SUSTAINABLE DEVELOPMENT GOALS

GOVERNMENT OF KARNATAKA

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HUMAN DEVELOPMENT REPORT - 2022

BRIDGING THE GAPS TOWARDS SUSTAINABLE WELL BEING

Human Development Division,
Planning, Programme Monitoring and Statistics Department,
Government of Karnataka

KARNATAKA

HUMAN DEVELOPMENT REPORT - 2022

BRIDGING THE GAPS TOWARDS SUSTAINABLE WELL BEING

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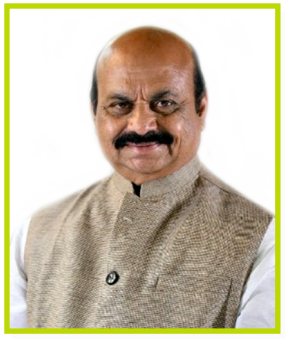

BASAVARAJ BOMMAI
Chief Minister

VIDHANA SOUDHA
BENGALURU-560 001

No: CM/PS/.11/2022

Date :...04/05/2022.....

MESSAGE

I am happy to note that **Department of Planning, Programme Monitoring and Statistics** is bringing out **Human Development Report- 2022**

Karnataka is a pioneering state in integrating Human Development outcomes in the development process of the state.

Karnataka Human Development Report 2022 – Bridging the gaps towards Sustainable well-being is a novel contribution in this series. It is more innovative and inclusive, in approach involving Youths, Social groups, Civil Society Organisations and International Agencies in integrating the Human Development process with Sustainable Development Goals. The state is on mission mode to achieve the targets set in SDG-2030 agenda and this report will help to reach the people at Taluka and Gram Panchayat level. The agenda and actions will be planned and implemented by the people and for the people.

I appreciate the Department of Planning, Programme Monitoring and Statistics for bringing out this report for helping us in carving out plans and policies to uplift the last person in the State.

I am hopeful that the policies and programmes designed and implemented based on this report will help to accelerate the process of shaping 'Nava Karnataka' for 'Nava Bharat' and enable Karnataka to emerge as a champion of Sustainable Human Development.

(BASAVARAJ BOMMAI)

Muniratna
Horticulture, Planning, Programme
Monitoring & Statistics and
Kolar District Incharge Minister

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ದಿನಾಂಕ: 07.05.2022

MESSAGE

Karnataka is a vibrant and dynamic state committed to promote Sustainable Human Development. The state has a regular agenda to review the progress in Human Development and reorient the public policy to **Bridge the Gaps** for inclusive development.The state has brought out Human Development Reports in 1999. 2005 and 2015 at state level and has also brought out district Human Development reports for all the districts in 2014. This report is the fourth in the series with a more focused approach to bring out the Human Development outcomes at Taluka and Gram Panchayat level and provide strategies for Aspirational Talukas and Gram Panchayats for inclusive and Sustainable Development. The state plans to focus more on Education, Skill, Health and Livelihoods in Aspirational Talukas for mainstreaming them in a time bound manner.

This analytical report is an outcome of deliberations and discussions at various levels involving experts, academic institutions and civil society institutions and the line departments. The efforts and initiative taken by Dr. Shalini Rajneesh, Additional Chief Secretary to Government, Planning, Programme Monitoring and Statistics Department and her team, are laudable.

I am sure that this report will be useful for all the stakeholders at **State, National and Global** level to plan and implement Human Development agenda for Sustainable Development.

(Muniratna)
Minister for Horticulture and
Planning, Programme Monitoring
and Statistics Department,
Government of Karnataka

VANDITA SHARMA, I.A.S.
Chief Secretary

ಕರ್ನಾಟಕ ಸರ್ಕಾರ
GOVERNMENT OF KARNATAKA

MESSAGE

The ethos of planning in Karnataka has always been people centric. However, introduction of the human development paradigm ensured the centrality of human development in the growth process. Additionally, it is extremely essential to incorporate human development into the planning process so that people can be empowered account and Governments can be encouraged to be responsive to the needs of the people.

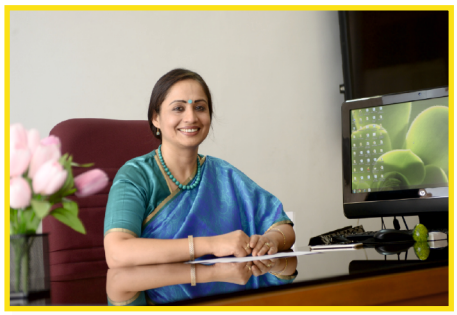
Karnataka has been pioneering the work of human development analysis, publishing its first Human Development Report in 1999 with a focus on regional imbalances in the State. The Second Human Development Report was Published in 2005, highlighting issues of governance and invest in human development. The State has brought out third Human Development Report in 2015 focusing on accelerating equitable human development.

This report, fourth in the series of Karnataka's Human Development Report is brought out on the theme of “Bridging the Gaps towards Sustainable Well-being” to ensure sustainable development of the state. It is the outcome of much thought and many deliberations at different levels, involving all stake holders, to bring out a realistic picture of the work done by the State in Human Development. This report provides a snapshot of the impact of the outcome of programme and various policies of State Government.

Commendable efforts have been made by Dr.Shalini Rajneesh, Additional Chief Secretary, Planning, Programme Monitoring and Statistics Department and her team members in bringing out this document. Experts have contributed significantly to provide the critical analysis of the human development issues in different chapters of the report. The inputs and data from different departments have helped to make the analysis more relevant and realistic.

I hope that this Document will be useful to Planners, Policy Makers, Government Agencies, Private sectors, International agencies, Academic institutions, Researchers, Individuals and Civil society organisations in working together for mainstreaming human development in the state and serve as a model to the whole nation.

(Vandita Sharma)
Chief Secretary
Government of Karnataka



Dr. Shalini Rajneesh, I.A.S.,
Additional Chief Secretary to Government
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and Statistics Department

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MESSAGE

Karnataka is one among the lead Indian States to bring in human development perspectives in its programmes and policies. The first human development report in 1999, was a status assessment report to take an overview of the State's achievement in basic human development sectors of health, education and livelihood. It was a balanced analytical deconstruction of the human development scenario in the State.

The second Human Development Report was published in 2005 with the theme on **'investing in human development'**. To assess the human development outcomes of public expenditure and policy decisions in different human development impacting sectors/schemes like poverty reduction/health and nutrition, education, social welfare etc. The State has ventured into **District Human Development reports on pilot basis for Vijayapura, Kalaburagi, Mysore and Udupi districts (2008) and later, for all the 30 districts in 2014**.

The State has brought out the third Human Development Report in 2015 with a specific theme on **'Accelerating Equitable Human Development'**.

The fourth Human Development Report 2022 is brought out with a specific action-oriented agenda to reach the human development milestones in Sustainable Development Goals. The effort is to explore the strategies and policies that promote sustainable wellbeing at Gram Panchayat level.

The special contributions of this report include an assessment of the impact of **Climate Change on inequalities and human development** and the strategies and way forward to accelerate the gains from **demographic dividend**.

I thank the committee members and experts for their contribution in preparation of this report and the special efforts from my team led by Dr. Chaya K Degaonkar, Additional Chief Evaluation Officer, Karnataka Evaluation Authority, Dr. Madheswaran, Professor, Institute for Social Economic Change and Dr. Manjunath, Director, Karnataka Evaluation Authority, Shri. K Gururaja Rao, Senior Director, Smt. Shilpa. S, Deputy Director, Human Development Division and Co-ordinators, Nodal Officers and other staff from the Planning Department and Directorate of Economics and Statistics to bring out a **realistic and actionable report based on Big Data Analytics.** I hope the data and evidence in the report will be used for decentralised planning at taluka and Gram Panchayat level for ensuring affirmative action and outcomes especially in aspirational taluks.

Shalini

(Dr. Shalini Rajneesh)

State Level Steering Committee

Sl. No	Designation of the Officer	Status in the Committee
1	Chief Secretary, Government of Karnataka	**Chairperson**
2	Additional Chief Secretary to Government, Planning, Programme Monitoring and Statistics Department.	**Member Secretary**
3	Representative from UNDP	Member
4	Principal Secretary to Government (Primary and Secondary Education) Education Department	Member
5	Principal Secretary to Government, Health and Family Welfare Department	Member
6	Principal Secretary to Government, Women and Child Welfare Department	Member
7	Principal Secretary to Government, Agriculture Horticulture Department	Member
8	Principal Secretary to Government, Horticulture Department	Member
9	Principal Secretary to Government, Food and Civil Supplies Department	Member
10	Secretary to Government (Expenditure), Finance Department.	Member

Besides the above Government Official Members, the following outside experts are also included in the Committee:

1	Dr. Rajashekar, Director, ISEC, Bengaluru.	Member
2	Prof. Rishikesha Krishnan, Director IIM, Bengaluru.	Member
3	Prof. Das, Director IIIT, Bengaluru.	Member
4	Dr. Sudheer Krishnaswamy, Director, NLSIU, Bengaluru.	Member

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2	Additional Chief Evaluation Officer, KEA	Member
3	Dr. Rajshekhar, ISEC	Member
4	Dr. Jyotsna Jha, CBPS	Member
5	Dr. S Madheswaran, ISEC	Member
6	Dr. T R Chandrashekar (Rtd), Hampi University	Member
7	Dr. Mukund, SDGCC	Member
8	Smt. Roopa, SDGCC	Member
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5	Employment and Decent Work **:** Performance and emerging challenges	Dr. S Madheswaran-ISEC and Dr. Jajati Keshari Parida, CU, Punjab
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Human Development – Executive Summary

Executive Summary:

The year 2022, marks the 75th Anniversary of Indian Independence. The whole nation is celebrating the Amrit Mahotsava with pride. At the same time, we also have to assess to what extent the political freedom has led to freedom of Choice (Amartya Sen-1988) is happening which in turn help in achieving the global 2030 goals. The Human Development Indices (HDI) provide a single measure capturing three dimensions of human development viz., health, education and living standards. This can be used as a summary measure towards the 2030 agenda as stated by Pedro Conceição, Director of the Human Development Report Office at UNDP.

Karnataka is on the path of rapid and inclusive development and has established its identity at national and global level as a dynamic and progressive State. The Karnataka model of development is now highlighted for its dynamic growth, innovative strategies and people friendly service delivery structures for quality of life of its citizens. Despite challenges and hardships imposed by the pandemic, **the achievements of the Government of Karnataka are noteworthy**. The State **ranks number one in India Innovation Index, 2nd in Milk Production**, and is a **Front runner** in Sustainable Development Goals, at all India level. The state contributes **8.8 % to the GDP** of the country and to more than **40% of the country's IT exports**. State has achieved average annual growth rate of 6.8% and with a per capita income of Rs.2,12,477, it ranks seventh highest in the country (Economic Survey 2021-22). The state is the first to implement the **National Education Policy** 2020 and first State to rollout a dedicated **Aerospace Policy**. The State is equally striving to transform the economic growth in human development outcomes.

Karnataka is one among the lead Indian States to bring in human development perspectives in its programmes and policies. It is the second state after Madhya Pradesh to bring out **the first Human Development Report in 1999**. This was a status assessment report to take an overview of the state's achievement in basic human development sectors of health, education and livelihood. It was a balanced analytical deconstruction of the human development scenario in the state.

The second Human Development Report, ***Financing Human Development*** **in 2005,** took stock of the human development scenario in Karnataka along with certain key issues that impact the development process. The second report examined and analysed the relation between public investment patterns and human development outcomes. It reviewed the implications of the investment for human development in the state with reference to all-India norms.

The **third** Human Development Report of the State was brought in 2015 with a specific theme - *"**Accelerating Equitable Human Development"***. The approach was to assess inclusiveness of human development across caste, class, gender and regions and accelerate the process. The report brought out that Karnataka was halfway on the journey towards equitable human development and a focused approach was required to lift the bottom districts out of low human development trap.

The state has also ventured into assessment of human development scenario at district level and District Human Development reports on pilot basis were prepared for Vijayapura, Kalburgi, Mysuru and Udupi districts (2008) and later for all the 30 districts in 2014 and an assessment of human development status at Gram Panchayath level through **Abdul Nazir Sab State Institute of Rural Development and Panchayath Raj (ANSSIRD & PR), Mysuru** in 2015. Thus, the progress in human development is periodically assessed in the State for evidence-based policy.

The fourth Human Development Report 2022 is presented with a specific action-oriented agenda to reach the One Trillion Dollars Gross Domestic Product (GDP) through human development milestones in the Sustainable Development Goals (SDGs). The effort is to explore the strategies and policies that help to bridge the gaps in human resources - knowledge, education, skills and labour productivity to achieve the targets and promote sustainable wellbeing. The Report is divided into 12 chapters, reflecting different dimensions of human development and new challenges posed by the pandemic in achieving the envisioned outcomes. The orientation in different chapters is towards actions needed to bridge the divides and looking beyond sustaining needs and expanding capabilities to see people as agents who act and bring about sustainable transformation through bridging the gaps that envelop pre-labour market investments in health and nutrition of young children along with **in-market education and skill**s and in post-scenario, access to capital resources, **decent work and ease of living** with a commitment to promote sustainable well-being.

Overall Approach of the Report:

- **Vision-2030** - To bring out the progress in human development in the state and the preparedness of the state to attain the agenda SDG-2030.
- **Bridging the Inequalities** - The analysis of status of gender, social groups (caste, tribe), demographic groups (children, elderly, differently-abled) and other minorities is being done to provide the evidence-based planning and policy for bridging the inequalities.
- **Capture the Regional Variations** through estimation of human development index at taluk and district level for specific State interventions in focused locations.
- Link the State Human Development Report (SHDR) with the State's SDG 2030 plan and assess the State's policy initiatives and gaps that will strengthen human

development goals in the State and a road map for taking the State to lead at the national and global level.

Unique Features:

- The Fourth Human Development Report of the State has, for the first time, estimated **HDI and** Multi-Dimensional Poverty (**MPI) at Taluk level for more focused approach with application of data science techniques.** The Taluk index is based on Taluk level data for Health, Education and Income derived from NFHS-5 and the data from Departments with the State Max Min values.
- Efforts are made to achieve **SDGs by integrating human development with Vision 2030 and harnessing human development through the Karnataka: A $1 Trillion GDP Visiona**
- The present Human Development Report has included new indices of Multi-Dimensional Poverty (MPI), Child Rights Index (CRI), Nutrition Index and the Youth Development Index along with Gender Inequality Index (GII), etc., which are based on new methodology / existing methodology and in a comparative framework providing statistical evidence to identify the strengths and gaps and the Aspirational taluks.
- The Report represents decentralised HDI at the Taluk level with State Goals Posts and Indicators. In line with this, for the first time the SDG localisation process is initiated in the State, which prerequisite micro level planning at Taluk and Gram Panchayath (GP) level accommodating the nine themes indicated by NITI Aayog.
- **Between 1990 and 2021, India's HDI value changed from 0.434 to 0.633**, registering a change of 45.9%. As far as Karnataka is concerned, **the HDI of the State is above the national average across the years.** The State in 2019-20 is placed at 11th in the country with significant improvement in the index during 1999-2020 from 0.432 to 0.644. This indicates that the state's achievement in human development has increased from 43% to 64.4%.
- To understand the relative position of States and districts of Karnataka in the global context and to create the districts and taluks as the fulcrum of development, the HDI is estimated using international goal posts viz., life expectancy at birth ranging between 20 to 85 years; range of expected years of schooling between 0 to 18 years; mean years of schooling ranging between 0 to 15 years and Gross national income per capita (2017 PPP$) between 100 to 75,000 at district level.
- This Report includes an assessment of the impact of **Climate Change on inequalities and human development** and the strategies and way forward to accelerate the gains from **demographic dividend** based on the requirements of the youths in the State and investment in youth human development.

- The Department of Planning's Sustainable Development Goals Co-ordination Centre (SDGCC) and International Institute of Information Technology (IIIT) of Bengaluru are collaborating for Artificial Intelligence (AI) based approach modelling and big data analytics in Data Lake Project. Data Lake provide granular analysis and various outcome based advisories at granular level.
- **The 2022-23 budget had taken this into account and has taken a revolutionary step to commence India's first 'Aspirational Taluk (block)' based budgetary approach to focus on 93 Aspiration taluks under Education, 100 in Health and 102 under Malnutrition.**
- **The Aspirational Taluk based budgeting has resonated and 2023-24 Budget has enhanced the scope of Aspiration Taluk based budgeting.**

Progress in Human Development: An Overview

Over the years, Karnataka State has made significant achievements in human development sectors. In education, it is emerging as knowledge hub, in health sector the state has established an efficient health delivery system which is evident from the management of pandemic situation in the State, besides the achievements in basic health indicators of Infant Mortality Rate (IMR), Maternal Mortality Rate (MMR) and under 05 Mortality Rate (U5MR).

Significant Achievements over last 5 years 2015-2020:

- The HDI has grown from 0.429 to 0.645 over 1990 to 2019 with an annual average growth of 1.42%. Over the last two decades the HDI of all the districts has improved significantly. In 1999 the highest achievement in HDI was 63 percent (0.63, Kodagu) and the lowest was 40 percent (0.399, Raichur). Now in 2020, the highest achievement in HDI is 73.8 percent and the lowest is 54 percent.
- **Bengaluru stands** at the top in terms of Human development achievement and can be categorised as district with high human development as per UNDP international comparison. Dakshina Kannada, Chikkamagaluru, Udupi and Kodagu are the next few districts with higher human development achievements.
- The top five districts where increase in HDI is significantly high are Bagalkote, Bellari, Ramnagar, Mandya, Yadgir. Along with these, Koppal also has higher increase in HDI next to Yadgir (0.420).
- For Chamarajanagar, the district considered to be the lowest in development aspects, the Index has increased from 0.576 to 0.601 ranking has improved from 25th in 2005 to 22nd in 2015 and 21 in 2021.
- Mandya has improved its performance and is placed at 06th position in 2021 from 12th in 2015.

- In 2015, the highest HDI=0.729 (BU) and lowest is 0.495 the Max-Min gap was = 0.234. But in 2021, the highest score 0.738 (BU) and lowest score 0.538 (Yadgir) the gap is reduced to 0.200, that is from 23.4% to 20%.
- **The increase in HDI of Bengaluru (U) is 0.009 and that of Yadgir is 0.043.** This is an outcome of focused approach under Special Development Plan and Aspirational District Programme.
- Karnataka has made significant achievements in health sector as visible from the health outcomes. The life expectancy has increased to 69.5 years and the Maternal Mortality ratio has come down to 83 per lakh live births in 2020 and 69 in 2022. The State stands in the first place for the implementation of Health and Wellness programme (a total of 6995 Health and Wellness Centres have been established as on February 2022).

Human Development Index Across Districts

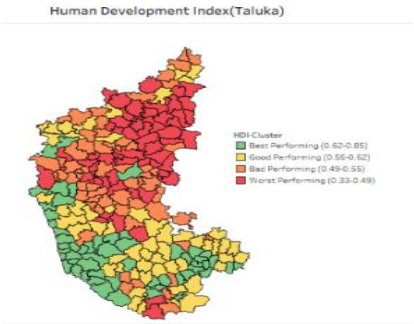
District	Health Index	MYS Index	EYS Index	Education Index	Income Index	HDI	Rank
Top Ten Districts							
Bengaluru	0.77	0.662	0.693	0.678	0.77	0.738	1
Dakshina Kannada	0.757	0.479	0.712	0.595	0.72	0.687	2
Chikkamagaluru	0.77	0.465	0.687	0.576	0.672	0.668	3
Udupi	0.76	0.492	0.64	0.566	0.684	0.665	4
Kodagu	0.768	0.589	0.648	0.619	0.616	0.664	5
Mandya	0.764	0.446	0.704	0.575	0.607	0.644	6
Bengaluru Rural	0.762	0.503	0.611	0.557	0.625	0.643	7
Ramanagar	0.761	0.433	0.697	0.565	0.615	0.642	8
Kolar	0.771	0.537	0.662	0.599	0.567	0.64	9
Shimoga	0.755	0.385	0.71	0.547	0.623	0.636	10
Bottom Ten Districts							
Chamarajanagar	0.776	0.344	0.633	0.488	0.573	0.601	21
Bidar	0.772	0.406	0.658	0.532	0.527	0.6	22
Vijayapura	0.771	0.381	0.667	0.524	0.532	0.599	23
Chitradurga	0.757	0.412	0.626	0.519	0.541	0.597	24
Koppal	0.765	0.399	0.64	0.52	0.524	0.593	25
Davangere	0.749	0.394	0.622	0.508	0.538	0.589	26
Haveri	0.762	0.365	0.527	0.446	0.533	0.566	27
Raichur	0.742	0.175	0.721	0.448	0.535	0.562	28
Kalaburagi	0.726	0.285	0.554	0.42	0.514	0.539	29
Yadgir	0.764	0.256	0.508	0.382	0.533	0.538	30

Source: SDGCC, Planning Department Government of Karnataka * Excluding Hubli Nagar Taluk

HDI for 176 Taluks 2019-20:

	Health Index	Education Index	Standard of Living Index	HDI
State Average	**0.732**	**0.476**	**0.564**	**0.576**
Above State Average	**98**	**84**	**94**	**98**
Below State Average	**78**	**92**	**82**	**78**

Source: Planning Department, Government of Karnataka



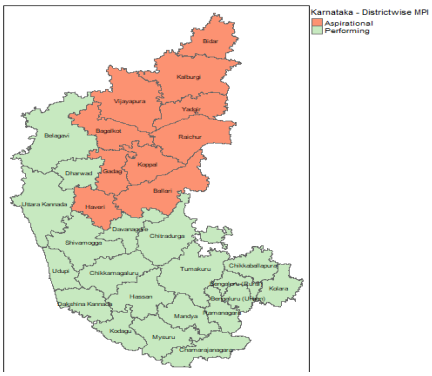
The Mangalore Taluk with HDI of 0.786 tops in human development and the Yadgir taluk of Yadgir district is at the lowest with HDI of 0.325. The achievement is 78% in Mangalore and 32.5% in Yadgir.

Top Ten and Bottom Ten Taluka in Human Development Index

Top Ten Taluka				Bottom Ten Taluka			
District	**Taluk**	**HDI**	**Rank**	**District**	**Taluk**	**HDI**	**Rank**
Dakshina Kannada	Mangalore	0.7867	1	Yadgir	Shahapur	0.4298	167
Bengaluru Urban	Bangalore-South	0.7847	2	Kalburgi	Chincholi	0.4218	168
Bengaluru Rural	Nelamangala	0.7609	3	Vijayapura	Basavana Bagewadi	0.4200	169
Dakshina Kannada	Sulya	0.7461	4	Raichur	Sindhanur	0.4186	170
Dakshina_Kannada	Bantwal	0.7400	5	Haveri	Savanur	0.4178	171
Uttara_Kannada	Bhatkal	0.7353	6	Koppal	yelburga	0.4133	172
Tumakuru	Tumkur	0.7235	7	Yadgir	Shorapur	0.3678	173
Ramanagara	Ramanagar	0.7233	8	Vijayanagar	Kudligi	0.3477	174
Udupi	Udupi	0.7111	9	Kalburgi	Jevargi	0.3292	175
Bengaluru_Rural	Hoskote	0.7098	10	Yadgir	Yadgir	0.3250	176

Source: SDGCC, Planning Department Government of Karnataka * Excluding Hubli Nagar Taluk

Major Challenges:



- In terms of MPI, the four districts of Kalyan **Karnataka region** - Yagdgir, Kalburagi, Raichur and Koppal along with Bellary are low performing in the State. Also, Bidar, Bellari, Gadag, Bagalkote, Vijayapura and Haveri of North Karnataka (**Belgaum division**) need focused approach with a package of schemes to address the deprivations in health, education and quality of life.
- Karnataka stands at 17th position the in GII among 22 major states with the loss of 54.9%. This is mainly because the of the poor political representation by women and huge gender gap in Labour Force Participation Rate (LFPR) of 43.6%.
- GII across districts indicate a lesser variation after accounting for political participation at local level. The variation in percentage of loss due to gender inequality is from 21% (Udupi) to 44% (Dharwad).
- The Child Rights Index is the only annual global ranking on how countries worldwide are adhering to children's rights, and which is based on five dimensions - Right to life; Right to Healthcare; Right to Education; Right to Protection and Right to Child Rights Environment. The latest report was released in 2021 and India[1] stands at 112th position with the index value being 0.680.
- Karnataka stands 07th in the rank and Malnutrition is the biggest challenge in this regard.
- When it comes to Malnutrition, the Global Nutrition Report (GNR) has identified six Maternal, Infant and Young Child Nutrition (MIYCN) targets and three diet-related Non-Communicable Disease (NCD) voluntary targets. India is 'on course' to meet three targets for MIYCN.
- Two Malnutrition Indices are computed in this report. (i) using indicators representing MIYCN, represented as MICYN index and (ii) using indicators representing Diet related Non-Communicable Disease, represented as DRNCD index. Karnataka stands at 12th position among 22 major States.
- At the district level, Koppal, Yadgir and Raichur are the districts with high incidence of malnourished children and anaemic women. On the other hand Mandya, Kolar and Ramanagar districts had low share of malnourished children and anaemic women. Bengaluru, Kodagu and Ramanagar districts had high percentage of adults with Blood

Pressure, diabetics and obese. Percentage of adults with low percentage of NCD is seen in districts Raichur, Haveri and Yadgir.

- In education sector Karnataka has two urgent issues to be addressed - high dropouts at secondary level and poor learning outcomes at higher levels of education.
- There are about 2 lakh dropout children in secondary education, 4687 high schools should be equipped with vocational labs and 2150 high schools with Information Communication Technology (ICT) Labs. 2023-24 Budget has announced the development of Shrishti Innovation Labs in Aspiration Taluks.
- Further, there is lack of proper sanitation (separate toilets) facilities in the schools and transportation facilities for children, especially in rural areas is a major challenge to be addressed.
- Karnataka is undergoing an epidemiological and demographic transition leading to increased number of Non-Communicable Disease cases. NCDs contributed 62%, Communicable diseases 25.1% and Injuries 12.9% of the total disease burden in Karnataka.
- The Maternal Mortality Rate (MMR) is comparatively high (especially in the districts of Dharwad, Chikkaballapur, Bidar, Hassan, Haveri, Shivamogga, Tumakuru and Chamarajanagar) due to 45.7% of the pregnant women in the age group of 15 to 49 are anaemic or malnourished. Further, an equally high number of women have high blood pressure and only 44.7% of the pregnant women consume iron-folic acid

Existing Opportunities and Way Forward (Proposed Action Points):

Major Action Points:

Health Index: U5MR and MMR have shown a direct inverse proportion to availability of Individual Household Toilets. 10% increase in sanitation facility can reduce IMR by 1 point (1 per 1000). **Swachh Bharat Mission and Jal Jeevan Mission** play pivotal role for Individual Household toilets and water.

Education Index: Gross Enrolment Ratio (GER) in Secondary education is a critical parameter. It has been observed that having individual teachers for Science and Maths, more ICT labs at schools can not only enhance Learning Outcomes (which are around 35 for Science and maths) but, can also arrest dropouts (14.65%) and generate additional enrolment of girls in Science and Technology (from current 32%). Further**, Sarva Shiksha Abhiyan (SSA)** and **Rashtriya Uchhatar Shiksha Abhiyan (RUSA)** to be leveraged.

Social Index: Pucca houses (35% to be provided) and Sanitation (12% to be provided) play crucial role in development of any human being. PMAY (U), PMAY (G), RGHS for housing

should be focused. Manufacturing/MSME should be enhanced and workers in manufacturing sector to increase from current 12%. PMFMG, FAME (for e-mobility) and SFURTI for MSME related upward linkages.

Overall: Factors contributing to Multidimensional Poverty Index to be addressed for holistic enhancement of Human Development

Actions for Increasing HDI and Reducing Poverty

- The incidence of poverty is high in North Karnataka, especially Kalyan Karnataka region. Lifting 20% and above population below poverty line (MPI NFHS-5) in Yadgir, Raichur and Kalburgi by bringing them under the ambit of various Health, Education and Housing Schemes will reduce the incidence of MPI significantly in the State.
- Percentage of urban households living in Kutcha houses to be reduced from 0.5% to 0% on priority basis using existing urban housing schemes.
- Asset transfer schemes can produce more sustainable impact on livelihoods. The Pashubhagya and Ksheera Snjeevani schemes to be linked with MGNREGA for cattle sheds and fodder development programme to provide support services.
- All the Antyodaya Anna Yojana (AAY) families to be covered under SHGs and the group is to be linked to banks for credit and KMF for marketing.
- Increase the productivity on small and marginal lands through widespread adoption of integrated farming system and promotion of micro irrigation by 77 lakh small and marginal farmers. Focus should be on 390 Gram Panchayaths where the gap between potential and actual yield is very high. Precision farming and Crop Diversification to high value crops, and crop planning at micro level based on market information, Agro processing clusters, cold storage and marketing infrastructure for value addition are the basic strategies for doubling the farmers' income in North Karnataka.
- **Agri and Agri Tech:** (i) Agriculture Universities, RDPR University and Farmer Producer Organizations (FPOs) should conduct regular capacity building programme for FPO executives in association with B-Schools of the State. (ii) Start-up companies in Agri-tech sphere should be linked to FPOs. (iii) Launch a pilot programme for promoting agripreneurs by linking them to FPOs and farm universities. (iii) Promote Integrated Farming System (IFS) among small and marginal farmers with financial assistance and technical mentoring by farm universities to generate employment and more income.
- Formulation and implementation of plans at GP level with increased public participation. Strengthen and operationalise the process of preparation of Gram Panchayath Development Plan (GPDP) and estimation of GDP at GP level.

Promotion of Quality and Inclusive Education:

Karnataka has two urgent issues to be addressed in the Education sector - high dropouts at secondary level and poor learning outcomes at higher levels of education. To address this,

- Promoting vocationalization of education is the urgent requirement. As per National Education Policy (NEP Clause 4.26): Every student should be imparted vocational crafts and as such, Internship opportunities to learn vocational subjects may be made available to students throughout Grades 6-12, including holiday periods.
- Vocational courses through online mode which is available with National Skill Development Corporation (NSDC) and Karnataka Skill Development Corporation (KSDC) are being leveraged. **Centres of Excellence / Skill Development will be created on a Hub and Spoke model. Schools should also partner with Polytechnics and it is in their vicinity**
- It may be useful to transform vocational education within the school in ways that it focuses of developing skill sets with knowledge for all students in secondary school post 09th grade to address the issue of dropouts. Collaborate with NGOs like Labour net and introduce multiple entry and exit options in higher education.
- The schools without ICT Labs to be covered under **TALP and other ICT initiatives**. To encourage Science education, establish **STEM labs in Girls' high schools**.
- Provision of Toilet facilities in all schools with priority to schools in talukas in Kalburgi, Yadgir, Raichur districts. Transport facilities and financial assistance and ensure safe environment at school to increase the enrolment of girls.
- Establishment of Special Education Zones in educationally backward talukas with **Vocational Education and Skilling Hub (VESH) in every SEZ.**
- Training to the Anganwadi teachers in **Udisha portage** for early intervention of ECCE for all children including children with disabilities.
- Extend RTE till 12th Grade in order to reduce dropouts and promote higher education.
- A model school in every GP is envisaged, which will be an upgradation of a Higher Primary School or a Secondary School in a GP with potential and feeder schools.
- To improve quality of higher education, support **accreditation of colleges** - government and private, to improve infrastructure and learning environment. Presently, among 4047 colleges in the State only 729 (18%) are accredited.
- Explore innovative financial solutions under Public Private Partnership (PPP) and Corporate Social Responsibility (CSR) pathways to reach the target set for the increase in the enrolment in higher education (GER) from about 32% to 60% and above by 2030.
- The budget of the Department of Higher Education must be enhanced to **an annual spending of 2% of the GSDP and must be at least 30% of the overall education budget**. Encourage research and resource pooling in higher education.

- Establish an independent **Teachers Academy** at the State level and strengthen the **Higher Education Academy** at Dharwad on a PPP model to address recruitment, foundation / induction training, periodic capacity building, performance assessment, ethics, research and database management.
- The present **State Council for Higher Education must be restructured** to play role of Think-Tank. Experts with fresh thinking and new ideas need to be drawn from across the State, country and the world.
- For quality improvement, teachers to be given mandate to train students in modern jobs. Involve them in social entrepreneurship for knowledge application in social transformation.

Promoting Health and Wellbeing:

- Convert all the 147 taluk hospitals functional 24/7 for maternity services, by addressing the shortages of doctors and para medical staff.
- **Decentralisation** of health schemes for their location with specific Information Education and Communication (IEC) and implementation requirements.
- There is need for monitoring the health of children from Anganwadi to high school through seamless integration of Reproductive Child Health (RCH) portal with School health portal to fix responsibility on the concerned Primary Health Centre (PHC)s to ensure required diagnostic, treatment, and monitoring of the health of women and children.
- Focus on **three strategies** for improving the health and wellbeing of children. First is ensuring survival beyond infancy. Second is supporting mothers. Third is focusing on providing children with adequate nutrition and the requisite vaccinations.
- ASHA to ensure provision of Iron Folic Acid (IFA) supplements to pregnant women, who are not able to come for regular ante-natal check-ups through home visits.
- To reduce tobacco and alcohol consumption among youth, strict prohibitions on advertisements and also the sale of tobacco and alcohol to youth and holding campaigns that promote awareness about the negative impacts.
- Making counselling services more accessible by partnering with mental hospitals for counselling. Strengthen the **Yuva Spandana** which is the first youth mental health promotion programme in **India**. It is implemented by the Department of Youth Empowerment and Sports, with technical collaboration from Centre for Public Health, Department of Epidemiology, NIMHANS since 2014.

Action Plan for Malnutrition and Anaemia Free (Mukt) Karnataka:

Nutrition is the area of concern. The districts of Kalburgi, Raichur, Yadgir, Koppal, Bellari, Bidar Gadag and 102 talukas with high incidence of malnutrition need an integrated and

holistic multi-sectoral approach as adopted in the World Bank Project in Chincholi and Devadurga.

- Anaemia can be reduced only if the departments (Health, Women and Child Development and Food and Civil Supplies) converge their activities and GP co-ordinates and monitors the activities regularly through Poshan Tracker created by GoI.
- As part of Pradhan Mantri Surakshit Matritva Abhiyan, Anaemia should be addressed through an integrated package of interventions.
- As per NFHS-5 survey it is estimated that approximately 29.3 lakh children and 4.3 lakh pregnant women are Anaemic. Screening of all pregnant women for Anaemia at sub-entre/Village Health and Nutrition Day (VHND)/outreach/PHC level can be done by Sahli's Haemoglobinometer or by Standard Hb Colour Scale.
- ASHAs and ANMs should screen children from 06 months up to 05 years of age for signs of Anaemia through opportunistic screening on various platforms. Focus on first 1000 days (including in the mother's womb) which is the most critical period in a child's physical and cognitive growth. Promote Community ownership and Management of Nutrition
- There are 102 talukas categorized as aspirational Talukas that are mainly concentrated in North and Northeast Karnataka. Multi-sectoral interventions for these talukas.
- Anaemic children in Anganwadis should be provided special supplementary nutrition (either Spirulina Chikkis, Dathru Loha, Sai Protein, etc.) for 90 days for improving Haemoglobin levels.
- Establish Nutrition Clusters managed by SHGs with machinery, etc., with capacity building and other related aspects at the cost of INR. 1 crore per annum. A pilot of 17 clusters, 1 per district should be developed - especially in taluks with high Anaemic prevalence. Budget requirement is INR. 17 crore. Total, **INR. 85 crore** would be required for a period of 05 years to eradicate child Anaemia.
- Improving coverage of government programmes and strengthening behaviour change strategies through creation of specific messages and 'Jan Andolan'. NSS Volunteers / Girls for awareness campaign - NSS Volunteers / Girls for awareness campaign.
- **Diversification of Public Distribution System** to include millets which can contribute to the access of micronutrients for the Anaemic population and promoting community nutrition gardens (nutri-gardens) in convergence with MGNREGA.

Skill Development, Employment and Decent Work:

The objective of **Employment Policy** should be to address basic issues in employment as related to growing size of informal labour market, lack of decent work and employment security, and the need for adequate employment growth to combat unemployment and productive utilization of demographic dividend. The present situation in the state highlights

that, there is significant increase in jobs in informal sector and also within the formal sector in informal segment. This is evidence of growing insecurity of employment and income and the phenomenon of rising gig jobs in the state. There is an urgent need to implement an Employment Policy to regulate these trends in job market and to provide decent work. Further, the manufacturing sector has to be expanded particularly in Tier-2 and Tier-3 cities. The state has to focus on creating decent work conditions in informal sector with scaling up the social security measures. In this context, the **New Employment Policy 2022-25** has linked jobs to investment and ensures creation of 7.5 lakhs new jobs in next three years. There is a need to create appropriate institutional mechanism to implement it. The policy guidelines should also focus **on future work and future skills**.

Further, the following measures would lead to improvement in human development through the provision of skill development, employment and decent work:

- **Transformation of Employment exchanges into E and E Facilitation centers** for employment and entrepreneurship in collaboration with leading industrial houses and multilateral agencies.
- Initiatives for **Un-organized Labour Force - a proper Labour Market information system (LMIS) to be developed in collaboration between KSDC, Industry, academia, Department of Labour, C and I with Department of Skill as nodal agency under SANKALP project.** LMIS will provide the requisite insight for skilling the labour force in the unorganized sector.
- Six **In**ternational **S**kill **T**raining and **In**novation **C**entres (**Instinct)** strategically located considering the geographical advantages, need for promoting inherent skills / occupations of the region, local industry sectors (for example, Automobile in Dharwad, ESDM in Mysuru, Artificial Intelligence, Nano Technology and Robotics in Bengaluru), etc.
- **Recognition of Prior Learning (RPL) in Farmers Community** - up-skilling, re-skilling and recognizing prior learning of farmers is vital. The District Skill Mission to work in co-ordination with the Agriculture department and Krishi Vigyana Kendra to establish a certification and recognition programme for the farmers.
- Initiating **Livelihood Facilitation Centre at the Block or Cluster Level** - with convergent action to support rural women, particularly those who are part of SHGs, and provision of benefits of different schemes of Government departments, credit linkages and marketing support.
- **Digital Skills and Entrepreneurship Mindsets in Schools and Colleges** - to be promoted through the Gram Panchayath Libraries.
- **Career Information and Guidance and Internship Programmes for Youths** in collaboration with leading Industrial Associations.

- **Youth Entrepreneurship Incubation at Colleges: (i)** Develop a District level hub and spoke model for entrepreneurship incubation with all educational institutions in the district as spokes. (ii) Extend the New Age Incubation Network (NAIN) Scheme to all Districts. (iii) Establish Karnataka Research and Innovation Authority (KRIA) as a nodal agency for strengthening incubation ecosystem in the State on the lines of Technology Transfer Offices (TTOs) of Israel.
- Create internship opportunities for graduates in Future Skills in companies like Infosys, Microsoft, IBM, etc., through Karnataka Digital Economy Mission (KDEM). Launch Future Digital Jobs Initiative for engineering colleges in Beyond Bengaluru Clusters.
- **Employment Policy -** The state is expected to generate employment of around 60 to 75 lakhs by 2025, which is primarily due to the growth in the following sectors - Tourism, IT and BT, Services, MSME, manufacturing and other industries like Electronics System Design and Manufacturing, etc. An employment policy is needed to build strategy and interventions in labour market to achieve the targets set under SDG-8 for growth, employment and decent work.

Promoting Gender and Social Equity:

The issues on top priority to promote gender equality are eradication of discriminatory practices, combating domestic violence, anaemia and increasing female labour force participation rates. Along with sensitization of the masses on various aspects of gender and social equity and convergent action across the Departments of Women and Child Development, Home, Health and Family Welfare and Education, there is a need for the following -

- Implement **the Women Empowerment Policy** for establishment of a just and humane society in which all women of Karnataka are empowered to realize their full potential and to live a life of dignity and choice, and are able to participate in the process of decision-making as equal partners to influence the process of social change.
- The State has been implementing Karnataka State Transgender Policy, 2017, which aims to integrate the Transgender communities into mainstream society and guarantee a secure future for them. It will address their vulnerabilities holistically and proposes initiatives for their social, psychological, financial welfare.
- Implement the **Girl Child Policy** to provide a healthy environment for the growth and safety and security of girl child. The main objective is to eradicate discriminatory practices and improve the sex ratio. Protect girl children from all forms of violence, abuse and discriminatory practices through effective enforcement of legislation and policies; promote change in attitudes and behaviours within families, communities and society at large, regarding girls and women by elimination of customs, beliefs, practices, and conduct that perpetuate discrimination and gender stereotypes.

- The State has formulated **new Youth Policy - 2022** focussing on education, training, employment and entrepreneurship of the female labour force and their facilitation to join the labour market & build the '**woman capital'.**
- Providing *voice* to women and Girl Child through programmes like Child Friendly Gram Panchayath (Makkala Snehi Gram Panchayath), and Gender Friendly Gram Panchayath (Mahila Snehi Gram Panchayath), etc.

Social Inclusion:

There is significant achievement in HDI of SC/ST and OBC categories, but the progress is not complete and the gap continues to exist. Ensure increased resource allocation and effective implementation and optimal utilization of funds under SCP/TSP schemes. There is a need to prioritize the spending for reducing the deprivations and achieving the human development outcomes and the SDG-2030 agenda.

- Outcome based budgeting and implementation of schemes under SCP/TSP, Backward Classes and Minorities based on identification of gaps in Human development sectors. Focus on economic mobility along with social inclusion.
- Public participation in Planning and implementation of SCP/TSP schemes and Social Audit of schemes and transparent monitoring and evaluation of the schemes.
- Strategy for promoting equity in livelihoods through investment in minor irrigation, ground water enrichment, rainwater harvesting, lake / tanks restoration and development, diversion of rivers, and creation of barrages under MGNREGA and Watershed development schemes.
- Legal / political / literacy of women and men for representation in local bodies.
- 'Make in India' initiatives, skill development from KSDC / KSDEL to boost the MSME sector, soft credit to MSMEs with export potential.
- To promote women entrepreneurship in SC/ST Women, 25 percent of the target under self-employment under various corporations and infrastructure in Industrial areas/ parks to be reserved for these women.
- Involvement of NSS volunteers under awareness and development initiatives at GP level for formulation of FPOs, SHGs, User Associations among these people.
- Special Development plan should focus only on human development sectors in backward talukas.

Harnessing Demographic Dividend - Youth Development:

Around half (48%) of the state's youth population were in the lowest bracket of attainment (10th Grade and below). 32% of the youth population had completed higher secondary education (11th or 12th Grade), and only 21% completed tertiary education. The number of young persons (16 to 35 years) who require skilling in Karnataka is projected for

the period 2016 to 2030 at 188 lakhs that includes, the persons in labour force, who have not completed higher education (including technical education) for new or better employment. Hence awareness, effective financial support and accommodation facilities are essential to increase human capital. To promote overall development of the youth it is necessary that the youth are empowered to start their own social enterprises and tackle social problems will make them drivers of change, ensuring private gains without losing sight of the public good that it can create for society and in this background, the State has made a commendable effort through -

- Preparation and implementation of **Yuva Budget.** Government of Karnataka has prepared a **compendium of 540 Government schemes** under Yuva Budget. The total budget under the various schemes was INR. 11456.46 crores during 2021-22.
- The State has formulated new Youth Policy - 2022. This will focus on the holistic development of youth. **The policy is being designed in participatory mode, after consultation with youth leaders at the district level, and professionals in various fields. Over 14,000 youths have provided opinions on various issues ranging from education to leadership,** which are being incorporated in the policy.
- The policy has recommended restructuring of the Department of Youth Empowerment and Sports, the creation of a Yuva Budget, and the formation of a youth advisory group. The policy identifies six focus areas - education and training, employment and entrepreneurship, health and well-being, sports and fitness, arts and culture - and recommended an action framework for each of them.

Building Resiliency to Climate Change and Inequality:

Progress in Human Development can be effectively made when the negative consequences of the environment on poverty, inequality, health, education, and so on are taken care of. There is dire need to increase budgetary allocations adequate enough to support environmental protection, along with effective participation of civil society institutions and general public in 'Save Environment' mission. In this direction, with the slew of policy measures and action plans, the State of Karnataka is poised to mitigate the impact of climate change and consequential its impact on vulnerable community. The action points for achieving the targets by 2030 are given below which will have significant positive impact on the reducing all kinds of inequalities arising from Climate Change:

- **Agriculture and Allied Sectors:** Increase area under watershed treatment and micro irrigation; Reduce annual consumption of chemical fertilizer; Promotion of organic farming and endemic drought/flood resistant varieties.
- **Agro-Forestry:** Tree planting in all vacant private and farmlands that are unfit for productive agriculture; Promote afforestation in 9150 Sq. Kms. available in forest and

7.69 lakh ha of barren and uncultivable land through integration of plantation schemes of Forest Department and MNREGA.

- **Livestock Sector:** Greater emphasis on fodder production; Conservation and genetic improvement of indigenous cattle and sheep breeds; Selective breeding for increasing productivity; Conservation by rearing elite animals in Government farms; Genetic selection for low methane emission.
- **Health Sector:** Increase in health care facilities, including mental health care; Identification of areas vulnerable to climate change effects; Enhance disease monitoring and surveillance in vulnerable areas.
- **Forest Sector:** Restoration of disturbed forests and plantations; Increasing focus on farm forestry and agro forestry; Policy changes to encourage people to plant trees in their lands.
- **Combat Disaster Situations:** Reduce urban flooding (UF) by proper maintenance of drainage system; Proper Solid Waste Management System; Using ICT in developing advance warning systems; Dissemination of information through SMS, web portal, radio, wireless communication, etc., and educating people about disaster management.
  - **Promoting Green Growth** industries and General energy efficiency (EE) measures like Green Transition, Green Jobs Green Economy, etc.
- **Resource Mobilisation through Green Bonds** in the permitted areas like e-mobility - PPP mode of operation (FAME 1 and 2), Waste Management (PPP), Micro and Solar Irrigation, etc.
- **Global Warming:** Solarization of all high energy consuming sectors / equipments.,
- Develop Bengaluru as e-Waste anagement hub and generate an income by recovering precious metals, like bronze, gold.
- Develop water security plans in 41 overexploited taluks, covering 1199 Gram Panchayaths, under Atal Bhujal Yojana.Achieving potential micro irrigation area of 2 million hectares focussing over exploited areas on priority.
- **A Climate Risk Atlas (CRA)** to map critical vulnerabilities at the district level.
- Establish a state **Climate-Risk Commission** to co-ordinate the Environmental De-risking Mission.
- Provide for **Climate Risk-Interlinked Adaptation Financing** by creating innovative CVI-based financing instruments that integrate climate risks for an effective risk transfer mechanism.

Good Governance for Human Development:

Governance and Human Development share a symbiotic relationship that determines the pace and direction of the progress that a state makes, the quality of governance has a significant

impact on human development and vice versa. For a pro-human development governance, the actions required are:

- Shifting emphasis from output to outcome planning and monitoring. Development of an output-outcome framework for monitoring the implementation of schemes.
- Use of data science applications such as data layering, data visualization, machine learning and AI tools for localisation of SDGs, identification of focus areas for specific interventions, to better capture evidence of achievement of more complex outcomes like **school dropouts vs. learning outcomes, estimation of GDP at GP level** for demand and resource-based planning, etc., for inclusion and equity.
- **A Project Management system** to monitor the implementation of mega projects to avoid cost escalation and ensure timely benefits to the masses.
- Impact evaluation of major beneficiary-oriented schemes and programmes through an independent evaluation system like **Karnataka Evaluation Authority** and effective utilization of evaluation output in redesigning the programmes and policies for more effective outcomes.
- To subsume existing institutions that deliver basic services like the School Development Monitoring Committee (SDMC), Anganwadis, Primary Health Centres, Fair Price Shops - under the jurisdiction of the Rural Local Bodies (RLB).
- In order to promote innovations in use of technology for delivering better outcomes for the citizens, two novel projects of the State that are being implemented are KUTUMBA - a family data base of all the households in Karnataka and FRUITS - a registration system for farmers to derive a range of benefits. These need to be implemented effectively for generating data base for effective planning and implementation of schemes.
- Increase the size of **district sector** to provide adequate resource base for planning and implementation of schemes in human development sectors.
- Developing **District and Taluk as a Fulcrum of Development**. Constructing a District Good Governance Index (DGGI) and strengthening institutional mechanism for participatory and effective planning at district level.
- Strengthening the institutional mechanism for formulation and effective implementation of GPDP.

Financing Human Development:

- Gram Panchayaths would be empowered and encouraged to be self-sufficient, so as to finance their requirements of development aligning with the nine themes of NITI Aayog.

- Sustainability bonds are being explored to engage private sector partnership with public sector and government in nation building and cost-sharing model of PPP is being explored for financing human development under Atma Nirbhar Bharat.
- Revise the cost norms for all beneficiary-oriented programmes and schemes for human development. Increase **allocations and expenditure on human development sectors** in coming budgets to reach the UNDP stipulated norms for Human Development Goals. These norms are - for Public Expenditure Ratio (PER) 25% Social Allocation Ratio (SAR) 40%, Social Priority Ratio (SPR) 50% and 05% for Human Expenditure Ratio (HER). At present the State PER is 12% SPR is 46.5%, and HER is 2.2%, which are well below the stipulated norms.
- Asset monetization for increasing the resources and rationalization of schemes for efficient utilisation of resources.
- Expanding the **scope of Avalokana** - New DSS software - to include age and gender of beneficiaries for monitoring the progress of the schemes from the perspectives of Child Budget and Gender Budget.
- Constructing Human Capital Index for Karnataka State.
- The State has recognized the need for CSR funding to fill up the resource crunch. **Akanksha** - An integrated online platform has been developed with the support of UNDP to create a seamless interface between Private and Public Sector.

Integrating Human Development with SDGs:

- Achieving the SDGs would clearly require efforts in meaningful partnerships and collaborative action for transformations across various dimensions of SDGs viz. basic human development needs and services, environment, and peaceful and inclusive societies.
- Karnataka is not in Aspirant category (<50) in any of the goals. It is achiever in SDG-7 affordable and clean energy. But it is in the Performer category for some critical goals like SDG-2, 4, 5, 9, 13 and 14 and these are more or less directly related to human development. In the SDGs-8 and 10, also, though we are in Front Runner category, the score is only 66 and 67 indicating the progress on the margin of the category.
- The State is well ahead in localization of SDGs and evidence-based strategies. Action plans are now being initiated at the sub-regional / taluk / Gram Panchayath level. **It is the first state to adopt Aspirational Taluk Approach to reach the people at local level for SDG targets, analysis and preparing action plans**.

Financial and Institutional reforms:

- Increase **allocations and expenditure on human development sectors** in coming budgets to reach the UNDP stipulated norms for human development goals.

- Restructure the gender budget with adequate and more allocations for income generating activities under Category A as per CAG 2019-20 Report as schemes for training and skill development, provision for credit, infrastructure, marketing, etc., and under Category B schemes, it should be ensured that women get at least 50 percent of the share.
- Reducing the size of the Government to control growing public expenditure. The expenditure on salaries and pensions is close to 40% of the revenue expenditure and maximum utilization of grants under Central Sector Schemes. Picking up all our entitlements from the Government of India without fail.
- Rationalizing the Schemes and mapping the budget with SDGs.
- Reducing unproductive expenditure by rationalizing the departments and increasing labour productivity and adoption to technology.

Decentralising Governance - Subsidiarity Principle:

- Community participation and Ownership - Community-based institutions to take ownership of the last mile institutions like schools, PHCs, Anganwadis, through the third tier of governance, the GP and engage in the decision-making process.
- Initiate and strengthen the process of preparation and implementation of GPDP with focus on the nine themes -for localized panchayat planning for SDGs. **i) Poverty Free and Enhanced Livelihoods in Village, ii) Healthy Village, iii) Child-Friendly Village, iv) Water Sufficient Village, v) Clean and Green Village, vi) Self-Sufficient Infrastructure in Village, vii) Socially Just and Socially Secured Village, viii) Village with Good Governance and ix) Women / Gender Friendly Village.**
- Ensure active participation of FPOs and SHGs in rural economy for Strengthening the agricultural food value chain in marketing and post-harvest infrastructure.
- Use of data science applications such as data layering, data visualization, machine learning and AI tools for localisation of SDGs, identification of focus areas for specific interventions.
- Ensuring that the youth of are associated with the planning of their Gram Panchayaths (and Villages). Leveraging NSS and NYK Clubs to engage youth from respective locality and provide outcome-based targets for overall development.

Policy Framework for Accelerating Human Development:

The **Women Empowerment Policy, Transgender Policy, 2017 and Girl Child Policy, the Youth Policy and Employment Policy** are some of the novel initiatives that will promote effective human development in the state and will lead the state towards achieving SDGs and One Trillion Dollar Economy.

Karnataka: A $1 Trillion GDP Vision Harnessing Human Development:

A comprehensive analysis of different states is being done through the **Karnataka: A $1 Trillion GDP Vision** to replicate best practices. A Nine Point Agenda including - boost agriculture sector through technology, branding, marketing and exports, boost manufacturing and exports via labour intensive industries, boost construction sector through increased infrastructural spending, systematic urbanisation, Aspirational Districts programme, specialised hi-tech industries to drive high value-added manufacturing and exports, investing in start-up ecosystem, etc. is being promoted through it. In this context, human capital is the most significant driver of socio-economic development and Karnataka, being conscious to needs of its populace, is initiating appropriate policies in this regard. Further to this Karnataka has become the first state in the country to start the State Institute for Transformation of Karnataka (SITK) to build on the human resource development led rapid socio-economic growth.

Harnessing and leveraging human capital is critical to achievement of Karnataka's USD 1 Trillion Economy and intrinsic growth. The unique advantage and strength of the state is its 2.1 crore youth and skill development, entrepreneurship and self-employment opportunities have to be provided to enhance the strength. Currently, more than 64% of state's economy is from service sector. In continuation to this, 2.5 lakh SHGs through the Stree Samarthya programme, and one lakh youth through Swami Vivekanada Yuva Shakti Yojane are expected to catalyze community based engagement and economic growth at grassroots. Enhancing girls in higher education from current 32% and LFPR from current 25% is detriment to achieving economic growth. Aspirational Taluk Initiative will also ensure targeted interventions to ensure nourished, healthy and educated societies.

Process of Preparation of Human Development Report:

- For preparation of Human Development Report, the State Level Stearring Committee headed by Chief Secretary to Government has been constituted by involving the experts from the reputed institutions as members of the Committee in addition to Departmental Officials for Monitorring the preparation of KSHDR 2022.
- After Finalization of the Chapters, the Chapter writer has been selected from reputed institutions for the preparation of 11 Chapters of KSHDR 2022.
- The Draft Report of Karnataka State Human Development has been reviewed in the Editorial Committee under the Chairmanship of Additional Chief Secretary, Planning Department.
- Participatory approach - sharing of the draft report with the concerned Departments and CEOs of Zilla Panchayat for their inputs.

- Consultation with different stakeholders through meetings and interactions for finalization of the Karnataka State Human Development Report 2022.

Karnataka Human Development Report 2022 makes a quantitative assessment of status of human development indicators based on recent available data. This report has brought out the dimensions and magnitude of human development exclusions across regions, gender and social groups. Taking into account the less than satisfactory performance of the State in Human development, there is a need to allocate more resources to human development sectors focusing on lagging regions to bridge the gaps in Human Development. The final outcomes can be attained only through a favourable development environment, providing adequate space and voices for all the people to participate and share the gains from development. This report has enabled it by reaching down to the Taluk and Gram Panchayath level to understand people and their communities to redesign and/or reorient the programmes and policies towards promoting inclusive and participatory Human Development with '**Sab Ka Saath, Sab Ka Vikas',** to ensure that **'No One is Left behind'**.

Chapter -2

Human Development In Karnataka: Performance towards Sustainable Wellbeing

Chapter 2

Human Development in Karnataka: Performance towards Sustainable Wellbeing.

2.1: Introduction

The year 2022 marks the 75th Anniversary of Indian Independence. The whole nation is celebrating the Amrit Mahotsava with pride. At the same time, Nation should also assess to what extent development is happening which in turn help in achieving the global 2030 goals. HDI provides a single measure capturing three dimensions of human development viz., health, education and living standards. This can be used as a summary measure towards the 2030 agenda as stated by Pedro Conceição, Director of the Human Development Report Office at UNDP. As many of the SDG indicators are either directly or indirectly related to HDI, improvement in HDI is an indication that SDGs are progressing. As the Nation has suffered a lot due to pandemic achieving the goals may be a dream but progressing in the right direction may be a console.

UNDP in their 2016 report, observed that "the progress in human development over the past 25 years has been impressive on many fronts. More children are going to school, people are living longer, incomes are higher and people have greater potential to shape their societies and their future under democratic forms of government. But the gains have not been universal, and not all lives have been lifted. This reality was the impetus for the intergovernmental agreement on the 2030 Agenda, which aims to leave no one behind. Millions of people are indeed unable to reach their full potential in life because they suffer deprivations in multiple dimensions of human development—lacking income and secure livelihoods, experiencing hunger and malnutrition, having no or limited access to social services, fearing violence and discrimination and being marginalized from the political processes that shape their lives. There are imbalances across countries; socioeconomic, ethnic and racial groups; urban and rural areas; and women and men. Some groups are more deprived than others, and the most deprived individuals belong to multiple disadvantaged groups—an older, ethnic minority woman in a least developed country, for example". The imbalance observed by UNDP across countries is also seen across states and within a state across districts.

In the light of the above the current chapter tries to estimate Human Development Index at State and district level. The estimates pertain to the year 2019, as most of the data used for the construction is in and around the year 2019. Though it would be interesting to understanding the situation after the pandemic, due to non availability of the data, estimates only provide a picture before the pandemic attack. This can also be treated as a baseline picture before pandemic and subsequent estimates which would become available in due course after the availability of new set of data would provide a picture about the extent pandemic has had an impact on the human development.

Based on the availability of data, an attempt is made to estimate indices relating to human development in the current chapter. The indices that are presented in the subsequent sections are (i) Human Development Index both at State and district level and Inequality adjusted Human Development Index at State level. To understand the progress made, current estimates are compared with the estimates from Karnataka third Human Development Report, which pertains to the year 2012. (ii) Gender inequality index at State and district levels. (iii) Child Rights index at State level and (iv) Malnutrition index at State and district level.

2.2: Human Development Index:

Human Development Index (HDI), a composite index measuring average achievement in three basic dimensions of human development—a long and healthy life, knowledge and a decent standard of living, of the Nation stands at 0.633 for the year 2022 and ranks 132 among 191 countries and is classified as country with medium Human Development.

Box 2.1: Human development—a people-centred approach

Human development is about acquiring more capabilities and enjoying more opportunities to use those capabilities. With more capabilities and opportunities, people have more choices, and expanding choices is at the core of the human development approach. But human development is also a process. Anchored in human rights, it is linked to human security. And its ultimate objective is to enlarge human freedoms. Human development is development of the people through the building of human resources, for the people through the translation of development benefits in their lives and by the people through active participation in the processes that influence and shape their lives. Income is a means to human development but not an end in itself. The human development approach in the 1990 Human Development Report also introduced a composite index, the Human Development Index (HDI), for assessing achievements in the basic dimensions of human development. Those dimensions of human development are to lead a long and healthy life, measured by life expectancy at birth; to acquire knowledge, measured by mean years of schooling and expected years of schooling; and to achieve a decent standard of living, measured by gross national income per capita.

Source: Human Development Report - 2016

Among the neighbouring countries, except Sri Lanka India is marginally better than the other countries. However, compared to Sri Lanka India is a way too low and needs to improve in all dimensions of human development (see Table 2.1). However HDI has grown from 0.429 to 0.645 over 1990 to 2019 with an annual average growth of 1.42% (see Figure 2.1).

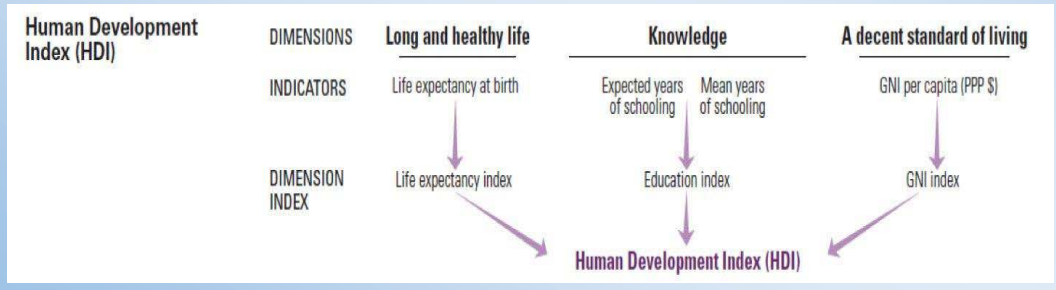
Table 2.1: HDI and its dimensions for selected countries

Country	Rank	HDI	Life Expectancy at birth	Expected Years of Schooling	Mean Years of schooling	National Income at $2017 ppp
Sri Lanka	72	0.782	77.0	14.1	10.6	12,707
India	131	0.645	69.7	12.2	6.5	6,681
Bangladesh	133	0.632	72.6	11.6	6.2	4,976
Nepal	142	0.602	70.8	12.8	5.0	3,457
Pakistan	154	0.557	67.3	8.3	5.2	5,005

Source: UNDP Report

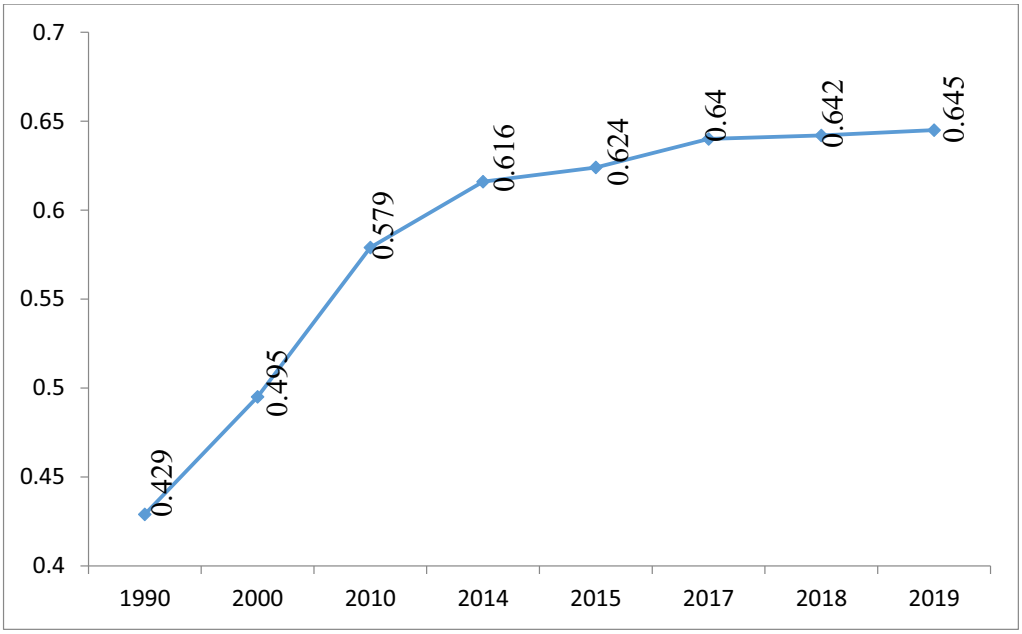
Box 2.2: Human Development Index (HDI)

The HDI was created to emphasize that people and their capabilities should be the ultimate criteria for assessing the development of a country, not economic growth alone. The HDI can also be used to question national policy choices, asking how two countries with the same level of GNI per capita can end up with different human development outcomes. These contrasts can stimulate debate about government policy priorities. The Human Development Index (HDI) is a summary measure of average achievement in key dimensions of human development: a long and healthy life, being knowledgeable and have a decent standard of living. The HDI is the geometric mean of normalized indices for each of the three dimensions. The health dimension is assessed by life expectancy at birth, the education dimension is measured by mean of years of schooling for adults aged 25 years and more and expected years of schooling for children of school entering age. The standard of living dimension is measured by gross national income per capita.



Source: Human Development Reports

Figure 2.1: Trends in HDI for India



Methodology for computing Human Development Index:

The Human Development Index (HDI) is a summary measure of achievements in three key dimensions of human development viz., long and healthy life, access to knowledge and a decent standard of living. This note describes the data sources and methodology to calculating the HDI.

Data Sources:

Life expectancy at birth:The life expectancy at birth usually denoted by e_0^0 , measures the average number of years a person is expected to live under prevailing mortality conditions. This measure is taken from census of India; abridged life tables 2014-18. Same table also provides life expectancy for different age group, using which inequality in levels of health is estimated.

Mean years of schooling: Mean years of schooling of the adult population i.e., aged 25 and above are estimated using the Periodic Labour Force Survey data for the year 2019-20. The same data is used to estimate the inequality in levels of education.

Expected years of schooling: Expected years of schooling is defined as the number of years of schooling that a child of school entrance age can expect to receive if prevailing pattern of age-specific enrolment rates were to stay same throughout the child's life (UNDP 2010). Based on the enrolment rates for the age group six to eighteen years, expected years of schooling is estimated using NSS 75st Social Consumption in India: Education survey, July, 2017 – June, 2018.

Per capita Income: Per capita income at state level is estimated using Gross National Income Per capita (2017 PPP US$) for India for the year 2019 from world development tables and

state level per capita consumption expenditure fromPLFS survey, 2019-20. This makes use of the assumption that income distribution across states is same as consumer expenditure distribution. Atkinson measure of inequality is estimated from same PLFS III unit record data and is used as a proxy for inequality estimate of income. As suggested by UNDP(2010), top 0.5 percentile group of distribution is truncated and zero expenditures are replaced with minimum value of expenditure of the bottom 0.5 percentile group.

STEPS FOR CALCULATING HUMAN DEVELOPMENT INDEX:

Step1: Creating the dimension indices:

Minimum and maximum values (goal posts) are set in order to transform the indicators expressed in different units into indices between 0 and 1. For international comparison, goal posts are taken from UNDP 2020 report and presented below. Having defined the maximum and minimum values, the dimension indices are calculated as

$$\text{Dimensional Index} = \frac{\text{actual value} - \text{min value}}{\text{max value} - \text{min value}}$$

The global goalposts used for the construction of HDI as set by UNDP is as follows:

Dimension	**Indicator**	**Minimum**	**Maximum**
Health	Life Expectancy (years)	20	85
Education	Expected years of schooling	0	18
	Mean years of schooling	0	15
Standard of living	Gross national Income per capita(PPP 2011$)	100	75000

For the education dimension, dimension index is first applied to expected years of schooling (EYS) and mean years of schooling (MYS) separately and then education index is obtained as the arithmetic mean of the two resulting indices. Finally HDI is the aggregation of the above three dimensional indices.

Step2: Aggregating the dimensional indices to provide the Human Development Index

The HDI is the geometric mean of the three dimensional indices

$$\text{HDI} = (\text{I}_{\text{Health}} \times \text{I}_{\text{Education}} \times \text{I}_{\text{Income}})^{1/3}$$

2.2.1: HDI at State level

In the current study, to understand the relative position of States and districts of Karnataka in the global context, HDI is estimated using international goal posts viz., life expectancy at birth ranging between 20 to 85 years; range of expected years of schooling between 0 to 18 years; mean years of schooling ranging between 0 to 15 years and Gross national income per capita (2017 PPP$) between 100 to 75,000. Table 2.2 presents statewise HDI for the year 2019. Though India as a whole belonged to medium human development category, Delhi and Kerala belonged to High human development category. Karnataka stands at 11th position among 22 major states with the HDI value being 0.644 which is slightly below the state average.Delhi, Kerala, Himachal Pradesh, Punjab and Tamil Nadu are the top five states in terms of Human Development Ranking.

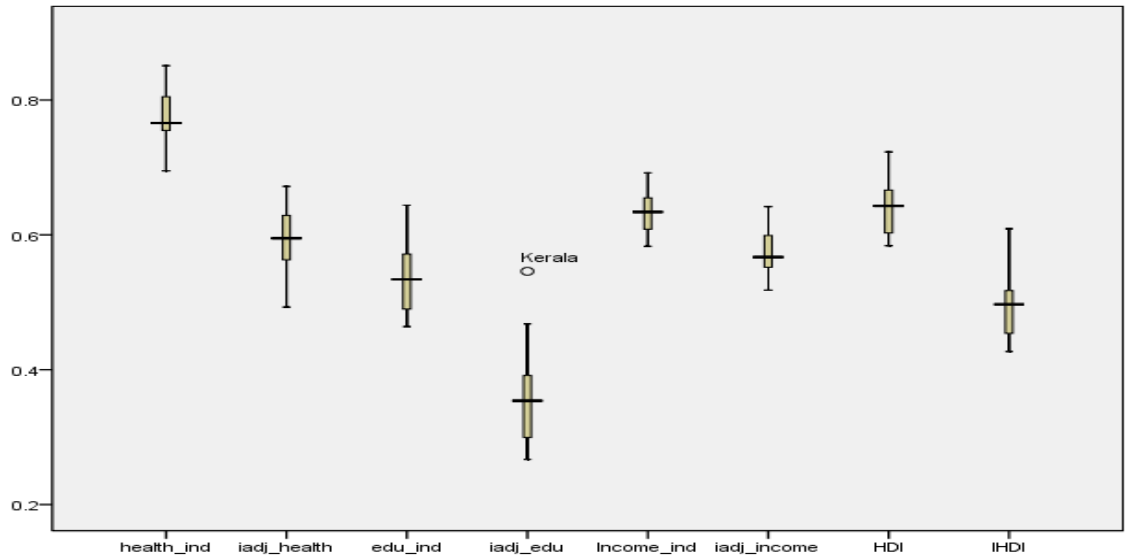
Table 2.2: Human Development Index Across Major Indian States-2019.

States	Health Index	MYS Index	EYS Index	Education Index	Income Index	HDI	Rank
Andhra Pradesh	0.769	0.343	0.642	0.492	0.663	0.631	14
Assam	0.722	0.446	0.620	0.533	0.624	0.621	15
Bihar	0.755	0.318	0.609	0.464	0.586	0.590	20
Chhattisgarh	0.695	0.395	0.632	0.513	0.583	0.592	19
NCT of Delhi	0.851	0.623	0.664	0.644	0.692	0.723	1
Gujarat	0.768	0.454	0.614	0.534	0.654	0.645	10
Haryana	0.766	0.462	0.642	0.552	0.656	0.652	9
Himachal Pradesh	0.814	0.521	0.694	0.608	0.637	0.680	3
Jammu & Kashmir	0.831	0.432	0.663	0.547	0.648	0.665	7
Jharkhand	0.755	0.350	0.626	0.488	0.586	0.600	17
Karnataka	**0.760**	**0.462**	**0.647**	**0.555**	**0.634**	**0.644**	**11**
Kerala	0.851	0.576	0.706	0.641	0.681	0.719	2
Madhya Pradesh	0.715	0.366	0.589	0.478	0.599	0.589	21
Maharashtra	0.808	0.502	0.659	0.581	0.636	0.668	6
Odisha	0.758	0.361	0.602	0.482	0.591	0.600	18
Punjab	0.811	0.478	0.658	0.568	0.676	0.678	4
Rajasthan	0.749	0.347	0.612	0.480	0.618	0.606	16
Tamil Nadu	0.802	0.471	0.679	0.575	0.669	0.676	5
Telangana	0.763	0.404	0.679	0.541	0.643	0.643	12

Uttar Pradesh	0.697	0.380	0.578	0.479	0.597	0.584	22
Uttarakhand	0.783	0.478	0.686	0.582	0.625	0.658	8
West Bengal	0.794	0.412	0.627	0.519	0.633	0.639	13
India*	**0.760**	**0.421**	**0.622**	**0.522**	**0.628**	**0.629**	

Note *: MYS – Mean Years of Schooling; EYS – Expected Years of Schooling

Figure 2.2: Box plot of HDI and its dimensions

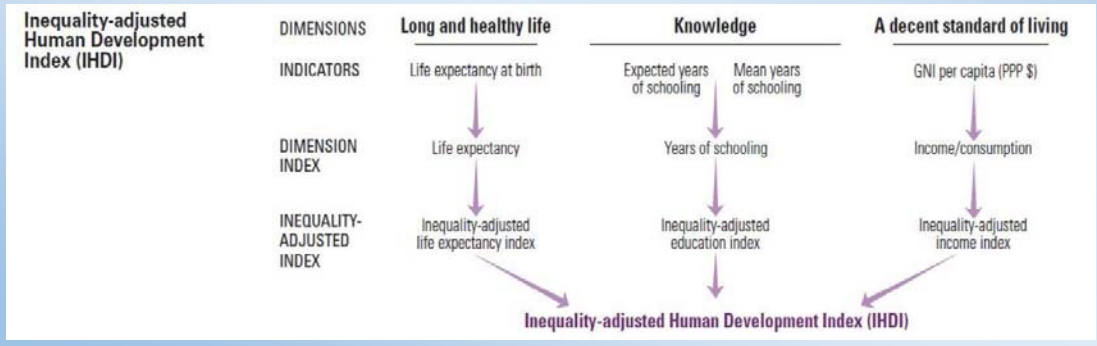


Less developed states like Uttar Pradesh, Madhya Pradesh, Bihar, Chhattisgarh and Odisha rank low in terms of Human development as well. There are also the states with high incidence of Multi-Dimensional Poverty – Uttara Pradesh (37.79), Madhya Pradesh (36.65), Bihar (51.9), Chhattisgarh (29.9) and Orissa (29.55)

The HDI, like all measures based on averages conceals disparities in human development across the population within the same economy. To account for distributional impact, Inequality adjusted Human Development Index was introduced by UNDP which takes into account not only the average achievements of a Nations health, education, and income, but also how those achievements are distributed among its population by "discounting" each dimension's average value according to its level of inequality. Table 2.3 presents Inequality adjusted HDI across states.

Box2.3: Inequality-adjusted Human Development Index (IHDI)

The IHDI combines a country's average achievements in health, education and income with how those achievements are distributed among country's population by "discounting" each dimension's average value according to its level of inequality. Thus, the IHDI is distribution-sensitive average level of human development. Two countries with different distributions of achievements can have the same average HDI value. Under perfect equality the IHDI is equal to the HDI, but falls below the HDI when inequality rises.



Methodology computing Inequality adjusted Human Development Index:

Step 1: Estimating inequality in the dimension of the Human Development Index

The inequality adjusted human development index(IHDI) adjusts the Human development Index for inequality in the distribution of each dimension across population.

Step 2: Adjusting the dimension indices for inequality

The inequality adjusted dimension indices are obtained from the HDI dimension indices, I_x by multiplying them by (1-A_x) i.e., $I_X^* = (1 - A_X) \times I_X$, where $A_x = 1 - \frac{\sqrt[n]{X_1 \ldots X_n}}{\overline{X}}$, is the corresponding Atkinson measure

<u>Step 3: Combining the dimension indices to calculate the Inequality adjusted Human Development Index:</u>

Inequality Adjusted HDI is the geometric mean of the three dimension indices adjusted for inequality:

$$\text{IHDI} = (I^*_{\text{Health}} \times I^*_{\text{Education}} \times I^*_{\text{Income}})^{1/3}$$

The loss in the Human Development Index due to inequality is:

$\text{Loss\%} = 1-[(1-A_{\text{Health}})*(1-A_{\text{Education}})*(1-A_{\text{Income}})]^{1/3}$

An un weighted average of inequalities in health, education and income is denoted as the co-efficient of human inequality.

After accounting for distributional impact, ranking of the States have marginally changed and Kerala stands the first in terms of IHDI and Delhi stands the next. Loss due to inequality is lowest for the State Kerala. Box plot also indicates that Kerala is a way ahead of other states after accounting for inequality in terms of educational attainment. Karnataka on the other hand slid down by two positions after accounting for inequality in the dimensions and stands at 13thposition. Highest loss was witnessed by Bihar, Jharkhand and Telangana i.e., around 27.35%. States Assam, Madhya Pradesh and Odisha improved their position atleast by two or more after accounting for inequality whereas Telangana, Jharkhand and Karnataka went down at least by two or more in their position.

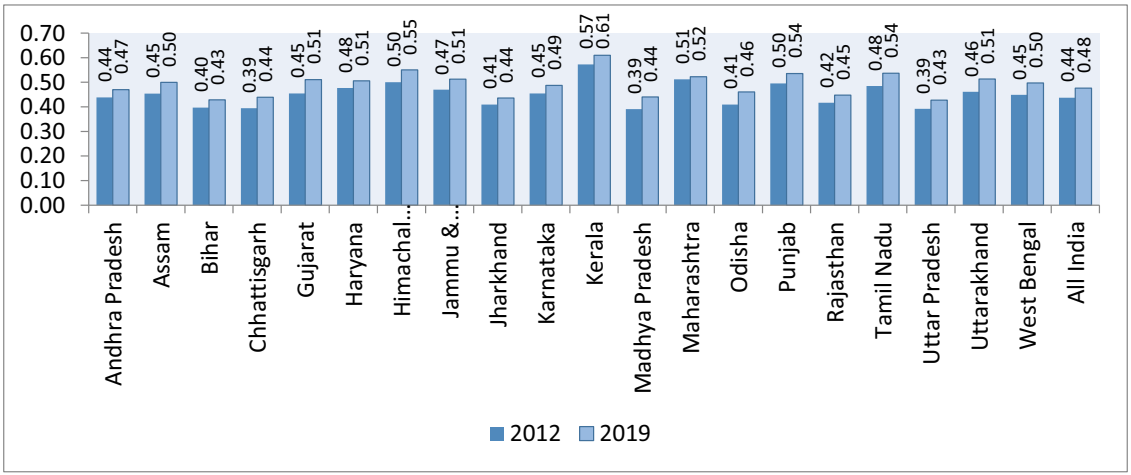
Table 2.3: Inequality Adjusted Human Development Index - 2019

States	Ineq Adj Health Index	Ineq Adj Edu Index	Ineq Adj Income Index	Ineq Adj HDI	Rank	Loss Due to Inequality	Co-Efficient of Human Inequality
Andhra Pradesh	0.5952	0.2865	0.6169	0.4721	14	25.16	23.78
Assam	0.5422	0.4050	0.5672	0.4994	11	19.63	19.31
Bihar	0.5387	0.2671	0.5466	0.4284	21	27.37	25.94
Chhattisgarh	0.4927	0.3286	0.5219	0.4388	19	25.92	25.17
NCT of Delhi	0.6717	0.4683	0.6416	0.5866	2	18.92	18.50
Gujarat	0.5926	0.3779	0.5952	0.5108	9	20.75	20.31
Haryana	0.6042	0.3548	0.6033	0.5057	10	22.46	21.63
Himachal Pradesh	0.6433	0.4461	0.5808	0.5503	3	19.12	18.79
Jammu & Kashmir	0.6667	0.3407	0.5922	0.5124	8	23.00	22.03
Jharkhand	0.5644	0.2835	0.5182	0.4361	20	27.33	26.26
Karnataka	**0.5619**	**0.3686**	**0.5578**	**0.4870**	**13**	**24.40**	**23.89**
Kerala	0.6568	0.5463	0.6306	0.6094	1	15.24	15.01
Madhya Pradesh	0.5407	0.2953	0.5343	0.4402	18	25.30	24.46

Maharashtra	0.6207	0.4105	0.5598	0.5225	6	21.80	21.48
Odisha	0.6054	0.3070	0.5246	0.4603	16	23.25	22.53
Punjab	0.6586	0.3770	0.6177	0.5353	5	21.02	20.34
Rajasthan	0.5779	0.2759	0.5621	0.4475	17	26.11	24.81
Tamil Nadu	0.6200	0.4036	0.6167	0.5364	4	20.62	20.11
Telangana	0.5782	0.3036	0.5804	0.4671	15	27.34	25.96
Uttar Pradesh	0.5185	0.2793	0.5387	0.4273	22	26.84	25.68
Uttarakhand	0.6373	0.3794	0.5585	0.5130	7	22.02	21.36
West Bengal	0.6056	0.3538	0.5734	0.4971	12	22.21	21.67
India*	**0.5795**	**0.3340**	**0.5568**	**0.4759**		**24.34**	**23.68**

All the States showed improvement in IHDI values between 2012 to 2019. At All India level IHDI improved from 0.44 to 0.48. Gujarat, West Bengal and Tamil Nadu are the States that showed higher improvements over the period and states Maharashtra, Jharkhand and Haryana showed least improvement. Improvement was moderate with respect to Karnataka State. State has achieved only 50% of maximum achievable level and still needs to go a long way even to reach the level of neighbouring state Kerala.

Figure 2.3: Comparing Inequality adjusted Human Development Index: 2012 to 2019



2.2.2: HDI at District Level.

Bengaluru stands at the top in terms of Human development achievement at district level and will be categorised as district with high human development as per UNDP international

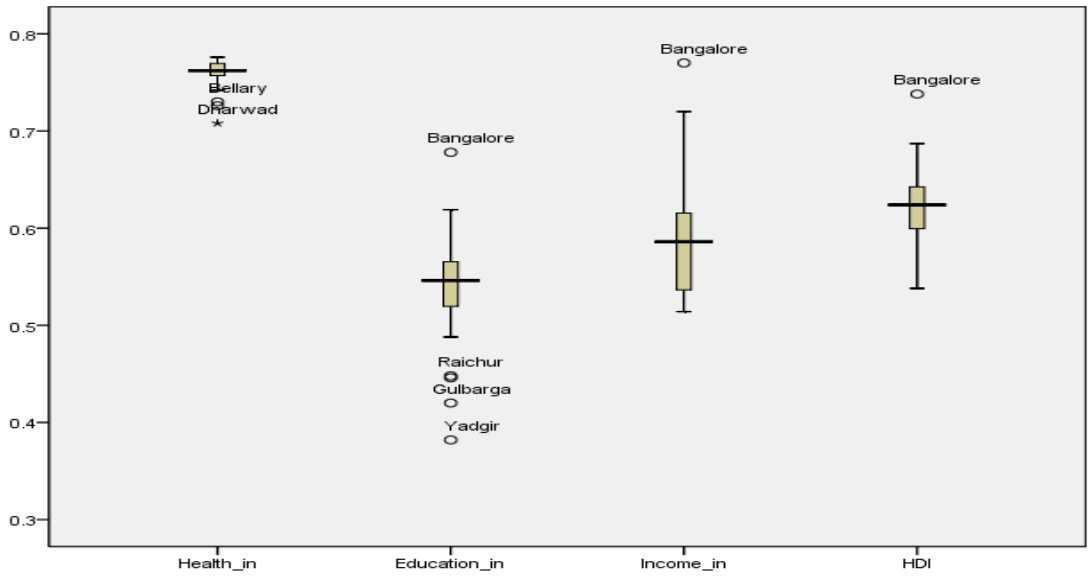
comparison. Even the box plot (Figure 2.3) also indicates that it is way ahead of other districts and figures it as an outlier with respect to Education and income dimension. With respect to HDI it is way ahead of other districts. As expected, Dakshina Kannada, Chikkamagaluru, Udupi and Kodagu are the next few districts with higher human development achievements. Yadgir, Gulbarga, Raichur, Haveri and Davanagere are the districts with low human development performance. Variation across districts is high with respect to both Education and Income indicators and more so with education. There are many flagship programmes like Samagra Shikshan Karnataka and MGNREGA NFSM etc. that can be designed and implemented effectively based on local needs. More emphasis should be on education outcomes to bring down the disparity across districts.

Table 2.4: Human Development Index Across Districts

District	Health Index	MYS Index	EYS Index	Education Index	Income Index	HDI	Rank
Bengaluru	0.77	0.662	0.693	0.678	0.77	0.738	1
Dakshina Kannada	0.757	0.479	0.712	0.595	0.72	0.687	2
Chikkamagaluru	0.77	0.465	0.687	0.576	0.672	0.668	3
Udupi	0.76	0.492	0.64	0.566	0.684	0.665	4
Kodagu	0.768	0.589	0.648	0.619	0.616	0.664	5
Mandya	0.764	0.446	0.704	0.575	0.607	0.644	6
Bengaluru Rural	0.762	0.503	0.611	0.557	0.625	0.643	7
Ramanagar	0.761	0.433	0.697	0.565	0.615	0.642	8
Kolar	0.771	0.537	0.662	0.599	0.567	0.64	9
Shimoga	0.755	0.385	0.71	0.547	0.623	0.636	10
Uttara Kannada	0.775	0.468	0.645	0.556	0.586	0.632	11
Bagalkot	0.774	0.458	0.625	0.542	0.594	0.629	12
Chikkaballapur	0.768	0.516	0.639	0.577	0.558	0.628	13
Mysore	0.759	0.46	0.653	0.557	0.577	0.625	14
Hassan	0.769	0.393	0.662	0.528	0.598	0.624	15
Gadag	0.767	0.424	0.703	0.563	0.559	0.623	16
Tumkur	0.759	0.383	0.629	0.506	0.606	0.615	17
Bellary	0.73	0.363	0.683	0.523	0.601	0.612	18
Dharwad	0.708	0.439	0.626	0.533	0.601	0.61	19

Belgaum	0.751	0.452	0.641	0.546	0.529	0.601	20
Chamarajanagar	0.776	0.344	0.633	0.488	0.573	0.601	21
Bidar	0.772	0.406	0.658	0.532	0.527	0.6	22
Vijayapura	0.771	0.381	0.667	0.524	0.532	0.599	23
Chitradurga	0.757	0.412	0.626	0.519	0.541	0.597	24
Koppal	0.765	0.399	0.64	0.52	0.524	0.593	25
Davangere	0.749	0.394	0.622	0.508	0.538	0.589	26
Haveri	0.762	0.365	0.527	0.446	0.533	0.566	27
Raichur	0.742	0.175	0.721	0.448	0.535	0.562	28
Kalaburagi	0.726	0.285	0.554	0.42	0.514	0.539	29
Yadgir	0.764	0.256	0.508	0.382	0.533	0.538	30
Karnataka	0.759	0.462	0.647	0.555	0.634	0.644	

Figure 2.4: Box plot of district HDI and its dimensions

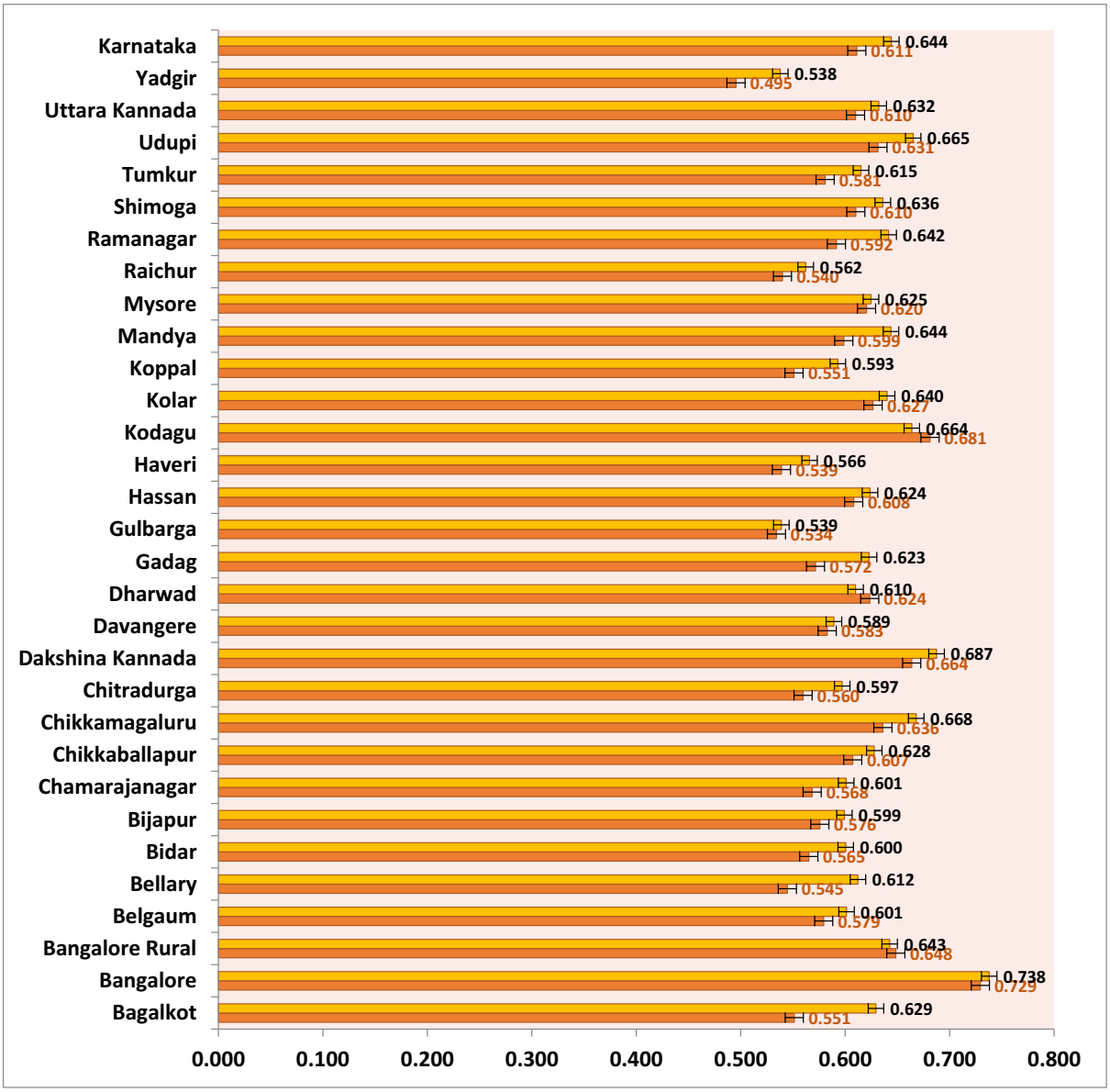


Comparing over the period 2012 and 2019 it is seen that except districts Kodagu, Dharwad and a marginal decline in Bengaluru Rural all the districts witnessed an improvement in the human development (see figure 2.5). Districts Bagalkot, Bellary, Gadag, Ramanagara, Mandya and Yadgir had significantly higher improvement compared to other districts.

In Dharwad decline in HDI is due to decline in Health Index from 0.749 in 2012 to 0.708 in 2019. The Maternal Mortality Ratio of Dharwad is 233 per lakh (2019-20) which is the highest in the state. In case of Bengaluru Rural, the decline is due to fall in Health Index and

a marginal fall in Education Index. In case of Kodagu, there is drastic fall in Income Index from 0.714 to 0.616 due to natural disasters.

Figure 2.5: Comparing HDI over two time periods: 2012 and 2019



2.2.3 Human Development Index at Taluka level with State Goal Posts & indicators

SDG localisation process is initiated in the state which prerequisite micro level planning at taluka and GP level, Therefore, HDI at taluk level is estimated. For a Taluk, the index is based on taluka level data from Health and education and income with the State Max Min values.

HDI for 176 talukas 2019-20

	Health Index	Education Index	Standard of living Index	HDI
State Average	**0.732**	**0.476**	**0.564**	**0.576**
Above State Average	**98**	**84**	**94**	**98**
Below State Average	**78**	**92**	**82**	**78**

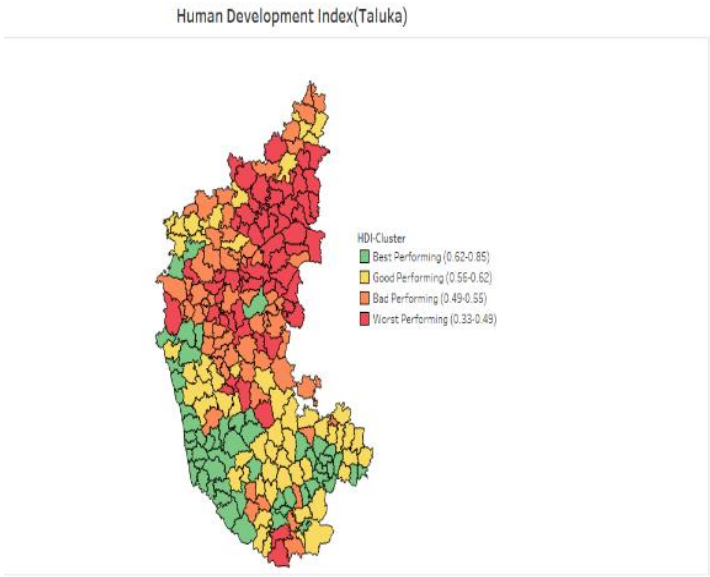
Source: Planning Dept. Gok

In 36 talukas the achievement in HDI is less than 50% indicating high incidence of deprivation. The State average is 0.576 and 78 talukas are below state average.

Table 2.5: Indicators for Taluk Human Development Index

Theme	Indicator	Data Source
Standard of Living	Percentage of HHs having access to modern cooking fuel like LPG, electricity, gas etc	NFHS 5
	Percentage of HHs having access to toilet within the premises	NFHS 5
	Percentage of HHs having access to water - tap water (treated and untreated), well water (covered), hand pump, tube well (bore hole) (*as per Census 2011 definition)	NFHS 5
	Percentage of HHs having electricity	NFHS 5
	Percentage of HHs having pucca houses (*good houses as per 2011 definition) (computed based on permanency in roof and wall)	NFHS 5
	Percentage of non-agricultural workers (main + marginal) to total workers	Districts at a Glance
	Per Capita Income (GDP) at Taluk level at current prices (2008-09)	Districts at a Glance
Health	Children (0-5 years) died for 1000 live births	NFHS 5
	Maternal deaths per 100000 live births	HMIS
Education	Male Literacy Rate	NFHS 5
	Female Literacy Rate	NFHS 5
	Gross Enrolment Rate (Elementary)	SATS
	Gross Enrolment Rate (Secondary)	SATS

The Max -Min values are identified from the distribution of the values of the variable across the districts/ Talukas in the State.



Mangalore Taluka with HDI of 0.786 tops in human development and the Yadgir taluka of Yadgir district is at the lowest with HDI of 0.325. the gap is very big i.e. 241 percent. The achievement is 78 percent in Mangalore and only 32.5 percent in Yadgir.

Table 2.6: Top 10 Talukas in Human Development Index

District	Taluka	Health index	Education Index	Standard of living Index	HDI	Rank
Dakshina_Kannada	Mangalore	0.8955	0.7369	0.7377	0.7867	1
Bengaluru_Urban	Bangalore-South	0.7526	0.6819	0.9415	0.7847	2
Bengaluru_Rural	Nelamangala	0.9103	0.6759	0.7160	0.7609	3
Dakshina_Kannada	Sulya	0.8771	0.6333	0.7476	0.7461	4
Dakshina_Kannada	Bantwal	0.8652	0.6249	0.7495	0.7400	5
Uttara_Kannada	Bhatkal	0.7376	0.8154	0.6610	0.7353	6
Tumakuru	Tumkur	0.8593	0.6431	0.6855	0.7235	7
Ramanagara	Ramanagar	0.8939	0.5836	0.7253	0.7233	8
Udupi	Udupi	0.8395	0.6634	0.6458	0.7111	9
Bengaluru_Rural	Hoskote	0.8773	0.6260	0.6511	0.7098	10

Table 2.7: Bottom 10 talukas in Human Development Index

District	Taluka	Health index	Education Index	Standard of living Index	HDI	Rank
Yadgir	Shahapur	0.7655	0.2609	0.3975	0.4298	167
Kalburgi	Chincholi	0.6736	0.2972	0.3749	0.4218	168
Vijayapura	Basavan Bagewadi	0.4107	0.4454	0.4050	0.4200	169
Raichur	Sindhanur	0.4881	0.3326	0.4518	0.4186	170
Haveri	Savanur	0.4315	0.4007	0.4217	0.4178	171
Koppal	yelburga	0.4801	0.3637	0.4042	0.4133	172
Yadgir	Shorapur	0.7097	0.1980	0.3541	0.3678	173
Vijayanagara	Kudligi	0.6083	0.2195	0.3148	0.3477	174
Kalburgi	Jevargi	0.6216	0.3216	0.1785	0.3292	175
Yadgir	Yadgir	0.5967	0.1495	0.3847	0.3250	176

Source: SDGCC Planning Dept. GoK. * Excluding Hubli Nagar taluka

The top ten talukas are from South Karnataka except Bhatkal from Uttar Kannada. Kalaburagi and Yadgir share 5 talukas in the bottom ten. Yadgir and Jevaragi are at the bottom. Except health, all the talukas are low in the other two parameters- education and Standard of living. Hence a package approach with synergy across Departments & Schemes is essential to address the low-level human development equilibrium trap. Yadgir and Shorapur have very low education index,

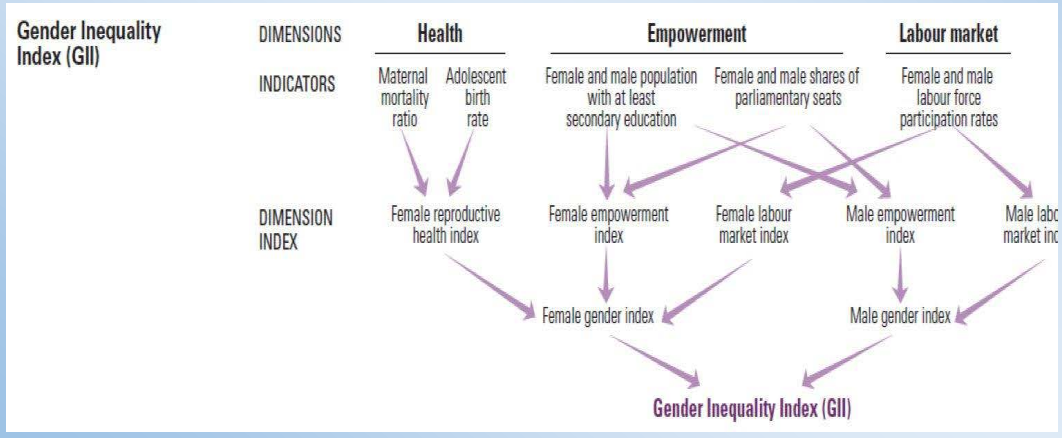
2.3: Gender Inequality Index

UNDP, before 2010, used Gender Development Index (GDI) and Gender Empowerment Index (GEM) to measure gender related indexes. As these measures had some important limitations, to overcome the limitations Gender Inequality Index (GII) was introduced in 2010 HDR. GII combines some aspects of GDI and GEM and it is an innovative approach to assess gender inequality. The GII is a composite measure reflecting inequality in achievements between women and men in three dimensions: reproductive health, empowerment and the labour market. The health dimension is measured by two indicators viz., maternal mortality ratio and the adolescent fertility rate. The empowerment dimension is

measured by the share of parliamentary seats held and by secondary and higher education attainment levels by each sex.

Box2.4: Gender Inequality Index(GII)

The GII is an inequality index. It measures gender inequalities in three important aspects of human development—reproductive health, measured by maternal mortality ratio and adolescent birth rates; empowerment, measured by proportion of parliamentary seats occupied by females and proportion of adult females and males aged 25 years and older with at least some secondary education; and economic status, expressed as labour market participation and measured by labour force participation rate of female and male populations aged 15 years and older. The GII is built on the same framework as the IHDI—to better expose differences in the distribution of achievements between women and men. It measures the human development costs of gender inequality. Thus the higher the GII value the more disparities between females and males and the more loss to human development.



Source: Human Development Reports

I is designed to reveal the extent to which national human development achievements are eroded by gender inequality. The GII, estimated at state level is presented in **Table 2.5.**

Methodology for computing Gender Inequality Index

The Gender Inequality Index (GII) reflects gender based disadvantage in three dimensions – reproductive health, empowerment and the labour market. It shows the loss in potential human development due to inequality between female and male achievements in these dimensions.

Dimension	Female	Male
Reproductive Health	MMR: Maternal Mortality Rate defined as number of deaths per 100,000 live births, SRS	

	AFR: Adolescent Fertility rate defined as births per 1,000 women ages 15-19, SRS	
Empowerment	PR_F: Female Parlimentary representation (%)	PR_M: Male Parlimentaryrepresentation(%)
	SE_F: Attainment at secondary and higher education by females(25+ years)(%)	SE_M: Attainment at secondary and higher education by males(25+ years)(%)
Labour Market	$LFPR_F$: Labour force participation rate by females(%)	$LFPR_M$: Labour force participation rate by males(%)

Data Sources:

Maternal Mortality Ratio(MMR): Maternal Mortality Rate(MMR) is defined as the number of maternal deaths to women in the ages 15-49 per lakh women in that age group. MMR corresponds to the year 2016-18 based on SRS. At district level MMR corresponds to average of three years viz., 2017-18,2018-19 and 2019-20 from HMIS .

Adolescent fertility rate(AFR): defined as number of live births per thousand women in the age group 15-19. NFHS 5 2019-21

Share of parliamentary seats held by each sex: Share of MP and MLA seats by each sex in 2019 general election. At state level 2015 & 2016 political participation by each sex at local governance.

Attainment at secondary and higher education by each sex: These estimates are based on PLFS III – 2019-20 Periodic Labour Force Survey.

Labour force participation rate by each sex: estimates are based on PLFS III – 2019-20 Periodic Labour Force Survey.

Step1: Aggregating across dimensions within each gender group by the geometric mean

$$G_F = \sqrt[3]{\left(\frac{10}{MMR}.\frac{1}{AFR}\right)^{1/2} \times (PR_F.SE_F)^{1/2} \times LFPR_F}$$

$$G_M = \sqrt[3]{1 \times (PR_M.SE_M)^{1/2} \times LFPR_M}$$

Step2: Aggregating across gender groups using harmonic mean to obtain equally distributed gender index

$$HARM(G_F, G_M) = \left[\frac{(G_F)^{-1} + (G_M)^{-1}}{2} \right]^{-1}$$

Step3: Calculating the geometric mean of the arithmetic means for each indicator

$$G_{\bar{F},\bar{M}} = \sqrt[3]{\overline{\text{Health}} \times \overline{\text{EmpowermentLFPR}}}$$

Where $\overline{\text{Health}} = \left[\sqrt{\frac{10}{\text{MMR}} \times \frac{1}{\text{AFR}}} + 1 \right] /2,$

$\overline{\text{Empowerment}} = \left[\sqrt{\text{PR}_\text{F} \times \text{SE}_\text{F}} + \sqrt{\text{PR}_\text{M} \times \text{SE}_\text{M}} \right]/2$ and

$$\overline{\text{LFPR}} = \frac{\text{LFPR}_\text{F} + \text{LFPR}_\text{M}}{2}$$

Step4: Calculating Gender Inequality Index

$$\text{GII} = 1 - \frac{\text{HARM}(\text{G}_\text{F}, \text{G}_\text{M})}{\text{G}_{\bar{\text{F}},\bar{\text{M}}}}$$

2.3.1: Gender Inequality Index at State level

The analysis here indicates that for Nation as a whole GII is 0.532, reflects the percentage loss (53%) in achievement across three dimensions due to gender inequality. Wide variation across states is seen and ranges from 36 percent to 68 percent. Losses due to gender inequality is lowest in Kerala (36.3%) followed by Himachal Pradesh (42.3%) and Maharashtra (44.0%). Women in Bihar (68.3%), Assam (66.3%) and West Bengal (56.5%) suffer the most in these dimensions.

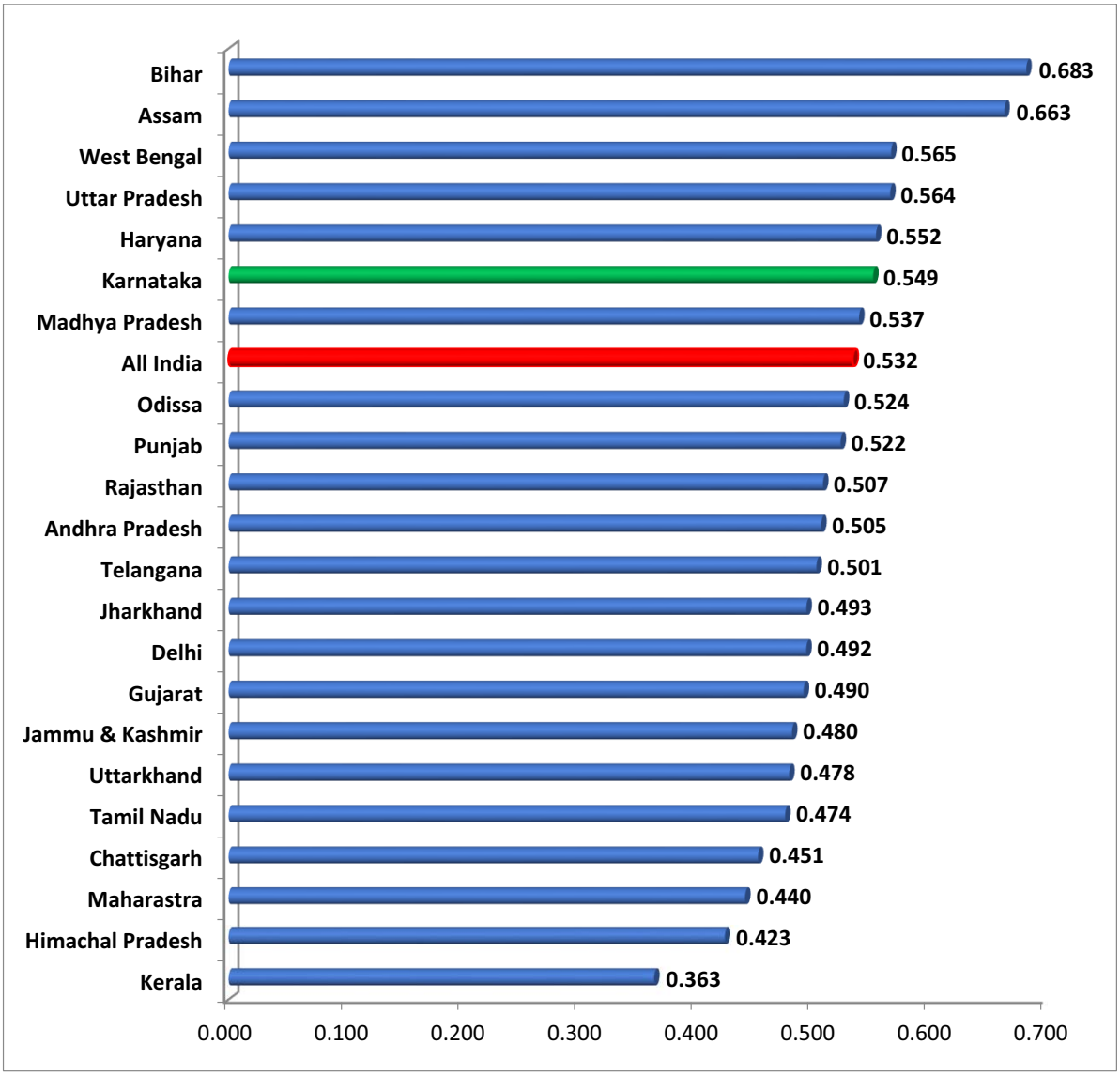
Table 2.8: GII Indicators across Indian Major States-2019

States	Female Reproductive Health		Political Participation		Secondary Education and above by adults(25+)		LFPR(15+)		GII	Rank
	MMR	AFR (15-19)	Female	Male	Female	Male	Female	Male		
Andhra Pradesh	58	67	9.0	91.0	19.9	33.9	39.2	78.1	0.505	12
Assam	205	61	5.0	95.0	21.7	28.6	16.5	77.0	0.663	21
Bihar	130	77	10.2	89.8	14.7	31.7	9.5	73.0	0.683	22
Chattisgarh	160	24	15.8	84.2	19.3	33.9	53.1	82.3	0.451	4
Delhi	77	19	11.7	88.3	51.6	65.1	16.1	73.5	0.492	9

Gujarat	70	34	9.1	90.9	24.5	38.7	31.1	79.4	0.490	8
Haryana	96	27	10.0	90.0	31.2	49.8	15.7	73.7	0.552	18
Himachal Pradesh	77	22	6.9	93.1	37.7	58.2	65.0	82.0	0.423	2
Jammu & Kashmir	77	9	2.2	97.8	25.1	42.4	37.6	74.3	0.480	7
Jharkhand	61	64	12.6	87.4	19.7	33.7	35.7	76.9	0.493	10
Karnataka	**83**	**40**	**3.6**	**96.4**	**31.6**	**44.2**	**33.8**	**77.4**	**0.549**	**17**
Kerala	30	18	7.5	92.5	42.0	44.1	31.9	71.8	0.363	1
Madhya Pradesh	163	37	9.7	90.3	16.7	29.9	37.7	80.0	0.537	16
Maharastra	38	47	9.5	90.5	32.4	48.7	38.6	75.6	0.440	3
Odissa	136	40	12.0	88.0	17.2	28.6	33.1	78.4	0.524	15
Punjab	114	21	6.2	93.8	39.3	46.6	23.7	77.2	0.522	14
Rajasthan	141	31	12.0	88.0	16.2	34.4	38.6	76.2	0.507	13
Tamil Nadu	58	34	5.5	94.5	29.9	40.5	40.2	77.9	0.474	5
Telangana	56	48	5.1	94.9	29.2	49.1	44.3	75.7	0.501	11
Uttar Pradesh	167	22	11.1	88.9	21.0	37.4	17.7	76.0	0.564	19
Uttarkhand	101	19	8.0	92.0	30.7	50.3	31.8	74.6	0.478	6
West Bengal	109	81	15.2	84.8	22.0	30.8	23.9	80.1	0.565	20
Total	**103**	**43**	**8.8**	**91.2**	**24.9**	**38.6**	**30.0**	**76.8**	**0.532**	

Karnataka stands at 17th position among 22 major states with the loss of 54.9%. Low performance of the state is mainly due to poor political representation by women. In general, one of the main limitation of GII is that the parliamentary representation excludes participation at the local government level and in Karnataka political participation at local level is more than 50% against the national representation of just 3%. At district level GII computation with local level political representation is considered. Kerala is at the top with only 36% inequality and Himachal Pradesh is at the second place with 42% inequality. In Karnataka there is a huge gender gap in LFPR of 43.6%.

Figure 2.6: Gender Inequality Index Across States 2019



2.3.2: GII at District Level

GII across districts indicate a lesser variation after accounting for political participation at local level. The variation in percentage of loss due to gender inequality is from 21% (Udupi) to 44% (Dharwad).

Table 2.9: Gender Inequality Index Across Districts of Karnataka - 2019

District	MMR	AFR (15-19)	Political Participation		Secondary Education and above by adult (25+)		LFPR(15+)		GII	Rank
			Female	Male	Female	Male	Female	Male		
Bagalkot	48	42	57.2	42.8	30.2	52.8	40.2	68.4	0.324	8

Bengaluru	59	17	54.5	45.5	57.1	69.1	24.6	76.1	0.322	7
Bengaluru Rural	78	39	51.4	48.6	35.9	39.0	22.7	79.1	0.420	29
Belgaum	104	53	51.4	48.6	32.1	48.1	37.8	78.0	0.419	28
Bellary	155	23	50.9	49.1	20.8	33.7	35.2	78.5	0.398	20
Bidar	53	27	51.2	48.8	28.1	50.7	41.9	84.3	0.322	6
Chamarajanagar	44	37	51.5	48.5	22.8	25.0	30.5	79.1	0.342	11
Chikkaballapur	63	33	51.7	48.3	34.5	49.0	24.0	65.9	0.375	16
Chikkamagaluru	58	34	52.6	47.4	34.9	36.7	19.5	74.1	0.397	19
Chitradurga	89	46	54.6	45.4	27.2	41.9	51.1	73.1	0.364	14
Dakshina Kannada	89	12	51.7	48.3	30.2	38.2	37.8	73.5	0.281	3
Davangere	109	31	52.0	48.0	21.7	33.9	31.6	81.6	0.407	23
Dharwad	209	23	51.8	48.2	31.0	43.6	29.8	85.1	0.440	30
Gadag	65	17	51.8	48.2	30.7	45.2	31.7	83.5	0.321	5
Hassan	60	39	51.8	48.2	20.5	27.5	45.6	84.2	0.341	10
Haveri	79	28	51.5	48.5	12.7	25.2	38.6	79.3	0.360	13
Kalaburagi	165	31	56.8	43.2	17.1	34.7	48.7	76.6	0.395	17
Kodagu	64	23	52.0	48.0	39.3	30.9	36.1	73.5	0.299	4
Kolar	56	52	51.3	48.7	39.3	48.1	27.2	79.3	0.401	21
Koppal	70	50	51.5	48.5	14.1	39.9	41.0	87.5	0.413	25
Mandya	73	36	51.5	48.5	29.9	43.9	26.9	84.3	0.408	24
Mysore	85	42	55.9	44.1	29.0	37.9	28.4	76.6	0.404	22
Raichur	127	52	54.6	45.4	11.7	19.2	43.8	73.6	0.414	26
Ramanagar	81	35	51.4	48.6	37.4	49.0	22.7	62.6	0.396	18
Shivamoga	95	19	61.5	38.5	25.2	25.9	31.1	73.0	0.326	9
Tumkur	86	30	51.6	48.4	17.8	42.4	27.1	79.3	0.416	27
Udupi	83	10	54.4	45.6	32.3	35.4	58.0	60.7	0.213	1
Uttara Kannada	46	13	52.4	47.6	29.3	46.6	34.5	69.5	0.250	2
Vijayapura	55	66	53.1	46.9	21.9	40.9	50.9	78.9	0.370	15
Yadgir	74	42	51.5	48.5	15.6	33.5	60.5	79.2	0.351	12
Karnataka	**84**	**34**	**53.0**	**47.0**	**31.6**	**44.2**	**33.8**	**77.4**	**0.377**	

Loss due to inequality is lowest among the districts Udupi, Uttara Kannada, Dakshina Kannada, Kodagu and Gadag. Dharwad district had highest gender inequality. Though inequality in the performance with respect to all indicators was moderate, very high inequality is seen in labour force participation. It should be noted here that the labour force participation estimated through PLFS survey data at district level should be taken with a caution. Bengaluru Rural, Belgaum and Tumkur are the next three districts with high gender inequality index. Bengaluru urban stands at 7th position with GII being 0.322 indicating 32% loss in achievement across three dimensions due to gender inequality. Here again Bengaluru Urban has done quite well with respect to all the indicators but for labour force participation. For reliable estimates of HDI or GII at district level, data system should be strengthened at district level.

Multi-Dimensional Poverty Index

The Multidimensional poverty Index (MPI) aims to measure the non-income-based dimensions of poverty, to provide a more comprehensive assessment of the extent of poverty and deprivation. The MPI tracks deprivation across three dimensions and 10 indicators: health (child mortality, nutrition), education (years of schooling & enrolment) and living standards (water, sanitation, electricity, cooking fuel, floor, assets).

Methodology for computing Multidimensional Poverty Index

Methodology on overall MPI using Alkire Foster

Indicator Framework

In the first stage, the constructed indicators are derived from the existing data variables of each pertaining to health, standard of living and education theme. The constructed indicators are computed by using various filters and aggregation is done at household level. The data has been abstracted using NFHS5 data source.

The list of indicators derived in each dimension is as follows.

Pillar	Indicators	Indicator
Health	Nutrition	a. HH Adult between 15-49 whose BMI <18.5 m/Kg.
		b.HH Children under 5 years who are stunted or underweight

	Child mortality	c.HH Any one person under 18 years who has died in the family.
Education	Years of schooling	a.HH Not even one household member has completed six years of schooling.
	School Attendance	b.HH Any school age children not attending school (6-14)
Standard of Living	Sanitation	a.HH has no sanitation facility
	Drinking water	b.HH has no safe drinking water or 30 min away
	Cooking fuel	c.HH cooks using solid fuel
	Electricity	d. HH has no electricity
	Housing	e. HH has inadequate housing material in either floor, roof or wall
	Assets	f. HH does not own more than one asset (radio, TV, telephone, computer, animal cart, bicycle, motorbike or refrigerator) and does not own a caror truck

The NFHS5 data sampling is done only for few clusters of households from selected villages of the State. Hence, extrapolation of data points is done to rest of the villages using semi supervised learning i.e., K Nearest Neighbour (KNN). This algorithm assumes the similarity between the new case/data and available cases and put the new case into the category that is most similar to the available categories. To identify the similarities between the new data and existing data, the input features are trained using census data source of the year 2011. The K-NN algorithm stores all the available data and classifies a new data point based on the similarity. This means when new data appears then it can be easily classified into a well suite category by using K- NN algorithm. This extrapolation is done at the village level after the incidence (head count ratio) and intensity of the clusteris computed. The weights computed were used to calculate intensity and incidence of poverty in a village using Alkire Foster method. The methodology used to calculate intensity and incidence (head count ratio) is given below:

$$\textbf{Incidence of poverty} = \frac{\text{Number of People affected by type of poverty in a village}}{\text{Total number of people in Village}}$$

$$\text{Intensity of poverty} = \frac{\sum_{i \in \text{household}} \text{HH size} * \text{household poverty score}}{\text{Total number of households in that poverty}}$$

Where,

poverty score = Wi * Ci

Wi-weight of the constructed indicators

Ci-value of the household in that indicator

HH= Household

The poverty score is considered only for those households which report poverty in majority of the dimensions and this is taken as cut-off to classify households is poor or not in each dimension of poverty.

The poverty index for each dimension is computed using the formula given below:

$$\text{PI of a Village} = \text{Incidence} * \text{Intensity}$$

In this case, if a household is deprived in more than $1/3^{rd}$ of indicators, it is considered to be poor.

The MPI is computed at the cluster level and extrapolated toVillage, GP, Taluk and District by measuring the deprivation in health, education and standard of living dimension.

Methodology on Theme-wise Poverty using Alkire Foster

1. The similar steps are followed as mentioned in methodology **1** to calculate the incidence, intensity and poverty for health, education and standard of living theme respectively.
2. The deprivation cut-off chosen to calculate the incidence and intensity for health is: if the household is deprived in any one of the two indicators considered, then the household is deprived in health (therefore, the weight = 0.5).
3. The deprivation cut-off chosen to calculate the incidence and intensity for education is: if the household is deprived in any one of the two indicators considered, then the household is deprived in education (therefore, the weight = 0.5).
4. The deprivation cut-off chosen to calculate the incidence and intensity for standard of living is: if the household is deprived in more than or equal to three indicators considered, then the household is deprived in standard of living (therefore, the weight = 0.5).

5. The health poverty, education poverty and standard of living poverty is computed at the cluster level as per Alkire Foster methodology (poverty = incidence * intensity) and extrapolated to Village, GP, taluk and District.

Methodology on Incidence of each indicator

1. The deprivation of household is computed and the incidence of each indicator at the cluster level is calculated as:

$$\text{Incidence} = \frac{\text{Number of deprived household in that indicator}}{\text{Total number of household in that cluster}}$$

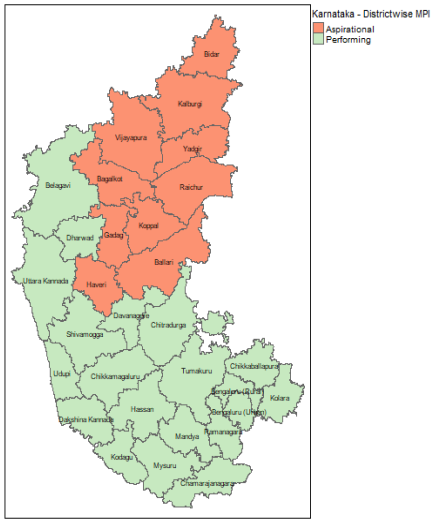
2. The incidence of each indicator at the cluster level is now extrapolated to Village, GP, Taluk and District using K-NN algorithm.

Table-2.10 Multi-Dimensional Poverty Index for Districts 2019-20

District	District Population	Incidence (%)	Estimated Poor Population	Intensity	MPI	Estimated Multi-Dimensionally Poor People	Percentage of Poor Population to the State total
Yadgir	1445226	28.68	8,79,204	45.07	0.1292	3,96,230	13.28
Raichur	2225308	21.58	6,60,792	44.42	0.0959	2,93,531	9.98
Gulbarga	3029841	20.33	5,54,053	40.89	0.0831	2,26,551	8.37
Koppal	1615277	19.35	5,18,268	42.75	0.0827	2,21,579	7.83
Bijapur	2625816	17.52	4,77,547	41.85	0.0733	1,99,830	7.21
Gadag	1167084	17.26	4,26,337	40.66	0.0702	1,73,336	6.44
Bellary	3384459	13.94	3,51,682	42.57	0.0594	1,49,714	5.31
Bidar	1935760	14.93	4,06,594	39.05	0.0583	1,58,756	6.14
Bagalkot	2169452	12.7	3,49,214	40.43	0.0514	1,41,187	5.27
Haveri	1776077	11.27	2,98,621	38.71	0.0436	1,15,604	4.51
Belgaum	5426096	8.18	2,24,583	40.75	0.0333	91,520	3.39
Dharwad	2129928	7.09	1,70,288	39.66	0.0281	67,538	2.57
Chitradurga	1818420	5.72	1,30,184	39.57	0.0227	51,511	1.97
Tumkur	2790349	5.61	1,17,844	38.64	0.0217	45,532	1.78
Davanagere	1794310	5.25	1,25,248	39.56	0.0208	49,550	1.89
Uttara Kannada	1526064	5.05	1,17,227	40.08	0.0203	46,986	1.77

Chamarajanagar	1082139	4.87	1,06,122	39.88	0.0194	42,322	1.6
Kodagu	560990	4.85	1,00,569	39.68	0.0193	39,906	1.52
Chikkaballapura	1379908	3.74	77,740	39.56	0.0148	30,754	1.17
Udupi	1326053	3.62	87,612	37.32	0.0135	32,700	1.32
Chikmagalur	1136942	3.22	67,868	39.68	0.0128	26,927	1.02
Shimoga	1875987	3.23	75,272	39.19	0.0127	29,498	1.14
Hassan	1848630	2.88	61,082	39.36	0.0113	24,040	0.92
Mysore	3437914	2.47	53,678	37.89	0.0093	20,338	0.81
Mandya	1850467	2.31	44,423	37.14	0.0086	16,497	0.67
Kolar	1705436	2.01	46,891	40.41	0.0081	18,950	0.71
Bangalore (U)	14271577	1.28	24,679	41.46	0.0053	10,232	0.37
Dakshina Kannada	2310853	1.29	30,849	37.67	0.0049	11,620	0.47
Ramanagara	1147733	0.96	19,744	40.03	0.0038	7,903	0.3
Bangalore Rural	1167401	0.79	17,893	37.48	0.003	6,706	0.27

Source: Planning dept. SDGCC GoK



The four districts of Kalyan **Karnataka region**- Yagdgir Kalburagi, Raichur and Koppal as well as Bellary are at the bottom in the State. These along with Bidar, Bellari, Gadag, Bagalkot, Vijaypura & Haveri of North Karnataka (**Belgaum division**) are in red zone and need focused approach with a package of schemes to address the deprivations in health, education and quality of life.

2.4: Child Rights Index

Kids Rights, an international non-governmental organization, strives for a world "where all children have access to their rights and are empowered to realise the great potential they carry within them. Kids Rights sees children as 'change makers' who have the power to move the world and facilitates them in voicing their opinions and in taking action to bring about change". The Kids Rights Index is the only annual global ranking on how countries worldwide are adhering to children's rights. The latest report was released in 2021 and as per 2021 index India[1] stands at 112th position with the index value being 0.680. Index is based on five dimensions viz., Right to life; Right to Healthcare; Right to Education; Right to protection and Right to child Rights Environment.

In this section an attempt is made to understand how good the states are in general and Karnataka in particular in realising children's rights in light of the resources the state possess. In order to construct the index, depending on the data availability at state level,

though we are able to maintain same indicators with respect to the first four dimensions, with respect to the last dimension i.e., child right environment due to non availability of the indicators at state level, the dimension is replaced with Right to enabling safety environment to the children as providing safety environment and protecting them from crimes would play equally important role in their life.

All the indicators are converted into their positive component and the indicators are standardized using Max-Min approach as the first step. Indicators for each dimension are aggregated using geometric mean and final child rights index is obtained as geometric mean of the dimensional indices. Dimensional indices and child rights index is presented in **Table.2.11.**

[1] Iceland, Switzerland and Finland are top three countries and Chad, Afghanistan and Sieara Leone are at the bottom three position.

Table 2.11: Child Rights Index and its dimensions

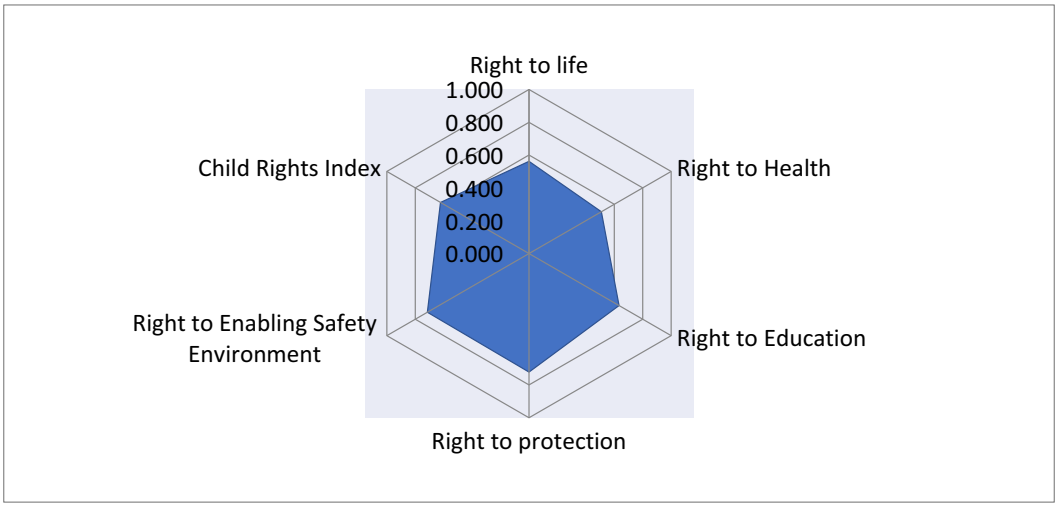
States	Right to life	Right to Health	Right to Education	Right to protection	Right to Enabling Safety Environment	Child Rights Index	Rank
Andhra Pradesh	0.574	0.570	0.460	0.467	0.826	0.566	11
Assam	0.187	0.234	0.480	0.601	0.756	0.394	19
Bihar	0.276	0.183	0.381	0.255	0.930	0.340	22
Chhattisgarh	0.229	0.514	0.547	0.806	0.544	0.490	15
Delhi	0.685	0.595	0.607	0.854	0.104	0.466	16
Gujarat	0.540	0.379	0.371	0.742	0.739	0.529	12
Haryana	0.496	0.628	0.607	0.797	0.470	0.589	10
Himachal Pradesh	0.652	0.683	0.825	0.318	0.664	0.600	9
Jammu &Kashmir	0.736	0.632	0.651	0.879	0.937	0.757	1
Jharkhand	0.470	0.202	0.462	0.225	0.872	0.386	20
Karnataka	**0.562**	**0.509**	**0.634**	**0.722**	**0.715**	**0.623**	**7**
Kerala	0.917	0.697	0.800	0.890	0.421	0.719	2
Madhya Pradesh	0.260	0.364	0.316	0.692	0.626	0.419	18
Maharashtra	0.706	0.394	0.646	0.685	0.689	0.611	8
Odisha	0.409	0.427	0.403	0.673	0.755	0.514	14
Punjab	0.562	0.716	0.503	0.826	0.681	0.647	5
Rajasthan	0.409	0.535	0.306	0.632	0.870	0.517	13
Tamil Nadu	0.704	0.648	0.705	0.807	0.701	0.711	3
Telangana	0.604	0.553	0.646	0.653	0.700	0.629	6
Uttar Pradesh	0.138	0.439	0.223	0.508	0.872	0.359	21
Uttarakhand	0.456	0.649	0.768	0.760	0.771	0.668	4
West Bengal	0.592	0.516	0.184	0.338	0.887	0.442	17
All India	**0.456**	**0.468**	**0.479**	**0.618**	**0.790**	**0.549**	

Jammu and Kashmir stands first in terms of the realization of children's rights. Kerala and Tamil Nadu are the next two states in fulfilling children's right and enabling them to grow and achieve fullest potential. Kerala though ranks second it performs better in terms of the first four dimensions viz., right to life, right to health, right to education and right to protection. Bihar, Uttar Pradesh and Jharkhand are the lowest performing states. Significant

disparities across states are seen with respect to all the dimensions. Right to life and Right to education had higher variation across states.

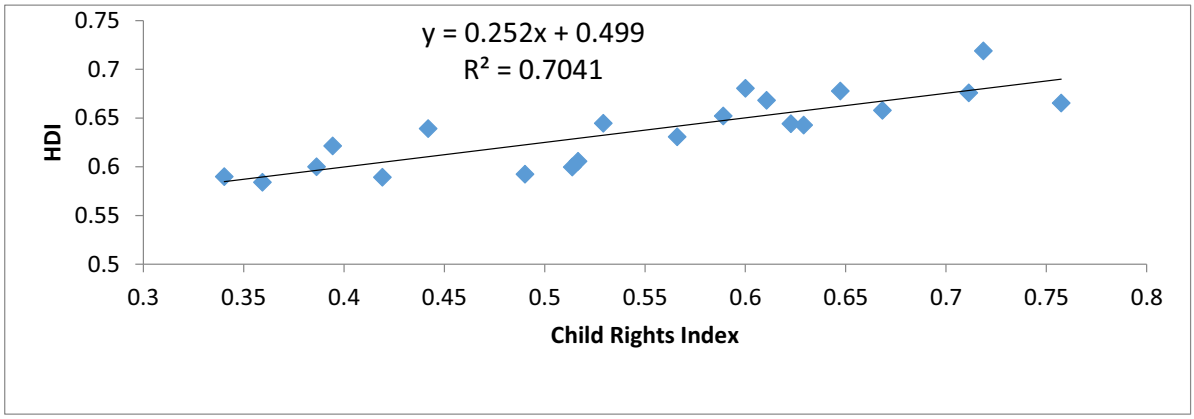
Karnataka stands 7th in the rank. State is disappointing with respect to right to health and right to enabling safety environment. Lower score with respect to right to health is mainly due to higher proportion of children under 5 are suffering from under weight and less percentage of households using unsafe sanitary facility. Malnutrition is the biggest challenge for the state and efforts should be made to reduce malnutrition in all forms.

Figure 2.7: Dimensions of Child Rights Index for Karnataka



The comparison between the HDI and the child rights Index, indicates a strong relationship between the two except Delhi. Delhi most advanced in terms of Human development, indicates an inadequate realization in terms of realizing children's right. Figure 2.8 presents the relation between the two excluding Delhi. Himachal Pradesh is another state, though better performing in terms of Human development, performance in providing children's right is poor.

Figure 2.8: Association between Child Rights Index and Human Development Index.

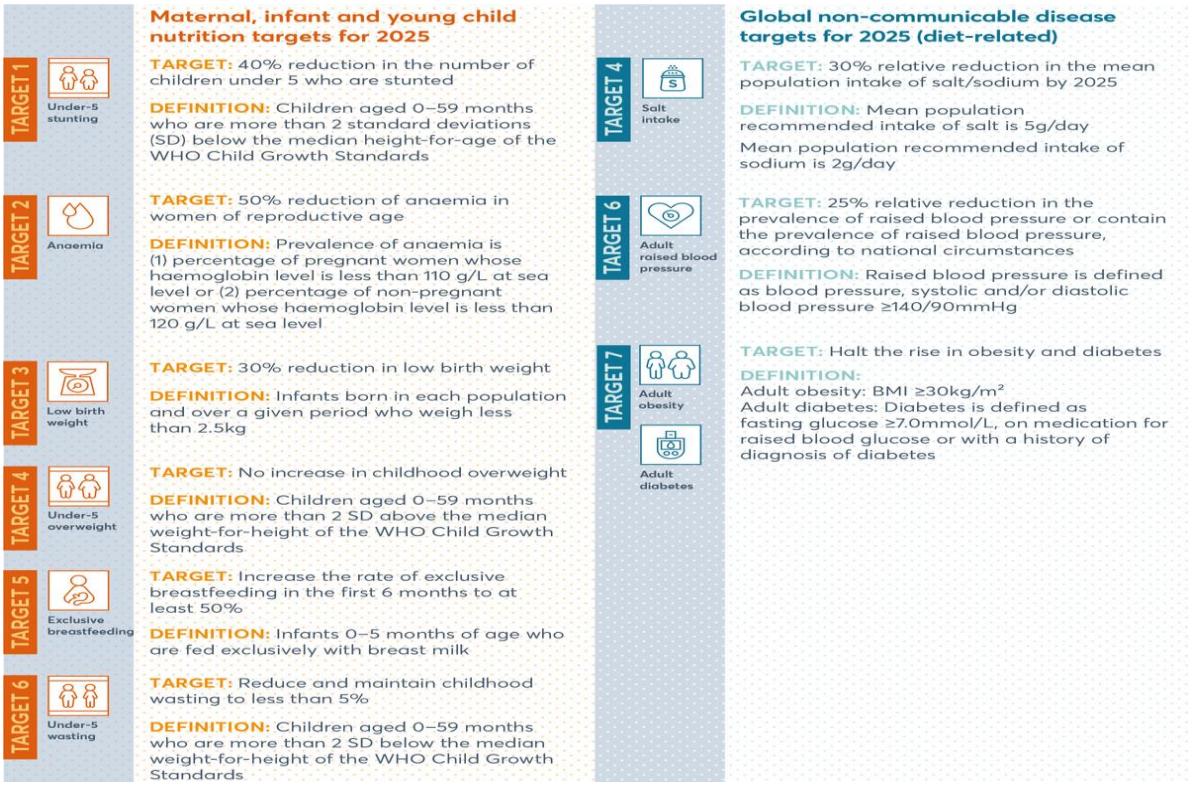


On the other hand States like Jammu and Kashmir and Telangana though middle performing in terms of Human development are performing well with respect to the children's need and right. Political will in prioritizing children's issue and rights with respect to the newly formed State, Telangana may have helped in placing the state high.

2.5: Understanding the burden of Malnutrition

The purpose of the Global Nutrition Report (GNR) is to drive greater action to end malnutrition in all its forms. In this endeavour Global Nutrition Report 2021 provide an overview of the progress it has made with respect to the targets set at global and country levels. GNR has identified six maternal, infant and young child nutrition (MIYCN) targets and three diet-related non-communicable disease (NCD) voluntary targets. The lists of the Targets are as follows:

Figure 2.9: Global Nutrition Targets



Source: 2021 Global Nutrition Report.

According to Country Nutrition Report, “India is 'on course' to meet three targets for maternal, infant and young child nutrition (MIYCN). No progress has been made towards achieving the target of reducing anaemia among women of reproductive age, with 53.0% of women aged 15 to 49 years now affected. Meanwhile, there is insufficient data to assess the progress that India has made towards achieving the low birth weight target, nor is there adequate prevalence data. India is 'on course' for the exclusive breastfeeding target, with 58.0% of infants aged 0 to 5 months exclusively breastfed. Similarly, India is 'on course' to meet the target for stunting, but 34.7% of children under 5 years of age are still affected, which is higher than the average for the Asia region (21.8%). India has made no progress towards achieving the target for wasting, with 17.3% of children under 5 years of age affected, which is higher than the average for the Asia region (8.9%). The prevalence of overweight children under 5 years of age is 1.6% and India is 'on course' to prevent the figure from increasing.

India has shown limited progress towards achieving the diet-related non-communicable disease (NCD) targets. The country has shown no progress towards achieving the target for

obesity, with an estimated 6.2% of adult (aged 18 years and over) women and 3.5% of adult men living with obesity. India's obesity prevalence is lower than the regional average of 10.3% for women and 7.5% for men. At the same time, diabetes is estimated to affect 9.0% of adult women and 10.2% of adult men".

Though India has made the above achievements, the achievements are not uniform across States. To achieve the target set for 2025, understanding the malnutrition status at the State level would be important which would help in concentrating on the poor performing states for improvement. In the light of the above this section concentrates on estimating the malnutrition index at State level using the indicators suggested by GNR for the year 2019-20 with the help of NFHS 5 data base. Further an attempt is also made to estimate the nutrition index at district level. Indicators used with the measurement definition are presented in **Figure.2.10.**

Two Malnutrition Indices are computed here (i) using indicators representing maternal, infant and young child nutrition (MIYCN), represented as MICYN index and (ii) using indicators representing Diet related Non Communicable Disease, represented as DRNCD index. Further while analyzing it was observed that the indicators children overweight and exclusive Brest feeding were more life style related and it was disturbing the ranking of the States as well as districts. Hence in Scenario I, we maintained the same set of indicators as suggested by the Global Nutrition report and in Scenario II, overweight children and exclusive breastfeeding were merged with diet-related NCD index and termed as Life Style Related Ill-being Index, represented as LSRIB Index.

Table 2.13: Indicators used for the construction of Malnutrition related Indices

Scenario - I		**Scenario - II**	
Maternal, infant and young child nutrition (MIYCN) Index	Children Under 5 who are Stunted (height - for - age)(%)	**Maternal, infant and young child nutrition (MIYCN) Index**	Children Under 5 who are Stunted (height - for - age)(%)
	Pregnant women age 15-49 years who are anemic (<11.0 g/dl) (%)		Pregnant women age 15-49 years who are anemic (<11.0 g/dl) (%)
	Non pregnant women age 15-49 years who are anemic (<12.0 g/dl)(%)		Non pregnant women age 15-49 years who are anemic (<12.0 g/dl)(%)
	Children under 5 years who are underweight(weight-for-age)(%)		Children under 5 years who are underweight(weight-for-age)(%)

	Children under 5 years who are wasted(weight-for height)(%)		Children under 5 years who are wasted(weight-for height)(%)
	Children under 5 years who are overweight (weight-for-height)(%)	**Life Style Related Ill-being Index (LSRIB) Index**	Children under 5 years who are overweight (weight-for-height)(%)
	Children under age 6 months exclusively breastfed(%)		Children under age 6 months exclusively breastfed(%)
Diet-related non-communicable disease (NCD) Index	Men Elevated blood pressure (Systolic>=140mm of Hg and/or Diastolic>=90mm of Hg) or taking medicine to control blood pressure(%)		Men Elevated blood pressure (Systolic>=140mm of Hg and/or Diastolic>=90mm of Hg) or taking medicine to control blood pressure(%)
	Women Elevated blood pressure (Systolic>=140mm of Hg and/or Diastolic>=90mm of Hg) or taking medicine to control blood pressure(%)		Women Elevated blood pressure (Systolic>=140mm of Hg and/or Diastolic>=90mm of Hg) or taking medicine to control blood pressure(%)
	Women who are overweight or obese(BMI>25.0 kg/m2)(%)		Women who are overweight or obese(BMI>25.0 kg/m2)(%)
	Men who are overweight or obese(BMI>25.0 kg/m2)(%)		Men who are overweight or obese(BMI>25.0 kg/m2)(%)
	Men Blood sugar level - high or very high (>140 mg/dl)or taking medicine to control blood sugar level(%)		Men Blood sugar level - high or very high (>140 mg/dl)or taking medicine to control blood sugar level(%)
	Women Blood sugar level - high or very high (>140 mg/dl)or taking medicine to control blood sugar level(%)		Women Blood sugar level - high or very high (>140 mg/dl)or taking medicine to control blood sugar level(%)

Using the data from NFHS 5, two indices which represents malnutrition status are computed i.e., malnutrition in maternal, infant and young child nutrition (MIYCN), and Diet related Non Communicable Disease and the results are presented in **Table 2.14.** It is seen from the table that Gujarat, West Bengal and Assam are the topmost three States with high incidence of Malnourishment. Alternative malnourishment index by excluding the indicators Extensive

breast feeding and overweight children showed Bihar as the state which is highly malnourished. Gujarat continues to be in the second position and Jharkhand is in the third position. Kerala and Punjab are the least malnourished States. Karnataka stands at 12th position among 22 major States. As per NFHS 5, 35.4% of the children were Stunted, 19.5% of the children wasted, 32.9% of children underweight, 45.7% of pregnant women anaemic and 47.8% of non pregnant women anaemic. The above figures for Karnataka as per NFHS4 are 36.2% stunted children, 35.2% underweight children, 26.1% wasted children, 45.4% pregnant anaemic women and 44.8% non pregnant anaemic women. Except percentage of children who are wasted, the improvement is marginal ranging from 0.3% to 2.3%. Only with respect to % of children who are wasted a 6.6% decline is noted. This presents a gloomy picture with respect to Karnataka and the state has to go a long way to achieve the targets set by WHO.

The States which present a low level of malnourishment are also the States with high incidence of diet related malnutrition or life style based ill being, Kerala which had the lowest incidence of malnourishment, had the highest share of adults suffering from Blood Pressure, diabetics and overweight or obese issues. Karnataka stands 7th with respect to diet related malnutrition or life style based ill being. Around 26% of adults are suffering from High Blood Pressure, 15% adults suffering from diabetics and nearly 30% of adults are either overweight or obese. Tamil Nadu and Punjab are the next two states which possessed higher incidence of diet related issues. Rajasthan, Jharkhand and Bihar are the States with lowest incidence of Diet related malnourishment problems. Development has positive correlation with Diet based malnourishment or life style based ill being and negative correlation with incidence of malnourishment.

Table 2.14: Malnourishment Index - 2019

States	Scenario I				Scenario II			
	MIYCN Index	Rank	DRNCD Index	Rank	MIYCN Index	Rank	LSRIB Index	Rank
Andhra Pradesh	0.420	14	0.697	3	0.533	13	0.529	5
Assam	0.653	3	0.205	16	0.724	5	0.257	16
Bihar	0.616	4	0.123	20	0.916	1	0.144	20
Chattisgarh	0.444	12	0.165	19	0.629	8	0.170	18
Delhi	0.294	20	0.593	6	0.256	19	0.542	4
Gujarat	0.714	1	0.329	13	0.904	2	0.345	14

Haryana	0.305	19	0.421	10	0.310	17	0.384	10
Himachal Pradesh	0.438	13	0.467	8	0.425	15	0.468	9
Jammu & Kashmir	0.490	9	0.174	18	0.396	16	0.258	15
Jharkhand	0.537	6	0.120	21	0.842	3	0.132	21
Karnataka	**0.475**	**11**	**0.528**	**7**	**0.536**	**12**	**0.477**	**7**
Kerala	0.151	22	0.925	1	0.093	22	0.792	1
Madhya Pradesh	0.327	17	0.190	17	0.625	9	0.145	19
Maharashtra	0.551	5	0.383	12	0.664	6	0.373	11
Odisha	0.491	8	0.414	11	0.621	10	0.373	12
Punjab	0.203	21	0.692	4	0.140	21	0.640	3
Rajasthan	0.411	15	0.043	22	0.478	14	0.069	22
Tamil Nadu	0.358	16	0.771	2	0.305	18	0.704	2
Telangana	0.523	7	0.616	5	0.642	7	0.520	6
Uttar Pradesh	0.485	10	0.221	15	0.555	11	0.248	17
Uttarakhand	0.310	18	0.457	9	0.249	20	0.475	8
West Bengal	0.685	2	0.304	14	0.747	4	0.352	13
All India	**0.536**		**0.385**		**0.631**		**0.378**	

At district level, information pertaining to anaemic among pregnant women, and extensive breast feeding was available only for 10-12 districts and hence these indicators were removed from the analysis. Further percentage of adults who were obese is made available only for women and the same for men at district level is not available. This could be possibly being low number of men in the sample at district level. Hence the figures across States and districts are strictly not comparable. Koppal, Yadgir and Raichur are the districts with high incidence of malnourished children and anaemic women. On the other hand Mandya, Kolar and Ramanagar districts had low share of malnourished children and anaemic women. Bengaluru, Kodagu and Ramanagar districts had high percentage of adults with Blood Pressure, diabetics and obese. Percentage of adults with low percentage of NCD is seen in districts Raichur, Haveri and Yadgir. 32% of adults had high blood pressure, around 20% were suffering from diabetics and 40% of women were either overweight or obese in Bengaluru urban district. On the contrary in Raichur district only 17% of adults were suffering from high Blood Pressure, 9% from diabetics and only 20% of women were obese. Even at district level development has high positive association with lifestyle based ill health and negative association with incidence of malnourishment.

Table 2.15: Malnourishment Index at District level -2019

Districts	Scenario I				Scenario II			
	MIYCN Index	Rank	DRNCD Index	Rank	MIYCN Index	Rank	LSRIB Index	Rank
Bagalkot	0.524	8	0.316	23	0.589	10	0.318	22
Bengaluru Urban	0.309	26	0.984	1	0.263	26	0.903	1
Bengaluru Rural	0.424	18	0.679	10	0.359	21	0.701	7
Belguam	0.562	5	0.302	24	0.613	7	0.316	23
Bellary	0.512	9	0.268	25	0.667	4	0.250	26
Bidar	0.567	4	0.242	28	0.643	6	0.256	25
Bijapur	0.510	10	0.347	22	0.554	11	0.351	21
Chamarajanagar	0.372	20	0.630	13	0.424	17	0.528	15
Chikkaballapura	0.344	21	0.535	17	0.356	22	0.486	17
Chikamagalur	0.443	16	0.691	9	0.371	18	0.723	6
Chitradurga	0.448	15	0.712	8	0.455	15	0.653	9
Dakshina Kannada	0.438	17	0.536	16	0.361	20	0.589	13
Davanagere	0.499	12	0.721	7	0.548	12	0.637	10
Dharwad	0.543	6	0.545	15	0.592	9	0.514	16
Gadag	0.491	13	0.425	20	0.612	8	0.376	20
Gulbarga	0.641	1	0.242	27	0.662	5	0.278	24
Hassan	0.338	22	0.777	5	0.282	25	0.763	5
Haveri	0.082	30	0.451	19	0.481	13	0.104	29
Kodagu	0.412	19	0.874	2	0.330	23	0.894	2
Kolar	0.231	27	0.510	18	0.174	28	0.541	14
Koppal	0.534	7	0.261	26	0.796	1	0.225	27
Mandya	0.152	29	0.814	4	0.146	30	0.631	11
Mysore	0.316	23	0.592	14	0.365	19	0.484	18
Raichur	0.584	3	0.079	30	0.747	3	0.094	30
Ramanagara	0.202	28	0.831	3	0.157	29	0.775	3
Shimogga	0.507	11	0.654	11	0.450	16	0.679	8
Tumkur	0.313	25	0.755	6	0.245	27	0.768	4
Udupi	0.314	24	0.646	12	0.289	24	0.606	12
Uttara Kannada	0.465	14	0.424	21	0.468	14	0.428	19
Yadgir	0.630	2	0.086	29	0.750	2	0.107	28
KARNATAKA	**0.494**		**0.566**		**0.509**		**0.543**	

Some of the districts in Karnataka have high percentage(above 55%) malnourished children and anaemic women. Districts with high malnutrition index with low diet related index are backward districts with high incidence of poverty and mostly northern Karnataka districts. More emphasis should be given in both the blocks either to reduce malnutrition or to reduce NCD burden.

2.6: Conclusion & Way Forward

India continues to belong to medium human development nation category, ranking 131 among 189 countries. Based on the HDI value at state level, Delhi and Kerala would be classified as high human development category for the year 2019. Karnataka stands at 11th position among 22 major states and by discounting each dimension by its level of inequality, the potential loss estimated is 24% and slides down its position by two ranks. At district level Bengaluru Urban has achieved highest human development with HDI value being 0.738 and as per UNDP classification it would be termed as high human development district.

In terms of Gender Inequality Index, Karnataka State ranks 17th and major reason is attributed to very low political participation by women. At district level, all the coastal districts have performed very well with very low GII. The GII can be reduced through improving the reproductive health and female labour force participation.

Children being 'change makers' who have the power to move the world, providing access to their rights and empowering would help them to realise the great potential they carry within them. In this respect Karnataka state has reasonably performed well ranking 7thamong the major states.

In Malnourishment, Karnataka as a whole need to improve a lot in terms of undernourished children and anaemic women. Most of the northern Karnataka districts need urgent and targeted attention to bring down malnourishment which would help in achieving SDG goals. A multi sectoral & intergenerational package approach is required to address malnutrition.

Karnataka State has overall 60 percent achievement in human development. But the inequality in spread of human development is very high. The incidence of deprivations is high in North Karnataka and very high in Kalyan Karnataka region. Unless this region is focused in future, the state will not move ahead at faster pace on human development path to attain the SDG 2030 agenda.

Way Forward- Action Agenda for Increasing HDI

2.6.1 : Focus on Aspirational Districts and Talukas.

- The bottom ten talukas, especially the five talukas from Yadgir and Kalaburagi need integrated approach to improve health, education and standard of living.
- There are 92 talukas performing low in education, these need to be focused on both infrastructure and quality and 78 talukas need focus on health infrastructure and quality health services.
- Focus on secondary and higher education in the districts of Yadgir, Kalaburagi, Raichur, Koppal, Haveri, to address human development disparities that are partly attributable to education can be addressed.

Promoting Livelihood

- The incidence of poverty is high in North Karnataka, especially Kalyan Karnataka region. Lifting 20% & above population below poverty line (MPI NFHS-5) in Yadgir, Raichur & Kalaburagi by bringing them under the ambit of various Health, education and Housing Schemes will reduce the incidence of MPI significantly in the State. Percentage of urban households living in kutcha houses to be reduced from 0.5% to 0% on priority basis using existing urban housing schemes.
- Asset transfer schemes can produce more sustainable impact on livelihoods. The Pashubhagya and Ksheera Snjeevani schemes to be linked with MGNREGA for cattle sheds and fodder development programme to provide support services. All the AAY families to be covered under SHGs & the group is to be linked to banks for credit and KMF for marketing.
- Increase the productivity on small and marginal lands through widespread adoption of integrated farming system and promotion of micro irrigation by 77 lakh small and marginal farmers. Focus should be on 390 Gram Panchayats where the gap between potential and actual yield is very high. Precision farming and Crop Diversification to high value crops, and crop planning at micro level based on market information, Agro processing clusters, cold storage and marketing infrastructure for value addition are the basic strategies for doubling the farmers' income in North Karnataka.
- **Agri and Agri Tech: (i)** Agriculture Universities, RDPR University and Farmer Producer Organizations (FPOs) should conduct regular capacity building programme for FPO executives in association with B-Schools of the State. (ii)Start-up companies in Agri-tech sphere should be linked to FPOs. (iii)Launch a pilot programme for promoting

agripreneursby linking them to FPOs and farm universities. (iii)Promote Integrated Farming System (IFS) among small and marginal farmers with financial assistance and technical mentoring by farm universities to generate employment and more income.

- Nutrition is the dark area of concern. The districts/ talukas with high incidence of malnutrition – Kalaburagi, Raichur, Yadgir, Koppal, Bellari, Bidar Gadag, are the districts that require urgent attention. There are 102 talukas with high incidence of mal nutrition that need an integrated multisectoral approach to address malnutrition. The multi sectoral and intergenerational approach as adopted in the World Bank Project in Chincholi and Devadurga needs to be adopted as a holistic approach.
- The schemes under SCP, TSP, Backward classes and minorities to be made more human development focused and outcome oriented.
- Formulation and implementation of plans at GP level with increased public participation. Strengthen and operationalise the process of preparation of Gram Panchayat Development Plan and estimation of GDP at GP level.

2.6.2 Quality and Inclusive Education - Implementing National Education Policy 2020

Promoting vocationalization of education is the urgent requirement. As per National Education Policy (NEP Clause 4.26): Every student should be imparted vocational crafts, such as carpentry, electric work, metal work, gardening, pottery making. Internship opportunities to learn vocational subjects may be made available to students throughout Grades 6-12, including holiday periods. Vocational courses through online mode to be also to be made available.

- In order to implement programmes in the National Education Policy (NEP) there is a need to establish **Centres of Excellence / Skill Development Centres at all Educational institutions.**
- There are about 75000 dropout children; it may be useful to transform vocational education within the school in ways that it focuses of developing skill sets with knowledge for all students in secondary school post 9^{th} grade.
- It may be useful to collaborate with NGOs like Labour net located in Karnataka to implement vocational education in schools and ITIs. This helps to link to the NEP 2020 where multiple entry and exit options will be introduced in higher education.
- Scaling up the model of collaboration with tata Technologies to upgrade 150 ITIs and introducing 23 courses.

- There are 4687 high schools, out of them, 2150 schools do not have ICT Labs. These to be covered under **TALP and other ICT initiatives**. To encourage Science education, establish **STEM labs in Girls' high schools**.
- Provide Toilet facilities in all schools with priority to schools in talukas in Kalaburagi, Yadgir, Raichur districts. Transport facilities and financial assistance and ensure safe environment at school to increase the enrolment of girls.
- Establishment of Special Education Zones in educationally backward talukas with **Vocational Education and Skilling Hub (VESH) in every SEZ.**
- Train Anganwadi teachers in **Udisha portage** for early intervention of ECCE for all children including children with disabilities.
- Extend RTE till 12th Std. to reduce dropouts and promote higher education.
- A model school in every GP is envisaged, which will be an upgradation of a Higher Primary School or a Secondary School in a GP with potential and feeder schools.
- **Higher Education**
- To improve quality of higher education, support **accreditation of colleges** – govt. and Private to improve infrastructure & learning environment. Among 4047 colleges in the State only 729 (18%) are accredited.
- Explore innovative financial Solutions under PPP and CSR pathways to reach the target set for the increase in the enrolment in higher education (GER) from about 32 % to 60% and above by 2030.
- The budget of the Department of Higher Education must be enhanced to **an annual spending of 2% of the GSDP and must be at least 30% of the overall education budget**. Encourage research and resource pooling in higher education.
- Establish an independent **Teachers Academy** at the State level and strengthen the **Higher Education Academy** at Dharwad on a public-private partnership model to address recruitment, foundation/induction training, periodic capacity building, performance assessment, ethics, research and database management.
- The present **State Council for Higher Education must be restructured** to play role of Think-Tank. Experts with fresh thinking and new ideas need to be drawn from across the State, country and the world.
- For quality improvement, teachers to be given mandate to train students in modern jobs. Involve them in social entrepreneurship for knowledge application in social transformation.

2.6.3 Promoting Health & Wellbeing

Karnataka State has made significant achievements in health sector as visible from the health outcomes. The life expectancy has increased to 69.5 years and the Maternal Mortality ratio has come down to 83 per lakh live births. The State stands in the first place for the implementation of Health and wellness program. Total 6995 Health and Wellness Centres are established as on February 2022. State stands in the Second place for registration of non-communicable disease software. Total 3,33,20,310 registrations have been done.

However, Karnataka is undergoing an epidemiological and demographic transition leading to increased burden of NCDs. NCDs contributed 62%, communicable diseases 25.1% and injuries 12.9% of the total disease burden in Karnataka.

Reducing IMR & MMR

- The MMR is high compared to Southern States due to 45.7% of the pregnant women in the age group of 15 to 49 are anaemic or malnourished in the state. Secondly, an equally high number of women have high blood pressure and thirdly, only 44.7% of the pregnant women consume iron-folic acid
- Maternal mortality is high in districts like Dharwad, Chickballapur, Bidar, Hassan, Haveri, Shivamogga, and Tumakuru followed by Chamarajanagara. Convert all the 147 taluk hospitals functional 24/7 for maternity services, by addressing the shortages of doctors and para medical staff.
- **Decentralision** of health Schemes for their location specific IEC and implementation requirements.
- There is need for monitoring the health of children from anganwadi to high school through Seamless integration of RCH portal with School health portal to fix responsibility on the concerned PHCs to ensure required diagnostic, treatment and monitoring of the health of women and children.
- ASHA to ensure provision of IFA supplements to pregnant women who are not able to come for regular antenatal check-ups through home visits.

Action Plan for Anaemia free (Mukt) Karnataka

- Anaemia can be reduced only if the departments (Health, WCD and FCS) converge their activities and GP coordinates and monitors the activities regularly through Poshan Tracker created by GoI.

- As part of Pradhan Mantri Surakshit Matritva Abhiyan, anaemia should be addressed through an integrated package of interventions.
- Screening of all pregnant women for anaemia at sub-Centre/VHND/outreach/PHC level can be done by Sahli's haemoglobinometer or by Standard Hb Colour Scale.
- ASHAs and ANMs should screen children from 6 months up to 5 years of age for signs of anaemia through opportunistic screening on various platforms.
- Focus on first 1000 days (including in the mother's womb) which is the most critical period in a child's physical and cognitive growth. Promote Community ownership & Management of Nutrition
- There are 102 talukas categorized as aspirational Talukas that are mainly concentrated in North and Northeast Karnataka. Multi sectoral interventions are needed for these talukas.
- As per NFHS 5 survey it is estimated that app. 29.3 lakh children and 4.3 lakh pregnant women are anaemic. Anaemic children in anganwadis should be provided Special supplementary nutrition (either spirulina Chikkis, Dathru loha, Sai Protein) for 90 days for improving haemoglobin levels.
- Establish Nutrition Clusters managed by SHGs with machinery etc, with capacity building and other related aspects the cost is Rs 1 crore per annum. A pilot of 17 clusters, 1 per district should be developed – especially in taluks with high anaemic prevalence. Budget Rs 17 crore. Total, **Rs 85 crore** would be required for period of 5 yrs to eradicate child anaemia.
- Improving coverage of government programs and strengthening behaviour change strategies through creation of specific messages and 'Jan Andolan'. NSS Volunteers / Girls for awareness campaign.
- **Diversification of Public Distribution System** to include millets which can contribute to the access of micronutrients for the anaemic population & promoting community nutrition gardens (nutri-gardens) in convergence with MGNREGA.
- Create awareness on healthy eating, vitamin and mineral requirements, optimal nutrition in schools, colleges, villages and cities through youth associations.

2.6.4 Employment & Decent work

The basic issues in employment are related to growing size of informal labour market, lack of decent work and employment security, and the need for adequate employment growth to combat unemployment.

Action Plan for skill Development and Employment generation in Karnataka

- **Strengthening Employment Exchange** to facilitate employment and entrepreneurship in collaboration with leading industrial houses and multilateral agencies. The centre to be further strengthened to facilitate skill development programs, act as Recognition of Prior Learning (RPL) centers, building skill ecosystem at the district level.
- Initiatives for **Organized Labour Force:** Skilling labour force in the unorganized sector and the MGNREGA workers through RPL process, imparting systematically planned short term skill development programs particularly on customer relationship management, EDP and business / professional ethics.
- Six **In**ternational **S**kill **T**raining and **In**novation **C**entres (**Instinct)** strategically located considering the geographical advantages, need for promoting inherent skills / occupations of the region, local industry sectors (for eg: Automobile in Dharwad, ESDM in Mysuru, Artificial Intelligence, Nano Technology and Robotics in Bengaluru) etc.
- **Recognition of Prior Learning (RPL) in Farmers Community:** Upskilling, reskilling and recognizing prior learning of farmers is vital. The District Skill Mission will work in coordination with the Agricultural department and Krishi Vigyana Kendra to establish a certification and recognition program for the farmers.
- Initiating **Livelihood Facilitation Centre at the block or cluster level** to support rural women, particularly those who are part of Self-Help Groups, providing convergence, & provision of different schemes of Government departments, credit linkages and marketing support.
- **Digital Skills & Entrepreneurship Mindsets in Schools and Colleges** Introduce Digital Skills for School and College students through Gram Panchayat Libraries and introduce mandatory curriculum on entrepreneurship mindset development from class 9 onwards to develop entrepreneurship mindset among students.

- **Career Information** and Guidance **& Internship** programmes for **youths** in collaboration with leading Industrial Associations.
- **Youth Entrepreneurship Incubation at colleges: (i)** Develop a District level hub and spoke model for entrepreneurship incubation with all educational institutions in the district as spokes. (ii)Extend the New Age Incubation Network (NAIN) Scheme to all Districts. (iii)Establish Karnataka Research and Innovation Authority (KRIA) as a nodal agency for strengthening incubation ecosystem in the State on the lines of Technology Transfer Offices (TTOs) of Israel.

- Create internship opportunities for graduates in Future Skills in companies like Infosys, Microsoft, IBM etc., through Karnataka Digital Economy Mission (KDEM). Launch Future Digital Jobs Initiative for engineering colleges in Beyond Bengaluru Clusters.
- **Agri Technology:** Agriculture Universities, RDPR University and Farmer Producer Organizations (FPOs) should conduct regular capacity building programme for FPO executives in association with B-Schools of the State
- **Employment Policy**

The state is expected to generate employment of around 60 to 75 lakhs by 2025 which is primarily due to the growth in the following sectors – Tourism, IT&BT, Services, MSME, manufacturing and other industries like Electronics System Design & Manufacturing etc. An employment policy is needed to build strategy and interventions in labour market to achieve the targets set under SDG-8 for growth, employment and decent work.

2.6.5 Promoting Gender and Social Equity

The issues on top priority are: eradication of discriminatory practices, combating domestic violence, anaemia & increasing female labour force participation rates. Convergence across the Departments of Women & Child Development, Home, health & Family Welfare & Education to take up the following actions:

Combating Violence & increasing Awareness

- Bring about social and attitudinal change for changing the stereo type gender roles through awareness, **Gender Sensitization** Programmes through social and religious platforms.
- **Introducing modules** on gender equality in family and society in school curriculum

- Coverage of about 60 thousand SC/ST women as members in SHGs under different economic activities through training, skill, and loan assistance.
- Strengthening Stree Shakti Groups & Active Involvement of Gram panchayats in women empowerment schemes. Social Accountability systems for all stakeholders, and promoting Women friendly Gram Panchayats.
- Nehru Yuvak Kendras & NSS Volunteers, – Boys & Girls to be included in the mission for generating awareness and empowerment.
- Sharing & implementation of best practices. IEC component in women welfare and empowerment schemes to be strengthened.
- NGOs, Voluntary organizations to be strengthened – Mahila Samakhya, Nari Adalat models to be evolved.
- Increase the coverage of One Stop centres, Santwana Centres, Special Diagnostic Centres and establishing end-to-end institutional set up to provide immediate assistance to women in distress.
- Implementation of PC&PNDT act & awareness program / workshops for ASHA/Anganawadi workers and Conducting district level workshop / taluk level

- Increasing women police stations in violence concentrated districts specifically in North Karnataka. Increasing Women police force. The target is to give 33 per cent representation to women. (Now reservation given to 25%)
- Effective implementation of prevention of Domestic violence Act2005 by providing adequate implementation machinery. Protection Officers at district levels,
- Implementation of new technologies, like fixing of CCTV cameras at sensitive places so that easily foot prints of accused will be found out.
- **Holistic policy framework for defining the Structures and Processes to Stop Child Marriage in Karnataka**. Providing *voice* to women & Girl Child through programs like Makkala Snehi Gram Panchayat, Mahila Snehi Gram Panchayat etc.
- Incentivize the GPs reporting zero child marriage every year with an appreciation plaque and cash awards.
- Planning for Deploy Team by the NGO's for the Suspicious Scanning Centers in Various districts in Karnataka (that have Low Sex Ratio at Birth).

- Compulsory 4 ANC registrations for pregnant women and increase the percentage from 78 percent to 100 percent.
- Increase the number of 24/7 PHCs in high MMR districts like Dharwad. 100% tracking of all pregnant women and ensuring high quality in antenatal care is planned.
- Tackling of Anaemia in pregnancy by supplementation with Iron Sucrose Injection, Iron Folic Acid & Calcium tablets.

Increasing Labour Force Participation rate- Education, Skill & Entrepreneurship Development

- **Provision of enabling facilities** to reduce the burden of domestic work. **Provision of support** facilities like ShishuVihars, crèches, old age care to help women to reduce their burden in care economy and enable their participation in labour market.
- Valuation of women's unpaid work. **Developing suitable methodology** and its application in Census and other sample surveys to account for women's work in care economy
- **Increasing enrolment of girls in higher education**-Technical and Professional education by expanding the scale and coverage of scholarships and hostels especially in North Eastern Karnataka.
- **SDEL to identify gender friendly courses** and promote enabling factors to increase the access of women to these courses.
- Coverage of transgenders through skill development programs and enhance their labour participation ratio.
- I**ncreasing the provision for women from 33 % to 50%** under **Chief Minister's Koushalya Karnataka Yojane**. **Specific targets** will be fixed for women and girls in all the programmes of Central and State Governments- RGCY, DDUGKY.
- **Comprehensive Training programmes** for women Gram Panchayat members to promote their effective participation in decision making process in Local governance.
- **Establishment of coaching centres, training institutes** to train girls for competitive examinations.

Women Entrepreneurship

- **Promoting** and strengthening women co-operatives. Promoting **entrepreneurship** among women- through focused schemes in Animal Husbandry, Dairy, Household industries. Expanding coverage of Udyogini scheme,
- Increasing the scope of economic activities among SHGs and **bank linkage of SHGs** under SRLM. **Micro Credit** to SCs and STs through Self Help Groups (SHGs) **Institutional Loans** to SHGs at concessional rate of Interest-(Cooperative Dept.)
- **Capacity building** of women in e-trading and e-commerce. **Re-training and skill upgradation.**
- Banks should adopt a **single window approach** to overcome the procedural and other barriers to accessing loans by women.
- Karnataka has launched '**Elevate WomEN'** initiative **exclusively for women entrepreneurs**, by partnering with Not-for-Profit organizations by extending support through **grant-in-aid fund**. **Co-operative entrepreneurship** to be promoted among SHG groups in both urban and rural areas.
- Awareness about provision under Industrial policy 2014-19, 5% **additional investment promotion subsidy**, interest subsidy etc.
- Women entrepreneurs parks are developed by KIADB in Ramanagara, Mysuru, Dharwad, Ballari & Kalaburagi. These should be implemented on urgent footing.
- Labour legislation and social security measures for women in unorganized sector.

Women's Access to Resources

- **Women's access to land rights** should be ensured through property and inheritance rights; direct government transfers and credit support to poor women to purchase or lease land from the market. Promote Joint ownership of land.
- Maintaining **gender disaggregated data** in all programmes and schemes for effective and evidence-based gender policy.

Social Groups- SC& ST

There is significant achievement in HDI of SC/ST & OBC category but the progress is not complete and the gap continues to exist as discussed above. Priority to be given to the bottom 10 talukas in HDI in resource allocation under SCP/TSP schemes. There is a need to

prioritize the spending for reducing the deprivations and achieving the human development outcomes and the SDG-2030 agenda.

Multi-Dimensional poverty across social groups

	SC	ST	General
Incidence	0.113	0.157	0.092
Intensity	0.42	0.43	0.41
MPI	0.0471	0.0672	0.038
Projected Population for 2022	1,20,06,500	51,17,536	7,19,61,497
Estimated Poor Population (as per 2022 population projections)	13,57,599	7,96,817	66,22,106

Source: Planning Dept. CODR

The incidence of MPI is 11 percent in SC, 15.7 percent in ST but it is 9.2 in general category. The estimated poor population is 13.5 lakhs in SC, 7.96 lakhs in ST category. The SCP/ TSP schemes and the other poverty alleviating schemes should concentrate on these 21.46 lakh people & those households.

Schemes under SCP/ TSP & Minorities should mainly focus on human development sectors in the bottom talukas on priority basis.

Bottom 10 talukas in HDI - SC, ST & Minorities

Scheduled Caste		**Scheduled Tribe**		**Minorities**	
District	**Taluka**	**District**	**Taluka**	**District**	**Taluka**
Chikmagalur	Koppa	Tumakuru	Kunigal	Chitradurga	Holalkere
Koppal	Kushtagi	Mandya	Maddur	Mandya	Srirangapattana
Bagalkot	Hungund	Tumakuru	Tiptur	Mysuru	T Narasipur
Chikmagalur	Sringeri	Dakshina Kannada	Mangaluru	Mandya	Mandya
Chamarajanagar	Gundlupet	Bagalkot	Hungund	Davanagere	Honnali
Uttara Kannada	Siddapur	Ramanagar	Channapatna	Davanagere	Davanagere
Uttara Kannada	Bhatkal	Bagalkot	Bagalkot	Haveri	Hirekerur
Bagalkot	Beelagi	Kalaburgi	Kalaburgi	Davanagere	Harihara
Uttara Kannada	Honnawar	Gadag	Gadag	Davanagere	Jaglur
Dharwad	Kundgol	Vijayapura	Vijayapura	Tumakuru	Koratagere

The specific action points are:

- Outcome based budgeting and implementation of schemes under SCP/TSP, Backward classes and minorities based on identification of gaps in Human development sectors. Focus on economic mobility along with social inclusion.
- Public participation in Planning and implementation of SCP/TSP schemes and social audit of schemes & Transparent monitoring and evaluation of the schemes.
- Strategy for promoting equity in livelihoods through investment in minor irrigation, ground water enrichment, rainwater harvesting, lake / tanks restoration and development, diversion of rivers, and creation of barrages under MGNREGA & Watershed development schemes..
- Legal / political / literacy of women and men for representation in local bodies.
- 'Make in India' initiatives, skill development from KSDC / KSDEL to boost the MSME sector, soft credit to MSMEs with export potential.
- To promote women entrepreneurship in SC/ST Women, 25 percent of the target under self-employment under various corporations and infrastructure in Industrial areas/ parks to be reserved for these women
- Involvement of NSS volunteers under awareness and development initiatives at GP level for formulation of FPOs, SHGs, User Associations among these people.
- Special Development plan should focus only on human development sectors in backward talukas.

2.6.6 Harnessing Demographic Dividend- Youth Development

Education, Entrepreneurship & Skilling

The number of young persons (16 to 35 years) who require skilling in Karnataka is projected for the period 2016 to 2030 at 188 lakhs that includes, the persons in labour force, who have not completed higher education (including technical education) for new or better employment. The following actions are proposed:

- **Around half (48%) of the state's youth population were in the lowest bracket of attainment (10th grade and below).** 32% of the youth population had completed higher secondary education (11th or 12th grade), and only 21% completed tertiary education.

Hence awareness, effective financial support and accommodation facilities are essential to increase human capital.

- Develop a District level hub and spoke model for entrepreneurship incubation with all educational institutions in the district as spokes. & extend the New Age Incubation Network (NAIN) Scheme to all Districts in State.
- Establish Karnataka Research and Innovation Authority (KRIA) as a nodal agency for strengthening incubation ecosystem in the State on the lines of Technology Transfer Offices (TTOs) of Israel.
- Set up Enterprise Facilitation Centres (EFCs) at District level as one stop shop centres.
- Create internship opportunities for graduates in Future Skills in companies like Infosys, Microsoft, IBM etc., through **Karnataka Digital Economy Mission (KDEM).**
- Establish a Central Career Guidance Cell at the State level to develop uniform content and curriculum for career guidance
- Adapt the German dual system into the ITI system wherein a trainee is given the opportunity to spend more time in the industry.
- Link with MSDE's National Apprenticeship Promotion Scheme where the central government will cover 25% of the cost of apprenticeship training to the industry.
- The government to facilitate 50,000 apprenticeships in a phased manner.
- Students pursuing general education will be imparted a certified skill training course during the course of their regular studies in line with the finishing school concept.
- Soft skills, English language skills to suit ITES sector and back end operations of other priority sectors identified in Youth policy will be imparted to these students. Three lakh students pursuing general education will be covered in a phased manner.
- **Social entrepreneurship -**Empowering youth to start their own social enterprises and tackle social problems will make them drivers of change, ensuring private gains without losing sight of the public good that it can create for society.

Health & wellbeing

- Focus on **three strategies** for improving the health and wellbeing of children. First is ensuring survival beyond infancy. Second is supporting mothers. Third is focusing on providing children with adequate nutrition and the requisite vaccinations.
- To reduce tobacco and alcohol consumption among youth, strict prohibitions on advertisements and also the sale of tobacco and alcohol to youth & holding campaigns that promote awareness about the negative impacts.

- Making counselling services more accessible by Partnering with mental hospitals for counselling. Strengthen the **Yuva Spandana** which is the first youth mental health promotion program in **India**. It is implemented by the Department of Youth Empowerment and Sports, with technical collaboration from Center for Public Health, Department of Epidemiology, NIMHANS since 2014.

Investing in Youth

- Preparation & implementation of **Yuva Budget.** Government of Karnataka has prepared a **compendium of 540 Government schemes** under Yuva budget. The total budget under the various schemes was Rs.11456.46 crores during 2021-22.
- The State has formulated new Youth Policy -2022. This will focus on the holistic development of youth. **The policy is being designed in participatory mode, after consultation with youth leaders at the district level, and professionals in various fields. Over 14,000 youths have provided opinions on various issues ranging from education to leadership,** which are being incorporated in the policy.
- The policy has recommended restructuring of the Department of Youth Empowerment and Sports, the creation of a Yuva Budget, and the formation of a youth advisory group. The policy identifies six focus areas — education and training, employment and entrepreneurship, health and well-being, sports and fitness, arts and culture — and recommended an action framework for each of them.

2.6.7: Bridging Gaps in Infrastructure for Human Development

The basic indicators impacting quality of living and human development are, Access to sanitation, drinking water, housing and cooking fuel. The action plans have to be prepared based on the percentage of households deprived at taluka level to reach the last milestone.

- The bottom 10 deprived districts and households as well as talukas in these indicators that need to be focused are given in the following table. Accordingly, the budget requirements need to be estimated

- **Deprivation in sanitation & Drinking water - focus districts, magnitude & Talukas**

District	(%) Without access	Sanitation Focus Talukas	District	% Deprived HH	Drinking Water Focus Talukas

Yadgir	63.77	Gurumithakala, Hunisigi, Shahapur, Shorapur, Vadagera,Yadgir	Udupi	18.91	Bynduru, Kundapur
Gulbarga	63.41	Afzalpur, Aland, Chincholi, Chittapur,Gulbarga, Jevargi, Kalagi, Kamalapura, Sedam, Shahbadha,Yadrami	Uttara Kannada	15.40	Ankola, Karwar
Bijapur	55.16	Babaleshwara, Basavan Bagewadi,Bijapur, Chadachana, Devara Hipparagi, Indi,Kolhara, Muddebihal, Nidagundi, Sindagi,Talikote, Tikota	Dharwad	14.75	Annigeri, Kundgol, Navalgund
Bagalkote	48.60	Badami, Bagalkote, Guledagudda, Mudhol	Bijapur	14.01	Babaleshwara, Basavan Bagewadi, Bijapur, Chadachana, Indi
Raichur	47.10	Devdurga,Lingasugur,Manvi, Maski Raichur, Sirivara	Kodagu	11.28	Madikeri, Somawarpet
Gadag	46.64	Gajendragad, Naragund,Rona	Raichur	10.84	Devdurga, Raichur
Bidar	43.62	Aurad, Basavakalyan Chittaguppa, Hulasuru, Humnabad	Dakshina Kannada	10.76	Belthangady, Kadaba
Koppal	40.59	Gangavathi, Kanakagiri, Koppal, Kukanuru, Kushtagi,yelburga	Gulbarga	10.46	Jevargi, Yadrami
Chitradurga	37.41	-	Bellary	8.81	Harapanahalli, Kudligi, Kurugodu
Bellary	35.39	Ballari, Hagaribommanahalli, Hospet,Kudligi	Tumkur	8.11	Pavagada

- Source: Planning Dept. CODR NFHS-5

Housing & Cooking Fuel- focus districts, magnitude & Talukas

District	(%) without access	Focus Talukas Housing	district	% HH Deprived	Focus Talukas Cooking Fuel
Gadag	53.61	Gadag, Gajendragad, Laxmeshwar, Mundargi, Naragund, Rona, Shirahatti	Yadgir	54.317	Gurumithakala, Hunisigi, Shahapur, Shorapur, Vadagera,Yadgir
Koppal	52.92	Gangavathi, Kanakagiri, Koppal, Kukanuru, Kushtagi, yelburga	Koppal	52.02	Gangavathi, Kanakagiri, Karatagi, Koppal, Kukanuru, Kushtagi, yelburga
Bidar	51.41	Aurad, Basavakalyan, Bhalki, Bidar, Kamalanagara	Gadag	45.69	Gadag, Gajendragad, Mundargi, Naragund,Rona, Shirahatti
Gulbarga	50.89	Afzalpur, Aland, Chincholi, Gulbarga, Jevargi, Kalagi, Kamalapura, Sedam, Yadrami	Gulbarga	41.79	Aland,Chincholi,Chittapur, Gulbarga, Jevargi, Kalagi, Kamalapura, Sedam, Shahbadha, Yadrami
Haveri	49.29	Ratteehalli	Bagalkot	41.42	Badami, Bagalkote, Guledagudda
Shimoga	47.90	Soraba	Haveri	40.99	Byadagi
Chitradurga	46.71	Challakere	Bijapur	40.58	Babaleshwara, Basavan Bagewadi, Chadachana, Devara Hipparagi, Indi, Kolhara, Muddebihal, Nidagundi, Sindagi, Talikote
Bagalkot	46.185	Badami, Bagalkote, Guledagudda	Raichur	40.11	Devdurga, Lingasugur, Raichur, Sirivara
Davanagere	45.833	Davanagere, Nyamati, Jagaluru	Bidar	33.79	Aurad, Basavakalyan, Bhalki
Bellary	45.744	Hagaribommanahalli, Kotturu, Kudligi, Siraguppa, Sonduru	Udupi	32.57	Hebri, Udupi, Brahmavara

Source: Planning Dept. CODR NFHS-5

- The deprivation is maximum in North Karnataka region, especially the Kalyan Karnataka Region (Gulbarga Division). There are many schemes- central & State- in these sectors. These need to be offered as a package, with additional allocations, adopting household approach for saturation.

2.6.8: Building Resiliency to Climate Change & Inequality

With the slew of policy measures and action plans, the State of Karnataka is poised to mitigate the impact of climate change and its consequential impact on vulnerable community. The action points for achieving the targets by 2030 are given below which will have significant positive impact on reducing all kinds of inequalities arising from Climate Change:

- **Agriculture and allied sectors:** Increase area under watershed treatment and micro irrigation. Reduce annual consumption of chemical fertilizer; Promotion of organic farming and endemic drought/flood resistant varieties.

- **Agro-forestry:** Tree planting in all vacant private and farm lands that are unfit for productive agriculture; Promote afforestation in 9150 Sq Kms available in forest and 7.69 lakh ha of barren and uncultivable land through integration of plantation schemes of Forest Department and MNREGA.

- **Livestock sector:** Greater emphasis on fodder production; conservation and genetic improvement of indigenous cattle and sheep breeds; Selective breeding for increasing productivity; Conservation by rearing elite animals in Government farms; Genetic selection for low methane emission.

- **Health sector:** Increase in health care facilities, including mental health care; Identification of areas vulnerable to climate change effects; Enhance disease monitoring and surveillance in vulnerable areas.

- **Forest sector:** Restoration of disturbed forests and plantations; increasing focus on farm forestry and agro forestry; Policy changes to encourage people to plant trees in their lands.

- **Combat Disaster Situations:** Reduce urban flooding (UF) by proper maintenance of drainage system. Proper solid waste management system. Using ICT in developing advance warning systems, dissemination of information through SMS, web portal, radio, wireless communication, etc. & educating people about disaster management.

- Efficient generation and utilization of energy (green growth strategies) in the Power Sector:

- **Promoting Green Growth** industries & General energy efficiency (EE) measures

    - Green transition: Investments must accelerate the decarbonization of all aspects of our economy.

    - Green jobs and sustainable and inclusive growth

- Green economy: making societies and people more resilient
- Invest in sustainable solutions: fossil fuel subsidies must end, and polluters must pay for their pollution.
- Confront all climate risks (United Nations, 2022).

- **Resource mobilisation through green bonds** in the permitted areas like e-mobility -PPP mode of operation (FAME 1 & 2), waste management (Public Private Partnership), Micro irrigation & Solar Irrigation etc.

- **Global Warming:** Solarization of all petrol pumps, ultra-mega solar power projects; New missions on wind energy (WE) and waste to energy (WTE). Desilting and deepening of tanks along with renovation / servicing of embankments and afforestation for conserving water bodies and avoiding flooding
- Develop Bengaluru as e-waste management hub and generate an income by recovering precious metals, like bronze, gold.
- Increase the use of LED bulbs to 120.07 from 37.54 per 1000 population to reduce CO2 emission.
- Develop water security plans in 41 overexploited taluks, covering 1199 Gram Panchayats, under Atal Bhujal Yojana. Achieving potential micro irrigation area of 2 million hectares focussing over exploited areas on priority.
- Develop a high-resolution **Climate Risk Atlas** (CRA) to map critical vulnerabilities at the district level and better identify, assess, and project chronic and acute risks. Establish a state **climate-risk commission** to coordinate the environmental derisking Mission.
- Provide for **climate risk-interlinked adaptation financing** by creating innovative CVI-based financing instruments that integrate climate risks for an effective risk transfer mechanism. Risk financing instruments should integrate physical climate risks into investment decision-making to reduce the cost of financing and increase the deployment of such instruments.
- Finally, integrating **gender and backwardness** dimension across space in the climate change adaptation and mitigation policies. Focussing on socioeconomic vulnerability and disaster vulnerability is crucial for reducing inequalities arising from climate change..

Progress in HD is only possible when the negative consequences of the environment on poverty, inequality, health, education, and so on are taken care of. There is dire need to increase budgetary allocations adequate enough to support environmental protection, along with effective participation of civil society institutions and general public in 'Save Environment' mission.

2.6.9: Good Governance for Human Development

Unquestionably, governance and human development share a symbiotic relationship that determines the pace and direction of the progress that a state makes, the quality of governance has a significant impact on human development and vice versa.

- Shifting emphasis from output to outcome planning and monitoring. Development of an output-outcome framework for monitoring the implementation of schemes and establishing an evidence-based decision support system that drives policy formulation.
- Use of data science applications such as data layering, data visualization, machine learning and AI tools for localisation of SDGs, identification of focus areas for specific interventions, to better capture evidence of achievement of more complex outcomes, e.g., **school dropouts, vs. learning outcomes, estimation of GDP at GP level** for demand and resource-based planning etc. for inclusion & equity.
- **A project Management system** to monitor the implementation of mega projects to avoid cost escalation and ensure timely benefits to the masses.
- Impact evaluation of major beneficiary-oriented schemes and programmes through an independent evaluation system like Karnataka Evaluation Authority and effective utilization of evaluation output in redesigning the programmes and policies for more effective outcomes.
- To subsume existing institutions that deliver basic services – like the School Development Monitoring Committee (SDMC), Anganwadis, Primary Health Centres, Fair Price Shops- under the jurisdiction of the RLB.
- Innovations in use of technology for delivering better outcomes for the citizens Two novel projects of the State are KUTUMBA – a family data base of all the households in Karnataka and FRUITS a registration system for farmers to derive a range of benefits. These need to be implemented effectively for generating data base for effective planning and implementation of schemes.

- Emphasis on technology-led growth coupled with local government reforms is, an innovative strategy to address the challenge of generating growth with equity and can be described as the "Karnataka model" of development.
- Institutionalise the participatory governance and mobilise community agency to break low-accountability traps. In this backdrop, the state must advance subsidiarity as a governing principle for public policy.
- Democratise the processes of development with decentralization of funds functionaries and functions and strengthening community-based institutions. Enable communities themselves to take ownership of the last mile institutions – schools, PHCs, Anganwadis, - through the third tier of governance, the Gram Panchayat (GP) and engage in the decision-making process.
- Increase the size of district sector to provide adequate resource base for planning and implementation of schemes in human development sectors.
- Developing **District as a fulcrum of development**. Constructing a District Good Governance Index (DGGI) and strengthening institutional mechanism for participatory and effective planning at district level.
- Reforms in governance enabling communities themselves to take the ownership and accountability of development agenda.

2.6.10: Financing Human Development

- Revise the cost norms for all beneficiary-oriented programmes and schemes for human development where cost norms have remained constant over years, adjustment for annual inflation is needed to ensure adequate budgetary financing for human development programmes.
- Increase **allocations and expenditure on human development sectors** in coming budgets to reach the UNDP stipulated norms for human development goals. These norms are- for Public Expenditure Ratio 25 percent, Social Allocation Ratio 40 percent and Social Priority Ratio 50 percent and 5 percent for Human Expenditure Ratio. At present the State PER is 12 percent SPR is 46.5 percent and HER is 2.2 percent, which are well below the stipulated norms.
- Release Allocation Ratio and Expenditure Release ratio should be aimed at 100 percent for all programmes and schemes in all the departments to ensure better outcomes.

- Expanding the **scope of Avalokana** – New DSS software –to include age and gender of beneficiaries for monitoring the progress of the schemes from the perspectives of Child Budget and Gender Budget.
- Constructing Human Capital Index for Karnataka State.
- Exploring cost-sharing model of public-private partnership for financing human development under Atmanirbhar Bharat.
- The State has recognized the need for CSR funding to fill up the resource crunch. Akanksha - An integrated online platform has been developed with the support of UNDP to create a seamless interface between Private & Public Sector.

Conclusion

The road to equitable Human Development in Karnataka is very clear. This report has brought out the dimensions and magnitude of human development exclusions across regions, gender and social groups. Taking into account the performance of the State in Human development, there is a need to allocate more resources to human development sectors focusing on lagging regions to bridge the gaps in human Development.

The report brings out the achievements and short comings in all dimensions of human development. The incidence of poverty is declining in the State and this is the outcome of effective implementation of the central and State Poverty alleviation and employment generation programmes. However, malnutrition, quality education, health infrastructure still remains the top priorities. Skill development, rural entrepreneurship &generation of adequate employment with decent work environment is essential to harness the human resource potential. A detailed action plan across the human development sectors is presented in this chapter.

Focusing on child health and nutrition, education and skills and better employment will help the State to harness the demographic dividend. Encouraging civic and political participation by young people will help to give young people a voice in various important flora and help mainstream youth issues. It will also help to inculcate a sense of social responsibility and ownership among the state's youth population and catalyse social action.

Chapter - 3

Quality Education in the era of New Education Policy-2020

Chapter 3

Quality Education in the era of National Education Policy 2020

Section I: School Education

3.1: Introduction

This report anatomizes Karnataka's educational system with the aim to appreciate and encourage perseverance of excellent standards; to identify areas that will benefit from improvement in order to attain global educational goals; to record the state's progress towards achieving equitable quality education in comparison to, and with its immediate southern neighbours, and India as a whole. Quality Education is adopted as one of the seventeen UN's Sustainable Development Goals, and it will play a crucial part in bringing about global peace and prosperity. The National Education Policy, 2020 introduces extensive changes to education in order to make the learning process more personalized, meaningful and holistic in order to give the best possible chances for every child to realize the potential that they possess in the fields that would be best suited for their strengths and inclinations.

While analyzing the Net Enrolment Ratios of the Southern states, which are generally frontrunners in Human Development, Karnataka commendably performs well even amongst the southern states. It is notably the only southern state to have achieved a perfect NER of 100 at the lower primary level for both the genders. This is a direct consequence of the efforts undertaken with the underlying goal of education for all. Within Karnataka, districts like Dakshina Kannada and Bengaluru Urban have consistently performed well in the educational sector. While progresses have been made to ensure that younger children enter schools, advancements in higher education in Karnataka and the rest of India needs betterment in order to compete with, and achieve global standards in education. Karnataka is home to several reputable and esteemed institutions like ISRO, RRI, NAL, IIITB, NLSIU to name a few. These institutions have received nods from global superpowers. The potential of these institutions can be expanded with conscious and constant efforts to ensure improved enrolments in higher education.

In the overall ranking of the states for the performance of the SDG goals in the year 2020 and 2021, Kerala is at the first position with a score of 75, followed by Tamil Nadu and

Himachal Pradesh, who are in the second position. Andhra Pradesh,Goa, Karnataka and Uttarakhand share the third rank with a score of 72. Karnataka is the among the front runner states in the overall SDG performance.

However, with respect to SDG-4 related to education, Karnataka has been ranked in the category of a performer state with a score of 64. The highest score is for Kerala (80) in the SDG4 that takes the first rank and continues to be the front runner for SDG4. The other states which are the front runner are Tamil Nadu, Himachal Pradesh, Goa, Uttarakhand along with the union territories of Chandigarh, Delhi and Puducherry.

In this report, we statistically investigate Karnataka's initiatives and advancements in achieving literacy rates, enrolments across social groups, efforts to achieve retention in schools, schemes and plans like the Mid-Day Meal and their role in contributing to students' learning. While Karnataka is a frontrunner in several areas, there are other areas which need attention and will benefit from actively working on them.

3.2: Literacy Rates at the District Level

The growth in education in any state rests on the literacy rates. It is often argued that the literacy rates has a close correlation with the enrolment and retention of children in formal school education. In particular the literacy level of women has a direct bearing on increasing the enrolment of children particularly girls. It has been observed that the figures of literacy levels at the state often mars the differences that exist between districts as well as taluks. Table 3.1A and 3.1 B presents the literacy rates of the top 5 districts and bottom five districts in Karnataka respectively. It also records the literacy rates for rural, urban and the total for men and women.

Table 3.1 A: Districts with Highest Literacy Rates (Top 5)

District	Rural			Urban			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Dakshina Kannada	90.97	79.83	85.33	95.50	88.83	92.12	93.13	84.13	88.57
Bengaluru (U)	84.54	70.92	78.21	91.66	85.27	88.61	91.01	84.01	87.67
Udupi	89.85	78.65	83.91	95.22	89.21	92.13	91.41	81.58	86.24
Uttara Kannada	87.63	74.87	81.31	94.49	86.91	90.73	89.63	78.39	84.06
Kodagu	85.90	76.30	81.00	94.40	88.50	91.40	87.10	78.10	82.60

Source: Karnataka At A Glance - Statistical Report - FY 2019-20

Examining the Literacy Rates of districts in Karnataka based on 2011 census, it was observed that Dakshina Kannada stood at the top of the chart with a total literacy rate of 88.57. Dakshina Kannada is followed by other high achievers in Literacy Rates: Bengaluru Urban (87.67), Udupi (86.24), Uttar Kannada (84.06) and Kodagu (82.60). The gender difference is more pronounced in the rural part of the districts than the urban. Kodagu surprisingly records a higher female literacy rate in the urban which is around 13 percent.

Table 3.1 B: Districts with the Lowest Literacy Rates (Bottom 5).

District	Rural			Urban			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Yadgiri	58.02	36.05	47.05	80.03	63.92	72.01	62.25	41.38	51.83
Raichur	66.01	42.36	54.11	83.10	67.10	75.12	70.47	48.73	59.56
Chamarajanagar	64.80	51.06	57.95	83.29	73.64	78.39	67.93	54.92	61.43
Kalaburagi	69.08	46.86	58.09	85.12	71.91	78.61	74.38	55.09	64.85
Vijayapura	74.03	51.10	62.81	87.80	74.79	81.33	77.21	56.72	67.15

Source: Karnataka At A Glance - Statistical Report - FY 2019-20

Yadagiri occupies the bottom position in the chart with a Literacy Rate of 51.83. Other districts with low literacy rates are Raichur (59.56), Chamajanagara (61.43),Kalaburgi (64.85), and Vijayapur (67.15). The gender difference in the literacy rates among the bottom five districts is big ranging from 13 per cent for Chamrajanagara to 21 percent for Vijayapura and Yadgiri. The gender difference is higher in rural areas of the districts than the urban parts.

3.3: Literacy Rates at the Taluk Level

The literacy rates at the Taluk level are an important indicator of the human development index for the Taluks. In particular, the female literacy rate has ramification for the overall education of the Taluks. It has always been argued that the literacy of women at the household level has a direct impact on the enrolment at the school level. (**Table 3.2**)

Table 3.2 : **Taluks with Highest and Lowest Literacy Rates**

Taluks with Highest Literacy Rates)		**Taluks with Lowest Literacy Rates**	
Taluk	**Literacy Rate**	**Taluk**	**Literacy Rate**
Dakshina Kannada- Mangalore	91.99	Yadagiri-Yadgir	48.38
Uttar Kannada- Karwar	89.91	Raichur- Devdurga	49.49
Udupi- Udupi	89.16	Yadagiri- Shahapur	49.6
Bengaluru Urban- Bengaluru East	88.25	Ballari-Siraguppa	53.26
Kodagu- Madikeri	88.25	Raichur- Manvi	54.38

Source:Karnataka At A Glance - StatisticalReport-FY2019-20

Mangalore in Dakshina Kannada, Karwar in Uttara Kannada, Udupi in Udupi district, Bengaluru East in Bengaluru Urban and Madikere in Kodagu are the top five taluks that has the highest literacy rates. It may be worthwhile to find out if this has a bearing not only on the availability of schools and colleges in these specific taluks and correspondingly higher enrolment rates. It has to be noted that the taluks that have recorded the lowest literacy rates are again located in the districts that have recorded low development indicators including education indicators. The influence of the literacy rates to fuel the growth of education as well as other related development indicators needs to be recognised and hence addressed urgently.

Most of the taluks which are at the bottom with regard to the literacy rates are located in districts that occupy the lowest levels in literacy rates. The taluk level analysis helps state level policies and interventions to further focus on micro units beyond districts. The lowest literacy level taluks are in the Kalyana Karnataka region and bordering the erstwhile Andhra Pradesh. Yadagir and Shahapur of Yadagiri district; Devadurga of Raichur and Siraguppa of Bellari are the five taluks that register the lowest literacy level at the taluk level.

3.4: School Education & Quality Index (SEQI)

In an attempt to foreground school quality, NITI Aayog developed the School Education Quality Index (SEQI) As education is on the concurrent list, the role of the state is crucial to improve the school quality. The SEQI(for details refer to Pg., NITI Aayog 2017,) consists of 30 indicators that helps assess the delivery of quality education.

Among the states that have gone down in their ranking, Karnataka has gone down by 8 ranks and holds the 13th rank with respect to the reference year with an EI of 52.95. Himachal Pradesh (EI: 62.78) and Rajasthan (EI: 59.43) have gone down by 1 rank and occupy the 5th and the 7th position respectively. Maharashtra with the EI of 62.55 is in the 6th position(↓ 3 ranks) for the reference year. Uttarakhand with an EI of 48.15 occupies the 14th position for 2016-17 for the reference year (↓4 ranks).

Against this data, it will be important for us to examine why Karnataka has drastically declined in its ranking of the EI.

Table 3.3: ***Karnataka Overall Performance***

Karnataka Overall Performance		
Category/ Domain Rank	**Category/Domain**	**Education Index Reference year (Y1)**
3	Overall	69.57
1	Outcomes	81.93
1	Learning outcomes	95.37
5	Access outcomes	79.89
12	Infrastructure and facilities for outcomes	25.97
6	Equity outcomes	65.76
16	Governance processes	39.35
16	Governance processes aiding outcomes	39.35

Source: NITI Aayog

(Base year: 2015-16, Reference year: 2016-17)

Karnataka tops in learning outcomes. But it will have to pay attention to Infrastructure and facilities and the governance processes as well as the Governance processes aiding outcomes.

Performance Grading Index

Performance Grading Index (PGI measures the performance of States/UTs on a uniform scale to catalyse the transformational change in the field of school education. One of the objectives of the PGI is to provide insight on the status of school education in States & UTs, including key levels that drive their performance and critical areas of performance. It pinpoints the gaps

and helps States/UTs in prioritising the areas for intervention to ensure that the school education system is robust at every level.

The PGI structure comprises of total weightage of 1000 points across 70 indicators, and 26 sub indicators which are grouped under 5 domains, viz., Learning Outcomes (LO), Access (A), Infrastructure & Facilities (IF), Equity (E) and Governance Process (GP). Following the same approach of State PGI in the previous years, States/ UTs are graded.

Table 3.4: PGI Indicators

PGI Indicators	Targeted Score	2017-18	2018-19	2019-20	2020-21
Domain1-Learning Outcomes and Quality	180	160	160	160	160
Domain2-Access	80	69	75	72	76
Domain3-Infrastructure &Facilities	150	100	81	96	123
Domain 4-Equity	230	212	199	206	211
Domain 5- Governance Processes	360	165	240	279	292
TOTAL WEIGHT	**1000**	**706**	**755**	**813**	**862**

Source:

Karnataka is in Level III (Scores range 85%-90%). It is second highest along with Chandigarh in learning outcomes but is placed at lower level in Governance and infrastructure. (Performance Grading Index for States & Union Territories 2020-21, Ministry of Education, GoI 2022)

The Performance Grading Index is also estimated at District level with a more focused approach based on 83 indicators, across six domains and the maximum score is 600. Among the districts, Chitradurga, Belgavi& Dharwad are in category -III -Ati-Uttam -(score range 71-80%). Bengaluru North, Udupi, Chickmagaluru, Kalaburagi, Mysuru &Raichuru -6 districts are in Prachesta-1 category (51 to 60 %). The remaining 21 districts are in Uttam (61% -70%) category.

3.5: Net Enrolment Rate: The National Picture

The Gross Enrolment Ratio has always been used as an indicator to measure access to formal education in the absence of the Net Enrolment Ratio. The analysis in the following section has been made using the Net Enrolment Ratio.

For the year 2019-20, at the Elementary Levels (I-VIII), India records a NER of 90.44. The NER for boys is 91.28 and girls is 89.66. It is heartening to note that Assam, Delhi, Karnataka, Manipur, Meghalaya Mizoram and Punjab all have an overall NER of 100.

It is important for one to examine the NER at the secondary education level in two parts, i.e., 10thgrade and 12th grade. The reason for this is that not all states have included 11thand 12th grade as part of the schooling system. In particular, Karnataka has continued to

retain the pre university education that is equivalent to the 11th and 12th grade as in most states.

There is sharp decline in the NER figures for India at the secondary level with an overall value of 50.23. Though there is a negligible gender difference at the national level with boys recording 50.3 and girls 50.7. Investigating the Secondary Education (IX-X) enrolments across all states and union territories, it was seen that Punjab holds the top position on the chart with an overall NER of 81.54, followed by Kerala with an NER of 74.13. Tripura, Delhi and Karnataka closely follow Kerala with overall NERs of 73.79, 72.32 and 72.31 respectively. Punjab also secures the top position in female enrolments with a female NER of 85.81. Other highest female NERs in secondary education are held by Tripura (76.22), Delhi (75.38), Kerala (74.14) **and Karnataka (71.5).** Ladakh occupies the lowest position on the chart with an overall NER of 33.15.

India records a further downward trend in the NER for higher secondary school (11th& 12th) with an overall value of 32.34.There is slight increase in the gender gap when compared to the secondary school with the NER for boys at 33.26 and 31.42 for girls.

A comparison across the different states reveal that Lakshadweep occupies the highest position with an overall NER of 63.44, followed by Kerala (NER: 62.38), Punjab (55.46), Himachal Pradesh (55.38) and Chandigarh (54.92). The female enrolments in higher secondary education found that Kerala tops the chart with an NER of 65.94. Other regions that follow Kerala with high female NERs are Lakshadweep (64.75), Chandigarh (61.37), Punjab (59.15) and Himachal Pradesh (57.78).

Table 3.5 ***NER - Southern States***

NER Southern Indian States (2019-20)															
Primary (I-V)				**U.Primary (VI-VIII)**			**Elementary (I-VIII)**			**Secondary (IX-X)**			**H.Secondary (XI-XII)**		
Location	**Girls**	**Boys**	**Overall**	**Girls**	**Boys**	**Overall**	**Girls**	**Boys**	**Overall**	**Girls**	**Boys**	**Overall**	**Girls**	**Boys**	**Overall**
Andhra Pradesh	85.73	88.78	87.3	70.56	72.19	71.38	87.68	90.7	89.22	55.15	55.08	55.11	37.18	32.46	34.73
Karnataka	**100**	**100**	**100**	**89.49**	**90.11**	**89.8**	**100**	**100**	**100**	**71.5**	**73.06**	**72.31**	**43.39**	**36.43**	**39.78**
Kerala	90.52	90.68	90.58	81.77	81.66	81.66	93.14	93.37	93.21	74.14	74.03	74.13	65.94	58.99	62.38
Tamilnadu	84.72	84.56	84.64	70.74	72.07	71.41	89.13	89.05	89.08	54.02	55.65	54.86	46.79	40.1	43.36
Telangana	94.96	94.76	94.82	72.92	72.82	72.84	96.02	95.79	95.87	57.15	56.9	57.04	36.06	26.1	30.91
INDIA	**92.37**	**90.52**	**91.4**	**71.89**	**70.44**	**71.14**	**91.28**	**89.66**	**90.44**	**50.3**	**50.17**	**50.23**	**33.26**	**31.42**	**32.3**

Source: NIC School Education Report 2019-20, Report ID: 4011

The southern states have performed better with respect to human development indicators. Hence it may be useful to compare the performance of Karnataka with reference to the southern states. It is observed that **Karnataka has been the only southern state** that has an NER of 100 at the lower primary level and this is seen for boys as well as girls. This in a sense reflects the long years of sustained effort to make sure that no child is left behind. This is followed by Telangana(94.82), Kerala(90.58), Andhra Pradesh(87.3) and Tamil Nadu(84.64). All the southern states do not show visible gender difference.

Comparing the NER for the higher secondary level for the year 2019-20, Kerala records a high of 62.38 as against the national NER of 32.3. Karnataka records higher than the national average **at 39.78.** However, Tamil Nadu fairs better than Karnataka with a NER of 43.36. Andhra Pradesh is marginally higher than India with 34.73 and Telagana is below the national figure at 30.91.

Thus, the issues of concern are drop in NER at Secondary and higher secondary level.

3.5.1: District level NER - Karnataka

To capture the district variation, the NER for elementary and secondary level at the district level was analysed. The district of Bengaluru urban was the highest with 124.05.

Table 3.6: ***Lowest and Highest NER in Karnataka's Districts***

Districts with Lowest NER (Avg of Taluks)				**Districts with Highest NER (Avg of Taluks)**			
District	**NER Elementary**	**District**	**NER Secondary**	**District**	**NER Elementary**	**District**	**NER Secondary**
Mandya	74.34	Yadagiri	62.14	Bengaluru Urban	124.05	Udupi	103.82
Chamrajanagara	76.44	Kalaburagi	70.21	Vijayapur	103.60	Bengaluru Urban	103.00
Hasan	77.78	Bidar	70.54	Udupi	100.36	Dakshina Kannada	98.35
Chikkaballapur	78.08	Dharwad	71.61	Dakshina Kannada	95.61	Bagalkot	90.49
Kolar	78.70	Kodagu	71.65	Gadag	95.42	Bengaluru Rural	89.32

Source: DoE 2019-20

The other four districts that followed are Vijayapur, Udupi, Dakshina Kannada and Gadag. At the secondary school level, the district that topped was Udupi with 103.82 followed by Bengaluru urban, Dakshina Kannada, Bagalkot and Bengaluru rural in that order with a value greater than 89.

It was observed that Mandya district has the lowest in the NER at the elementary level at 74.34. The other districts that occupied the lowest ranks for NER at the elementary level are Chamarajnagar, Hassan, Chikaballapur and Kolar respectively with a value less than 79. The low NER at Elementary level indicates highest deprivation with respect to education, access to knowledge and better life. These districts need focus from the bottom.

At the secondary level, Yadagiri district with a value of 62.14 recorded the lowest NER. The other districts that were at the bottom of the table were Kalaburgi, Bidar, Dharwad and Kodagu. It may be useful to consider the low NER in the above districts with the higher number of children from SC and ST households.

3.5.2: Net Enrolment Ratio for Taluks in Karnataka

While district level data allows one to locate specific districts that are performing well with respect to education indicators, it may be important to examine data at the Taluk level to identify Taluks which may be performing high/low contradictory to the performance of the district.

Table 3.7: ***Top Performing Taluks As Per NER***

Taluks with Highest NER			
Taluk	**NER Ele.**	**Taluk**	**NER Sec.**
Bengaluru Urban - Bangalore South	152.18	Uttar Kannada- Joida	162.88
Bengaluru Urban- Anekal	130.62	Uttar Kannada- Siddapur	133.85
Uttar Kannada- Joida	117.99	Uttar Kannada- Karwar	121.25
Dharwad- Hubli	115.79	Bengaluru Urban - Bangalore South	119.35
Vijayapur- Bijapur	114.5	Udupi- Karkala	116.89

Data written as District-Taluk, Source: DOE 2019-20

Among the taluks in Karnataka, the highest NER at the elementary level is Bengaluru South. The other taluks in the top ranks are Anekal (BU), Joida (Uttara Kannada), Hubli (Dharward) and Bijapur (Vijayapur) with a NER of above 114. At the secondary level, Joida, Sidapur and Karwar (all from Uttara Kannada) take the first three ranks with a value over 121. Bengaluru South and Karkala from Udupi occupy the 4th and 5th position with a value of above 116.

Table 3.8: Bottom *Performing Taluks As Per NER*

Taluks with Lowest NER			
Taluk	**NER Elementary**	**Taluk**	**NER Secondary**
Belagavi- Athani	29.64	Belagavi- Athani	27.88
Dharwad- Dharwad	45.9	Dharwad- Dharwad	38.99
Mandya- Nagamangala	62.65	Uttar Kannada- Haliyal	47.26
Chikkaballapur- Gudibande	64.08	Kalaburagi- Chincholi	53.92
Uttara Kannada - Haliyal	67.03	Uttar Kannada - Honnavar	55.31

Data written as District-Taluk, Source: DOE 2019-20

The taluks that have recorded the lowest NER at the elementary level of 29.64 is Athani(Belgavi). The other Taluks that are at the bottom of the table are Dharwad(Dharwad), Nagamangala(Mandya), Gudibande(Chillaballapur and Haliyal(Uttar Kannada) with a value lesser than 67.03. Athani(Belgavi) has recorded the lowest NER even et the secondary level. The other taluks that are the at the lower end are Dharwad(Dharwad), Chincholi(Kalburgi) and Honnavar(Uttar Kannada) with a NER less than 55.

3.6: Gender Gap in Enrolment

At the elementary level, the Gender Gap among the districts range from 0.90 to 0.97 Vijayapura records the lowest with 0.90 while Uttara Kannada records the highest with 0.97. At the secondary education level, the Gender Gap ranges from 0.90 (Udupi) to 1.01 (Hassan). When the Gender Gap in Enrolment at the elementary level was examined at the Taluk level, Badami in Bagalkot recorded the lowest at 0.85 and Yadgir of the Yadagiri district recorded the highest at 1.08. The Gender Gap in the enrolment at the secondary level was examined, Tumkur recorded the lowest at 0.77 while Alur Taluk of Hasan district recorded the highest at 1.14.

3.7.1 Pupil Teacher Ratio at the District Level

The Pupil Teacher ratio is an important indicator of school quality. While the data is available for sanctioned and working schools at the elementary and secondary level, the analysis was

based on the working schools at these two levels. The data at the district and taluk level are presented separately for the top five and bottom five districts and taluks.

The Pupil Teacher Ratio for Karnataka at the district level for elementary level ranges from 17.02 for Chikkamagalur to Yadagiri with 47.50. At the secondary school level the PTR range is from 9.7 in Hassan district to 30.64 for Bellari district.

Table 3.9: ***Districts with Lowest and Highest PTR: Elementary and Secondary***

Districts With Lowest PTR (Avg of Taluks)								**Districts With Highest PTR (Avg of Taluks)**							
District	**PTR SE**	**District**	**PTR WE**	**District**	**PTR SS**	**District**	**PTR WS**	**District**	**PTR SE**	**District**	**PTR WE**	**District**	**PTR SS**	**District**	**PTR WS**
Hasan	13.75	Chikkamagaluru	17.02	Hasan	7.71	Hasan	9.7	Koppal	27.76	Yadagiri	47.5	Yadagiri	23.97	Ballari	30.64
Chikkamagaluru	13.92	Hasan	17.04	Kodagu	9.03	Kodagu	10.68	Yadagiri	27.23	Ballari	45.09	Ballari	23.52	Yadagiri	29.82
Kodagu	14.07	Kodagu	17.82	Mandya	9.14	Mandya	11.53	Raichur	26.87	Raichur	40.94	Koppal	22.41	Koppal	27.55
Uttar Kannada	14.57	Kolar	18.12	Chikkamagaluru	9.2	Chikkamagaluru	11.58	Dharwad	26.64	Koppal	39.12	Raichur	19.71	Raichur	25.8
Kolar	14.8	Uttar Kannada	19.96	Ramanagar	9.51	Ramanagar	11.66	Ballari	26.19	Belagavi	33.34	Belagavi	18.19	Belagavi	23.03

PTR_SE: Sanction Elementary, PTR_WE: Working Elementary PTR_SS: Sanction Secondary, PTR_WS: Working Secondary

The other top performing districts with low PTR at the elementary level are Hassan, Kodagu, Kolar and Uttara Kannada with a PTR less than 20. At the secondary level, the other top performing districts with low PTR are Kodagu, Mandya, Chikmagaluru and Ramanagar with a PTR of less than 12. In contrast the poor performing districts at the elementary level in addition to Yadagiri are Ballari, Raichur, Koppal and Belagavi with a PTR (33-45).

3.7.2 PTR at the Taluk Level

Based on the data available for the year 2019-20, the range of the pupil teacher ratio at the Taluk level for Elementary School is 12.01(Karwar in Uttara Kannada district)&53.24 for Savadatti in Belagavi district.

The range of the PTR among the taluks in Karnataka for secondary school is from 6.56 (Karwar in Uttara Kannada) to 42.05 for Siraguppa in Ballari district.

Table 3.10: ***Taluks with Lowest and Highest PTR: Elementary And Secondary***

Taluks With Lowest PTR								Taluks With Highest PTR							
Taluk	**PTR SE**	**Taluk**	**PTR WE**	**Taluk**	**PTR SS**	**Taluk**	**PTR WS**	**Taluk**	**PTR_ SE**	**Taluk**	**PTR WE**	**Taluk**	**PTR SS**	**Taluk**	**PTR WS**
Uttara Kannada Karwar	9.1	Uttar Kannada Karwar	12.01	Hasan Sakleshpura	4.9	Uttar Kannada Karwar	6.56	Belagavi Savadatti	29.46	Ballari Siraguppa	53.24	Ballari Siraguppa	27.59	Ballari Siraguppa	42.05
Chikkamagaluru Sringeri	11.55	Kolar Srinivaspura	14.34	Uttar Kannada Karwar	5.29	Hasan Sakleshpura	6.76	KoppalKushtagi	29.13	YadagiriShorapur	53	Yadagiri Shahapur	26.72	Yadagiri Shahapur	33.09
Tumkur Kunigal	12.24	Ramanagar Magadi	14.99	Hasan Alur	6.36	Hasan Hassan	7.77	YadagiriShorapur	28.54	YadagiriShahapur	50.08	BallariHospet	24.89	KoppalGangavathi	32.24
Tumkur Turuvekere	12.3	Hasan Hassan	15.01	Dakshina Kannada Mangalore	6.91	Hasan Alur	8.2	GadagShirahatti	28.5	Raichur Devdurga	48.89	KoppalGangavathi	24.6	Raichur Devdurga	31.83
RamanagarMagadi	12.4	Kodagu Somawarpet	15.07	Tumkur Turuvekere	6.93	Kodagu Somawarpet	8.33	Koppal Yelburga	28.39	Ballari Sonduru	45.09	Belagavi Gokak	23.95	Ballari Hospet	31.11

Data written as District-Taluk

PTR_SE: Sanction Elementary, PTR_WE: Working Elementary

PTR_SS: Sanction Secondary, PTR_WS: Working Secondary

The other four taluks with the lowest PTR around 15 at the elementary level are Srinivaspura, Kolar; Magadi, Ramanagar; Hassan, Hassan; and Somawarpet in Kodagu district.

At the secondary level the other four with low PTR of less than 9 are Sakleshpura, Hassan and Alur in Hassan district; and Somawarpet, (Kodagu).

The other four among the bottom five taluks with the highest PTR of 31 are Shahapur, (Yadagiri); Gangavathi, (Koppal); Devdurga, (Raichur) and Hospet, (Ballari).

The PTR across the taluk show large classes(45-53) at the elementary level which is not unmanageable. However, the problem perhaps lies in the distribution of this student strength across different grades/standards which may be a challenge. The management of the MDM scheme being the responsibility of the teacher will further reduce the actual instruction time that has direct bearing on student learning outcomes.

3.8: Dropout- District and Taluk

Another sensitive indicator of school quality is the dropout rates. The dropout rates by social groups cross the districts in Karnataka will provide important insights for interventions.

3.8.1: General Category

For the year 2019-20, the range of school dropout rates for General category at the lower primary level is zero (for udupi, Uttara Kanada and Shivamoga) to the highest for Chamarajanagara with 21.32.. Additionally, Yadagiri, Kolar, Bidar and Kalburgi also recorded dropout rates above 13 among girls at the lower primary in the General category. At the upper primary level, the dropout rates range from 0 (Dakshina Kannada, Udupi) to 30.86 for Yadagiri, Raichur, Haveri and Kalburgi that recorded more than 24. Surprisingly, Mandya that has not figured amongst the districts with the highest dropout rates at the lower primary level has recorded 25.46 for girls at the upper primary level. The dropout rates at the secondary school level ranges from 0 for (Ballari and Udupi) to a high of 60.23 for Haveri. The dropout rate is the highest for boys at 65.65. The other districts that have a dropout rate > 49 are Yadagiri, Belagavi. Chitradurga and Mandya.

3.8.2: Scheduled Castes

At the lower primary level, the dropout rates among the scheduled castes range from nil to 4.66 in Bidar. Even among districts having the highest dropout rates among the SCs in the upper primary level, the value is around 2 per cent. The dropout range for the secondary level for the SCs is 8.15 (Bengaluru North) to 36.1 in Bidar. Bidar has the highest dropout rate(37.97) among boys among the SCs in the state.Koppal, Raichur, Belagavi Chikkodi and Kalburgi record higher than 22. However, **the dropout rates are lower than for general category. This is the favourable outcome of financial assistance and support facilities for these students.**

3.8.3: Scheduled Tribes

Among the STs at the lower primary level, the dropout rates range from nil to 5.44 for Bidar.At the upper primary level, the highest dropout rate is 8.93 for Kalburgi. Uttara Kannada, Belagavi Chikkodi, Belagavi and Bidar register a dropout rate of over 5. At the secondary level the dropout ranges from 5.91 (Bengaluru North) to about 34 by Bidar and Kalburgi. Uttara Kannada, Belagavi Chikkodi and Belagavi also register a dropout rate of over 25.

3.8.4: School Dropouts and Learning Outcomes:

Another sensitive indicator for school quality is the learning outcomes of students across districts for different levels of school education. The nexus of learning outcomes is inextricably intertwined with dropout rates. At the school level, the teaching learning process, teacher quality, the class size, the active instructional time, the medium of instruction, school community interaction, leadership and governance factors impact learning outcome of students and drop out rates.

The household factors play an equally important role in influencing student attendance and learning outcomes. These factors, range from food security, disposable income at the family level/poverty, the matching of school language with language spoken at home, prior learning, time and support for learning at home, parental perceived returns from schooling, literacy levels of parents and members in the household, distance of school from home among others. In addition, factors related to age, caste, gender, availability of functional toilets and cultural practices like early marriage among girls affect the dropout of girls.

Therefore, At the state level, good infrastructure, nutritional support for children through mid-day meals schemes, incentives in the form of textbooks, scholarships, bicycles have positively impacted and enhanced the retention of children in schools.

3.9: Resources & Outcomes

Given the growing demand for secondary and higher education, it may be useful to devise innovative mechanisms to encourage private partnership to meet the aspirations of the youth in this country. To better capture the private participation in school education, it may be important to compare the expenditure made against the number of students served in the government and the private management schools. Best practices in terms of budget allocation and expenditure need to be systematically researched to derive new insights to reorganise the budget in ways that it can impact the overall quality of education.

Table 3.11: Budget Allocation and Expenditure on General Education (HOA-2202)

(Rs. In Lakhs)

Education Department	2016-17				2017-18		2018-19		2019-20	
	Budget Allocated (Revised)		Expenditure		Budget Allocated (Revised)	Expenditure	Budget Allocated (Revised)	Expenditure	Budget Allocated (Revised)	Expenditure
	Plan	Non-Plan	Plan	Non-Plan						
Elementary Education	384105.72	657861.96	369398.17	659308.7	941069	1125444.3	1461332.9	1262955.9	1539931.5	1402495.95
Secondary Education	126124.33	377762.37	124013.98	376388.97	500178	558634.92	612720.67	646638.44	714885.5	715543.91
Higher Education	92615.49	246207	81505.44	242024.43	287717.82	280270.58	265232.21	270360.56	275232.9	370316.79
Adult Education	2187	419	3584	405.86	1299	399.74	1304	1312.8	187.17	176.37
Language Development	500	3158	500	3263.41	3683	3597.15	4123	4659.88	4931	5809.04
General	25943.81	127	12979.88	72.65	31098	18349.12	17682.92	18408.34	16135.65	15726.74
Total	**631476.4**	**1285535**	**591981.5**	**1281464**	**1765045**	**1986695.8**	**2362396**	**2204335.9**	**2551304**	**2510068.8**

Source; FD, GoK

State Initiatives

- School dropout period of children out of school is considered to be 7 days instead of 60 days.To prevent absenteeism of children and to attend schools regularly Education Coordinator (ECO) is appointed as Attendance Authority. In case absenteeism of more than 7 days is found, ECO is supposed to visit the students' family to persuade the parents to bring their children to schools and this method is being implemented.
- Free uniform, text books, mid-day meals plan, Ksheerabhagya, vitamin tablets etc. are provided to encourage students to attend schools regularly.
- Scholarships and admissions in hostels are provided to coordinate different incentives given by other departments regarding Child Education.
- Totally 71 Kasturba Gandhi Balika Vidyalaya(KGBV) schools and 86 KKGVB Hostels are opened in educationally backward blocks so that drop out girl students are admitted to continue their education on priority basis.
- Accommodation is provided to students in the hostels run by other departments.
- Action is taken to collect the data of all children who have come to mainstream in the Vidyavahini software.

BENGALURU: A report on midday meals in the state by the Karnataka Evaluation Authority says that 2.1 lakh children — 6.4% of total children in government schools — do not get breakfast at home. For them, milk given in school is the first meal of the day, pointing to the need of expanding the midday meals to breakfasts too. Noting that milk and midday meal scheme have done wonders in enrolment, retention, learning levels and health of children. (Times of India-March 11, 2021)

Impact of COVID-19

The COVID-19 pandemic brought about the Learning Loss phenomenon that was widely observed in school-going children. Learning Loss is observed as a loss of academic skills over an extended break from school- usually during summer breaks. Learning loss includes forgetting and losing expertise over skills that were previously learned during the academic year, such as mathematical skills, reading skills etc. ASER's study of rural Karnataka's educational status in 24 out of the existing 30 districts revealed that in children aged 5-16, a decline in reading skills was seen in the year 2020 when compared to the year 2018. The different levels of reading were categorized as: Not even a letter, Letter, Word, Std 1 Level Text, Std 2 Level Text. The report revealed that there were 40.3% children in grade 1 who could not read a single letter in 2018 and this number increased to 56.8 % children who could not read in 2020. Similarly, the percentage of children who could not read a single letter has increased across grades 1-8 (except grade 6) in 2020 in comparison to 2018. Similarly, the percentage of children who could not recognize numbers 1-9 (arithmetic skills) have increased across grades 1-8

- Nali-Kali programme to provide quality education.

3.10: Way Forward

Despite the high performance at the primary level of education, secondary education lags considerably in the state of Karnataka. It should be distinctly noted that all the education outcomes of enrolment, transition and retention falls sharply at the secondary and higher secondary level. Dropout is inextricably linked to these parameters. This can be attributed to number of factors which include cultural, environmental, school-based or socio-economic factors. NITI Aayog annually ranks and measures the progress of the Indian states on

different SDGs, highlighting their performance and journey towards achieving SDGs including SDG 4.

The analysis of School Education and quality Index as well as Performance Grading Index indicated the low performance of the State in infrastructure and Governance processes. Therefore, to improve learning outcomes, it is essential to focus on these sectors.

Improving Infrastructure and Learning facilities

The following are the bottom 10 talukas without basic infrastructure facilities like Girls Toilet, Drinking water, Library etc. and teaching learning support facilities like Science kit Maths kit etc. These talukas to be given top priority with higher level of resource transfer.

- **Without Functional Girls Toilets**

District	Taluk	number of schools without functional girls toilet	number of schools without functional girls toilet(%)
Kalburgi	Chittapur	34	11.2
Yadgir	Hunisigi	28	11.1
Yadgir	Shorapur	36	10.6
Kalburgi	Aland	38	8.9
Kalburgi	Yadrami	12	8.05
Kalburgi	Kalagi	15	8.02
Kalburgi	Chincholi	28	8
Ballari	Hadagali	19	7.78
Raichur	Devdurga	33	7.46
Kalburgi	Sedam	24	7.29

Library

District	Taluk	Number of Schools without library	Number of Schools without library(%)
Yadgir	Hunisigi	85	33.7302
Yadgir	Shorapur	100	29.4118
Bidar	Bhalki	124	29.3144
Davanagere	Nyamati	30	27.7778
Yadgir	Shahapur	84	26.0062
Bidar	Kamalanagara	30	25.4237
Raichur	Maski	77	23.1928
Kalburgi	Shahbadha	25	22.7273
Yadgir	Vadagera	23	22.1154
Yadgir	Gurumithakala	39	21.9101

Drinking Water

District	Taluk	number of schools without drinking water facility	number of schools without drinking water facility(%)
Kalburgi	Aland	19	4.46
Kalburgi	Kamalapura	11	4.16
Raichur	Devdurga	15	3.39
Chitradurga	Holalkere	9	2.87
Vijayapura	Muddebihal	7	2.47
Yadgir	Shorapur	8	2.35
Vijayapura	Talikote	5	2.34
Koppal	Kushtagi	6	1.73
Bidar	Humnabad	5	1.65
Ballari	Hadagali	4	1.63

Without Science Kit

District	Taluk	number of schools without functional science kit	number of schools (%)
Dharwad	Navalgund	64	52.03
Bidar	Hulasuru	37	50.00
Dharwad	Annigeri	40	45.98
Udupi	Kapu	43	45.26
Kalburgi	Chittapur	136	45.03
Chikkamagalur	Sringeri	25	44.64
Udupi	Bramhavara	65	42.21
Vijayapura	Talikote	89	41.78
Bidar	Bhalki	173	40.90
Belavi	Kitthuru	56	40.58

Without Maths Kit

Dist	Taluk	number of schools without functional maths kit	No of schools (%)
Dharwad	Navalgund	49	39.8374
Dharwad	Annigeri	31	35.6322
Vijayapura	Talikote	70	32.8638
Bidar	Hulasuru	24	32.4324
Chamarajanagara	Yalandur	27	32.1429
Kalburgi	Chittapur	96	31.7881
Kalburgi	Gulbarga	308	29.9029
Vijayapura	Sindagi	118	28.7805
Bidar	Bhalki	118	27.896
Koppal	Kushtagi	94	27.2464

Without Computer Aided Learning Lab

District	Taluk	number of schools without functional CAL lab	number of schools (%)
Bagalkot	Badami	208	70.99
Haveri	Ranebennur	248	69.08
Bagalkot	Guledagudda	57	67.86
Haveri	Byadagi	114	67.86
Belagavi	Nippani	161	65.98
Belagavi	Mudalagi	141	65.89
Gadag	Gajendragad	84	65.63
Gadag	Mundargi	97	65.54
Bidar	Hulasuru	48	64.86
Belagavi	Hukkeri	272	64.30

In terms of ensuring that formal schooling is accessible to all, particularly with children with special needs, Karnataka has not only made schools open to CWSN, and has provided ramps. They have also provided provisions in terms of transport allowances.Uttara Kannada, Ramanagar, Haveri ,Gadag and Chikmangalur are the districts that record the highest children with special needs which is less than 2 percent. However, Yellapur taluk in Uttara Kannada records close to 5 percent CWSN.

3.11: Quality and Inclusive Education - Implementing National Education Policy

As per National Education Policy (NEP Clause 4.26): Every student should be imparted vocational crafts, such as carpentry, electric work, metal work, gardening, pottery making. Internship opportunities to learn vocational subjects may be made available to students throughout Grades 6-12, including holiday periods. Vocational courses through online mode will also be made available.

Indian Knowledge Systems, including tribal knowledge and indigenous and traditional ways of learning, will be covered and included in mathematics, astronomy, philosophy, yoga, architecture, medicine, agriculture, engineering, linguistics, literature, sports, games, as well as in governance, polity, and conservation

6 core areas to be concentrated:

- Arts and Culture
- Teacher Training
- Digital Library

- Language Learning
- Vocational Skills
- Orienting Dropouts and mainstreaming them.

In order to encourage smooth transition of children and main stream drop outs and for implementing the National Education Policy (NEP) there is a need to establish **Centres of Excellence / Skill Development Centres at all Educational centres.** Ideally, the above-mentioned **Centres of Excellence / Skill Development Centres at all Educational centres** should work with the technical institutions to update and upskill.

The initiative in Vocational education needs a greater fillip. There are about 75000 dropout children, it may be useful to transform vocational education within the school in ways that it focuses of developing skill sets with knowledge for all students in secondary schools post 9th grade. The need is to make the shift of not looking at vocational education in isolation but integral to quality education and technology that will enable students to learn through multiple languages through a click of a button.

- It may be useful to collaborate with NGOs like Labournet located in Karnataka that have demonstrated strength in helping several state governments to implement vocational education schools and ITIs. They prepare students for early employment option through specific trade-based skilling and prepare them for interoperable options for higher education.This will closely link to the NEP 2020 where multiple entry and exit options will be introduced in higher education.
- The collaboration with tata Technologies to upgrade 150 ITIs and introducing 23 courses (June 2022) is a concrete step in this direction.
- Drawing on initiatives in Haryana, Punjab, Assam and Odissa, where digital content is widely used along with lab facilities to learn the practical aspects will help to bridge the shortage of teachers/trainers in vocational education and introduce students to technology which is integral to be gainfully employed in today's changing employment space. There are 4687 high schools, out of them, 2150 schools do not have ICT Labs. These to be covered under **TALP and other ICT initiatives**. To encourage Science education, establish **STEM labs in Girls' high schools**.
- Provide transport facilities and financial assistance and ensure safe environment at school to increase the enrolment of girls.
- Establishment of Special Education Zones in educationally backward talukas with Vocational Education and Skilling Hub (VESH) in every SEZ.

- Start Early Childhood Care and Education in Anganwadi centres and develop model Anganwadi centres. A Model School with pooling of resources and feeder schools at Hobli/ GP level
- It is recommended that SDMC for Urban Schools must be created and Urban Local Government must also undertake to start Child Budgeting in their Budget.
- The NEP 2020 has emphasised the need for inclusive education where Karnataka has made strides in reaching out to children with disability. ECCE Workers and Aganwaditeachers to be trained in Udisha portage which has already been tried in Karnataka for early intervention of all children including children with dis/abilities. To coordinate with block resource centres for IE for providing necessary support with health and professionals.
- There is a need to focus on completion of schooling at grade 12, which will mean the transition of students from grade 8, 9, 10 and 11 to assess the eligible population for higher education. In the absence of this data, the rush to increase the enrolment in colleges will be futile as that is dependent on the student population that has completed grade 12.
- Karnataka is now focusing on evidence-based policy by pooling and analysing the data at taluk/GP level. This has been extremely useful to locate specific taluks and villages which require interventions. The data analytics helps to find out correlations among the variables to locate specific variables and populations groups that require urgent attention in the hope to reduce inequality among different populations.
- The close correlation between, health indicators, women's literacy rates, livelihood opportunities, migration and education need to be carefully studied to understand multiple interventions beyond the school education to enhance school related educational outcomes.

Financing NEP:

- The cost for equipping each school with equipment, cognitive tools, vocational labs as mandated by NEP is estimated at Rs 42 lakh for infrastructure and 20% annual recurring costs for operation and maintenance. Karnataka has approximately 49800 Government Schools, establishing above mentioned infrastructure would mean Rs. 20,916 crores. A model school in every GP is envisaged, which means 6000 schools in the state with the estimated cost of Rs 2,520 crore.

- Public Private Partnership (PPP) should be encouraged to build such infrastructure. In order to Boost private sector investment in social infrastructure projects, under Atma Nirbhar , Enhanced Viability Gap Funding only for Social Infrastructure Projects (Education, Health, Skill Development) has been increased to 40% by Center Government with a matching state share and 20% by Private Partner.

Section II Higher Education

3.12 Introduction

The 21st century is witnessing unprecedented changes in the sphere of development. According to the United Nations World Population Prospects Database (2012), India will soon have the largest working population of the world. To convert this challenge to an asset we need to transform this work force into knowledge workers. India as a key global player, will have to focus on transforming higher education and prepare this young work force to be a part of this international competition regime. It is predicted that like the revolutionary change in the industrial sector of India during the nineties, India is poised for a similar revolution in the field of higher education during the coming decade. The key drivers of change according to the University Grants Commission (UGC), the National Planning Commission and the National Knowledge Commission, are Expansion, Equity and Excellence (3Es).

Against this background, higher education is seen as critical to Karnataka's emergence as a major player in the national and global knowledge society and economy. The role of higher education in support of overall education is clearly seen as the country moves from the universalisation of basic education (RTE) to the progressive massification of secondary education. A closer examination of the preparedness of Karnataka particularly of higher education to respond to the challenges of the 3Es is examined through the following sections.

3.13: Higher Education Scenario-Infrastructure

The state is poised to play a key role in leading the transformation. Historically, the state and particularly the capital city of Bangalore has been a pioneer in establishing science and technology institutions that have been comparable to international standards. The Indian

Institute of Science and other national research institutions like the National Centre for Biological Sciences (NCBS), Raman Research Institute (RRI), Indian Institute of Astrophysics (IIA), Indian Satellite Research Organisation (ISRO), National Aeronautics Laboratory (NAL), Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR), National Law School of India University (NLSIU), Indian Institute of Science, Bangalore (IIMB) and International Institute of Information Technology, Bangalore (IIITB), are among the best research and teaching institutions in the country.

These institutions have the state of art facilities in terms of laboratory and libraries that can be an envy of other universities and institutions in the country. It is unfortunate but critical to point out that the growth in higher education in Karnataka and for that matter India has been extremely uneven with regard to several dimensions.

3.13.1: Distribution of Higher Educational Institutions

At the national level, in the year 2019-20, the total number of universities in India is 1043. The distribution of the higher educational institution at the national level reveal that the highest proportion is the state public universities, closely followed by the state private universities

Table 3.12: **List of Universities by Type**

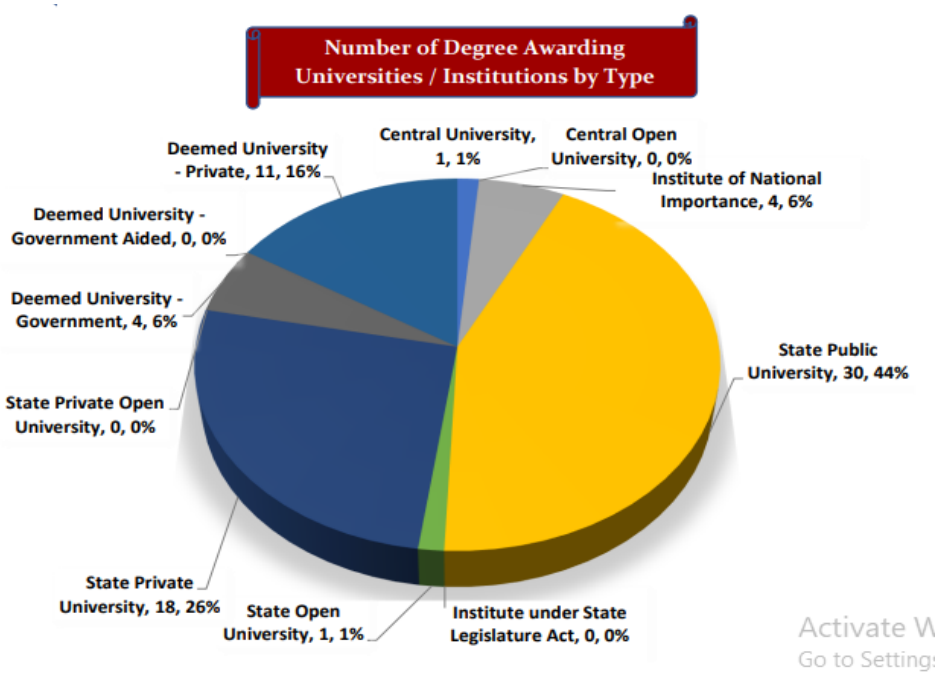
Sl.No.	State/Uts	All India	Percentage	Karnataka	Percentage
1	Central University	48	4.60	1	1.45
2	Central Open University	1	0.10		0.00
3	Institute of National Importance	135	12.94	4	5.80
4	State Public University	386	37.01	30	43.48
5	Institute under State Legislature Act	5	0.48		0.00
6	State Open University	14	1.34	1	1.45
7	State Private University	327	31.35	18	26.09
8	State Private Open University	1	0.10		0.00
9	Deemed University-Government	36	3.45	4	5.80

10	Deemed University-Government Aided	10	0.96		0.00
11	Deemed University-Private	80	7.67	11	15.94
12	Grand Total	1043	100	69	100

Source: AISHE 2019-20

India has 135 institutes of National importance, 80 deemed universities private and 36 deemed universities government. Karnataka has a total of 69 universities. The distribution of different types of universities in Karnataka follow the national pattern with 30 state public universities and 18 state private universities.There are 11 deemed universities private and 4 deemed universities state.There are 4 institute of national importance, 1 central university and 1 open university in Karnataka.

Figure-3.1 Karnataka State 2019-20



3.13.2: Premier Educational Institutions in Karnataka

In addition to above mentioned universities, Karnataka is a major place for independent/autonomous research or specialized institutions like Raman Research Institute; Institute for Social and Economic Change (ISEC); National Institute of Advanced Studied (NIAS); National Centre for Biological Sciences (NCBS) and such specialized institutions totaling to more that 25 of them. These institutes are not only contributing to specialized

research but also to the large social development within and outside the state. The form and spectrum of higher education institutions in the State of Karnataka is wide and varied, from independent research institutes to social, scientific research across institutions.

Karnataka and in particular Bengaluru has been home to several premier institutions in science and technology as well as humanities and social sciences. The Indian Institute of Science, Bengaluru, The National Centre for Biological Sciences, The Raman Research Institute, The Indian Institute of Astrophysics, The Jawaharlal Centre for Advanced, Scientific Research, The Indian Institute of Information Technology are some of the leading S&T institutions in Bengaluru. The above institutions along with leading Information technology industries, like, the INFOSYS, WIPRO, BIOCON, have spearheaded innovations in Karnataka and made Bengaluru the IT capital/Silicon Valley of India. In addition, Bengaluru also houses the National Institute for Fashion Design, Indian Institute of Management, Bengaluru, Institute of Social and Economic Change, The National Institute of Advanced Studies among others. Karnataka has an IIT in Dharwad. Among the leading private universities in India, The Manipal Academy of Higher Education, Christ deemed to be University and Azim Premji University need special mention.

3.13.3: Colleges

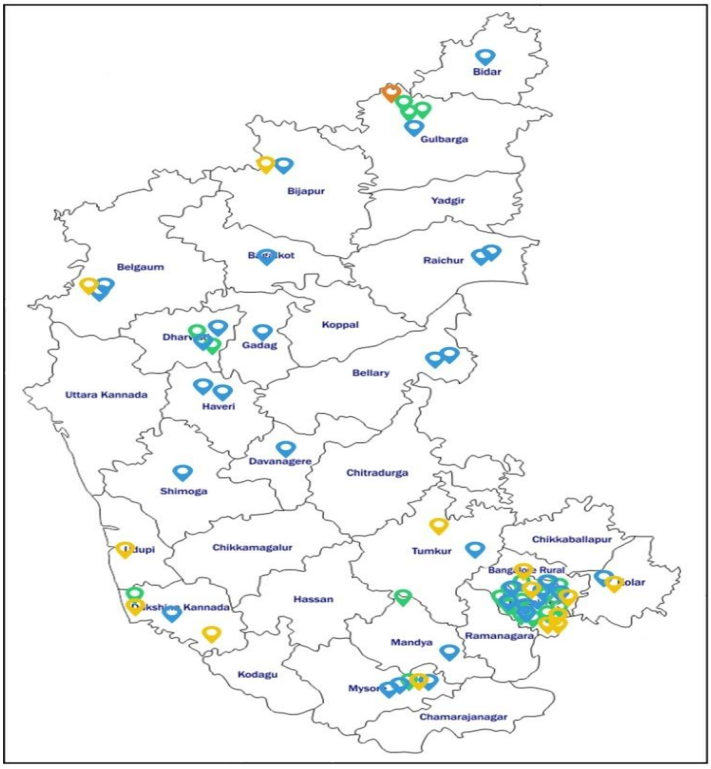
Apart from these higher educational institutions, there are 3971 colleges, out of 39,955 colleges in India (AISHE, 2020). Nearly 70% of these colleges are private unaided(2793). The remaining 30% of these colleges are government and government aided colleges. The role of the private sector in higher education in Karnataka is significant and it may be important to examine the distribution of these institutions across different districts as well as professional and general colleges.

Table 3.13: List of Colleges by Type (Based on actual Response)

Sl. No.	College Type	All India	Percentage	Karnataka	Percentage
1	Private Un-Aided	26054	65.21	2793	70.33
2	Private Aided	5336	13.36	471	11.86
3	Government	8565	21.44	707	17.80
4	Grand Total	39955	100	3971	100

Source: AISHE 2019-20

Figure 3.2: College Distribution across Karnataka- A Snapshot



Legend

- Central University
- Deemed University
- State Private University
- State Public University

State Public Universities
1. Bangalore University, Bengaluru
2. Bengaluru City University, Bengaluru
3. Bengaluru Dr B R Ambedkar School of Economics University, Bengaluru
4. Bengaluru North University, Kolar
5. Davangere University, Davangere
6. Gulbarga University, Gulbarga
7. Karnataka Janapada Vishwavidyalaya, Haveri
8. Kannada University, Hampi
9. Karnataka State Law University, Hubli
10. Karnataka State Open University
11. Karnataka State Rural Development and Panchayat Raj University, Gadag
12. Karnataka State Women University, Bijapur
13. Karnataka University, Dharwad
14. Karnataka Veterinary, Animal & Fisheries Science University, Bidar
15. Karnataka Samskrit University, Bengaluru
16. Karnataka Folklore University, Haveri
17. KSGH Music and Performing Arts University, Mysore
18. Kuvempu University, Shimoga
19. Maharani Cluster University, Bengaluru
20. Mandya University, Mandya
21. Mangalore University, Mangalore
22. Nrupathunga University, Bengaluru
23. National Law School of India University, Bengaluru
24. Raichur University, Raichur
25. Rajiv Gandhi University of Health Sciences, Bengaluru
26. Rani Channamma University, Belgaum
27. Tumkur University, Tumkur
28. University of Agricultural Sciences, Bengaluru
29. University of Agricultural Sciences, Dharwad
30. University of Agricultural Sciences, Raichur
31. University of Horticultural Sciences, Bagalkot
32. University of Mysore, Mysore
33. Visveswaraiah Technological University, Belgaum
34. Vijayanagara Sri Krishnadevaraya University, Bellary

List of Universities

Central Universities
1. Central University of Karnataka, Gulbarga

Deemed Universities
1. B.L.D.E, Bijapur
2. Christ, Bengaluru
3. Indian Institute of Science, Bengaluru
4. International Institute of Information Technology, Bengaluru
5. JSS Academy of Higher Education & Research, Mysore
6. Jain, Jakkasandra
7. Jawaharlal Nehru Centre for Advanced Scientific Research, Bengaluru
8. KLE Academy of Higher Education and Research, Belgaum
9. Manipal Academy of Higher Education, Manipal
10. NITTE, Mangalore
11. Sri Devraj Urs Academy of Higher Education and Research, Kolar
12. Sri Siddhartha Academy of Higher Education, Tumkur
13. Swami Vivekananda Yoga Anusandhana Sansthana, Bengaluru
14. Yenepoya, Mangalore

State Private Universities
1. Adichunchanagiri University, Nagamangala
2. Alliance University, Bengaluru
3. Azim Premji University, Bengaluru
4. CMR University, Bengaluru
5. Dayananda Sagar University, Bengaluru
6. Garden City University, Bengaluru
7. JSS Science & Technology University, Mysore
8. Khaja Bandanawaz University, Kalaburagi
9. KLE Technological University, Hubli
10. Ramaiah University of Applied Sciences, Bengaluru
11. PES University, Bengaluru
12. Presidency University, Bengaluru
13. Rai Technology University, Bengaluru
14. Reva University, Bengaluru
15. RV University, Bengaluru
16. Sharnbasva University, Kalaburagi
17. Shri Dharmasthala Manjunatheshwara University, Dharwad
18. Sri Sathya Sai University for Human Excellence, Kalaburagi
19. Srinivas University, Mangalore
20. The University of Trans-Disciplinary Health Sciences and Technology, Bengaluru

3.14: Access- Enrolment in Higher Education

Examining the enrolment of students in the regular mode for the years 2015-2020, it has been observed that among the southern states, Tamil Nadu records a higher percentage of 8.71 percent followed by Karnataka with 6.14 per cent. Karnataka has recorded a small but a steady rise when compared to Tamil Nadu that has seen a slight decline. The enrolment percentage for Andhra Pradesh (4.77), Telangana (3.89) and Kerala is 2.5.

Table 3.14: **Enrolment through Regular Mode - Karnataka & Southern States**

Year	All India	Karnataka	%	Andhra Pradesh	%	Kerala	%	Tamil Nadu	%	Telangana	%
2015-16	30759880	1786965	5.81	1408781	4.58	754742	2.45	2763456	8.98	1288648	4.19
2016-17	31616124	1808536	5.72	1494538	4.73	798052	2.52	2870773	9.08	1391629	4.40
2017-18	32610784	1882507	5.77	1585554	4.86	832200	2.55	2975131	9.12	1372419	4.21
2018-19	33427320	1929855	5.77	1576181	4.72	848243	2.54	3007564	9.00	1374056	4.11
2019-20	34249437	2102002	6.14	1632509	4.77	881477	2.57	2982489	8.71	1333841	3.89

Source: AISHE 2015-20

Table 3.15: Enrolment Through Distance Mode

Year	All India	Karnataka	%	Andhra Pradesh	%	Kerala	%	Tamil Nadu	%	Telangana	%
2015-16	3824901	70981	1.86	315757	8.26	184413	4.82	471898	12.34	185587	4.85
2016-17	4089781	62758	1.53	304895	7.46	235091	5.75	500578	12.24	47108	1.15
2017-18	4031594	61349	1.52	111728	2.77	250717	6.22	465814	11.55	46888	1.16
2018-19	3972068	58639	1.48	184649	4.65	247599	6.23	406632	10.24	52405	1.32
2019-20	4286922	85890	2.00	264640	6.17	256376	5.98	537822	12.55	55767	1.30

Source: AISHE 2015-20

Examining the enrolment of students in higher education in the distance mode, Tamil Nadu has registered over five lakh students followed closely by Andhra Pradesh and Kerala with over 2.5 lakh. The other two southern states of Karnataka and Telangana have registered less than a lakh students in the distance mode. Karnataka has only one open university that has having in the distance mode.

Table 3.16: Enrolment across Colleges Per Lakh Population in Major South Indian States

States	No. of Colleges	No. of Colleges per lakh Population	Average Enrolment per College
Karnataka	4047	59	l415
Andhra Pradesh	2750	51	547
Kerala	1417	48	575
Tamil Nadu	2610	38	872
Telangana	2071	53	545

Source: AISHE 2019-20

Among the southern states, Karnataka has the highest number of colleges of 4047. Correspondingly the student enrolment in colleges in Karnataka is 1415, which is the highest among the southern states.Karnataka also records the highest number of colleges per lakh population indicating better access. Among the southern states, Tamil Nadu records the lowest access with 38 colleges per lakh population.

Table 3.17: State-Wise Foreign Students

Year	All India	Karnataka	%	Andhra Pradesh	%	Kerala	%	Tamil Nadu	%	Telangana	%
2015-16	45424	14398	31.70	1787	3.93	133	0.29	5377	11.84	3032	6.67
2016-17	47575	13050	27.43	2341	4.92	104	0.22	4889	10.28	3461	7.27
2017-18	46144	12041	26.09	2092	4.53	136	0.29	3542	7.68	2877	6.23
2018-19	47427	10023	21.13	1982	4.18	217	0.46	4101	8.65	2020	4.26
2019-20	49348	10231	20.73	2094	4.24	302	0.61	4461	9.04	2261	4.58

Source: AISHE 2019-20

The NEP 2020 has also emphasized the need to focus on internationalization of higher education. Indian students have traditionally travelled abroad for higher education. The need to make India an attractive destination for students from other countries has gained importance in recent years. It has been observed that there is a steady increase of students from the African countries and the Middle East nations. Data with respect to the number of students were not available till recently. Examining the share of the foreign students who come to India for higher studies, nearly one third of them studied in Karnataka in 2015-16. However, for the year 2019-20, the percentage has reduced to about one fifth. One of the prime reasons could be the pandemic. More importantly, it could be the absence of necessary infrastructure like hostels on campus, the gap in the current curriculum and pedagogic practices in comparison to international standards. India and particularly Karnataka that has several colleges professional and general, it may be useful to address the above issues so that Karnataka may become attractive as a destination for higher education among other nations.

Social Groups Enrolment Category-Wise Across Leading States in Southern India

Table 3.18: Scheduled Caste Enrolments in Southern India

Schedule Caste						
State	**Year**	**Male**	**%**	**Female**	**%**	**Both**
All India	2015-16	2606117	54.18	2204197	45.82	4810314
	2019-20	2854313	50.45	2803359	49.55	5657672
Karnataka	2015-16	124945	52.36	113675	47.64	238620
	2019-20	147206	50.73	142956	49.27	290162
Andhra Pradesh	2015-16	146454	55.45	117688	44.55	264142
	2019-20	167358	52.87	149215	47.13	316573
Kerala	2015-16	22714	36.63	39289	63.37	62003
	2019-20	25434	35.19	46838	64.81	72272
TamilNadu	2015-16	274323	49.73	277354	50.27	551677
	2019-20	298278	48.59	315606	51.41	613884
Telangana	2015-16	125580	52.71	112655	47.29	238235
	2019-20	93804	44.77	115713	55.23	209517

Source: AISHE 2015-16 & 2019-2020

In the quest of reaching the SDG4 targets on quality education and to ensure that the gap among the social groups and gender is being bridged, the data of enrolment among the scheduled castes across the southern states is examined with respect to the years 2015-16 and 2019-20. The overall trend shows that the gender gap in enrolment is definitely closing across India and so also the southern states. Kerala records highest percentage of girls (64.81) enrolment in comparison to boys (35.19) among the southern states. Telangana (55.23) and Tamil Nadu (51.41) has higher percentage of scheduled caste girls enrolled in higher education when compared to boys from amongst the same community. For Karnataka the corresponding figure is close to 50 percent.

Table: 3.19: Scheduled Tribe Enrolments in Southern India

Scheduled Tribes						
State	**Year**	**Male**	**%**	**Female**	**%**	**Both**
All India	2015-16	916917	53.80	787544	46.20	1704461
	2019-20	1072646	49.75	1083463	50.25	2156109
Karnataka	2015-16	44571	53.81	38264	46.19	82835
	2019-20	53814	50.88	51947	49.12	105761
Andhra Pradesh	2015-16	39407	54.96	32293	45.04	71700
	2019-20	47292	53.60	40939	46.40	88231
Kerala	2015-16	3163	40.08	4728	59.92	7891
	2019-20	4360	38.80	6877	61.20	11237
Tamil Nadu	2015-16	14789	55.90	11667	44.10	26456
	2019-20	17240	52.62	15526	47.38	32766
Telangana	2015-16	71184	57.13	53411	42.87	124595
	2019-20	55494	51.08	53143	48.92	108637

Source: AISHE 2015-16 & 2019-2020

The Gender Gap in enrolment of girls from Scheduled Tribes has reduced by 7 percent at the national level and also in Karnataka when the figures are compared for the years 2015-16 and 2019-20. The distribution among boys and girls is almost equal to 50 percent. The percentage for girls among the scheduled tribes in Kerala is over 61 percent. Among the southern states Andhra Pradesh records the highest gender gap of 7 percent.

Table 3.20: Other Backward Classes Enrolments in Southern India

Other Backward Classes						
State	Year	Male	%	Female	%	Both
All India	2015-16	6239481	53.45	5434054	46.55	11673535
	2019-20	7202109	50.54	7047005	49.46	14249114
Karnataka	2015-16	431212	50.02	430942	49.98	862154
	2019-20	536146	48.73	564008	51.27	1100154
Andhra Pradesh	2015-16	403618	58.26	289172	41.74	692790
	2019-20	464389	55.45	373065	44.55	837454
Kerala	2015-16	141039	42.14	193628	57.86	334667
	2019-20	194158	39.67	295290	60.33	489448
Tamil Nadu	2015-16	937148	51.09	897210	48.91	1834358
	2019-20	1074844	50.11	1070143	49.89	2144987
Telangana	2015-16	355291	54.13	301130	45.87	656421
	2019-20	301585	48.08	325657	51.92	627242

Source: AISHE 2015-16 & 2019-2020

The trend in the enrolment of students in higher education among the backward classes is similar when compared to the scheduled castes and scheduled tribes. For 2019-20, the gender gap at the national as well as the Karnataka state has closed by 7 points, indicating a positive trend. While Kerala has been the top performer recording over 60 percent girls of the total enrolled students in higher education from the BCs, Andhra Pradesh is the lowest with an enrolment percentage of 44.55 percent.

Comparing the data on enrolment of the scheduled castes, scheduled tribes and backward classes, the gender gap among the scheduled castes has almost closed for Karnataka. However, among the scheduled tribes as well as backward classes in Karnataka, the gender gap stands around 7 percent and needs to be addressed despite the fact it reflects the national trends.

3.15: Growth Rate of Enrolment in Higher Education in India:

The enrolment of students across the levels of higher education has steadily increased in the during the period (2015-16 to 2019-20), with a compound annual growth rate of nearly 20 percent.

Table 3.21: Level-wise Enrolment and its Compound Annual Growth Rate (2015-20)

All India – Student Enrolment									
Year	Ph.D.	M.Phil.	Post Graduate	Under Graduate	PG Diploma	Diploma	Certificate	Integrated	Grand Total
2015-16	126451	42523	3917156	27420450	229559	2549160	144060	155422	34584781
2016-17	141037	43267	4007570	28348197	213051	2612209	166617	173957	35705905
2017-18	161412	34109	4114310	29016350	235263	2707934	177223	195777	36642378
2018-19	169170	30692	4042522	29829075	224711	2699395	162697	241126	37399388
2019-20	202550	23934	4312535	30647287	217249	2672562	159869	300373	38536359
CAGR	**8.5**	**-8.1**	**12.2**	**19.1**	**-7.6**	**9.4**	**5.9**	**9.8**	**19.9**

Source: AISHE 2015-20

Comparision the annual compound growth rate of student enrolment across the levels for the same period reveal that the undergraduate education records close to 20 percent. This is indicative of the expansion of colleges at the undergraduate level in response to the rising demand for college education across the country. The M.Phil and PG diploma have registered a negative CAGR of about 8 percent. While NEP 2020 has indicated the restructuring of higher education to increase the honour courses at the undergraduate level where research can be introduced, fuelling the interest for research and attracting talent at the undergraduate level. In addition, NEP 2020 envisages to revamp the Masters and PhD programme which will be built on the honours at the under graduate level where the M.Phil loses its significance. Hence the NEP gradually aims at replacing the M.Phil program. There has been a rising enrolment at the master's level over the five years.

Growth Rate of Enrolment in Higher Education in Karnataka: Table 3.9 records the annual growth rate in enrolment across different levels in higher education. In contrast, Karnataka has registered a CAGR of 12.31 in the post graduate diploma courses.

Table 3.22: Level-wise Enrolment and its Compound Annual Growth Rate Karnataka (2015-20)

Karnataka – Student Enrolment									
Year	**Ph.D.**	**M.Phil.**	**Post Graduate**	**Under Graduate**	**PG Diploma**	**Diploma**	**Certificate**	**Integrated**	**Grand Total**
2015-16	11777	592	200909	1420697	5546	206680	4329	7416	1857946
2016-17	10841	527	203889	1432755	5655	205872	3713	8042	1871294
2017-18	14190	527	209262	1502926	6212	200062	3686	6991	1943856
2018-19	13300	468	211941	1557985	6446	187128	3079	8147	1988494
2019-20	14988	528	239156	1714696	9873	194493	2702	11456	2187892
CAGR	**4.88**	**-3.39**	**4.17**	**4.55**	**12.31**	**-1.61**	**-12.75**	**8.96**	**3.95**

Source: AISHE 2015-20

Similarly, Karnataka has a CAGR at the under graduate level of 4.55 as against the national figure of 19.1. The state CAGR figures for masters and PhD is less than 5 and shows a sharp decline when compared to the corresponding national figures of 19.1 and 8.5 respectively. The certificate courses have become less popular with a negative CAGR of -12.75.This is reflective of the low employment opportunities for certificate holders in the state.

Table 3.23: All India - Percentage of Enrolment Level-Wise 2015-20

Year	**PhD**		**PG**		**UG**		**Certification**		**Integrated**	
Year	**Male**	**Female**	**Male**	**Female**	**Male**	**Female**	**Male**	**Female**	**Male**	**Female**
2019-20	55.02	44.98	43.13	56.87	50.78	49.22	65.14	34.86	56.17	43.83
2018-19	56.18	43.82	43.57	56.43	50.97	49.03	66.80	33.20	57.50	42.50
2017-18	57.35	42.65	45.96	54.04	51.88	48.12	67.88	32.12	58.44	41.56
2016-17	58.00	42.00	45.43	54.57	52.68	47.32	69.71	30.29	58.90	41.10
2015-16	58.95	41.05	46.42	53.58	53.29	46.71	70.35	29.65	59.61	40.39

Source: AISHE 2019-20

The gender distribution of enrolment across different levels of higher education shows a slow but steady rise in enrolment of girls. While the enrolment of boys is higher in the certification and integrated courses, the percentage of girls is close to 50 percent at the undergraduate level and rises to 57 percent at the post graduate level. At the doctoral level, it is encouraging to observe that women constitute nearly 45 of the students enrolled for PhD. The closing gender gap is a positive sign.

Table 3.24: Percentage of Enrolment Level -Wise in Karnataka 2015-20

	PhD		PG		UG		Certification		Integrated	
Year	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
2019-20	56.19	43.81	43.83	56.17	49.50	50.50	58.47	41.53	55.71	44.29
2018-19	60.68	39.32	44.17	55.83	49.33	50.67	60.81	39.19	55.17	44.83
2017-18	64.15	35.85	46.27	53.73	48.82	51.18	61.13	38.87	55.49	44.51
2016-17	61.16	38.84	47.40	52.60	49.63	50.37	63.27	36.73	54.79	45.21
2015-16	63.04	36.96	48.60	51.40	50.05	49.95	64.17	35.83	54.91	45.09

Source: AISHE 2019-20

The enrolment trend by gender across different levels of higher education in Karnataka represents the national trend. The share of women in enrolment from the UG to doctoral level has increased over the past five years as shown in the table. Women are less than half in the certificate and integrated courses. At the UG level women are almost half and this rises to 56 % at the master's level. 43.81 percent of the doctoral students enrolled in Karnataka are women.

Table 3.25: Gender Parity Index in Higher Education (18-23 Years)

Gender Parity Index in Higher Education (18-23 Years)															
	All Categories					**SC Students**						**ST Students**			
State/ UTs	**2015-16**	**2016-17**	**2017-18**	**2018-19**	**2019-20**	**2015-16**	**2016-17**	**2017-18**	**2018-19**	**2019-20**	**2015-16**	**2016-17**	**2017-18**	**2018-19**	**2019-20**
Karnataka	0.99	1.01	1.05	1.04	1.05	0.93	0.96	0.97	0.98	0.99	0.89	0.95	0.97	1	1
Andhra Pradesh	0.77	0.78	0.78	0.81	0.84	0.78	0.79	0.83	0.84	0.87	0.72	0.74	0.77	0.76	0.76
Kerala	1.32	1.41	1.26	1.4	1.36	1.73	1.78	1.81	1.85	1.86	1.41	1.36	1.45	1.43	1.5
Tamil Nadu	0.92	0.95	0.98	0.97	0.99	0.99	0.98	1.02	1.01	1.04	0.75	0.62	0.78	0.75	0.86
Telangana	0.85	0.88	0.92	1.02	1.05	0.9	0.95	1.06	1.18	1.23	0.73	0.76	0.82	0.88	0.93
India	0.92	0.94	0.97	1.00	1.01	0.91	0.93	0.96	1.02	1.05	0.83	0.85	0.87	0.92	0.97

Note: Should be greater than 1 for better GPI, Sources: AISHE (2015-20)

The Gender Parity index in higher education (18-23 years) has increased at the national level and for Karnataka. A closer observation of GPI across the social categories for India for the period 2015- 20 shows an increase for all categories (1.01), SCs (1.05) and STs (0.97). The

corresponding figures for Karnataka are AC(1.05), SCs(0.99) and ST(1). The efforts of the government to provide access to girls among the SCs and STs by providing them hostels, scholarships have yielded results. The affirmation steps in providing reservations to these categories at the college level and the rising aspiration of girls for higher education have been contributing factors. The expansion of colleges and universities beyond Bengaluru would have had a positive impact sincereduced geographical distance from home has always encouraged girls to access education.It is important to consider despite advancement made in several spheres of life, cultural factors that restrict mobility of girls associated with family honour after puberty still operates in rural areas coupled with early marriage practices. Providing access to higher education through colleges that are not far from residences will help enhance enrolment among girls particularly among the scheduled castes and schedules tribes. Expansion of hostel facilities for girls will be an encouragement for girls to enrol in higher education.

Table 3.26: Gross Enrolment Ratio 2019

Gross Enrolment Ratio (GER) – 2019									
State/Uts	**ALL**			**SC**			**ST**		
	Both	**Male**	**Female**	**Both**	**Male**	**Female**	**Both**	**Male**	**Female**
Karnataka	32.0	31.2	32.7	23.2	23.3	23.1	20.9	20.9	21.0
Andhra Pradesh	35.2	38.3	32.2	31.2	33.4	29.0	29.4	33.6	25.6
Kerala	38.8	32.9	44.7	26.7	18.7	34.8	24.0	19.1	28.7
Tamil Nadu	51.4	51.8	51.0	39.6	38.8	40.4	40.7	43.8	37.7
Telangana	35.6	34.8	36.4	32.5	29.1	35.8	30.2	31.3	29.1
India	27.1	26.9	27.3	23.4	22.8	24.1	18.0	18.2	17.7

Source: AISHE (2019-20)

There have been national and state efforts to increase the GER in higher education with the hope that it will provide a fillip to the national growth and development. The rapid expansion of higher education institutions across the country has opened the doors of higher education to students from social categories who were earlier not a part of higher education system in India. The higher education sector has been transformed with the reconstitution of the student community that has increasingly become diverse with many students who are first generation learners who are entering the portals of higher education.

In comparison, there is gap in the GER for all categories when compared to the SCs and STs with the STs registering 18, which is less than 10 of all the categories taken together. The SCs with a GER of 23.4 is relatively closer to the overall GER(27.1). The gender difference in GER in each of these categories is less than 1 which is encouraging. The GER for Karnataka overall (32) is higher than the national average. The GER for ST in Karnataka(20.9) is higher than national figure of 18 by 3 points. The GER for the SC for Karnataka is 23 close to the national corresponding figure.

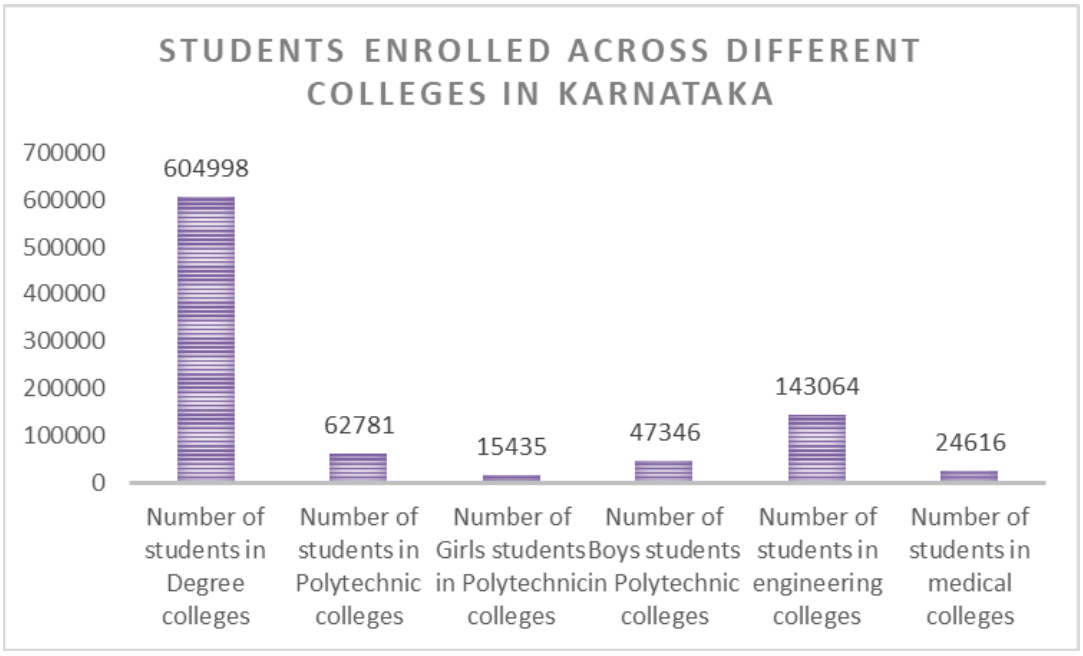
Table 3.27: State Wise- Pupil Teacher Ratio

Year	India	Karnataka	Andhra Pradesh	Kerala	Tamil Nadu	Telangana
2015-16	20	13	13	13	13	14
2016-17	23	14	15	15	15	17
2017-18	25	16	18	15	15	18
2018-19	24	15	16	14	15	17
2019-20	23	14	16	14	15	16

Sources: AISHE 2015-20

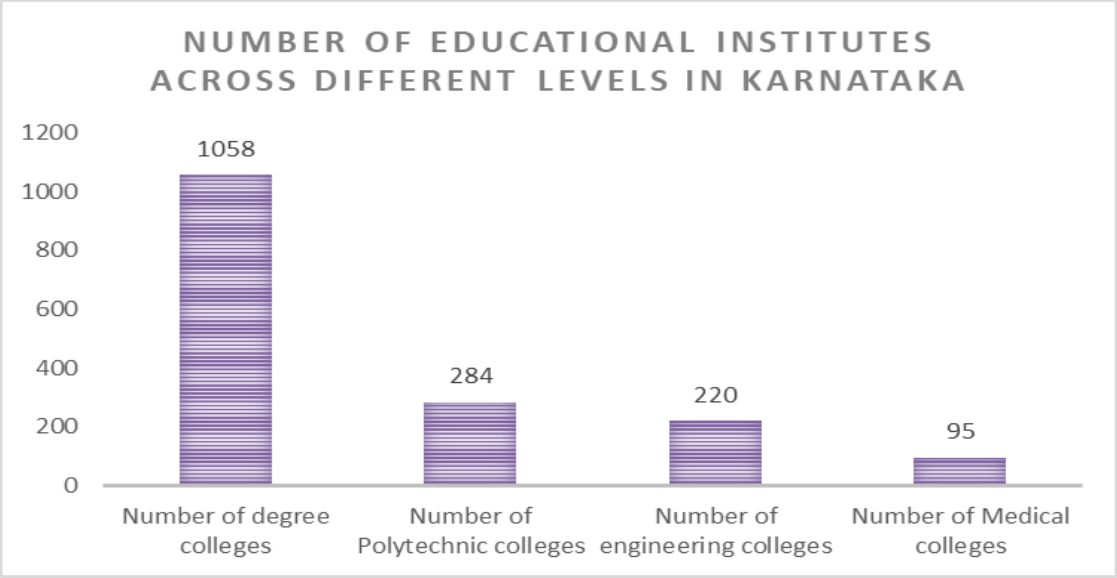
The pupil teacher ratio in higher education is low indicating that in the overall pool of faculty at the national level, the number of students per teacher is 23. The same is true for all the southern states including Karnataka that records a PTR of around 15.

Figure 3.3: Students Enrolled Across Different Colleges in Karnataka



The maximum enrolment of students across different kinds of colleges in Karnataka show that the maximum enrolment of 604998 is in degree colleges. The next highest enrolment in Karnataka is in the engineering colleges with a total of 143064 students. This is followed by polytechnic colleges with a student enrolment of 62781. The lowest number of enrolment is in the medical colleges which is 24616.

Figure 3.4: Educational Institutes Distribution across Levels in Karnataka



The distribution of the higher education institutions across different types reflects the pattern of student enrolments. Except that after degree colleges that account for 1058, the polytechnic colleges (284) is higher than the engineering colleges (220). Karnataka has 95 medical colleges. The distribution of these colleges across the state of Karnataka will be useful.

Table 3.28: Five Districts with Largest Values in the Selected Variables

No. Of Degree Colleges	No. of Students In Degree Colleges	No. of Poly.Tech Colleges	No. of Students InPoly.Tech Colleges	No. of Girls Students InPoly.Tech Colleges	No. of Boys Students InPoly.Tech Colleges	No. of Engg. Colleges	No. of Students InEngg. Colleges	No. of Medical Colleges	No. of Students In Medical Colleges
Belagavi	Belagavi	Bengaluru(U)	Bengaluru (U)	Bengaluru (U)	Bengaluru(U)	Bengaluru(U)	Bengaluru(U)	Bengaluru(U)	Dakshina Kannada
Vijayapura	Bengaluru (U)	Belagavi	Dakshina Kannada	Tumakuru	Dakshina Kannada	Dakshina Kannada	Dakshina Kannada	Dakshina Kannada	Bengaluru (U)
Tumakuru	Vijayapura	Dharwad	Ballari	Dakshina Kannada	Ballari	Belagavi	Belagavi	Belagavi	Belagavi
Bengaluru (U)	Tumakuru	Ballari	Tumakuru	Ballari	Tumakuru	Mysuru	Udupi	Bagalkot	Kalburgi
Bagalkot	Dakshina Kannada	Dakshina Kannada	Uttara Kannada	Hassan	Uttara Kannada	Tumakuru	Tumakuru	Udupi	Vijayapura
		Kalburgi							

In districts Bengaluru(U), Dakshina Kannada, Belagavi, Mysuru, Tumakuru the concentration of number of private (Aided and unaided) engineering colleges are higher.

Table 3.28 shows the district names with largest 5 values. It can be observed that Bengaluru urban has highest value across 7 variables out of 10 variables. For number of polytechnic colleges 6 districts are given as both Dakshina Kannada and Kalburgi have 12 polytechnic colleges1.

Table 3.29: Five Districts with Smallest Values in the Selected Variables

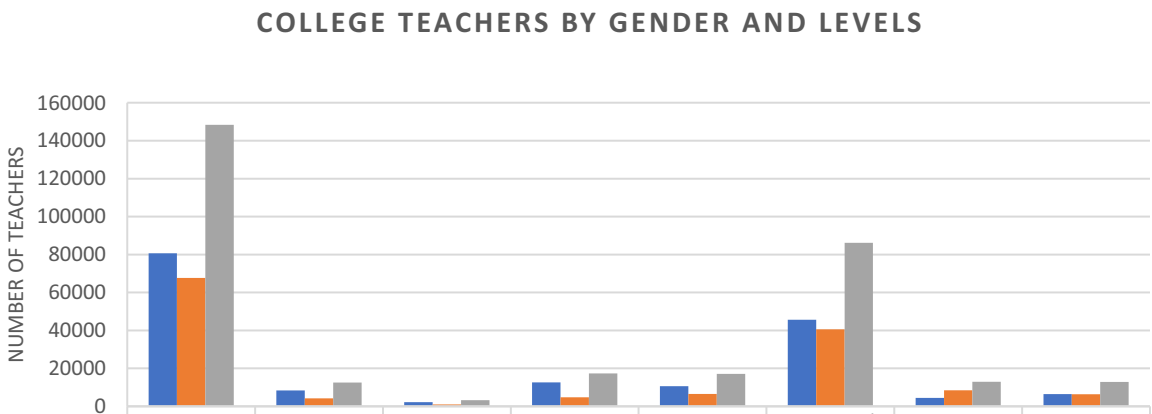
No. Of Degree Colleges	No. Of Students In Degree Colleges	No. Of Poly.Tech Colleges	No. Of Students InPoly.Tech Colleges	No. Of Girls Students InPoly.Tech Colleges	No. Of Boys Students InPoly.Tech Colleges	No. Of Engg Colleges	No. Of Students InEngg Colleges	No. Of Medical Colleges	No. Of Students In Medical Colleges
Kodagu	Kodagu	Chamarajanagara	Bengaluru (R)	Yadgir	Bengaluru (R)	Koppal	Koppal	Chamarajanagara	Davanagere
Bengaluru(R)	Chamarajanagara	Kodagu	Yadgir	Koppal	Koppal	Chikkamagaluru	Yadgir	Chikkamagaluru	Haveri
Yadgir	Bengaluru(R)	Bengaluru(R)	Koppal	Bengaluru (R)	Yadgir	Chitradurga	Chitradurga	Haveri	Bengaluru(R)
Chikkaballapura	Yadgir	Chikkamagaluru	Bidar	Bidar	Vijayapura	Yadgir	Raichur	Ballari	Chikkamagaluru
Chamarajanagara	Dharwad	Chikkaballapura	Raichur	Raichur	Bidar	Chamarajanagara	Ramanagara	Bengaluru(R)	Chitradurga
						Chikkaballapura		Davanagere	
						Haveri		Koppal	
						Kodagu		Tumakuru	
						Shivamogga		Uttara Kannada	

Source: DoE 2019-20

[1]There are total 284 Polytechnic colleges in Karnataka

Table 3.29 shows district names with smallest 5 values. It can be observed that koppal, Chamrajnagara and kodagu have lowest values in two variables. The number of engineering colleges in koppal is 0, Chikkamagaluru, Chitradurga and Yadgir districts have 1 engineering college respectively and Chamarajanagara, Chikkaballapura, Haveri, Kodagu and Shivamogga districts have 2 engineering colleges respectively. Chamarajanagara, Chikkamagaluru, Haveri districts have 1 medical college respectively and Ballari,Bengaluru(R),Davanagere, Koppal, Tumakuru, Uttara Kannada districts have 2 medical colleges respectively.

Figure 3.5: Distribution of Teachers across Levels and Gender



	Overall	SC	ST	Professor & Equivalent	Reader & Associate Professor	Lecturer/ Assistant Professor	Demonstrator/Tutor	Temporary Teacher etc.
Male	80677	8391	2207	12578	10584	45593	4456	6443
Female	67691	4168	1022	4748	6523	40559	8445	6388
Total	148368	12559	3229	17326	17107	86152	12901	12831

3.16: Gender distribution of faculty by level types

The gender distribution of students at the higher education level has substantially improved except for some disciplines. It is often argued that fair distribution across gender needs to be reflected even at the faculty level. Faculty most often are role models and hence one needs to pay attention to this aspect. The distribution of the faculty across men and women show that there are 80677 men as against 67991 women showing a difference of over 12000 faculty in favour of men. However, when one examines this distribution across social categories, the gender difference increases. For the scheduled castes, women faculty (4198) is almost half

the number of men faculty(8391). The pattern is similar for faculty among the scheduled tribes. When one examines the gender difference of faculty across different level, it is the highest among the professors with about one third of the professors being women. At the Associate professors' level, the gender difference stands at little more than half of them are women. At the Assistant Professor's level, the gender difference is negligible as is the case of temporary teachers. As one moves lower in the hierarchy for example at the demonstrator/Tutor's level. The number of women is double the number of men. It may be important to understand the gender difference across social categories at different levels of the faculty.

3.17: Distribution of student enrolment in higher education across districts in Karnataka:

The gross enrolment ratio across districts for the last five years show that in general the enrolment has incrementally increased across most districts for both men and women.

However, it is important to note that Yadgir that had an enrolment in higher education around 3 per cent in 2015-16 which is lowest for the state has considerably increased to 22.9 percent for men and 15 percent for women. In fact, it has recorded a higher rate of enrolment when compared to Koppal,Chamrajnagar and Hassan that has consistently recorded low enrolment rates in higher education.It may be important to examine the factors in 2019-20 that has resulted in this increase. The factor for Koppal, Chamrajnagar and Hassan recording consistently low enrolment in higher education could be migration and/or the need for agricultural labour in and around the districts.

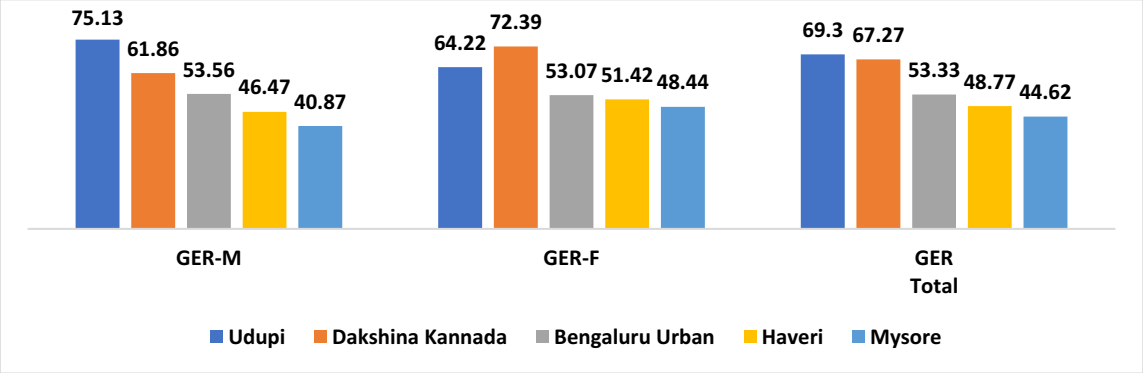
Udupi has shown a steep increase in enrolment in higher education over the past five years with a GER increasing from 44.57 to 69.30. In fact the enrolment of men in higher education has risen from 46.48 to 75.13. propelling a big demand for higher education among theyouth in Udupi. There is a marginal decrease in GER in higher education in Hassan and Chikmagalur, where the pandemic must have been one of the factors.

District Wise GER in Higher Education the Best Performing Districts (2019-20)

Comparing the GER across the districts in Karnataka for the year 2019-20, the top performing districts are Udupi, Dakshina Kannada, Bengaluru Urban, Haveri and Mysore. The gender gap is positive and in favour of women in Dakshina Kannada. Bengaluru Urban has lowest gender gap followed by Haveri and Mysore respectively. Udupi that has higher

development indicators has the highest gender gap of over 10. It will be useful to examine the factors responsible for this gender gap.

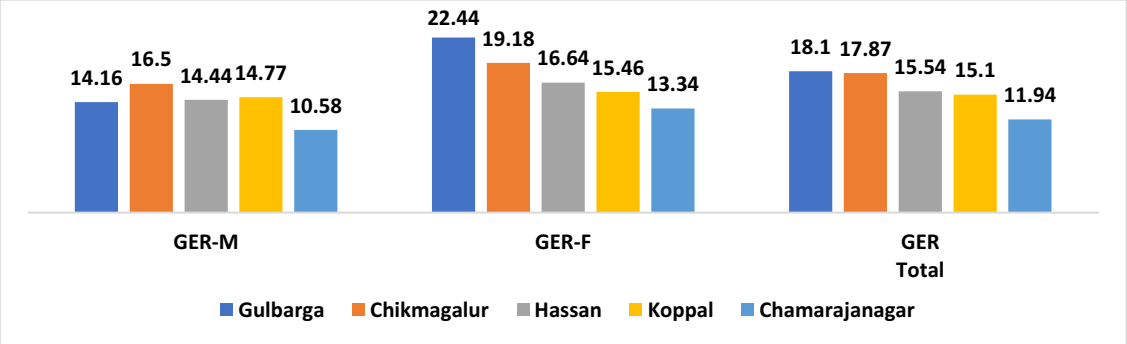
Figure 3.6: The Top 5 Districts with the Highest Enrolment in Higher Education in Karnataka (2019-20)



District-wise GER in Higher Education the Lowest Performing Districts(2019-20)

Examining the GER in higher education among the lowest performing districts, Chamarajnagar records the lowest with 11.94 followed by Koppal,Hassan, Chikmagalur and Gulbarga in that order. What is surprising among these low performing districts with respect to GER in higher education(**Fig-3.7)** is that the women are relatively doing much better than the men. It may be important to correlate this with annual household income, caste and migration data/daily wage labour data.

Figure 3.7: Lowest 5 Districts in Karnataka with the 5 lowest Enrolment in Higher Education (2019-20)

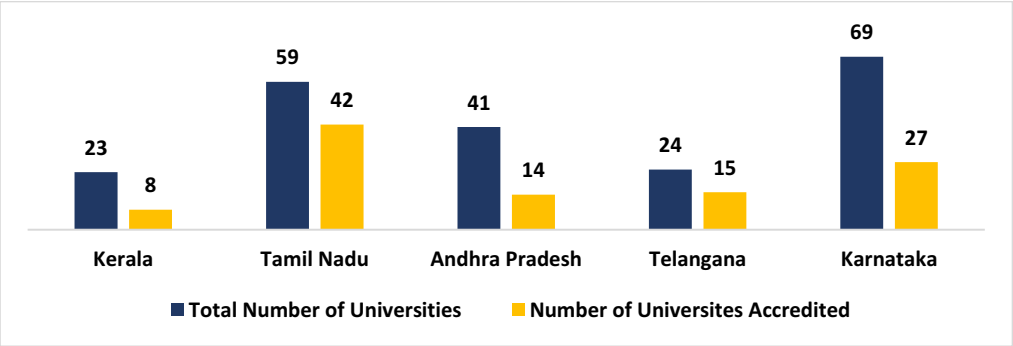


3.18: Quality of Education - Accreditation Status of Universities and Colleges

Accreditation: One of the important markers of quality higher education is the number of universities and colleges that are accredited. Karnataka has the highest number of universities among the southern states and the total number is 69. This is followed by Tamilnadu (59),

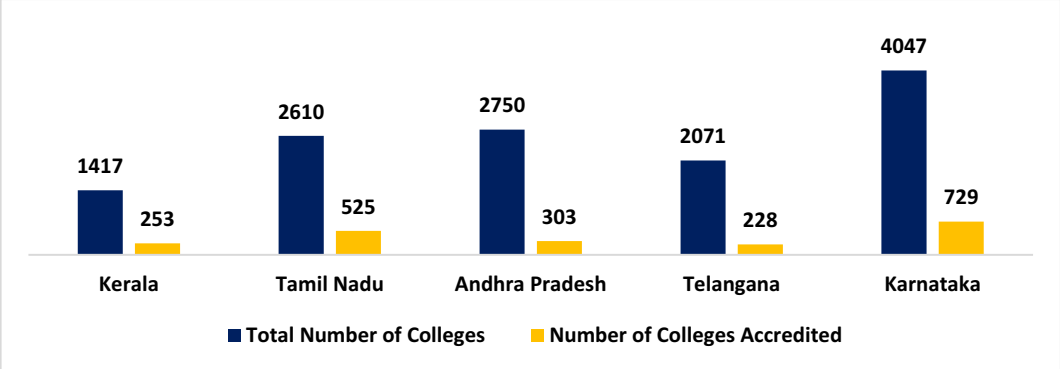
Andhra Pradesh(41) and Telagana(24) and Kerala(23). However, Tamilnadu has the highest proportion of universities (42/59) that are accredited followed by Telagana(15/24). Karnataka at 27/69 occupies the 3rd position among the southern states. Andhra Pradesh and Kerala have around only a third of their universities accredited.

Fig-3.8: Accreditation Status of Universities among the Southern States.



Source: NAAC, 2022 (https://assessmentonline.naac.gov.in/public/index.php/hei_dashboard

Fig-3.9: Accreditation Status of Colleges among the Southern States



Source: NAAC, 2022 (https://assessmentonline.naac.gov.in/public/index.php/hei_dashboard

Among the colleges in the southern states, the pattern of accreditation shows that only a very small number of them are accredited. Reference to **Fig-3.9,** out of the total 4047 colleges in Karnataka, only 729 of them are accredited. Tamil nadu is relatively better in terms of the proportion of colleges that are accredited. This is followed by Karnataka. Andhra Pradesh (303/2750); Telangana (228/2071) and Kerala (253/1417) have extremely small number of their colleges that are accredited.

3.19: Knowledge & Innovations - India Innovation Index

Higher education should lead to expansion of knowledge base and innovations. In the quest to improve the ranking of India in the global innovation index, NITI Aayog has computed the

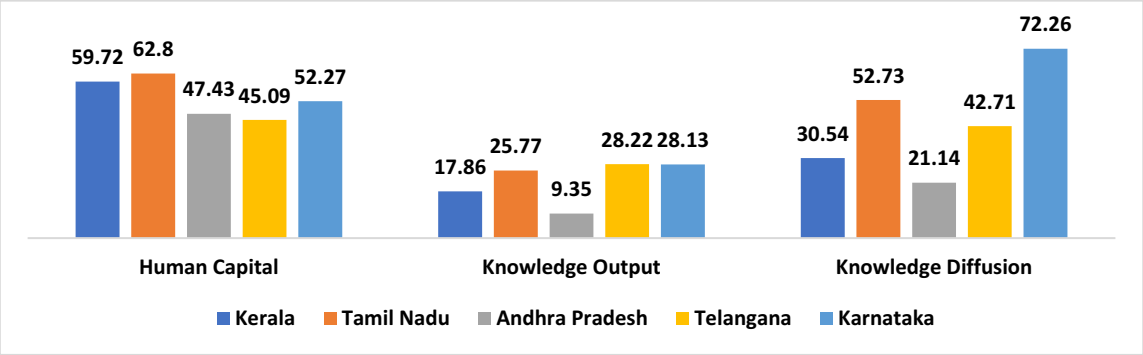
India Innovation Index. This index is a combination of two dimensions —Enablers and Performance—with seven pillars and 36 indicators between them. The findings from the index provide some interesting insights about the ranking of states on the India innovation index. There is a strong positive correlation between the Gross Domestic Product of the state and the Innovation index.

The Indian states display a wide range of scores on the index with Delhi at the top with 46.6 while Lakshadweep finishes last with a score of 11.7. To ensure a fair comparison, states have been categorised under three segments, viz. NE and Hill States, UT and City States, and Major States. Amongst the Major States, the average innovation score is 25.35. Karnataka tops at 42.5, which is attributable to its strong number of venture capital deals, registered GIs and ICT exports. Karnataka's high FDI inflow has also enhanced the innovation capabilities of the state. Maharashtra follows second at 38, while Bihar finishes last at 14.5. The case for the southern states as the top performers has also become stronger as four of them occupy the top-five spots within the Major States.

3.20: Knowledge Output and Human Capital

Comparing the southern states with respect to knowledge output, human capital and knowledge diffusion, it is clear that Karnataka leads in Knowledge diffusion and jointly holds the first position with Andhra Pradesh with respect to knowledge output. However, when the human capital is compared across the southern states, Tamilnadu leads at 62.8 followed by Kerala at 59.72. Karnataka is in the third position among the southern states at 52.27.

Figure-3.11: Comparison of select Innovation indicators across the Southern States.



Source: India Innovation index 2019-20

3.21: Way Forward

The expansion of higher education has to take care of geographical distribution across different districts in Karnataka. The state may need to focus to start new colleges including professional colleges and universities in aspirant districts of Karnataka. If Karnataka must be a leader in higher education, it is important to build inter-linkages between colleges, universities, and research institutions and more importantly the industries. Documenting, analysing, and disseminating the best practices will be critical to stay ahead.

- Acknowledging the progress in school education, particularly elementary education, there is a need to focus on the 11th and 12 grades to ensure increase in the success rates to enable the much-desired increase in the enrolment in higher education. Targeted inventions in specific districts and taluks have yielded results. Karnataka will have to focus on factors that will enable the state to be a leader in innovation and make the necessary investment in those verticals that can enhance and hasten the speed of progress and development.

Karnataka is the first state that has taken a bold step in initiating changes in education in accordance with NEP-2020.

- The NEP and the UGC has re-emphasised the need to strengthen research and research culture in universities. To ensure this transformation, there is a need to relook at the curriculum, the pedagogic practices as well as redefine the role of faculty in universities where the current structure and teaching load need to be reworked to allow teachers to strike a better balance between teaching and research.
- The multiple entry and exit option for under-graduate education has been adopted by Karnataka as an important first step. What may be required is the redesign of the curriculum in line with what is the possible career track for these students who exit at the certificate, diploma and graduate and graduate(research) levels. Each of these career track needs to build possibilities for upward mobilities in terms of skills and career growth.
- **The Right to Education should be extended to Grade 11 and 12 which will mean that every child is assured 12 years of schooling**.
- The much-popularised credit transfer is indeed a step in the right direction. But integral to this, equally important is to build equivalence of the credits across higher education institutions of different quality and develop templates for all subjects at the national or state level that has an organic blend of standardisation and flexibility.

- The vocational education vertical which is an important component of NEP needs a complete revamp and perhaps recreated based on best practices from within the state, country and international experiences.The analysis of rates of return on education indicates that the overall returns to education for regular workers are the highest for diploma (15.9%), followed by graduation and above degree (11.5%), and secondary education (10.2%) (Singhari and S. Madheswaran-2016). Therefore, there is an urgent need to focus on skill based technical and professional diploma and certificate courses tailoring to the job market requirements.
- The returns on **investment at all levels are higher for SC/ST population** (Diploma) 21%, Higher education- 11.3% and Muslim (Diploma) 19.11%, higher education- (15.1%) and for Women (Diploma 23.1%, Secondary 17.5% & Graduate and above 13.6%) across all levels of education for regular workers therefore, increasing access to education and providing opportunities in job market for these marginalized groups will increase their HDI and contribute to their empowerment and mainstreaming.

Quality Education

- Towards the road of quality education, Karnataka has to choose some of the promising institutions from different geographical locations and develop them into institutions that are on par with global standards.
- Proactive recruitment retention and capacity building of students and faculty from less represented geographical areas, castes, classes and communities differently abled to make research, teaching/education institution/or Universities more inclusive.
- Support accreditation of colleges – govt. and Private to improve learning environment
- Against the target set for the increase in the enrolment of higher education (GER) from about 18 % to 30% by 2020, Karnataka has very little option but to explore innovative financial Solution to support a large number of students aspiring to enter the higher education system (Kurup, A Et. Al, 2011).
- The budget of the Department of Higher Education must be enhanced to **an annual spending of 2% of the GSDP and must be at least 30% of the overall education budget**. Encourage private higher education institutions to enhance spending on research, capacity building of faculty. Linking universities to research institutions has to be organically built to promote mutual exchange and sharing of resources.

- To set up **Karnataka Student Scholarship and Loan Authority** to co-ordinate, disburse and manage the scholarships and loans to students who pursue higher education in Karnataka, merge schemes, use a single window to identify and mentor deserving/ needy students in a transparent and user-friendly manner based on AADHAAR identification. The initial fund can be created by levying a surcharge of 5% on excise duty on liquor which will amount to about Rs. 500 crore per year (Karnataka Higher Education Vision Document, 2021).
- Allow Universities to float long term, 10years + bonds for creating necessary academic and hostel infrastructure, labs, libraries etc. These bonds should be guaranteed by the State. The interest on the bonds should be paid by the Universities from their fee collection and internal funds while the principal upon maturity should be paid by the State. A sum of Rs 5000 crore in the form of bonds over the next 5 years may be allocated for this purpose. This would bring the infrastructure on par with the best in India. Many Universities have various funds invested in bank deposits and these may be invested in such bonds thus recycling these funds (Karnataka Higher Education Vision Document 2012)

Need to develop a framework which is competency – based and is in tune with the fast-changing employment opportunities that are emerging both for the domestic and international job markets. Portability of qualifications with due accreditation is integral to the creation and sustainability of mobile workforce (Kurup, A.et. Al, 2011)

- Encourage and support the private sector vocational education through accreditation and recognition mechanisms (Delloite, 2012). The growth and expansion of the vocational sector rests on a symbiotic interaction of the sector with the industry in a continuous manner where responsibilities are shared between them to ensure the efficiency of the workforce created through this mechanism.
- Establish an independent **Teachers Academy** at the State level and strengthen the **Higher Education Academy** at Dharwad on a public-private partnership model to address recruitment, foundation/induction training, periodic capacity building, performance assessment, professional development, ethics, research and database management.
- The present **State Council for Higher Education must be restructured** to play role of Think-Tank. Experts with fresh thinking and new ideas need to be drawn from across the State, country and the world.

- Thrust should be provided to 27 schemes from 8 departments to enhance Education and Skilling. Rs 3,233 crores have been allocated to the above mentioned schemes in 2022-23 Budget. Major Schemes for Education include Sarva Shiksha Abhiyana, Samagra Shikshana Abhiyana, Vidya Vikasa Scheme, Raitha Vidhya Nidhi, Scholarships to Students. Major schemes for Skilling include Pradhan Mantri Kaushalya Vikas Yojana, Chief Minister's Kaushalya Karnataka Yojana and SANKLAP.

Conclusion

Education is the right approach for mainstreaming and empowerment of the deprived groups. It will also increase the size of demographic dividend. Karnataka is now emerging as research, innovation and knowledge hub of India. The National Education Policy 2020 provides concrete strategies and programmes for inclusive, need based education planning and the State has taken a lead to implement it. Therefore, it is expected that the state will be able to increase the quantity as well as quality of human capital to promote rapid and inclusive human development and achieve the targets set in SDG-4 Quality education for all by 2030.

Chapter - 4
Demography, Health and Nutrition

Chapter 4

Demography, Health and Nutrition

4.1: Introduction

Karnataka provides a mixed picture as far the demographic and health achievements are concerned. The State made significant strides with respect to demographic advancement. At the same time, there is lot to be desired in ensuring better health status in comparison to southern states bordering Karnataka.

One of the major challenges in achieving health is the inequity in health both in terms of health care and provision.

Although health equity is understood differently in different context, the pursuit on systematic elimination of health disparity should be the priority in any contexts. Therefore, renewed attention is required to ensure that the health system is more equitable and in particular addresses to improve the health status of the vulnerable sections of the population.

As already pointed out, health is not merely a function of the provision of health care facilities but has direct connection with many social determinants. Adequate nutritious food, quality of water, controlling environmental pollutants, providing employment, ensuing education etc, affect the health status overwhelmingly. The holistic approach to health, therefore, necessitates addressing all these issues which has direct linkages for the overall well-being of population. Various studies have clearly indicated the close nexus of education and income status with the health status of the people (Grossman and Kaestner, 1997; Preston, 1975). Therefore, achieving higher levels of health involves addressing all these concerns as well than mere provision of health care facilities. The link between social determinants of health and health outcomes is very strong and often dominate in ensuring better health status.

Health is a complex subject involving multiple stakeholders. In India, in addition to the pivotal role played by thepublic sector, private sector and nongovernmental organizations (NGOs) also play vital role in the provision of health care. This is particularly relevant in a context where out of pocket expenditure constitute nearly 34 percent of total health expenditure in Karnataka and a large section of population depending upon private sector for

curative care. Therefore, the role of large private sector can neither be undermined nor remain completely unregulated as has been the practice for a long.

This chapter investigates the current health status and trend in Karnataka and its variation across socio-economic and geographical locations by considering some major demographic and health indicators. First, the chapter discusses current demographic and health status both at the State and the district level. Second, it analyses the health infrastructure. Third, it brings out the Covid-19 pandemic in the state and progress towards sustainable development goals.

The evolution of health policy and system development is discussed in fourth section. Fifth section addresses the health financing in the State and the final section brings out the future challenges.

4.2: Demographic and Health Profile

The Sustainable Development Goals (SDGs) adopted by the UN Summit on 25 September 2015, by member countries include a set of 17 Goals all of which have direct connection in ensuring healthy lives and promote well - being for all at all ages. The Goal 3 specifically addresses the health dimension. The targets under this include the desire to reduce maternal and child mortality, prevalence of communicable diseases etc. There is a need for renewed efforts to achieve these goals in the State.

Developing the health sector in terms of infrastructure, human resource is essential to provide quality health care service. The Government of Karnataka has given due importance in developing the health sector and provision of good health care is a vital component of it. The strength of the Health & Family welfare system in Karnataka is evident from the successful management of covid-19 in the State. The state effort in the management of the pandemic is commendable which was made possible by the strong health infrastructure at different levels in both rural and urban areas. This has also shown a significant positive impact on demographic and health indicators in the state.

The achievements in some demographic goals have been noticeable in Karnataka. The population growth rate has significantly come down from over 2 percent per annum around three decades before to 0.84 percent in recent years. According to the expert committee report on Population Projection for India and States (2011-36), the annual growth rate is expected to decline 0.8 percent in 2021 (MOHFW 2020). This is likely to reduce further infuture. Thus, the era of the concern on rapid increase in population is almost giving way to more of

optimism in recent time. **Table 4.1** presents the total population and the annual rate of growth in the last five decades.

Table 4.1: Total population and its Annual Growth Rate, 1981-2021, Karnataka

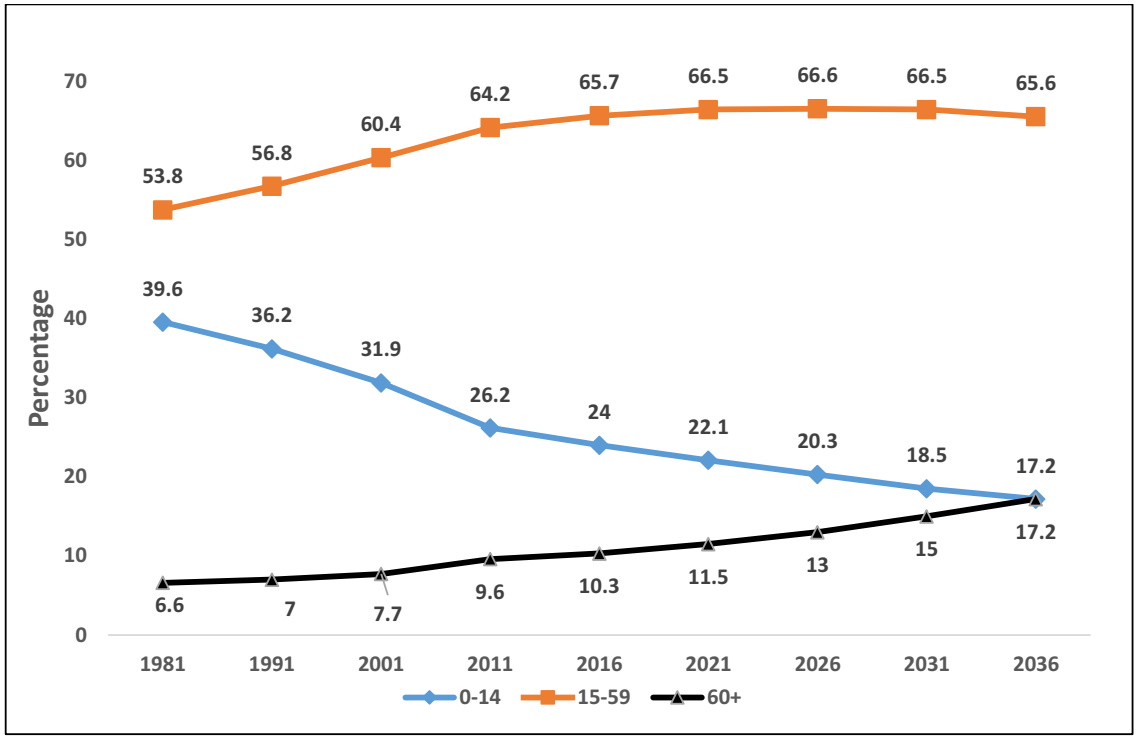
Year	Population	Annual growth rate %
1981	3,71,35,714	2.37
1991	4,49,77,201	1.92
2001	5,28,50,562	1.63
2011	6,11,30,704	1.46
2021	6,68,45,000	0.84

Source: Census figures, various years & Projection 2021

Karnataka has performed very well in terms of family welfare programmes. The total fertility rate declined from 2.0 in 2011 to 1.6 in 2021 (NCP MoHFW, 2019). Birth rate and infant mortality rate have reduced faster during the last decade. It is important to note that life expectancy has increased consistently year on year from 2011 to 2021 for both men and women, which calls for focus on health planning for older adults in an aggressive manner. According to fourth and fifth rounds of National Family Health Surveys (NFHSs), the state has shown significant improvement in terms of sex ratio. Achievement of health and family welfare programmes in the state is established through the indicators such as percentage of eligible couples using contraception and unmet need for family planning. It is observed that use of family planning has gone up by 17 percent and unmet need for family planning has gone down by about 4 percent between fourth and fifth rounds of NFHS.

A major demographic shift that has occurred and widely discussed in the last one decade has been the alteration in the age structure of the population (Bloom 2012; James, 2011). It has major implications for several economic and social forces in the society. The age structure impacts on economy by way of demographic dividend that is well recognized. Karnataka's age structure is typically adult peak since the last decade and is likely to continue for the coming two to three decades as well **(Figure 4.1).** The percentage of adultpopulation in the State has reached around 65 percent in 2011. The young age population (below age 14), on the contrary, is declining drastically since 1991. Simultaneously the proportion of old age is also on the rise but the total share of elderly is still less than 10 percent. But the rapid increase in the elderly population signifies that they will constitute a significant proportion of the population in the State in coming decades.

Figure 4.1: Percentage of Population in 0-14, 15-59 and 60+ age group, India, 1981-2036

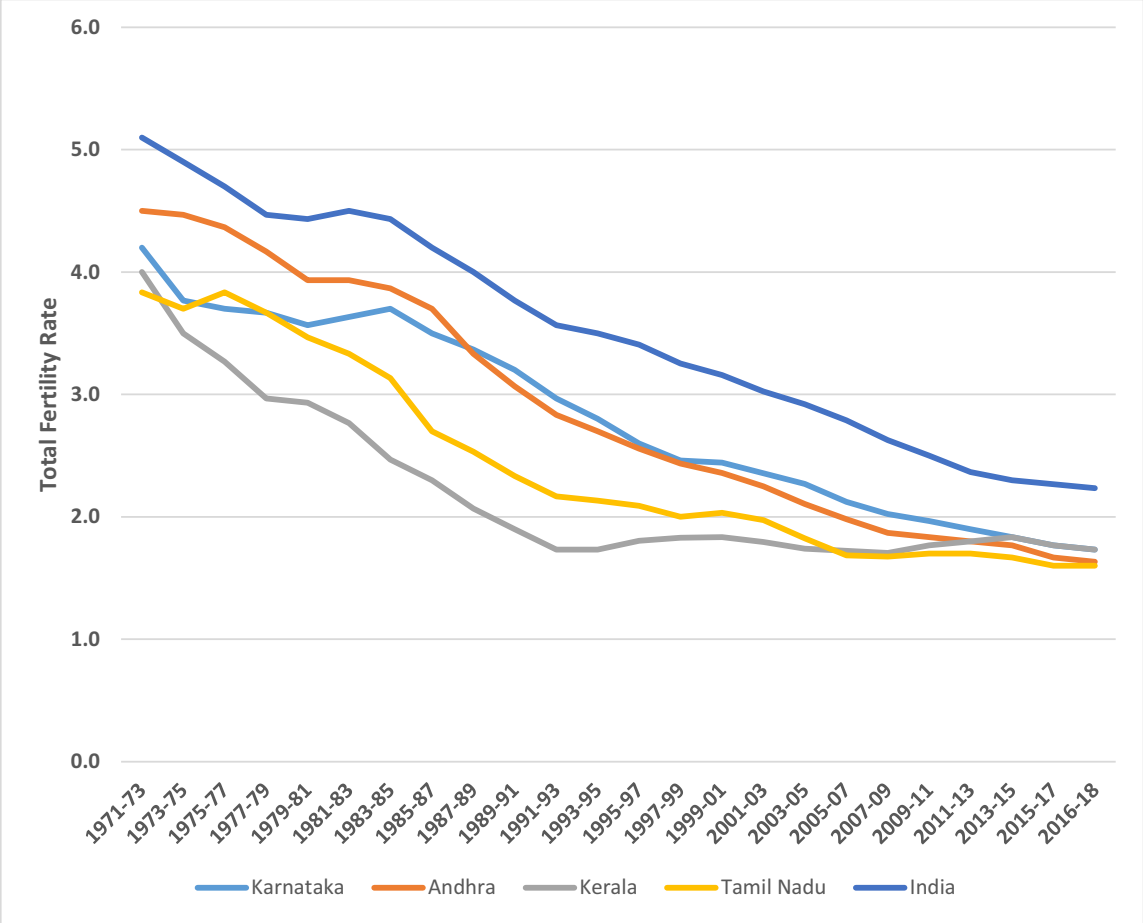


Source: MOHFW 2020

4.2.1: Fertility Trends

The main driver of population change in the State has been the fertility transition. Fertility has been rapidly and steadily declining in the State since the 1990s. With Karnataka reaching replacement level fertility by middle of the last decade, all the southern states in the country have achieved the replacement level. Karnataka, therefore, was a laggard among southern states but as compared to all India trend as well as many northern states, the State's achievement in fertility front is noteworthy. **Figure 4.2** presents three year moving average of total fertility rate for Karnataka, all India and other southern states since 1971. Both the rural and urban areas of the State have now reached below replacement level fertility. The estimated total fertility rate from the National Family Health Survey-5 (NFHS-5) also stands at 1.7 for the period 2019-21. As per NFHS-5, the total fertility rate for urban and rural areaswas 1.5 children and 1.8 children respectively. Thus, it appears that the fertility transition has nearly embraced most sections of the population.

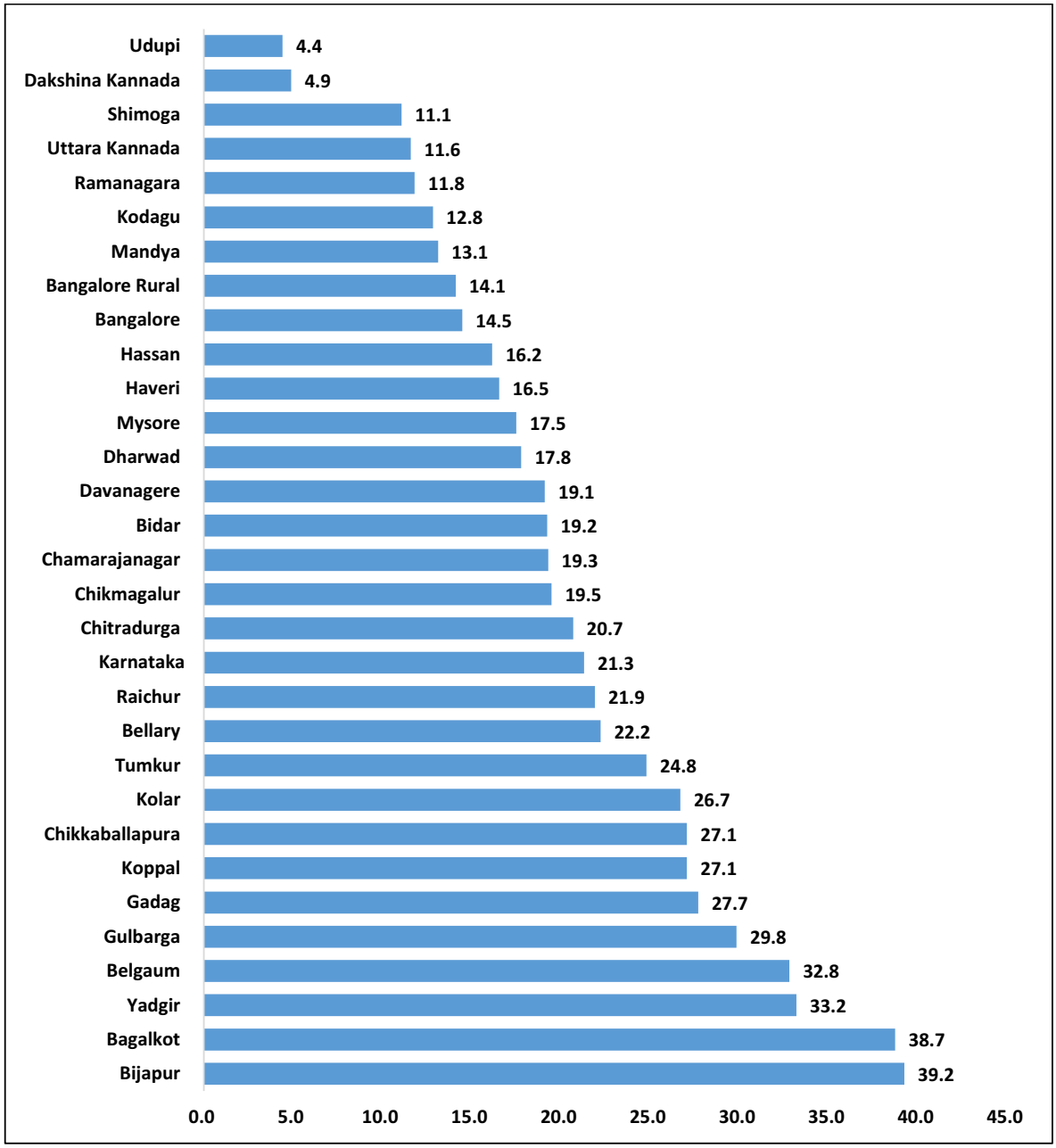
Figure 4.2: Total Fertility Rate in Southern States and all India, 1971-73 to 2016-18



4.2.2: Early marriage in women

Despite low fertility the Karnataka is characterized by child marriages or marriages before the legal age at marriage for girls. One fifth of women in age group 20-24 years in NFHS-5 survey reported that they were married before the legal age at marriage of 18 years. The issue is most acute in Bijapur, Bagalkot and Yadgir where one third of women were married before the age of 18 years. This culturally rooted practice is noted in all districts is an indication of value accorded to rights of the girl child in this society. This is one of the predominant child rights violation issue that is to addressed in near future.

Figure 4.3: Districtwise variations in percentage of women aged 20-24 years who were married before age 18 years< Karnataka 2019-21



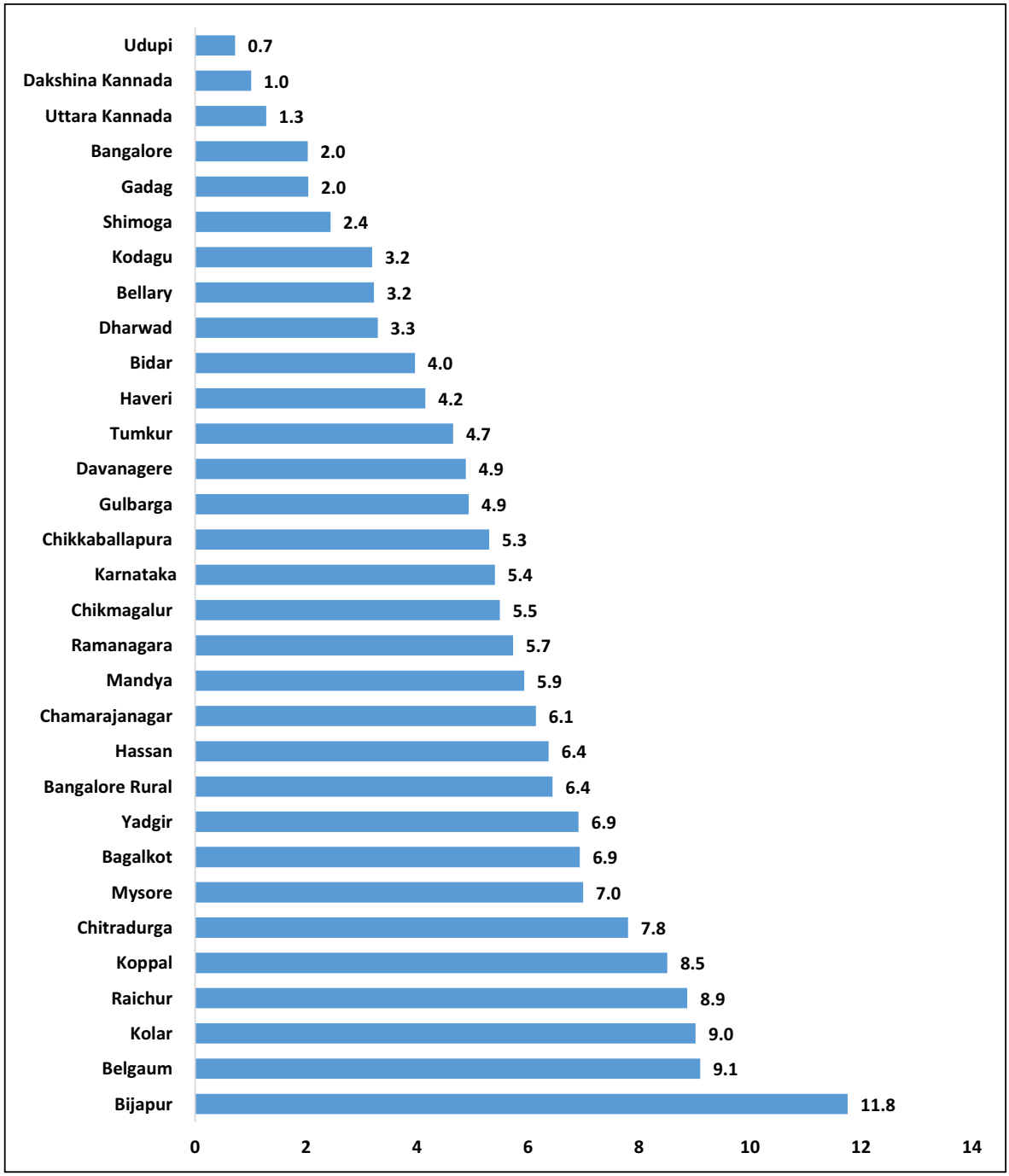
Data source: NFHS-5 (2019-21): National and State Factsheets

4.2.3: High risk pregnancies

In line with the early marriage, the teenage pregnancy too is substantial in the state. About 5 percent of the women aged 15-19 years in NFHS-5 survey is noted to be already mothers or pregnant at the time of the survey. It is well known that the complications from pregnancies is a major cause of mortality among adolescents aged below 20 years. Further it restricts their

potential to pursue education and enter job markets. Girls in Bijapur (12 percent) were the most affected followed by Belgaum, Kolar, Raichur, Koppal and Chitradurga districts.

Figure 4.4: Districtwise variation in percentage of women aged 15-19 years who were already mothers or pregnant at the time of the survey, Karnataka 2019-21



Data source: NFHS-5 (2019-21): National and State Factsheets

4.3: Life expectancy at birth

The life expectancy has increased from 61 to 69 between 1981-85 to 2014-18 in Karnataka but the improvement has been rather sluggish over the last decade. Thus, of late, the life expectancy in Karnataka is very close to the Indian life expectancy (**Table 4.2**) As life expectancy improvement in the country is largely the result of reduction in infant and maternal mortality rate, it is important to have a closer look at the trends of these two vital indicators to understand the health status of the population.

Table 4.2: Life Expectancy in Karnataka, 1981-85 to 2014-18

Years	Total			Male		Female	
	Karnataka	India	Diff. in years	Karnataka	India	Karnataka	India
1981-85	60.7	55.5	5.2	59.7	55.4	62	55.7
1991-95	62.5	60.3	2.2	60.6	59.7	63.9	60.9
2001-05	65.1	63.2	1.9	63.4	62.3	66.9	63.9
2006-10	67.2	66.1	1.1	64.9	64.6	69.7	67.7
2010-14	68.8	67.9	0.9	66.9	66.4	70.8	69.6
2011-15	69.0	68.3	0.7	67.2	66.9	70.9	70
2012-16	69.1	68.7	0.4	67.6	67.4	70.7	70.2
2013-17	69.2	69	0.2	67.7	67.8	70.8	70.4
2014-18	69.4	69.4	0	67.9	68.2	70.9	70.7

Source: Office of the Registrar General of India, Various Years, Abridged Life Tables

4.4: Health Indicators

4.4.1: Maternal and Child Health Outcomes

Infant and Maternal Mortality

Reduction in Infant Mortality has been the major focus of the maternal and child health programmes in India from its inception. Inadequate progress in child survival remained a matter of grave concern for many decades. Undoubtedly, National Rural Health Mission (NRHM) launched in India since 2005 has provided renewed focus on reducing infant mortality rate in India. It, later, covered the urban areas as well and transformed into a National Health Mission (NHM). Karnataka has also launched several incentive programmes as part of the NRHM to promote institutional delivery and seeking health facilities by the

poor sections. **Figure 4.5** presents the infant mortality rate in Karnataka, all India along with other southern states in the country.

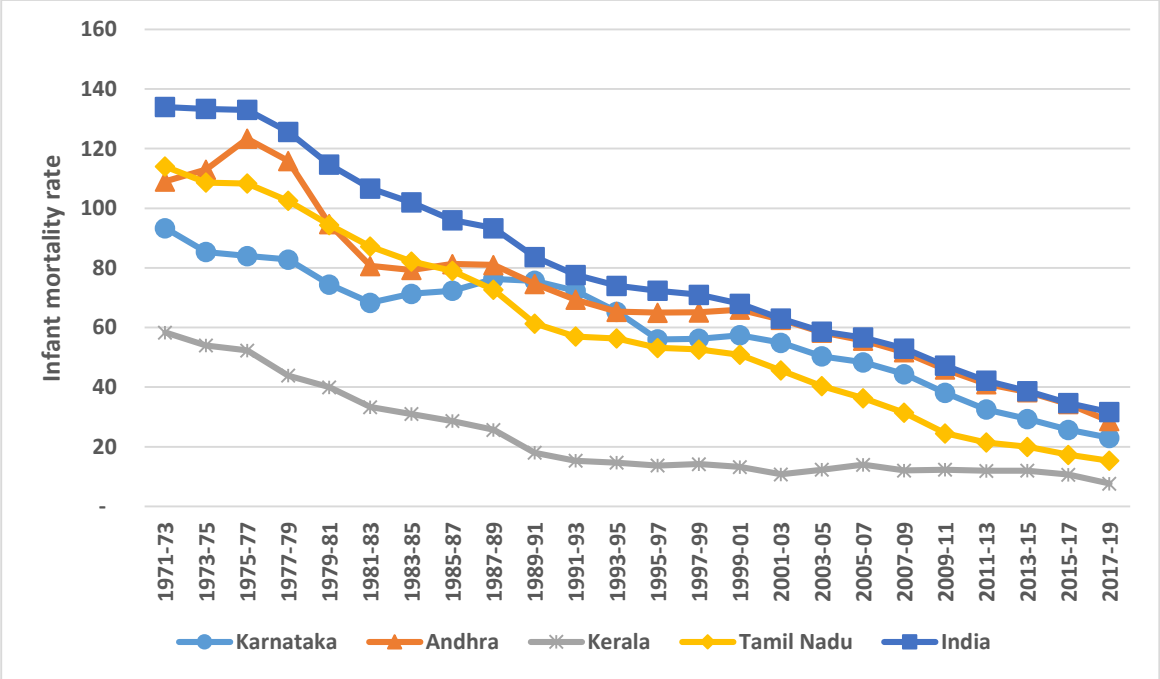
The 12th Five-year Plan (2012-17) in respect of the health sector has aimed at controlling population and reducing infant and maternal mortality through strengthening health services. In addition, attempts have been made to remove intra-regional and regional disparities by improving health services. The progress of some of the key maternal and child health indicators has been encouraging in the State during the last few years. The total fertility rate in the State declined from 1.8 in 2015-16 to 1.7 by 2020. Percentage of mothers utilising at least 4 antenatal care visits has marginally increased from 70.1% in 2015-16 to 70.9% by 2019-20. Between 2015-16 and 2019-20 there has been a significant increase in percentage of institutional births from 94.0% to 97.0% and percentage of institutional births in public facility from 61.2% to 64.8% respectively. However, there is a significant rise in the percentage of women aged 15-49 years who are anaemic from 44.8% in 2015-16 to 47.8% in 2019-20.**(Table 4.3)**

Table 4.3: Status of Maternal and Child Health Indicators in Karnataka

Health Indicators	NFHS-5 (2019-20)	NFHS-4 (2015-16)
Neonatal mortality rate (NNMR) (per 1,000 live births)	15.8	18.5
Infant mortality rate (IMR) (per 1,000 live births)	25.4	26.9
Under-five mortality rate (U5MR) (per 1,000 live births)	29.5	31.5
Children under 5 years who are stunted (height-for-age) (%)	35.4	36.2
Children under 5 years who are wasted (weight-for-height) (%)	19.5	26.1
Children under 5 years who are underweight (weight-for-age) (%)	32.9	35.2
Children age 12-23 months fully vaccinated based on information from either vaccination card or mother's recall	84.1	62.6
Total fertility rate (children per woman)	1.7	1.8
Mothers who had at least 4 antenatal care visits (%)	70.9	70.1
Institutional births (%)	97.0	94.0
Institutional births in public facility (%)	64.8	61.2
All women age 15-49 years who are anaemic(%)	47.8	44.8
Current use of Contraception (Any Method)	68.7	51.8
Unmet Need for Family Planning	6.5	10.4
Under nutrition among Women age 15-49	17.2	20.7
Overweight/ Obesity among Women age 15-49	30.1	23.3
Prevalence of Diabetes among women 15 years and above	14	NA
Prevalence of Hypertension among women aged 15 years and above	25	NA

The neonatal mortality rate has declined from 18.5 per 1,000 live births in 2015-16 to 15.8 per 1,000 live births by 2019-20; whereas, the Under-five mortality has declined from 31.5 1,000 live births in 2015-16 to 29.5 1,000 live births by 2019-20. While, the infant mortality has declined faster during the last few years and has reached 21 in 2019 (As per SRS 2019) from 35 in 2011 which is almost 14 units reduction per 1000 live births in a span of 8 years **(Fig.4.5)** In terms of child nutrition Karnataka state has witnessed a sharp decline in percentage of Children under 5 years who are underweight from 35.2% in 2015-16 to 32.9% by 2019-20. While, percentage of Children under 5 years who are wasted declined from 26.1% to 19.5%. further, percentage of children aged 12-23 months fully being vaccinated has increased form 62.6% in 2015-16 to 84.1% by 2019-20.

Figure 4.5: Presents the infant mortality rate in Karnataka, all India 1971-73 to 2017-19



The infant mortality rate (IMR) or the number of infant deaths per 1,000 live births has seen a decline from 93 in 1971-73 to 23 in 2017-19. Decline was faster in last two decades than in the other periods presented.The infant mortality rate has reached 21 in 2019 as against 25 for Andhra Pradesh, 23 for Telangana (Telangana figures are not shown in **the Figure 4.5**) and 31 for all India despite the fact that the rate is far higher if comparison is made with Karnataka now has reached IMR of 21(SRS-2019). Kerala had the same IMR of Karnataka in the early 1990s indicating the lag in achievement of the State. Tamil Nadu recorded much faster decline than Karnataka and has reached an IMR of 19 by 2015.

Table 4.4: Annual Rate of Decline in IMR (1981-2019)

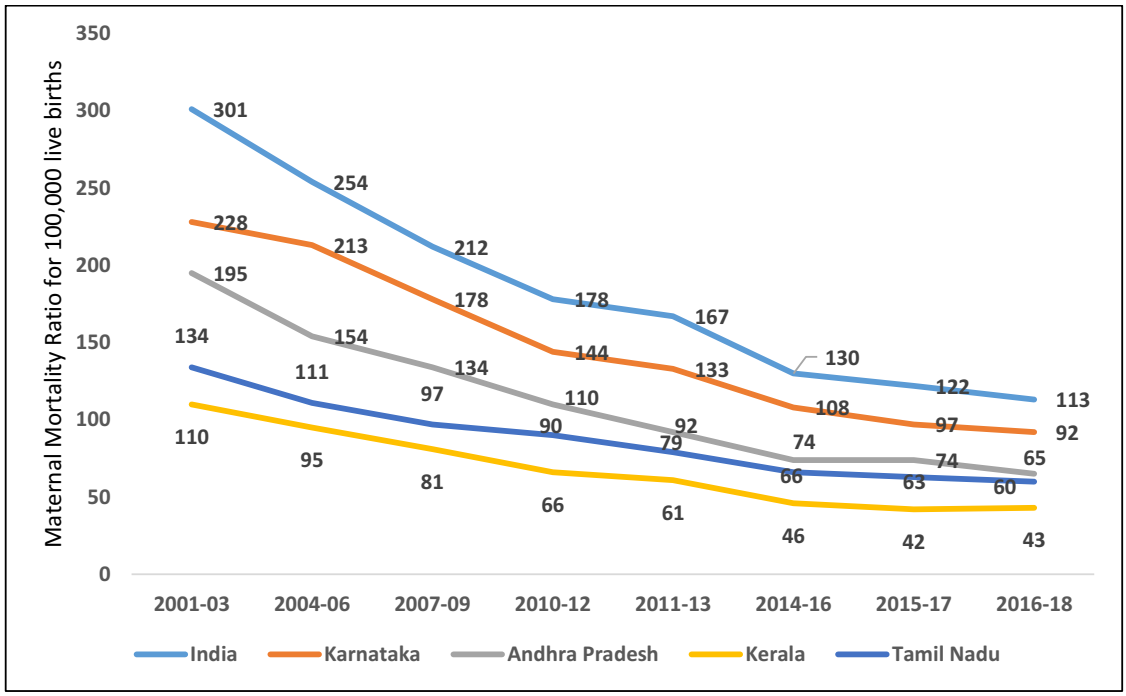
Year	Growth Rate
1981-1990	1.14
1991-2000	-2.35
2001-2006	-1.92
2007-2015	-2.51
2016-19	-2.94

Source: SRS respective years

Undoubtedly, the pace of decline in IMR has a direct linkage with the several initiatives the government has undertaken in recent times. **Table 4.4** presents the rate of decline in IMR in different periods. The rate of decline has been well below 2 percenttill 1990. With the introduction of NRHM/NHM programme, the pace has again gone up over 2.5 percent. Most of the infant deaths in the State take place soon after birth. The neonatal deaths taking place within 28 days constitute more than 75 percent of the total infant deaths in the State. Karnataka's neonatal mortality was 16 per 1000 live births in 2019 with the risk being double in rural areas than in urban areas.

Decline in maternal mortality ratio was faster than that of infant mortality rate. The decline has been sharp since the second half of the last decade and has reached 92 per 100,000 live births (**Figure 4.6**). Although the recent reduction is noteworthy, Karnataka's MMR level lagging behind other southern states. Therefore. efforts needs to be strengthened further to bring down maternal mortality rate in the State.

Figure 4.6: Maternal Mortality Ratio (per one lakh live births) in Southern States, 2001-03 to 2016-18



Source: Sample Registration System Reports respective years

Karnataka state lags behind in provisioning of antenatal care services to the women. The percentage of mothers who had at least 4 antenatal care visits is same an national average for India and is almost stagnant at 71 percent between NFHS-4 (2015-16) and NFHS-5 (2019-21) (IIPS 2021). This indicates the lack of progress in the inter-survey period. Only 71 percent in Karnataka (urban- 74 percent and Rural-69 percent) of mothers received had an antenatal check-up in the first trimester**(Table 4.5).** Nearly half of pregnant women in Koppal and Gadag districts did not get an antenatal check-up in first tri semester. One third of women in 12 out of 30 districts in the state did not receive an antenatal check-up in first tri semester.

The state is closer to achieving universal coverage for institutional births **(Table 4.5).** Less than 85 % institutional deliveries were noted in Gulbarga, Raichur, Koppal, Bijapur and Yadgir. The government facilities is the major provider for institutional births facilities. Nearly two third of deliveries were in government facilities. Overwhelming majority in relatively backward districts of the state like Chikkaballapura, Chamarajanagar, Haveri,Chikmagalur, Bellary and Kolar were depending on government facilities for child birth services. Less than half of the institutional births in Udupi and DakshinaKannada were carried out in government facilities. Close to one third of the child births in the state were

through caesarean deliveries. Percentage of childbirths through caesarean section increased from 24 percent to 32 percent between NFHS-4 (2015-16) and NFHS (2019-21). More than half of child births in Udupi and Tumkur districts were through C-section. Such unacceptable levels of C-section were flagged in KHDR 2015 (Government of Karnataka 2015) and situation has even aggravated over time.

Table 4.5: Percentage of Women by Various Delivery Characteristics across districts in Karnataka, 2019-21

District	Mothers who had an antenatal check-up in the first trimester	Institutional births (%)	Institutional Births in Public Facility	C- Section
Bagalkot	78.2	95.2	57.1	31.0
Bengaluru	75.3	99.3	54.7	30.6
Bengaluru Rural	81.8	100.0	72.0	43.6
Belgaum	71.2	97.5	60.6	24.2
Bellary	67.5	95.7	76.8	29.1
Bidar	62.7	99.0	73.4	21.8
Bijapur	60.3	91.8	59.6	20.9
Chamarajanagar	83.2	100.0	82.7	31.4
Chikkaballapura	82.6	99.0	83.0	38.2
Chikmagalur	69.5	98.4	77.9	38.1
Chitradurga	66.3	98.3	68.8	42.8
Dakshina Kannada	86.1	100.0	41.9	30.4
Davanagere	63.0	98.3	68.9	39.8
Dharwad	78.7	99.7	69.2	29.9
Gadag	52.6	96.2	67.5	33.5
Gulbarga	59.3	88.7	60.5	22.7
Hassan	67.6	100.0	71.7	41.8
Haveri	73.3	97.2	82.6	23.9
Kodagu	70.6	98.4	73.3	33.3
Kolar	78.0	99.6	76.1	42.1
Koppal	52.4	90.7	68.2	19.1

Mandya	85.6	99.5	60.2	39.5
Mysore	82.0	100.0	56.2	43.7
Raichur	66.4	88.9	64.4	20.0
Ramanagara	91.8	100.0	68.8	39.9
Shimoga	58.7	99.7	74.1	43.7
Tumkur	68.6	100.0	66.9	52.1
Udupi	75.1	98.9	37.6	51.9
Uttara Kannada	80.4	99.3	69.5	36.3
Yadgir	57.4	93.3	73.4	14.3
Karnataka	**71.0**	**97.0**	**64.8**	**31.5**

Data source - NFHS-5 State and district fact sheets

The picture that emerges from the immunization is also not encouraging. NFHS-5 shows the children aged 12-23 months fully vaccinated based on information from either vaccination card or mother's is only 84 percent. The coverage was 63 percent in NFHS-4 and hence the state has a long way to go in universalizing vaccination coverage. There district-wisevariation is an indication of huge challeges in improving vaccination coverage. One fourth of childrenaged 12-23 months in Bijapur, Bidar, Gagag, Bellary are not fully vaccinated. Poor coverage is mainly due to poor coverage of measles vaccination. The vaccination is mostly undertaken in government facilities (92 percent), which is noted to be uniform across the districts. This underlines the fact that full the goal of achieving cent percent can be achieved in the Stateonly through expanding the government health delivery system in those poor performing districts.

NFHS-5 data on vitamin A supplementation shows 84 percent of children age 9-35 months who received a vitamin A dose in the last 6 months . There is only a marginal increase in last 4 years as the same was 82 percent in NFHS-4. The coverage of vitamin A supplementation also varied across districts.There is no doubt to the fact that various programmes initiated during the last decade or so was critical in bringing down the infant and maternal mortality rate significantly in recent period. The recent initiatives are innovative and had been instrumental in increasing the institutional delivery in the State substantially. Not only in terms of infant and maternal mortality but even more attention is needed in adult and old age mortality also. The adult mortality in the State is even higher than the all India average and old age mortality is almost close to the all India level. This is despite the fact that Karnataka has been much above the all India in terms of fertility level and infant mortality.

Table 4.6: Percentage of Children age 12-23 months fully vaccinated and Children age 9-35 months who received a vitamin A dose in the last 6 months

District	Children age 12-23 months fully vaccinated based on information from either vaccination card or mother's recall	Children age 12-23 months who received most of their vaccinations in a public health facility (%)	Children age 9-35 months who received a vitamin A dose in the last 6 months (%)
Belgaum	81.4	92.8	91.9
Bagalkot	78.6	98.8	73.0
Bijapur	71.1	92.8	83.4
Bidar	74.8	93.6	80.5
Raichur	80.2	98.8	83.0
Koppal	84.8	98.6	70.9
Gadag	74.3	98.9	72.0
Dharwad	(87.6)	(91.0)	83.5
Uttara Kannada	93.6	(84.3)	89.7
Haveri	95.7	98.5	78.4
Bellary	(71.5)	(98.1)	73.7
Chitradurga	(94.6)	(100.0)	93.5
Davanagere	(79.4)	(96.0)	78.7
Shimoga	(96.1)	(91.9)	92.2
Udupi	89.9	90.5	88.1
Chikmagalur	(91.0)	(95.9)	85.5
Tumkur	(97.7)	(100.0)	96.8
Bengaluru	(78.2)	(67.1)	86.9
Mandya	(93.9)	(100.0)	94.9
Hassan	(96.8)	(97.4)	91.7
Dakshina Kannada	(86.8)	(96.6)	88.7
Kodagu	(90.6)	(88.1)	90.7
Mysore	(97.2)	(93.9)	98.1
Chamarajanagar	(93.3)	(94.8)	93.6
Gulbarga	75.3	94.6	94.5
Yadgir	82.6	97.6	77.7
Kolar	(86.3)	(90.8)	87.5
Chikkaballapura	(76.6)	(100.0)	84.8
Bengaluru Rural	92.7	100.0	84.9
Ramanagara	(100.0)	(96.5)	87.6
Karnataka	**84.1**	**91.7**	**86.2**

Data source: NFHS-5 State and district fact sheets

4.4.2: Morbidity and Utilization of Health care Services

Morbidity measured using the 75th round National Sample Survey (2017-2018) on health care consumption, as the percentage of persons reported as ailing in the 15-day recall period(Table 4.7). About 4.3 percent of population in Karnataka were reported as ailing in the last 15 days prior to the survey. Proportion reporting illness is marginally higher in urban areas than in rural areas, while the reported illness is lower than the national average (7.5 percent). The outpatient care services were mainly provided by the private health care sector (78 percent). Only around one-fifth of the patients utilized services from the government for their outpatient care needs. The percentage utilizing government facilities were higher in rural areas (29 percent) than in urban areas (14 percent). The total out of pocket expenditure (OOPE) for treatment of non-hospitalisation cases or outpatient care was INR 708 (India INR 721/-). The OOPE was lower in rural areas (INR 664/-) than in urban areas (INR 756/-) Thetotal out of pocket expenseson was INR 460/- for outpatient care taken from a government health facility and INR 776/- from private health facilities **(Table 4.8).**High out of pocket expenditure in public facility is an indication of shortage of drugs, diagnostics and allied services in government facilities.

Table 4.7: Utilization of inpatient and outpatient care services, Karnataka 2017-18

Inpatient/ Outpatient	**Place of residence**		**Karnataka (Total)**	***India-Total***
	Rural	**Urban**		
	(A) Outpatient treatment			
% reporting illness in last 15 days	3.9	4.8	4.3	7.5
% using government facilities	28.7	13.8	21.5	30
total out of pocket expenses (in INR)	664	756	708	721
	(B) Inpatient treatment			
A4. Distribution of medical expenses				
B1. Hospitalizations per 1000 persons in an year	29	28	28	29
% hospitalized in government hospital	32.3	17.1	26.6	45
Total out of pocket expenditure (in INR)	14,630	28,698	19,859	22,380
Computed from the 75th round National Sample Survey (2017-2018) unit level data on health care consumption				

Table 4.8: Out of pocket expenditure on inpatient care and outpatient care by source of treatment, 2017

Inpatient/outpatient treatment	Source of treatment		Karnataka (Total)	*India-Total*
	Public facility	Other facility		
Per episode of illness treated in an outpatient care facility in last 15 days (in INR)	460	776	708	721
Per episode of hospitalization in last 365 days (in INR)	4927	25283	19859	22380

Source: Computed from the 75th round National Sample Survey (2017-2018) unit level data on health care consumption

Annual hospitalization rate obtained from the 75th round National Sample Survey (2017-2018) on health care consumption is defined here as the number per 1000 of persons treated as inpatient during last 365 days. The annual hospitalization rate was 28 per 1000 population, which was closer to the national average. The percentage utilizing inpatient care from government hospitals was much lower in urban areas (17 percent) than in rural areas (32 percent). The total OOPE by the household per episode of hospitalization was INR 19859/-.Out of pocket expenditure expenses reported was nearly 2 times higher in urban areas than rural areas. As compared to inpatient treatment from public facility (INR 4297/-) the total OOPE by household was 5 times higher in other facilities (INR 25,283).

Regarding health financing situation, the health expenditure indicators for financing in Karnataka are closer to the national average with government expenditure on health equivalent to 27 of the total health expenditure (THE), which is also equivalent to 6 percent of the general government expenditure, respectively (MOHFW 2019). However, the out-of-pocket expenditures accounts for 49 percent of THE (all India 63 percent) and is one of the lowest among other Indian States (MOHFW 2019). But the state also appears to be lagging in terms of utilisation of central government funds for health care. Utilization ratios for funds under National Health Mission was only 55 % in 2015-16, which declined to a further low of 40 % in 2016-17(Chowdhury and Mohanty 2018). Further the allocation for primary health care within government expenditure on health used to be lowest for Karnataka (29 percent in 2013-14) when compared to other Indian States (Berman et al..2017).

4.4.3: Non-communicable diseases

The data on the burden of NCDs are not easily available for recent years. The National Family Health Survey-4 tested the prevalence of diabetes and hypertension among men and

women aged 15 years and above. The percentage of population aged 15 years and above with blood sugar level - high or very high (>140 mg/dl) or taking medicine to control blood sugar level was 14 percent in females and 16 percent among males. Risk of diabetes was higher in districts like Bengaluru, Ramanagara, Kodagu, and Udupi and in comparisons to districts like Yadgir, Raichur, Bidar, Bellary and Koppal. **(Table 4.9)**

Hypertension is noted to be a serious health problem in adults in Karnataka.More than one fourth of population aged 15 years and above were having elevated blood pressure (Systolic ≥140 mm of Hg and/or Diastolic ≥90 mm of Hg) or taking medicine to control blood pressure. Such an alarming prevalence of hypertension was noted in all the districts. Nearly one thirds of adults in Kodagu, Bengaluru and Udupi were having hypertension.

Such a high burden of diabetes and hypertension is a tracer indicator of several lifestyle related chronic conditions in Karnataka. Interventions against attributable risk factor behaviours to promote healthier lifestyle is essential in this population. Future health systems will be under pressureto finance such costs if this remains unattended.

Table 4.9: Percentage of women and men aged 15 years with diabetes and hypertension across districts of Karnataka, 2019-21

District	Blood sugar level - high or very high (>140 mg/dl) or taking medicine to control blood sugar level Women	Blood sugar level - high or very high (>140 mg/dl) or taking medicine to control blood sugar level Men	Elevated blood pressure (Systolic ≥140 mm of Hg and/or Diastolic ≥90 mm of Hg) or taking medicine to control blood pressure Women	Elevated blood pressure (Systolic ≥140 mm of Hg and/or Diastolic ≥90 mm of Hg) or taking medicine to control blood pressure Men
Belgaum	12.9	12.2	19.4	22.2
Bagalkot	11.8	12.8	19.1	21.0
Bijapur	11.6	14.3	20.2	21.0
Bidar	9.0	12.5	21.2	24.1
Raichur	8.9	9.2	18.5	16.7
Koppal	9.6	14.5	19.5	22.2
Gadag	12.1	13.2	22.1	23.9
Dharwad	13.8	14.1	26.6	23.7
Uttara Kannada	12.7	13.8	26.9	25.1
Haveri	12.7	15.2	21.4	24.4
Bellary	9.2	11.6	21.2	20.9
Chitradurga	15.1	14.4	29.7	30.6
Davanagere	16.1	17.5	24.8	29.5
Shimoga	15.3	16.7	27.2	28.7

Udupi	16.7	17.7	31.2	32.5
Chikmagalur	15.6	15.7	29.2	28.7
Tumkur	15.4	19.9	27.4	34.0
Bengaluru	19.4	21.3	30.7	33.5
Mandya	16.1	18.2	30.1	29.8
Hassan	16.3	18.7	28.1	29.5
Dakshina Kannada	15.4	14.8	30.1	29.9
Kodagu	17.4	19.3	31.5	33.3
Mysore	13.8	14.0	25.5	27.4
Chamarajanagar	14.1	14.8	28.8	29.9
Gulbarga	11.4	15.1	17.0	24.8
Yadgir	7.7	13.1	17.5	18.0
Kolar	12.5	15.1	24.3	27.9
Chikkaballapura	11.9	16.5	24.1	32.5
Bangalore Rural	13.6	17.7	26.7	30.8
Ramanagara	18.2	19.6	28.2	29.9
Karnataka	**14.0**	**15.6**	**25.0**	**26.9**
India	**13.5**	**15.6**	**21.3**	**24.0**

Data Source: NFHS 5 Fact Sheets

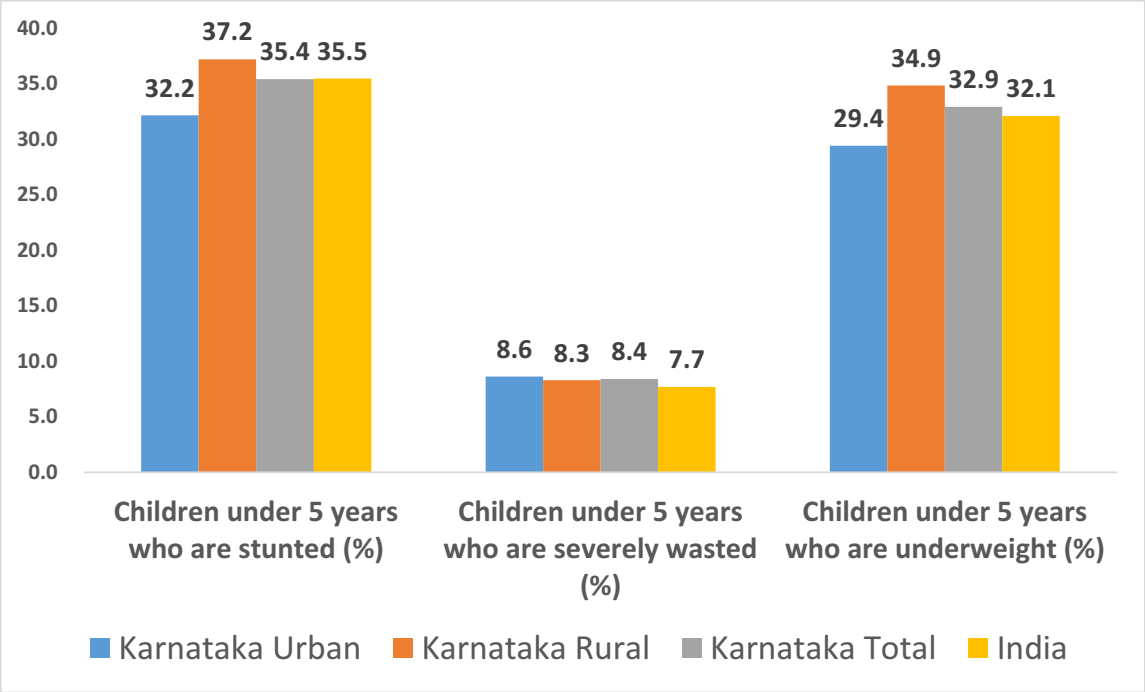
4.5: Nutrition

Nutrition is a vital part of Health and development, it is also a key component impacting life cycle, from infancy to geriatric and therefore has a profound influence on not only shaping the quality of human resources of a society, but preserving, protecting, promoting healthy and productive human capital. Malnutrition could undermine investments in education, health and other development sectors. Undernutrition or inadequate nutrition during pregnancy and lactation are critical determinants of maternal, neonatal and child health outcomes. Maternal undernutrition is associated with increased risk of maternal mortality, and both maternal stunting and wasting are associated with term and preterm births of children, Small for Gestational Age (SGA) and low-birth weight. Children born SGA are more likely to become stunted children and adults, which places such women at increased risk from delivery complications, morbidity, and mortality over time. As a part of the commitment to improving nutritional status of population and to accelerate the path to SDG goals, the government of Karnataka has already drafted the state nutrition policy titled Maternal, Infant, Adolescent, and Young Child Nutrition (MIAYCN).

Nutritional Status of Children

Karnataka is an average performing state in terms of nutritional status of the children with malnutrition levels being close to the national average. Malnutrition level in the state can be gauged from the recent NFHS-5 (2019) where children under age five years were classified as undernourished according to three anthropometric indices; height-for-age (stunting), weight-for-height (wasting), and weight-for-age (underweight).

Figure: 4.7 Nutritional indicators of children under 5 years, Karnataka 2019 and India-2019-21



Data Source: NFHS 5 Fact Sheets

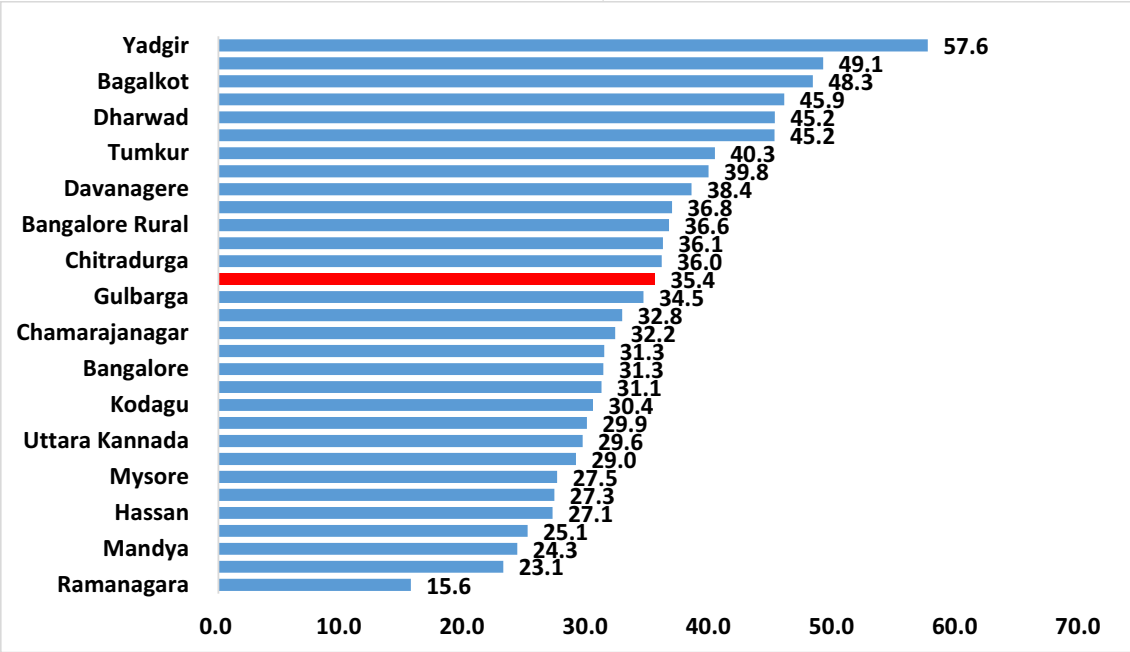
More than one third of the children in this age-group were noted to be stunted with the prevalence rate being critical in both urban (32 percent) and rural areas (37 percent). Stunting as is know is a sign of chronic undernutrition that reflects failure to receive adequate nutrition over a long period in these children and is considered as a measure of linear growth retardation and cumulative growth deficits. It is to be noted that the level stunting in children in Karnataka remained static between NFHS-4 (2015-16) and NFHS-5 (2019). Other than nutritional deficits over long period of time, stunting in such populations can also affected by recurrent and chronic illness in respective children. Share of children who are stunted ranged from 58 percent in Yadgir district to 16 percent in Ramanagara District. More than 40

percent of the children in districts of Tumkur, Gadag, Dharward, Bijapur Bagalkot and Koppal too were stunted.

The current nutritional status information is available from the indicator on wasting in children (assessed via weight-for-height), which represents the failure to receive adequate nutrition in the period immediately before the survey. Around 8 percent of children in both rural areas of the state is considered to be severely wasted. The proportion children under 5 that were severely wasted declined from 11 percent in NFHS-4 (2015-16) to 8 percent in NFHS-5 (2019). Wasting as in known is an outcome of inadequate food intake or from a recent episode of illness causing weight loss. The proportion children under 5 that were wasted declined from 26 percent in NFHS-4 (2015-16) to 20 percent in NFHS-5 (2019). Severe wasting in children was noted to be highest in 16 percent in Dakshina Kannada and lowest in Tumkur (3 percent). Data shows the stunting and severe wasting doesn't go together as children in backwards districts were at a higher risk of stunting or chronic undernutrition while those in better performing districts were at a relatively higher risk of wasting or acute undernutrition.

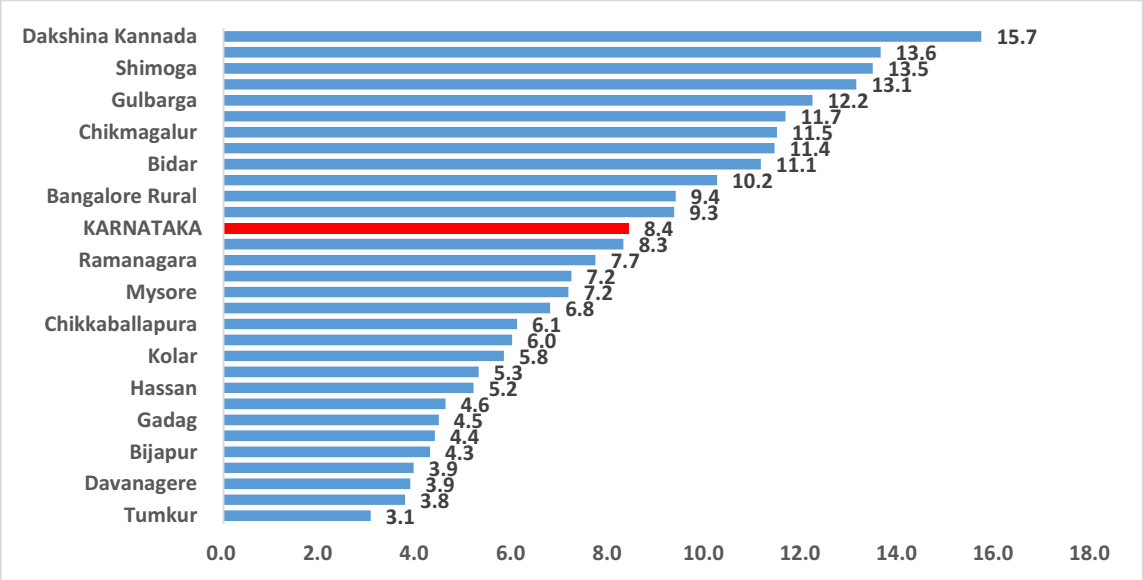
About one third of the children under 5 in Karnataka are underweight and the risk is slightly lower in urban areas (29 percent) than in rural areas (35 percent). There was only a nominal reduction in prevalence of underweight among these children in Karnataka between 2015-16 (35 percent) and 2019 (33 percent). This is expected as underweight assessment is based on weight-for-age which is a composite index that takes into account both acute and chronic undernutrition described above. Hence the prevalence of underweight is most ideal indicator for understanding the district wise differentials in undernutrition in children. Prevalence of underweight ranged from 46 percent in Koppal district to 16 percent in Kolar district. Most critical is the fact that more than one third of children in 14 out of 30 districts in Karnataka is underweight. On the other hand the NFHS-5 also shows prevalence of overweight in children below 5 years as 3 percent (4 percent in urban areas and 3 percent in rural areas) in the state.

Figure 4.8: Percentage of children under 5 years who are stunted across districts, Karnataka, 2019



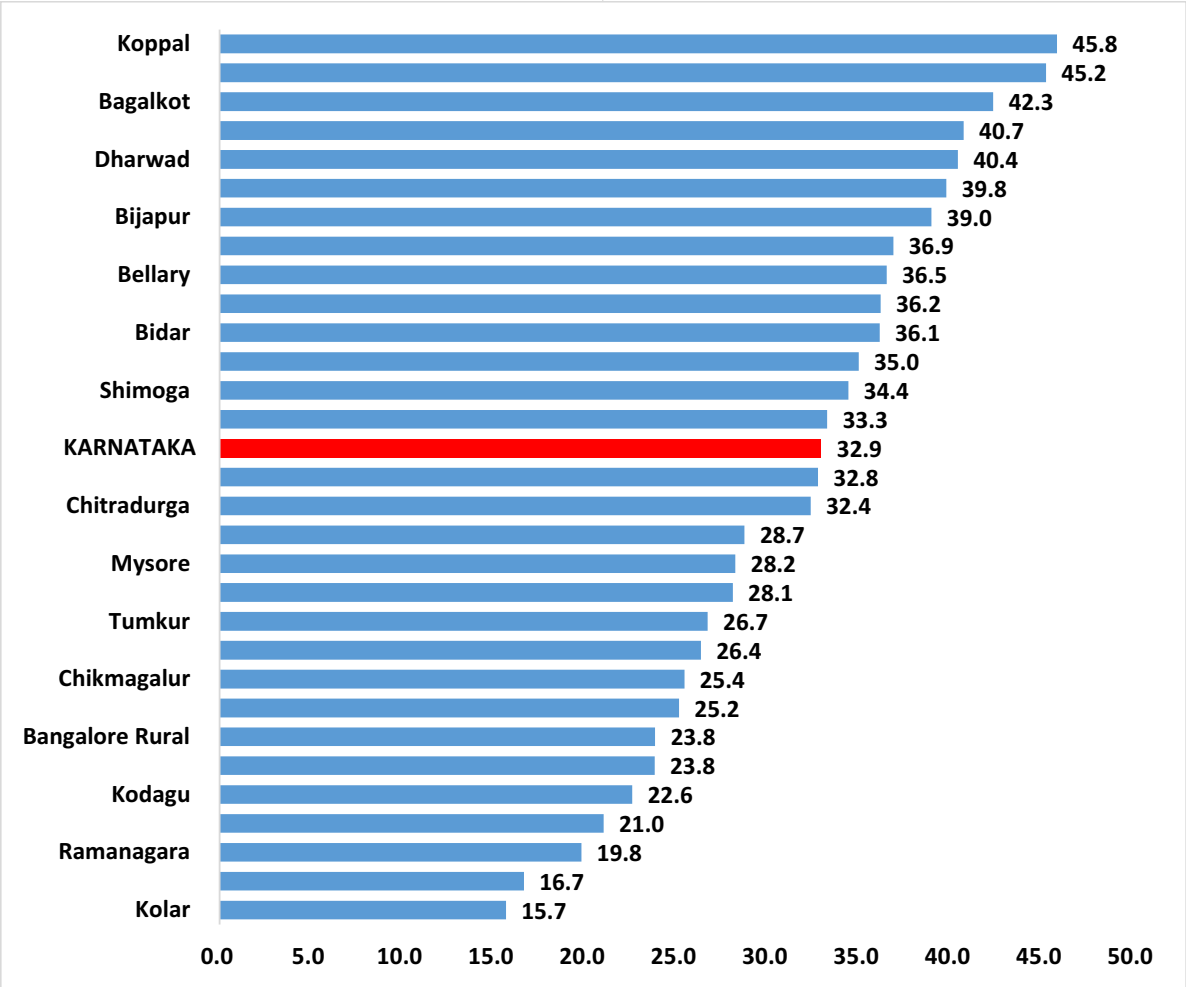
Data Source: NFHS 5 Fact Sheets

Figure 4.9: Percentage of children under 5 years who are severely wasted across districts, Karnataka 2019



Data Source: NFHS 5 Fact Sheets

Figure 4.10: Percentage of children under 5 years who are underweight across districts, Karnataka, 2019

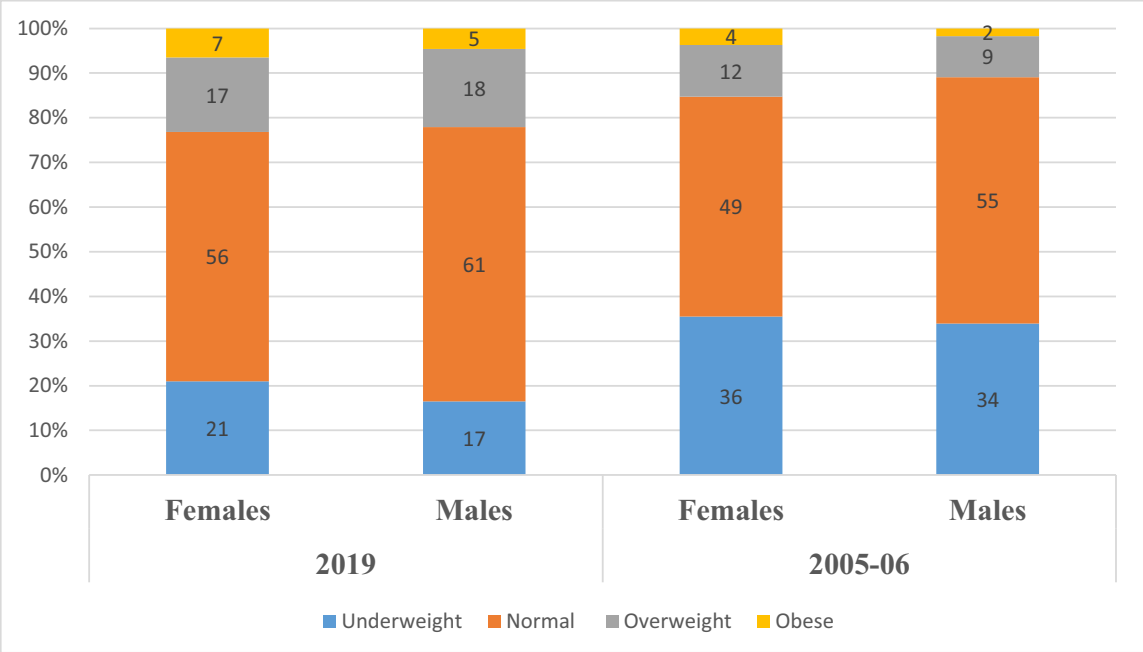


Data Source: NFHS 5 Fact Sheets

4.5.1: Nutritional Status of Adults

Malnutrition in adults results in reduced productivity, an increased susceptibility to infections, retarded recovery from illness, and for women, heightened risks of adverse pregnancy outcomes. NFHS-5 collected anthropometric data on the height and weight of women and men aged 15-49 years. The body mass index (BMI) is calculated as weight in kilograms divided by the square of height in meters. Adults were classified as too thin or underweight (BMI <18.5 kg/m^2), normal (BMI between 18.5-24.9 kg/m^2), overweight (BMI between 25.0-29.9 kg/m^2), and obese (BMI >30 kg/m^2).

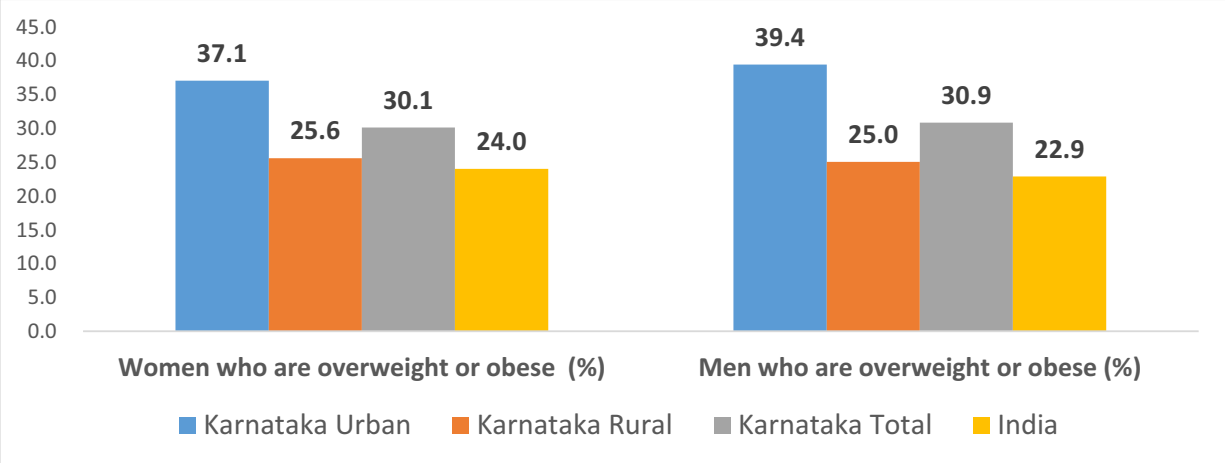
Figure 4.11: Nutritional status of adults aged 15-49 years by sex, Karnataka, 2005-06 and 2019



Data Source: DHS Stat Compiler https://www.statcompiler.com/en/ and NFHS-5 report

Between 2005-06 and 2019, the share of underweight adults aged 15-49 years had declined 36 percent to 21 percent for females and 34 percent to 17 percent for males. However there was increase in proportion overweight from 12 percent to 17 percent for females and from 9 percent to 18 percent during the same period. Though the overall prevalence is low a similar increase was noted in the case of obesity between 2005-06 and 2019. Normal body composition is more in the case of males than their female counterparts. Females were at a higher risk of underweight and obesity during both point of time.

Figure 4.12: Prevalence of overweight and obesity by sex, Karnataka 2019 & India 2019-21



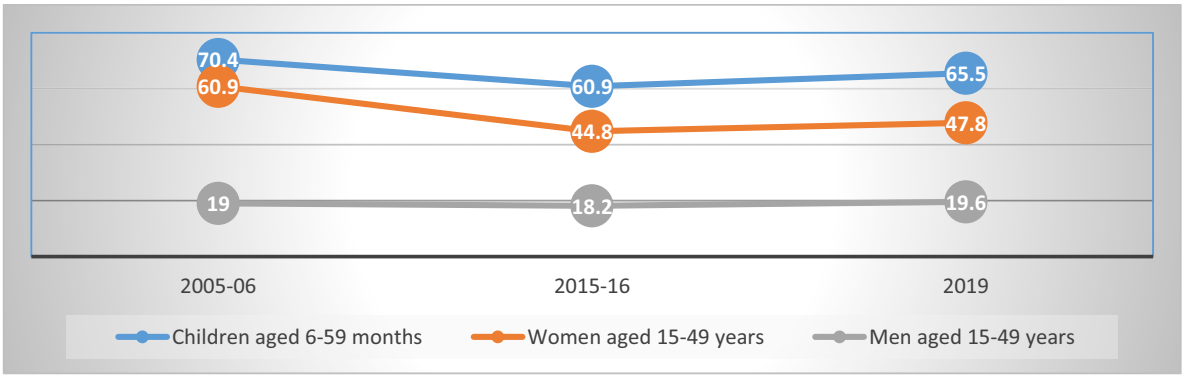
Data Source: NFHS 5 Fact Sheets

The recent NFHS-5 (2019) indicates that the prevalence of overweight and obesity among adults aged 15-49 years in Karnataka (30-31 percent) to be higher) than the national average (23-24 percent). Overweight and obesity is much higher in urban areas of the state than in rural areas. As seen above there has been an increase in overweight and obesity and a decline in underweight between 2015-16 and 2019. The proportion overweight has increased from 23 percent to 30 percent for females and 22 percent to 31 percent males between 2015-16 and 2019. While the decline in prevalence of underweight was from 21 percent to 17 percent for females and 17 percent to 14 percent for males in the same period. All these illustrates the ongoing nature of nutritional transition among the adult population in the state, with burden shifting from undernutrition to overweight and obesity. Shift towards overweight and obesity is an outcome of changing life style behaviour ranging from poor dietary intake to lack of physical activity, which makes the population more vulnerable to non-communicable diseases. However nearly one out of every six adults aged 15-49 in Karnataka is underweight, signalling the nature of dual burden of undernutrition and over nutrition in the State.

4.5.2: Anaemia in children and young adults

Anaemia is an indicator of both poor nutrition and poor health in a population. Anaemia is a serious global public health problem that particularly affects young children and pregnant women. WHO estimates that 42% of children less than 5 years of age and 40% of pregnant women worldwide are anaemic.

Figure: 4.13 Percentage with anaemia in chidlren and young adults in Karnataka, 2005-06, 2015-16 & 2019

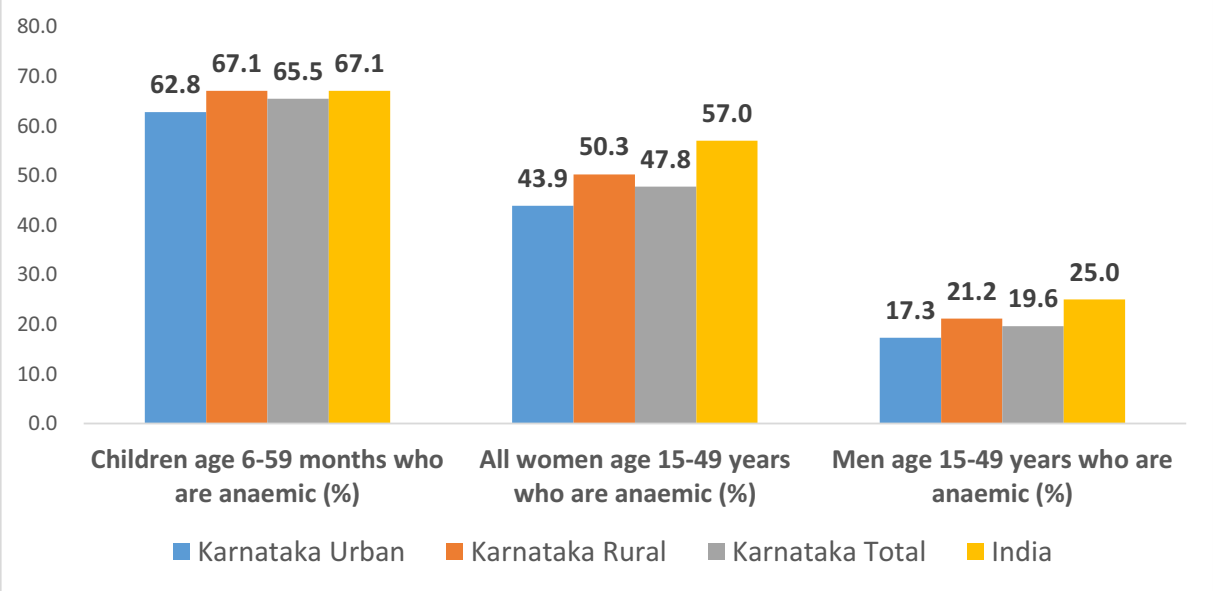


Data Source: NFHS 5 Fact Sheets and DHS Stat Compiler https://www.statcompiler.com/en/

According to WHO, it can also impact other nutritional concerns such as stunting and wasting, low birth weight and childhood overweight and obesity due to lack of energy to exercise. School performance in children and reduced work productivity in adults due to anaemia can have further social and economic impacts for the individual and family.

A child or a pregnant woman whose hemoglobin count is less than 11 grams per decilitre is classified as anaemic. In non-pregnant women, those with a hemoglobin count less than 12.0 grams per decilitre is treated as anaemic. Men with a hemoglobin count less than 13.0 grams per decilitre is classified as anaemic. According to NFHS-5 in Karnataka 66 percent of children aged 6-59 months are having anaemia. Nearly half of women aged 15-49 years are anaemic while the prevalence of same was 20 percent among their male counterparts. Trends indicate there anaemia levels in Karnataka to be nearly stagnant in last decade.

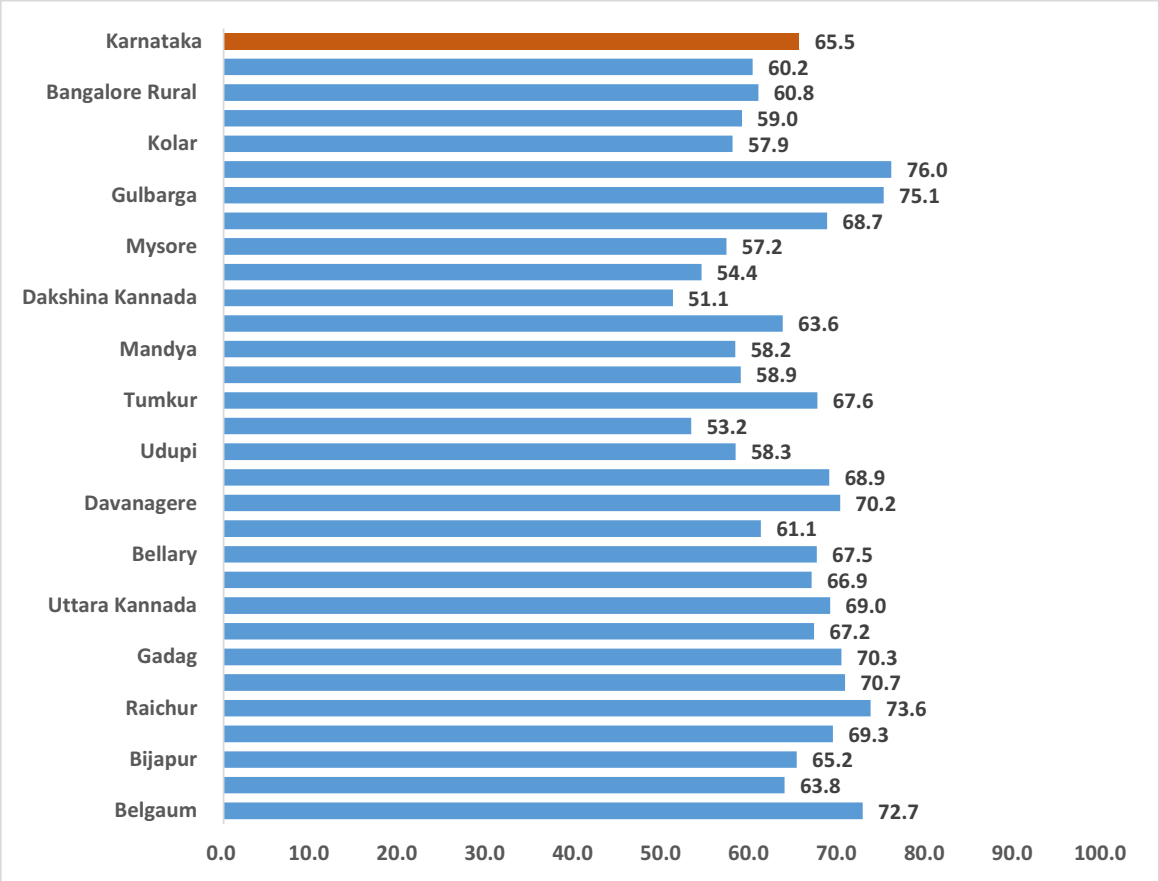
Figure 4.14: Prevalence of anaemia among children and and young adults, Karnataka 2019 and India 2019-21



Data Source: NFHS 5 Fact Sheets

The prevalence of anaemia in children is close to national average but Karnataka is well below national level in terms anaemia level in adult females and males. Prevalence of anaemia is noted to be slightly higher in rural areas than urban areas in the state. Anaemia in children is a major public health issue in the state with more than 50 percent of children in all districts of Karnataka has been tested to be anaemic in the NFHS-5 (2019).

Figure 4.15: Percentage of children age 6-59 months who are anaemic across districts, Karnataka 2019

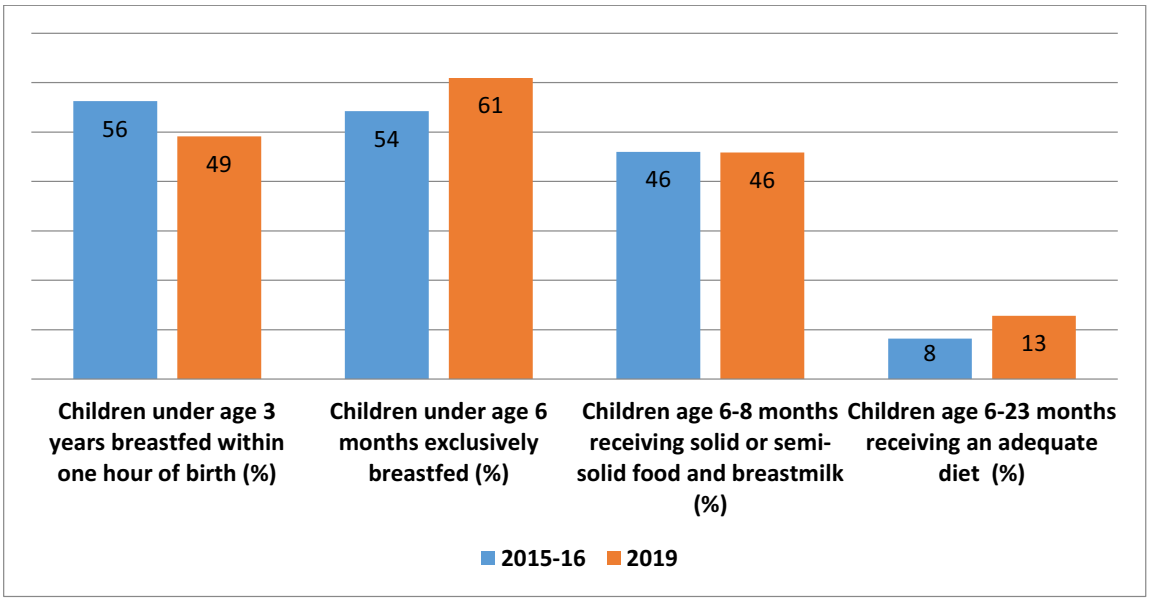


Data Source: NFHS 5 Fact Sheets

4.5.3: Infant and young child feeding practices

Infant and child feeding practices are key indicators of nutritional status of children. Breastmilk provides all the energy and nutrients that the infant needs for the first months of life, and it continues to provide up to half or more of a child's nutritional needs during the second half of the first year, and up to one third during the second year of life. Though Karnataka is performing relatively better in terms of exclusive breast feeding and initiation of breastfeeding, the indicates lack of progress in these indicators between 2015-16 and 2019. Only half of the children were reported to be breastfed within one hour of birth and decline in the same needs to be addressed. There was a considerable increase in exclusive breastfeeding from 54 percent in 2015-16 to 61 percent in 2019. However, children given solid or semi solid food along with breast milk remained static at 46 percent. The adequacy of dietary intake for children aged 6-23 months was only 13 percent in 2019.

Figure 4.16: Infant and child feeding practices, Karnataka 2015-16 and 2019



Data Source: NFHS 5 Fact Sheets

Malnutrition especially in the case of children and women is noted to be very high in Karnataka state. The Government of Karnataka (2022) in it's draft policy on nutrition attributed a major part of it to food insecurity, poor maternal and childcare practices, and limited access to environmental health services, which are determined by poverty, low education attainment, gender, societal discrimination, and poor infrastructure. The recent data presented above portrays that Karnataka is in the midst of major nutritional transition with the dual burden of undernutrition and over nutrition. The stagnation in progress noted in nutritional indicators between NFHS4 and NFHS5, indicates that the vertical nutrition programmes for target groups alone may not be sufficient for attaining the State policy goal of undernutrition free Karnataka. Dietary behavioural interventions are to intensified to address the malnutrition levels in the state. As in other similar settings the population is now consuming more foods high in energy, fats, free sugars and salt/sodium, and many people do not eat enough fruit, vegetables and other dietary fibre such as whole grains. The public needs to be sensitized on need to adhere to diversified, balanced and healthy diet as a protection against malnutrition in all its forms, as well as non-communicable diseases (NCDs), including such as diabetes, heart disease, stroke and cancer. Unprecedented increase in overweight and obesity calls for state level intervention to address the lack of physical activity.

4.6: Health Infrastructure and Manpower

The State has a wide network of health institutions providing health services both in urban and rural areas. **Table 4.10** presents information on health infrastructure in the State. There are 16 District Hospitals, 11 Other Hospitals and 36 Autonomous and Teaching Hospitals in the State. The primary health infrastructure has fulfilled the norms required under the "minimum needs programme" at the aggregate level. However, at the district and sub-district levels there are excess as well as scarcity of health institutions reflecting the inequity that exists in the distribution of health facilities. There are 8871 Sub-centres, 2359 Primary Health Centres (PHCs), 207 community health centres (CHCs) and, 146 taluk hospitals catering to the health needs of the rural population. On an average a public hospital serves over 5000 population in Karnataka. The ratio is favourable in many southern districts while it over 6000 in many northern districts as well as Bengaluru urban. But given the density and the existence of considerable number of private hospitals, Bengaluru urban district may not face the shortage as much as in other northern districts.

Apart from this the State also has around 2600 Hospitals providing health services based Indian System of Medicine. The primary health infrastructure in rural areas has fulfilled the norms required under the "Minimum Needs Programme" at the aggregate level **(Table 4.11)**.

Table: 4.10 Infrastructure of Public Health Services of the State Govt.

Type of Institution	**No.**
Sub-Centres	8871
Primary Health Centres	2359
Community Health Centres	207
Taluk / General Hospitals	146
Autonomous & Teaching Hospitals	36
Other Hospitals under Health & FW	11
District Hospitals	16
Indian System of Medicine Hospitals	2600

Table: 4.11 In Position and Shortfall of Man Power in the Public Health Services of the State Govt in Rural Areas.

Particulars	In Position.	Shortfall.
Health worker [female] ANM at Sub Centre in rural area	3301	1461
Health worker [Male] ANM at Sub Centre in rural area	1994	5794
Health worker [female] at PHC's in rural area	5644	-
Health Assistant at PHCs in Rural Area	2914	1438
Doctors at Primary Health Centres in Rural Areas	2071	105
AYUSH Doctors at Primary Health Centres in Rural Areas	356	-
Doctors at Sub District Hospitals	1396	-
Doctors at District Hospitals	677	

Source: Rural Health Statistics 2019-20

Table: 4.12Number of health care facilities in Karnataka as on 31st March 2019

Health care Centre/Hospitals	Rural	Urban	Total
Sub centre	9187	251	9438
PHCs	1995	364	2359
HWC-SC	571	0	571
HWC-PHC	132	71	203
CHCs	198	9	207
Sub Divisional Hospital (SDH)			146
District Hospital			16
Mobile Medical Units			22
Medical Colleges			16

Data Source: National Health Profile 2020

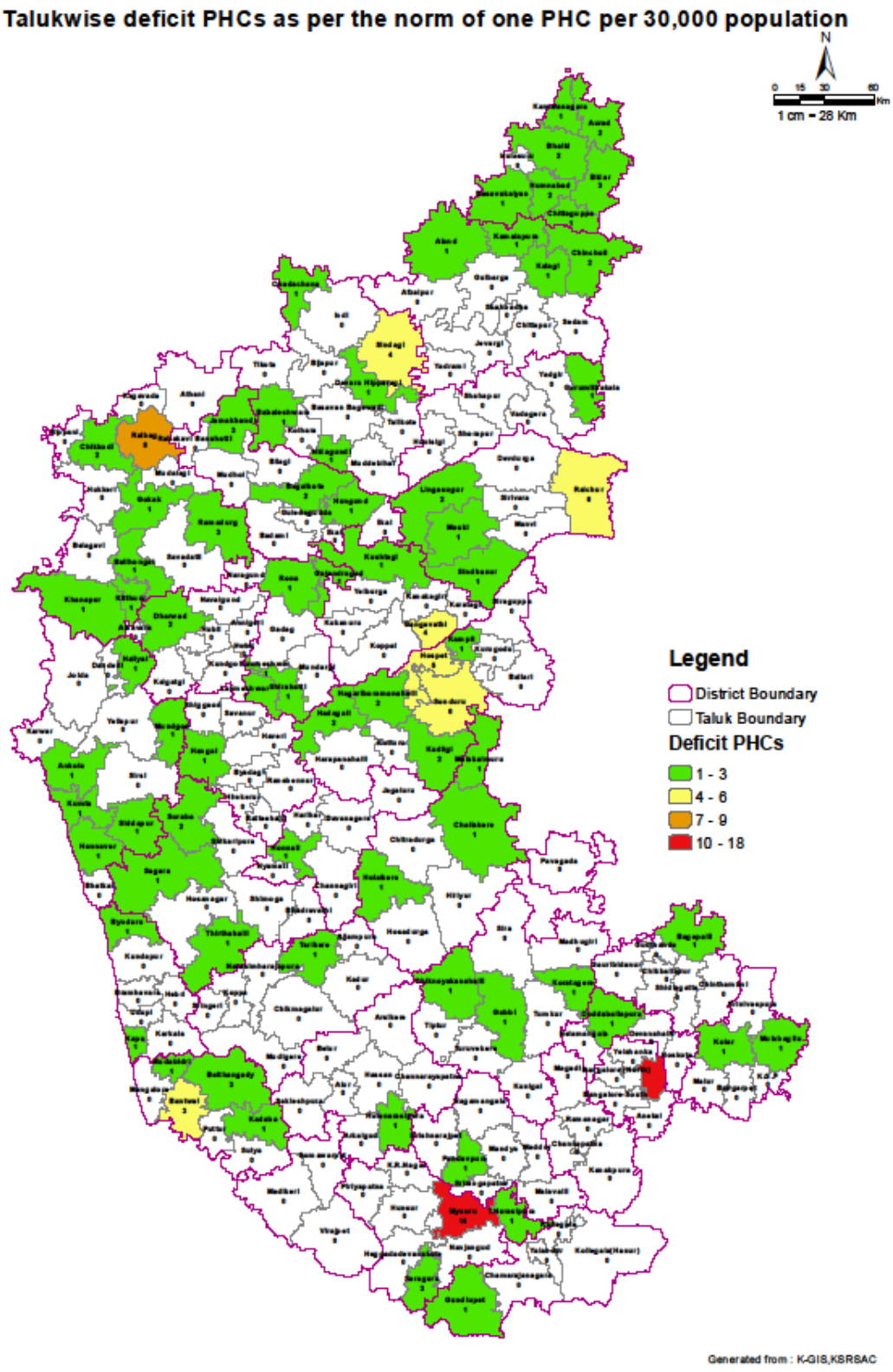
Table: 4.13 Medical manpower registered in in Karnataka

Details	Registered in 2010	Registered in 2019	Total registered upto 2019
Number of doctors registered with state medical council or medical council of India*	3727	6306	126567
Dental surgeons registered with Central/ State Dental council*	1913	2275	43876
AYUSH Registered Practitioners (Doctors)			48326
Ayurvedic Registered Practitioners (Doctors)			35886
Registered Auxiliary Nurse Midwives***			54039
Registered Nurses& Registered Midwives***			231643
Registered Lady Health Visitors***			6840
Registered Pharmacists***			60486

Source: Compiled from National Health Profile 2020
*- registered upto 2019
** registered as on 1st Jan. 2018
*** registered as on 11.08.2020

The manpower shortage in public health institutions has been a matter of serious concern of late. While considerable efforts were put in to upgrade the infrastructure facility in public health facilities, it has not been matched by adequate manpower. Various studies have brought out considerable deficit in health manpower existing in different parts of the State. In addition, absenteeism and long leave of health functionaries also affect the effective service delivery.

Map 4.1: Talukwise deficit Public Health Centres



4.7: Major Health Programme Initiatives Implemented by Government of Karnataka

4.7.1: National Health Mission (NHM)

National Rural Health Mission (NRHM) was launched on 12th April 2005 by the Government of India to improve medical facilities in the rural areas of the country. It is modified as National Health Mission by combining the primary health care services to the urban and rural population. The NHM seeks to provide Accessible Affordable and Quality Health Care to the rural population especially the vulnerable sections.

Around 11 programs are implemented under National Health Mission it includes RMNCH+A including immunization, National Vector Borne Disease Control Programme (NVBDCP),Revised National Tuberculosis Control Programme (RNTCP), National Leprosy Eradication Programme (NLEP),National Programme for Control of Blindness (NPCB),Integrated Disease Surveillance Project (IDSP),Additional Services to Under National Health Mission, Programme of Pulse Polio,Mission**Indradhanush**, Health Education Training Preventive of Deafness and other Programs and Strengthening of public health facilities by providing new constructions additional alternation and renovation.

4.7.2: National Vector Borne Disease Control Programme (NVBDCP)

State is implementing the activities for prevention and control of Vector Borne Diseases like Malaria, Filaria, Dengue, Chikungunya and Japanese Encephalitis as per the guidelines of GOI, Directorate of NVBDCP Delhi**.** The State is heading towards elimination of malaria Elimination. The State is experiencing declining trend of Malaria incidence. During 2021, a decrease of 44% in total Malaria cases is marked up to November as compared to same period of 2020. The State is under category-2 as per elimination criteria. While, the total confirmed Dengue cases in the State has increased from 3390 in November 2020 to 6042 by November 2021. Five deaths are confirmed from i.e. Ramanagar-02 and one death each from Belagavi, Chamarajanagara & Dakshina Kannada. Further, a total of 1827 Chikungunya confirmed cases have also been reported showing increase compared to same period of last year **(Table 4.14).**

Table 4.14: Details of NVBDCP

Year	Malaria cases/ deaths	Denguecases/ deaths	Chikungunya cases	AES/JE cases	AES/JE deaths
2016	10607/0	6083/8	1528	406/ 11	0/0
2017	7381/0	17844/ 10	3511	332/ 23	0/ 0
2018	5289/0	4848/4	2951	380/35	0/5
2019	3499/0	18183/17	3994	388/33	0/4
2020	1701/1	3823/5	1326	346/19	4/2
2020 (November)	1552/0	3390/0	1112	319/15	0/0
2021 (November)	860/0	6042/5	1827	324/20	0/1

4.7.3: National Tuberculosis Control Programme

National Tuberculosis Elimination Program (NTEP) erstwhile Revised National Tuberculosis Control Program (RNTCP) was implemented in the State from 1998 and the entire State was covered in 2004. More than 90000 TB patients put on treatment annually in Karnataka TB program. For administrative feasibility State is divided into 31 District TB Centers (DTC). 31 DTCs are divided into 271 TB Units (TU) one for every 2.5 lakh population. Selected Primary Health Centers have been up-graded as Designated Microscopic Centers (DMC) including 56 medical colleges and facilities in private sector. There are a total of 1893 DMCs providing sputum microscopy services across the state.

4.7.4: National Leprosy Eradication Programme

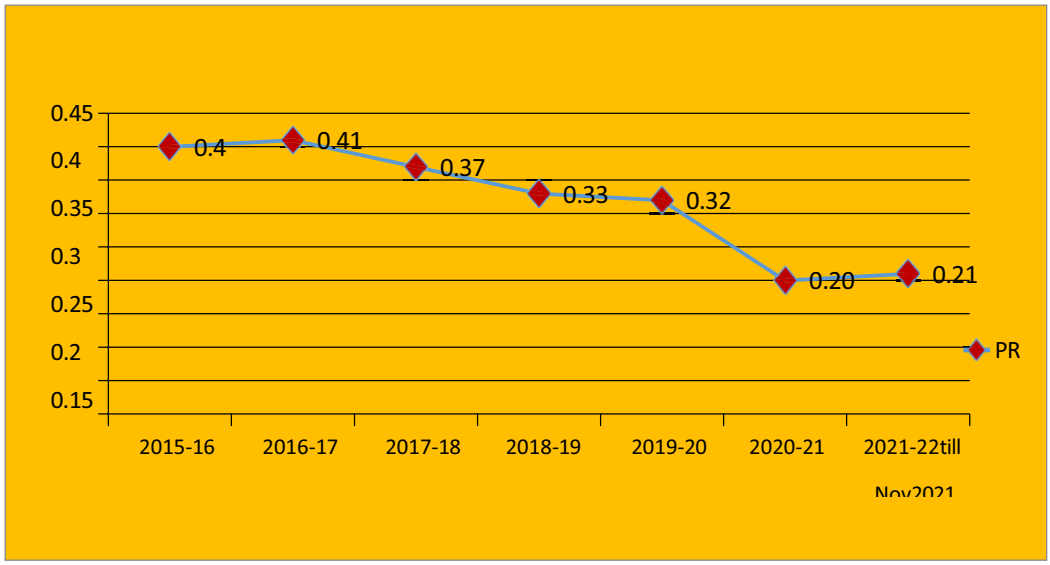
National Leprosy Control Programme was started in 1955. Tremendous achievement was made in the Programme with regard to accessibility and service delivery, with the successful implementation of the Programme. The prevalence rate of leprosy as dropped in Karnataka from 40/10000 population in the year 1986 to 0.21/10000 population in November 2021-Karnataka.

The main objectives under National Leprosy Eradication Programme (NLEP) are:

1. Elimination of leprosy i.e. prevalence of less than 1 case per 10000 population in all the Districts of the State.
2. Strengthening Disability Prevention & Medical Rehabilitation of persons affected by leprosy.

3. Reduction in the level of stigma associated with leprosy.Currently, 02 districts have prevalence rate 0.50 to 1 (Bidar, &Koppala) i.e 1000 population as on November 2021 there are 1080 Leprosy cases under treatment.

Figure: 4.17 Prevalence Rate of Leprosy in Karnataka



4.7.5: National Programme for Control of Blindness

The National Programme for Control of Blindness was started in 1976 as a Centrally Sponsored Scheme to counter the problems of Blindness due to various factors and also to reduce the prevalence of Blindness to 0.3% by 2020. The present prevalence rate of blindness is 1% as per National Survey 2006-07.

4.7.6: The Integrated Disease Surveillance Project (IDSP)

The Integrated Disease Surveillance Project was launched in 2005 and became programme in the year 2012. The general objectives of the programme aims at establishing a decentralized state based system of surveillance for communicable diseases so that timely and effective public health actions can be initiated in response to health challenges in the country at the state and national level.To improve the efficiency of the existing surveillance activities of disease control programs and facilitate sharing of relevant information with health administration community and other stakeholders so as to detect disease trends over time and evaluate control strategies.

The specific objectives of Integrated Disease Surveillance Programme are:

1. To integrate and decentralize surveillance activities.
2. To establish systems for data collection reporting analysis and feedback using Information Technology.
3. To strengthen laboratory support for disease surveillance and laboratory confirmation of outbreak.
4. To develop human resources for disease surveillance and action.
5. To involve all stakeholders including private sector and communities in surveillance activities.

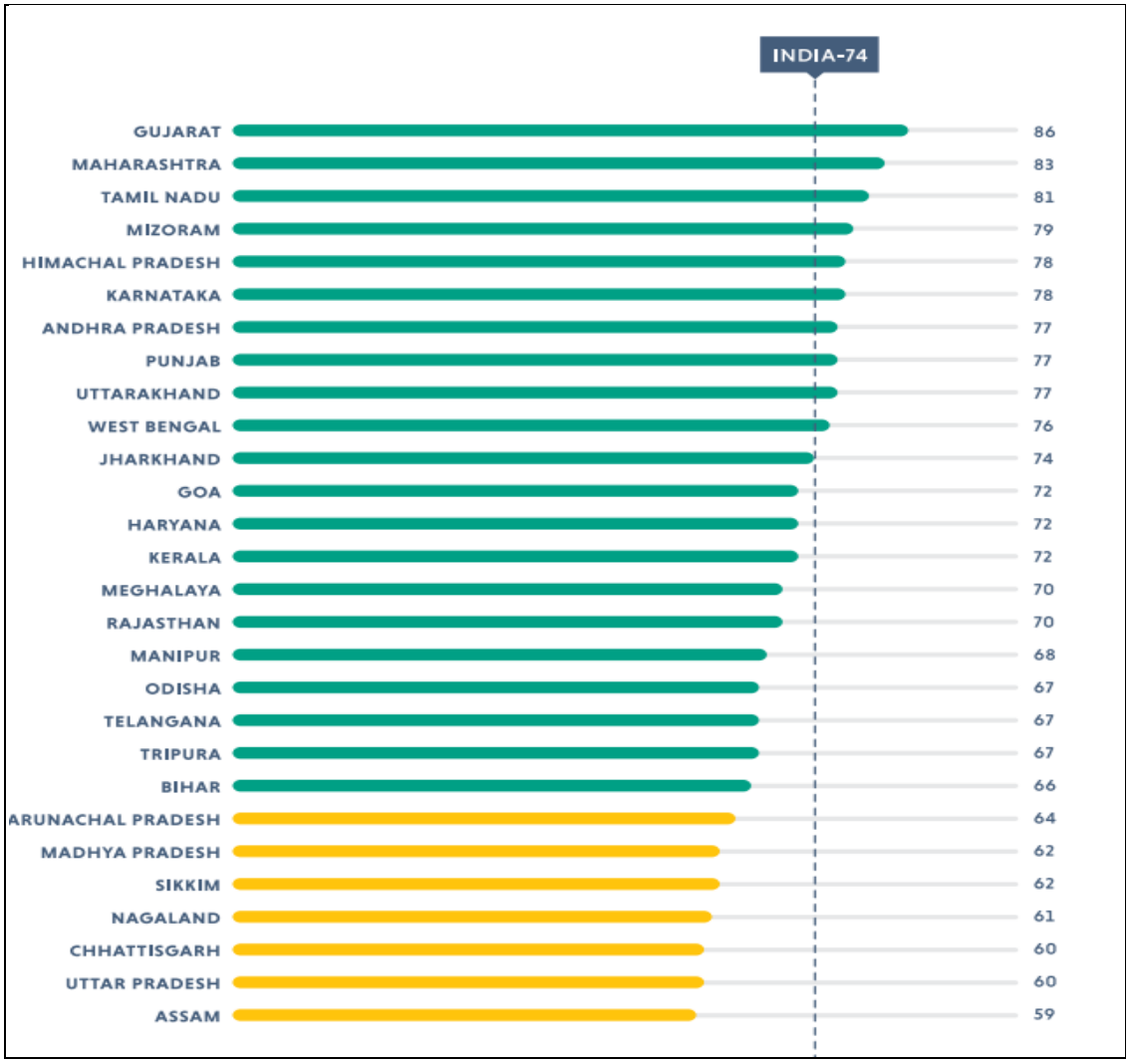
4.7.7: Other Major Health Programme Initiatives

The Department of health and family welfare services implements various National and State health programs of public health importance and also provides comprehensive health care services to the people of the State through various types of health and medical institutions. The progress of the health programmes are presented i**n** in Table in Appendix.

4.8: Progress towards Sustainable Development Goals

In this section we examine the status of Karnataka in terms it's progress towards Sustainable Development Goal (SDG) 3 for 2030 on health and wellbeing. SDG's were adopted by United Nations and its member states in 2015 to end poverty, hunger, AIDS, and discrimination against women and girls. The objective of SDG 3 is to thrive towardsensuring healthy lives and promote well-being for all at all ages.

Figure 4.18: SDG 3 Index Score of States, 2020-21



Source: NITI Ayogand United Nations (2021) SDG India Index and Dashboard 2020-21, New Delhi: NITI Ayog and United Nations, https://sdgindiaindex.niti.gov.in/assets/Files/SDG3.0_Final_04.03.2021_Web_Spreads.pdf (accessed on 10-02-2022)

The NITI Ayog is the central institution engaged in planning and implementing programmes to expedite India's pathway to achieve the SDG goals. Karnataka ranks 6th in the NITI Ayog's Index for monitoring India's progress towards Goal of Good Health and Well-Being. Karnataka with a score of 74 is considered to be a front runner among Indian States (65-99 points) towards achieving this goal.

Table 4.15: Performance of Karnataka and India on indicators of SDG 3, 2020-21

Indicator	Karnataka	India	Target 2030
Maternal Mortality Ratio (per 1,00,000 live births)	83	103	50
Under 5 mortality rate (per 1,000 live births)	28	36	25
Percentage of children in the age group 9-11 months fully immunized	94	91	100
Total case notification rate of tuberculosis per 1,00,000 population	135	177	242
HIV prevalence rate (%)	0.02	0.05	0
Suicide mortality rate per lakh population	17.1	10.4	3.5
Death rate due to road traffic accidents (per 100,000 population)	16.6	11.6	5.8
Percentage of institutional deliveries out of total deliveries reported	99.9	94.4	100
Monthly per capita out-of-pocket expenditure on health as a percentage of monthly per capita consumption expenditure	9.8	13	7.8
Total physicians, nurses and midwives per 10,000 population	70	37	45
SDG Index Score	78	74	100

Source: NITI Ayogand United Nations (2021) SDG India Index and Dashboard 2020-21, NewDelhi: NITI Ayog and United Nations https://sdgindiaindex.niti.gov.in/assets/Files/SDG3.0_Final_04.03.2021_Web_Spreads.pdf (accessed on 10-02-2022)

Progress made in terms of 10 individual indicators that contribute to aggregated SDG 3 index monitoring is presented in the table below. The state has already achieved targets related to case notification rate of tuberculosis per 1,00,000 population, universalization of institutional delivery and health workforce or the number of physicians, nurses and midwives per 10,000 population. Despite this the workers especially doctors and nurses are unevenly distributed across rural and urban areas and across districts within the state. As per latest estimates 58 percent of doctors are in urban areas and 42 percent in rural areas, while 72 percent of the nurses are in urban areas against 28 percent are in rural areas (WHO 2021). In this regard the Government of Karnataka has already set a higher target of 5 doctors, 12 staff-nurses and 2.5 midwives all per 1000 population by 2030 as a part of their strategy to achieve universal health coverage to the population (Government of Karnataka, 2020).

Karnataka is closer to attending SDG 3 targets related to under 5 mortality, full immunization children in the age group 9-11 months, HIV prevalence, out of pocket expenditures. However the state is lagging behind in 3 of the remaining indicators related to reductions in maternal mortality, suicide mortality and road traffic accidents.

4.9: Performance in Health Indicators at District level

Using the methodology of NITI Aayog and based on the availability of data at the district level SDG index using 6 indicators covering health and nutrition has been computed(See **Table 4.20**).

Out of 30 districts only 3 districts i.e.Ramnagara, Mysore and Mandaya are front runners in terms of health while, majority of the Northern Karnataka districts are in still an aspirational category (14 district). Whereas, Bengaluru, Udupi, Chikmangalore, Chamarajanagar districts are in the performer category(13).

The state has committed itself in reducing the maternal mortality ratio to less than 70 per 100,000 live births by 2030 and the indicator monitored to achieve this target is Proportional of Institutional Deliveries. It can be observed from the table that out of 30 districts in Karnataka only 7 districts have achieved the set target these (i.e. 100% Institutional Deliveries) includes Bengaluru Rural, Chamarajanagar, DK, Hassan, Mysore, Ramnagara and Tumkur. While Raichur and Gulbarga have the lowest ranks in terms of achieving the set target.

By 2030, end preventable deaths of new-borns and children under 5 years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1,000 live births and under-5 mortality to at least as low as 25 per 1,000 live births and one of the indicator monitored to achieve this target is Percentage of fully immunised children in age group 0-5 years. It can be observed from the table that only Ramnagara district has achieved the 100 immunization among children in the age group of 0-5 years while rest Bellary, Bijapur, Gulbgara has lowest levels of achievement in terms of immunization.

By 2030, end all forms of malnutrition, including achieving, by 2025, the internationally agreed targets on stunting and wasting in children under 5 years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women and older persons. NITI

Aayog monitors 4 nutritional based indicators of which 3 are relating to children and 1 relating to pregnant women aged 15-49 years.

The children based targets include percentage of children under age 5 years who are stunted and target is to reduce the stunting rates to 2.5% ; percentage of children under age 5 years who are underweight and target is to reduce the under weight rates to 0.9% and percentage of children under age aged 6-59 months who are anaemic and target is to reduce the anemia rates to 14%. Based on the current figures no district in the state is even close to achieving this target by reducing stunting rates, prevelance of anemia among children age 6-59 months and underweight rates.

Similarly, the Northern Districts of Karnataka i.e. Yadgir, Raichur, Bellary have highest level of anemia among women in age group 15-49 years and women with low BMI as compared to the southern districts of Karnataka.

Table 4.16: District Wise SDG Health Indicators

Districts	Children age 6-59 months who are anaemic	Pregnant women age 15-49 years who are anaemic	Children under 5 years who are stunted (height-for-age) (%)	Children under 5 years who are underweight (weight-for-age)(%)	Proportional of Institutional Deliveries	Percentage of fully immunised children in age group 0-5 years	Children age 6-59 months who are anaemic	Pregnant women age 15-49 years who are anaemic	Children under 5 years who are stunted (height-for-age) (%)	Children under 5 years who are underweight (weight-for-age)(%)	Proportional of Institutional Deliveries	Percentage of fully immunised children in age group 0-5 years	Health Composite Score
	Raw Data						Index Score						
Baglkote	63.8	49.5	48.3	42.3	95.2	78.6	20	47	17	8	58	26	29
Bangalore	58.9	23.7	31.3	28.1	99.3	78.2	28	100	48	39	94	25	56
Bengaluru Rural	60.8	33.6	36.6	23.8	100	92.7	25	82	38	49	100	75	61
Belgaum	72.7	40	32.8	36.9	97.5	81.4	5	68	45	20	78	36	42
Bellary	67.5	40.2	36.1	36.5	95.7	71.5	14	68	39	21	62	1	34
Bidar	69.3	60.4	36.8	36.1	99	74.8	11	24	38	22	91	13	33
Bijapur/Vijayapura	65.2	71.5	45.9	39	91.8	71.1	17	0	21	15	27	0	14
Chamrajnagar	68.7		32.2	28.7	100	93.3	12		46	38	100	77	55
Chickballapur	59	37.9	31.3	25.2	99	76.6	27	72	48	46	91	19	51
Chickmagalur	53.2		27.3	25.4	98.4	91	37		55	45	86	69	58
Chitradurga	61.1	57.1	36	32.4	98.3	94.6	24	31	39	30	85	81	48
Davanagere	70.2		38.4	32.8	98.3	79.4	9		35	29	85	29	37
Dharwad	67.2	68.4	45.2	40.4	99.7	87.6	14	7	23	12	97	57	35
DakhinaKannada	51.1	35.8	25.1	26.4	100	86.8	40	77	59	43	100	54	62
Gadag	70.3	51.1	45.2	39.8	96.2	74.3	9	44	23	13	66	11	28
Gulbarga	75.1	58	34.5	36.2	88.7	75.3	1	29	42	21	0	15	18
Hassan	63.6	47	27.1	23.8	100	96.8	20	53	55	49	100	89	61
Haveri	66.9	59.4	29.9	35	97.2	95.7	15	26	50	24	75	85	46
Kodagu	54.4	50.1	30.4	22.6	98.4	90.6	35	46	49	52	86	67	56

Kolar	57.9	37.9	31.1	15.7	99.6	86.3	29	72	48	67	96	53	61
Koppal	70.7	52.2	49.1	45.8	90.7	84.8	9	42	15	0	18	47	22
Mandya	58.2		24.3	16.7	99.5	93.9	29		60	65	96	79	66
Mysore	57.2	24.2	27.5	28.2	100	97.2	30	100	55	39	100	90	69
Raichur	73.6	69.1	39.8	40.7	88.9	80.2	4	5	32	11	2	31	14
Ramanagar	60.2		15.6	19.8	100	100	25		76	58	100	100	72
Shimoga	68.9	33.4	29	34.4	99.7	96.1	11	82	52	25	97	87	59
Tumkur	67.6		40.3	26.7	100	97.7	14		31	43	100	92	56
Udupi	58.3	48.4	23.1	21	98.9	89	29	50	63	55	90	62	58
UttaraKanada	69	33.1	29.6	33.3	99.3	93.6	11	83	51	28	94	78	57
Yadgir	76	61.1	57.6	45.2	93.3	82.6	0	22	0	1	41	40	17

Aspirant
Performer
Front Runner

4.10: Covid-19 Pandemic in Karnataka

As on 31st January 2022, there were 38.1 lakh confirmed cases and 38,998 deaths due to Covid-19 in Karnataka. The state Karnataka which accounts for 5 percent of total population of India is the third most covid-19 affected state in the country, accounting for 9 percent of confirmed cases and 8 percent of the deaths in the country. However, the case fatality ratio (CFR)or the proportion of individuals diagnosed with covid-19 who die from that disease was comparatively lower in Karnataka (1.02 percent) than the average Indian situation (1.2 percent). CFR shows lesser severity among infected persons in the state, which could also be an indicator of better management this pandemic situation.(**Table 4.19)**

Table 4.19: States in terms of number of covid-19 cases in India as on 31st January 2022

Rank	State	Confirmed cases	Deaths	Case Fatality Ratio (%)
1	Maharashtra	77,21,109	1,42,611	1.85
2	Kerala	60,25,669	54,395	0.90
3	Karnataka	38,09,467	38,998	1.02
4	Tamil Nadu	33,45,220	37,564	1.12
5	Andhra Pradesh	22,76,370	14,615	0.64
6	Uttar Pradesh	20,19,549	23,207	1.15
7	West Bengal	19,95,516	20,619	1.03
8	Delhi	18,30,268	25,865	1.41
9	Odisha	12,49,240	8,665	0.69
10	Rajasthan	12,06,421	9,268	0.77
All India		**4,14,67,007**	**4,96,274**	**1.20**

The intensity of covid-19 across three waves are presented in the graphs below. The peak of the first wave was in September 2020 with over 2.6 lakhs confirmed cases, while deaths were highest (3388 cases) in August 2020. The second wave was most severe in the month of May 2021 with 10.8 lakh confirmed cases and 13,567 deaths. The third wave underway was at it'speak in the month of January 2021 with 8 lakh cases with a low severity of 663 deaths.

Only limited information is available on differentials in prevalence of covid-19 across states including Karnataka. The round 2 of sero survey of IgG antibodies against SARS-CoV2 and

Acute infection in Karnataka state shows the differentials in prevalence of Covid-19 between 25January – 18 February 2021 (Government of Karnataka 2021). The odds of covid-19 infection was 1.2 times higher in males than females, 1.7 times higher in those aged over 40 years than those aged 18-29 years and over 2 times higher among elderly, those with comorbidity and bus conductors and auto drivers when compared to pregnant women who had the lowest risk.

Figure: 4.19 Newly confirmed covid-19 cases in each month in Karnataka, March 2020 to Jan 2022

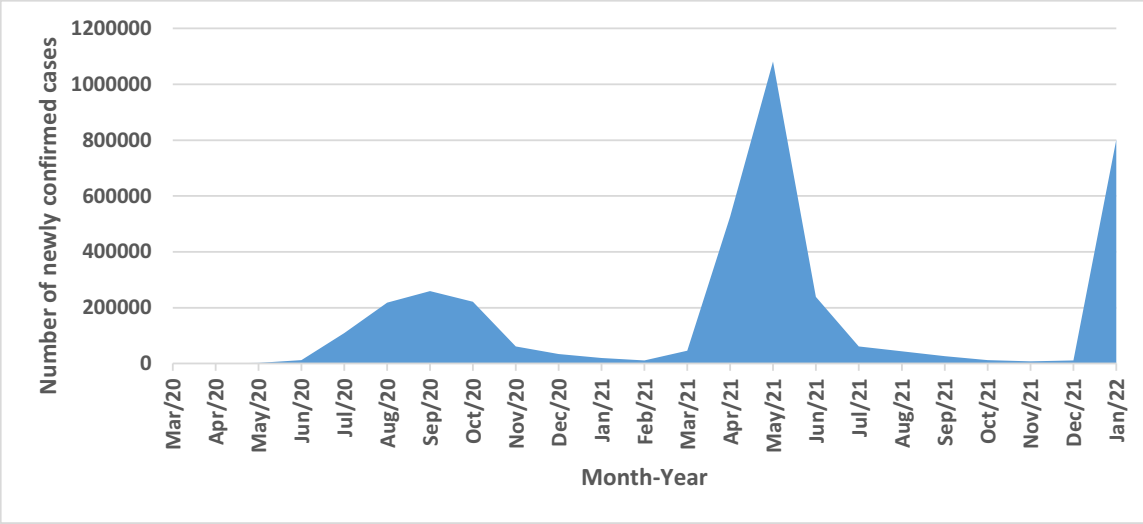
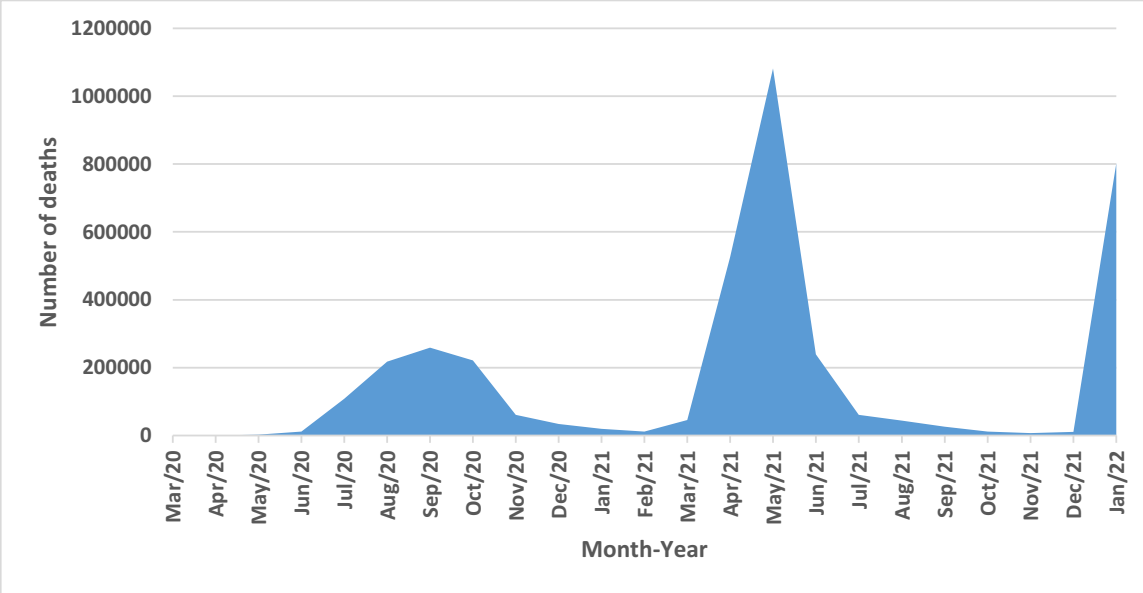


Figure: 4.20 Confirmed covid 19 deaths in each month in Karnataka, March 2020 to Jan 2022



Karnataka State has made significant achievements in health sector as visible from the health outcomes.TheState stands in the first place for the implementation of Health and wellness program. Total 6995 Health and Wellness Centres are being established as on February 2022. State stands in the Second place for registration of non-communicable disease software. Total 3,33,20,310 registrations have been done.

The State also stands in the Second place in the implementation of e-Sanjeevini program, with an average of 12,000 consultations per day. The State stands at 8thpositionwith MMR of83 in terms of ranking in MMR as compared to other states throughout the country.

Karnataka is one of the 7 states to have achieved National Health policy Goal of MMR less than 100. The next aim of the state is to achieve the Sustainable Development Goal (SDG) of MMR of less than 70 which is to be achieved by 2030.

However, Karnataka is undergoing an epidemiological and demographic transition leading to an increased burden of NCDs. In 2016, NCDs contributed 62%, communicable diseases 25.1% and injuries 12.9% of the total disease burden in Karnataka. The economic impact of NCDs is phenomenal due to the increasing costs of care as well as the need for continuity in care. Therefore, preparedness of health infrastructure to meet NCD challenges is essential.

Increase Screening and surveillance

- All men and women- 30 years of age and above for Oral Cancer, Hypertension and Diabetes Mellitus
- All women- 30 years of age and above for Cervical and Breast Cancer
- Setting up the Site of Screening- The site of screening can be either the village itself or at sub centre (if the sub centre is near). In urban areas, this can be the site of the Urban Health and Nutrition Day (UHND) or the Urban Primary Health Centre (UPHC). Screening of the common NCDs should be undertaken at a place that is easily accessible to all the members of the community, particularly women, poorest and other vulnerable groups and for the larger population.
- **Decentralision** of health Schemes for their location specific IEC and implementation requirements.
- Permanent staff requires to be hired, in the 100 aspirational Taluks 267 Medical officers (MBBS) , 584 Laboratory Technicians, 559 Pharmacists, 2734 Nurses and

midwife, 555 Health Assistant (male/female) , 1197 Multi-skilled Group D workers are to be recruited.

- There is need for monitoring the health of children from anganwadi to high school through Seamless integration of RCH portal with School health portal to fix responsibility on the concerned PHCs to ensure required diagnostic, treatment and monitoring of the health of women and children.
- RDPR should ensure through PDOs – the provision of clean fuel, water and sanitation for all round enrichment of health and well being.

Action Plan for Anaemia free (Mukt) Karnataka

Anaemia can be reduced only if the departments (Health, WCD and FCS) converge their activities and GP coordinates and monitors the activities regularly through Poshan Tracker created by GoI. Health dept. should prepare region wise Nutrition plan and create IECs in the forms of video snippets and ensure dissemination to the public through GP, Asha worlers, Angwandi Workers etc. Digital literacy is to be imparted to all Asha workers

- Poshan Tracker should be updated regularly by Asha Workers (ANMs)/ Anaganwadi Workers (AWS)/ PHC doctors for effective monitoring of malnutrition. Asha workers should on a quarterly basis test the anaemic mother/ child and upload the relevant data in Poshan Tracker
- Anganwadi worker should upload BMI details and provide rations and supplements distribution data. The households having anaemic women/ Children should be identified and provided with fortified grains through PDS by the FCS and supplementary Nutrition Under ICDS
- Pregnant Women and Lactating Mothers: Provision of IFA tablets to pregnant women will be during routine antenatal visits at sub Centre/ PHC/CHC/DH. ASHA to ensure provision of IFA supplements to pregnant women who are not able to come for regular antenatal checkups through home visits. She will also monitor compliance of IFA tablets consumption through weekly house visits.

Financing the Plan

As per NFHS 5 survey it is estimated that app. 29.3 lakh child and 4.3 lakh pregnant women are anaemic.Anaemic children in anganwadis should be provided Special supplementary nutrition (either spirulina Chikkis, Dathruloha, Sai Protein) for 90 days for improving

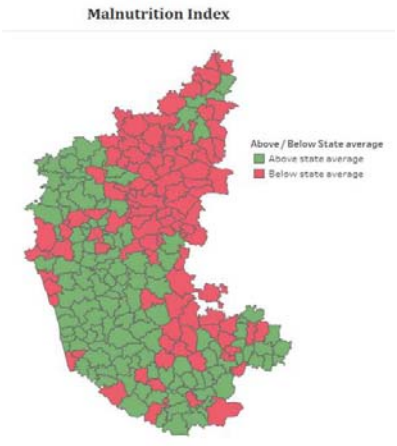
hemoglobin levels. Calculated are Rs 2 per day per child for 90 days, Rs 53 crore per anum is required for child anamia intervention in the state.

Anaemic children in anganwadis should be provided Special supplementary nutrition (either spirulina Chikkis, Dathruloha, Sai Protein) for 90 days for improving hemoglobin levels

Similarly, NLM & Stree Shakti Self help Groups (SHGs) can be empowered and enabled to produce, improve amd supply supplementary nutrition food (SNF) to the children, adolescent girls, pregnant women and lactating mothers. An SHG Nutrition cluster should be developed and these SHGs can be upgraded in MSME to engage in food process, thereby adding value to agri produce.

The estimated cost of Nutrition Clusters with machinery etc, with capacity building and other related aspects is Rs 1 crore per anum. A pilot of 17 clusters, 1 per district should be developed – especially in taluks with high anaemic prevalence. Budget = Rs 17 crore.Total, **Rs 84 crore** would be required **per anum** for period of 5 yrs to eradicate child anaemia.

- Provide breakfast to children in Govt. Schools in high incidence talukas ti improve the nutrition status.
- Strengthening of IEC component for knowledge, awareness and application –balanced diet, breast feeding etc.
- The anaemia among adolescent is 49.4 percent and there are 115 talukas below State average mainly in North Karnataka- specifically in KK region. Special schemes can be introduced by the board targeting the adolescent girls. The focus needs to include the survival of women and children and health and well-being of adolescent girls
- Improving coverage of government programs and strengthening behaviour change strategies through creation of specific messages and 'Jan Andolan'. NSS Volunteers / Girls for awareness campaign- NSS Volunteers / Girls for awareness campaign.



- There are 102 talukas categorized as aspirational Talukas that are mainly concentrated in North and Northeast Karnataka. Multi sectoral interventions for these talukas.

- **Diversification of Public Distribution System** to include millets which can contribute to the access of micronutrients for the anemic population
- Primary caregivers should be imparted with proper training and management with respect to children's nutritional requirements (ICDS)

Conclusion

The health achievements have significant impact on human development and labour productivity. The State has to focus on critical and poor performing regions in health indicators. The Northern Districts of Karnataka i.e. Yadgir, Raichur, Bellary have highest level of anemia among women in age group 15-49 years and women with low BMI as compared to the southern districts. The integrated plan has to focus on infrastructure, human resources, awareness and community participation and efficient service delivery to achieve the desired outcomes. The interventions at right place and in required form will help to achieve the SDG-3 targets well in advance and to ensure inclusive and quality health for all.

Chapter - 5

Employment And Decent work: Performance and Emerging Challenges

Chapter 5

EmploymentAnd Decent Work: Performance and Emerging Challenges

5.1:Introduction

The very formulation of SDG 8 "Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all" recognizes that economic growth will be inclusive only if it creates jobs and decent work. Because of the strong link between growth, employment and poverty, reduction activities in support of SDG 8 will also support the achievement of SDG 1 (poverty), SDG-5 (Women's work) and 10 (equality), partially with SDG-2, 3 & 4. The targets associated with SDG 8 cover a wide range of aspects linked to the Decent Work Agenda, such as productivity (8.2), entrepreneurship (8.3), green jobs (8.4), job creation (8.5), youth employment (8.6), child and forced labour (8.7), OSH (8.8), LED (8.9) and access to finance (8.10).

The state economy of Karnataka had been passing through a phase of rapid and sustained economic growth (close to double digits growth GSDP) since the last three decades. As a consequence, it has achieved a substantial improvement in human development (Mehrotra and Parida, 2021). The state, which has also been passing through a phase of demographic dividend, in which the share of working population is the highest (about 67 percent), falling overall work participation rates and the rising youth unemployment rate, together, put question on the process of harnessing its demographic dividend. This dividend is likely to disappear forever post 2040, due to the falling fertility rates below replacement level (NFHS, 2019-20).As the share of elderly population has already started rising in the state, the concerns on demographic dividend should be the top most priority of the government's policy making, in the next couple of decades. The share of elderly population in Karnataka has increased slowly (2 percentage points in about 18 years) from 6 percent to 8 percent during 1993-94 and 2011-12. But most recently, it has increased very rapidly to 12 percent during 2019-20 (4 percentage points in just 6 years).

Further, in the context of Covid and Post covidsituation, when economic revival is necessary by expanding domestic demand for goods and services, it is necessary to enhance the income of the poor or the lower middle class with higher propensity to consume, which is possible by

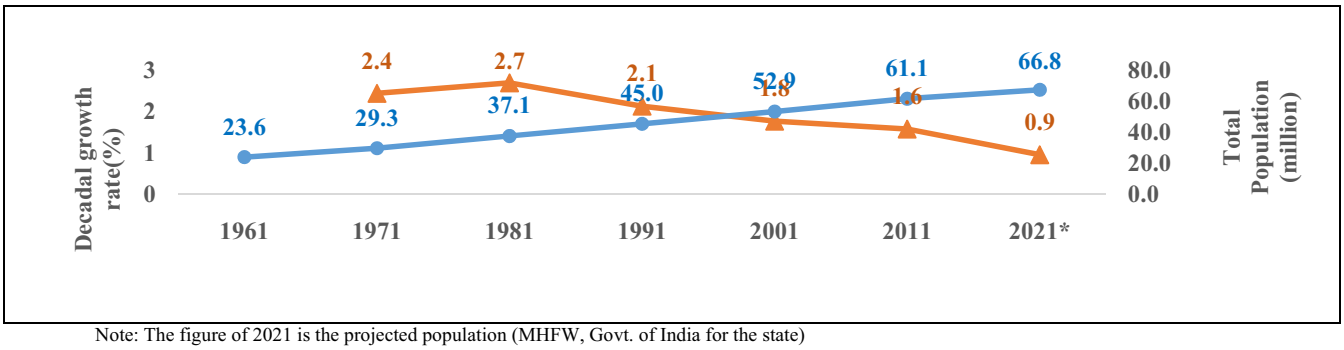
increasing employment generation in decentralized production sector. Therefore, creation of decent jobs for the expanding educated and trained youth job seekers (labour force) is crucial.

The main objective of this chapter is to identify the existing labour market challenges in Karnataka, and to come out with suggestions for improving labour market outcomes that in turn will enhance Human Development status of the people. This chapter is organized in eight sections. Section two provides the context of demographic dividend, while section three explains the labour market participation scenario in the state focusing the social structure economic and skill issues. The broad sectoral employment trends and the sub sectoral employment pattern are analyzed in section four. Section five provides a discussion on the quality of jobs. Section six is devoted to earnings, and the incidence of poverty among non-farm sector workers. Section seven provides a discussion on constraints and challenges on harnessing demographic dividend in the state. While section eight outlines a road map for sustainable employment and decent work

5.2: Demographic Dividend- Size and Dimensions

The total population in the State of Karnataka continued to rise from about 23.6 million to about 67 million during 1961 and 2021 (**Figure5.1**),while the decadal growth rate of total population declined from 2.7 per cent per annum during 1981 to 0.9 per cent per annum during 2021. However, during the period 1994-2012, the share of youth (age group 15 to 29 years) in total population increased from 28 (1993-94) to 29 percent in 2004-05 but later declined to 28 percent in 2011-12 and to 26 percent in 2019-20; and the share of working age population (age group 15 to 59 years) increased from 59 percent to about 67 percent (**Figure 5.2**), but declined recently in 2019-20 by one percentage point.

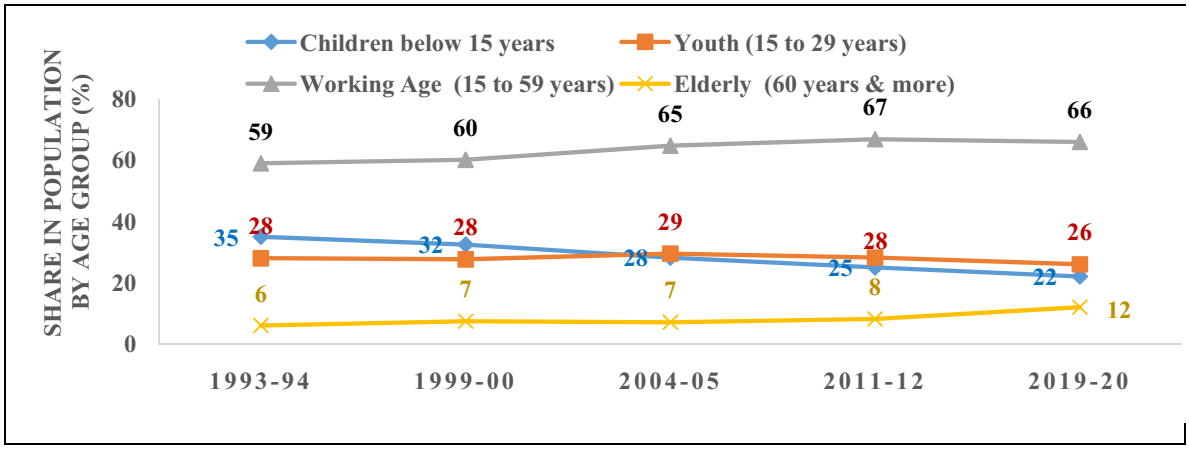
Figure 5.1: Decadal Population Trends in Karnataka, 1961-2021



Note: The figure of 2021 is the projected population (MHFW, Govt. of India for the state)
Source: Census decadal population compiled from website: www.in the statesta.com.

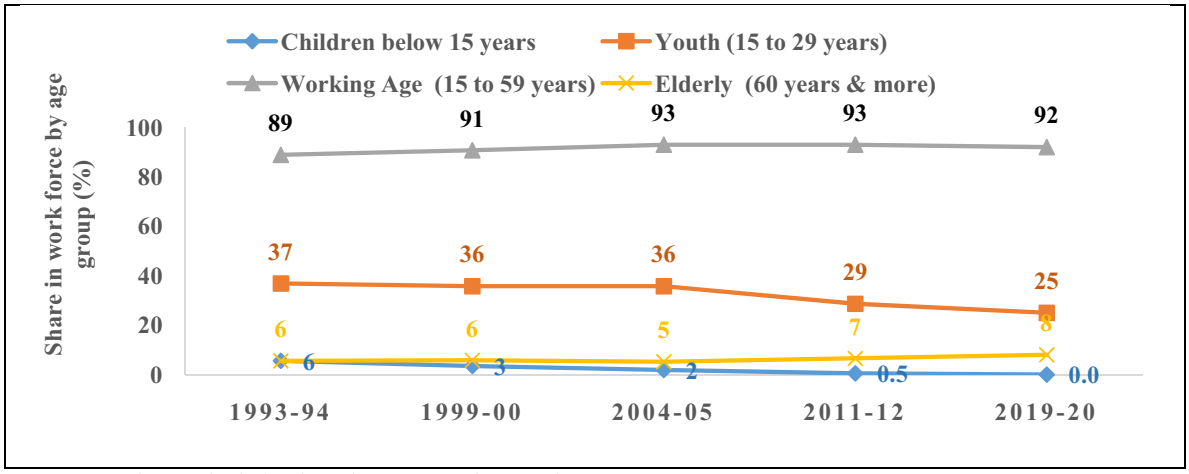
However, it is noted that the share of elderly population has consistently been rising in Karnataka (**Figure 5.2**). That means the state economy is now moving quickly towards an ageing society. The share of elderly population was 6 per cent in total population during 1993-94, which increased to 7 per cent during 2004-05, and further to 8 per cent and 12 percent during 2011-12 and 2019-20 respectively (**Figure 5.2**). Similarly, the share of elderly population in the total workforce also increased from about 6 percent to 8 percent during 1993-94 and 2019-20 (**Figure5.3**).

Figure5.2: Demographic characteristics of Karnataka, 1994-2020



Source: Authors calculation based on NSS and PLFS data.

Figure 5.3: Share of population in the workforce by broad demographics, 1994-2020



Source: Authors calculation based on NSS and PLFS data.

5.3: LabourMarket ParticipationScenario

The overall labour force participation rate (LFPR) in the state has been declining consistently since 1993, until most recently. It declined from 48 percent to 43 percent during 1983 and 2012, but increased marginally to 43.5 percent during 2019-20. This declining trend is observed in case of women, but not in the case of men. While male LFPRremained stagnant around60 percent;**the LFPR of females declined from 36 percent to 27 percent** (**Table 5.1**).

According to studies like Himanshu (2011) and Mehrotra et al. (2014), at the all India level, the growing mechanization in agriculture and growing enrollment of girls in the higher education (See Rangarajan et al., 2011; Kannan and Raveendran, 2012; Hirway, 2012; Parida, 2015) are among the major reasons of declining female LFPR in rural areas. Moreover Mehrotra and Parida (2017) argued that the prevalence of social constraints, and behavioral factors at the household level due to the recent improvement in the standard of living (negative income effect) are also likely to play an important role in this process.

Table 5.1: Labour Force Participation Rate (LFPR) in Karnataka, 1993-94 to2019-20

Age Groups	Labour Force Participation Rate (%)				
	1993-94	1999-00	2004-05	2011-12	2019-20
Males					
Youth Population (15 to 29 years)	79.7	78.5	78.05	63.7	63.5
Working Age Population (15 to 59 years)	89.3	88.7	88.5	83.3	83.8
Elderly Population (60 years & above)	62.2	52.7	53.01	55.7	41.7
Total Population (All ages)	**59.4**	**59.04**	**61.5**	**60.9**	**60.4**
Females					
Youth Population (15 to 29 years)	49.5	42.3	44.3	24.3	28.5
Working Age Population (15 to 59 years)	55.3	49.7	54.5	34.9	37.8
Elderly Population (60 years & above)	21.3	20.2	21.4	16.7	12.3
Total Population (All ages)	**36.4**	**32.8**	**49.9**	**24.6**	**26.6**
Males+ Females					
Youth Population (15 to 29 years)	64.6	60.6	61.6	44.9	46.3
Working Age Population (15 to 59 years)	72.5	69.5	71.7	59.7	60.8
Elderly Population (60 years & above)	40.8	35.7	36.2	34.09	26.6
Total Population (All ages)	**48.04**	**46.03**	**49.9**	**42.9**	**43.5**

Source: Authors calculation using NSS and PLFS unit level data

Since the sectoral employment pattern in Karnataka also reveals a similar trend of structural transformation, the above cited reasons could also be partly responsible for low and declining female LFPR in the state.

As expected, both the labour force participation rate (LFPR) and work participation rate (WPR) of working age population are highest across the gender categories (**Table 5.1 and 5.2**). The falling participation rates of elderly population is a good sign. It is also a reflection of the structural transformation, which caused an improvement in the overall standard of living of the households in Karnataka,and also the coverage of elderly under social protection schemes**like SandhyaSuraksha**(State) and Central Old age pension scheme,that helped to improve the overall HDI of the state.

However, the falling labour market participation (both LFPR and WPR) of the youth population is mainly owing to the increased participation in education and training (**Table 5.1 and 5.2**).

Table 5.2: Work Participation Rate (WPR) in Karnataka, 1993-94 to2019-20

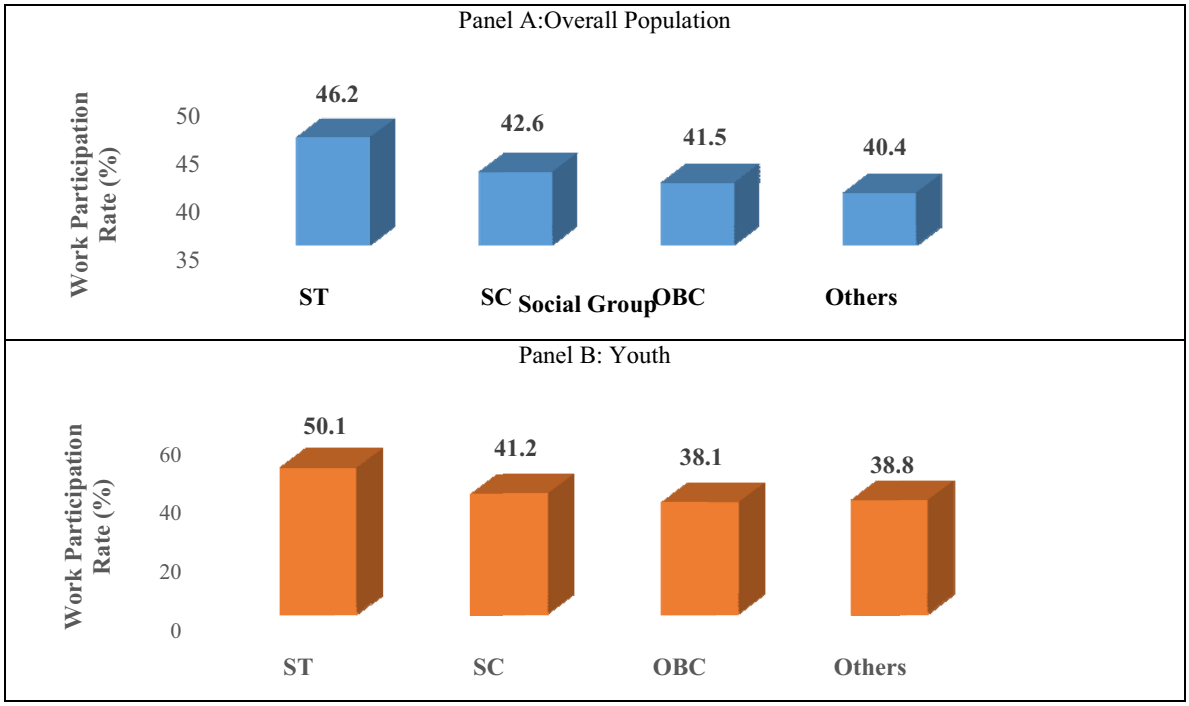
Age Groups	Work Participation Rate (%)				
	1993-94	1999-00	2004-05	2011-12	2019-20
Males					
Youth Population (15 to 29 years)	76.9	75.8	76.3	61.04	56.7
Working Age Population (15 to 59 years)	87.8	87.3	87.5	81.9	80.7
Elderly Population (60 years & above)	62.2	52.7	53.01	55.7	41.7
Total Population (All ages)	**58.6**	**58.1**	**60.81**	**59.9**	**58.4**
Females					
Youth Population (15 to 29 years)	48.04	41.4	42.5	23.07	22.2
Working Age Population (15 to 59 years)	54.5	49.2	53.6	34.4	35.3
Elderly Population (60 years & above)	21.3	20.1	21.4	16.7	12.3
Total Population (All ages)	**35.9**	**32.5**	**37.4**	**24.3**	**24.9**
Males+ Females					
Youth Population (15 to 29 years)	62.5	58.8	59.8	42.9	39.7
Working Age Population (15 to 59 years)	71.4	68.5	70.8	58.8	58.04
Elderly Population (60 years & above)	40.8	35.7	36.2	34.09	26.6
Total Population (All ages)	**47.4**	**45.4**	**49.3**	**42.3**	**41.6**

Source: Authors calculation using NSS and PLFS unit level data

5.3.1: Socio-Economic Factors influencing Work Participation rates

Social group, religion, standard of living of the family (measured by monthly per capita expenditure of the households/family) and the level of education and training could be among the major socio-economic gradients, which are likely to influence the work status of men and women in Karnataka. The social group-wise comparison of the work participation rate reveals that the work participation is higher among socially backward groups like Scheduled Tribe (STs) and Scheduled castes (SCs) in Karnataka. On the other hand, the work participation among higher castes (categorized as "others") is the lowest. A similar pattern is noted in the case of youth (**Figure 5.4**). The men and women belonging to socially marginalized groups including STs and SCs, normally work in either agriculture, construction or in other labour-intensive manufacturing and low paid informal service sectors as casual workers or self-employed (See Mehrotra&Parida, 2019). Due to their relatively low level of education (mostly illiterates or with upto primary level of education) and skill, poverty and relatively low level of social restrictions etc., their work participation rate is higher than their upper caste counterparts.

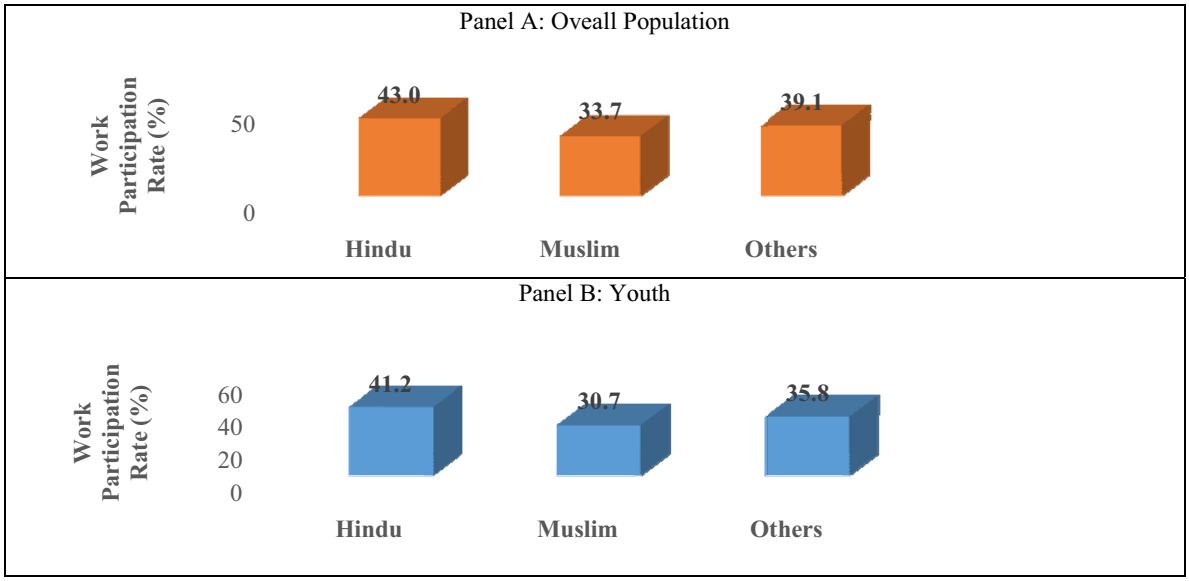
Figure 5.4: Work participation rate of overall population by social groups, 2019-20



Source: Authors calculation and plot using PLFS unit level data

Similarly, the religion group-wise comparison reveals that the work participation is highest among Hindus, and it is lowest among Muslims. The same trend is noted in the case of youth population (**Figure 5.5**).

Figure 5.5: Work participation rate of overall population by religion groups, 2019-20



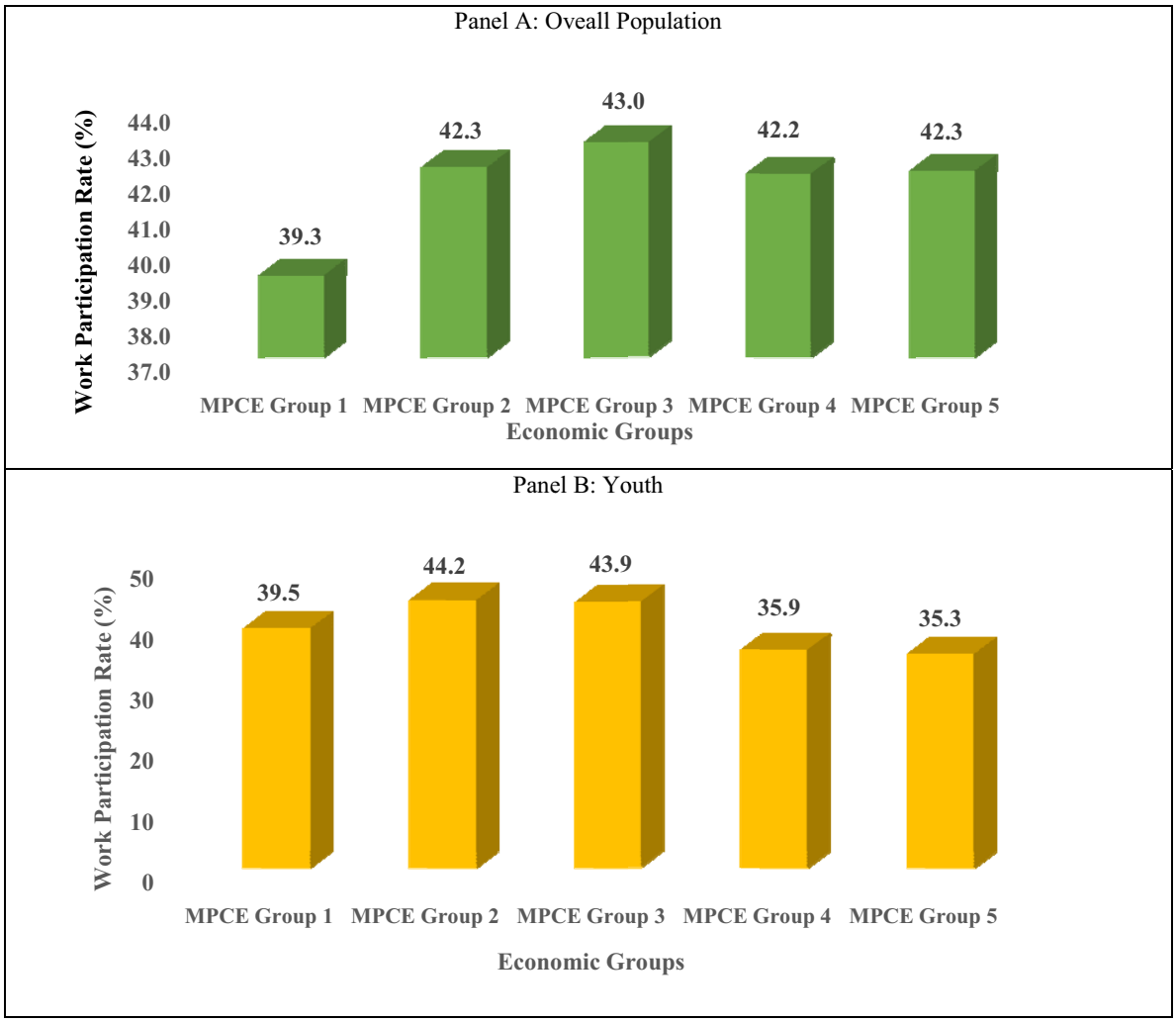
Source: Authors calculation and plot using PLFS unit level data

Althoughfor male, religion is not an important constraint; in the case of women, it is one of the major constraints that obstruct them to take part in paid jobs in both rural and urban areas. According to Pattayat et al., (2022), women belonging to Muslim families, on the average, have lesser probability of participating in the labour market on paid jobs, as compared to the women,whobelong to both Hindu and all other religions.The households' standard of living (proxy for family income) plays an important role in determining the work participation behavior of individuals. For example, the phenomenon of added worker and discouraged labour hypothesis work together in the case of both women and newly educated job seekers. While according to added worker hypothesis, women and young member of the family work to support the family income, in case of economic crisis. Hence, they tend to withdraw from the labour market with an improvement in the standard of living of the family. The discouraged labour hypothesis, on the other hand, argues that with persistent increase in the level of educated open unemployment, young job seekers are normally discouraged to search for jobs actively. Hence, their labour force participation is likely to be negatively impacted.

Figure 5.6 is partly reflecting both the phenomenon. Because, it is noted that the WPR of both lowest economic quintile (MPCE Group 1) and higher economic quintiles (MPCE Group 4 and 5) are also lower. It can be argued that at the lower economic groups the phenomenon of added labor hypothesis had been working previously, and hence with an improved standard of living, the work participation of low income households starts declining.

Since the families belong to upper income quintiles can afford to hold their educated young members as unemployed for a relatively longer period of time, their members tend to look for quality jobs. In case quality jobs are not available inadequate numbers (partly reflected through increased unemployment rates), they can afford to wait for some time.

Figure 5.6: Work participation rate of overall population by economic groups, 2019-20

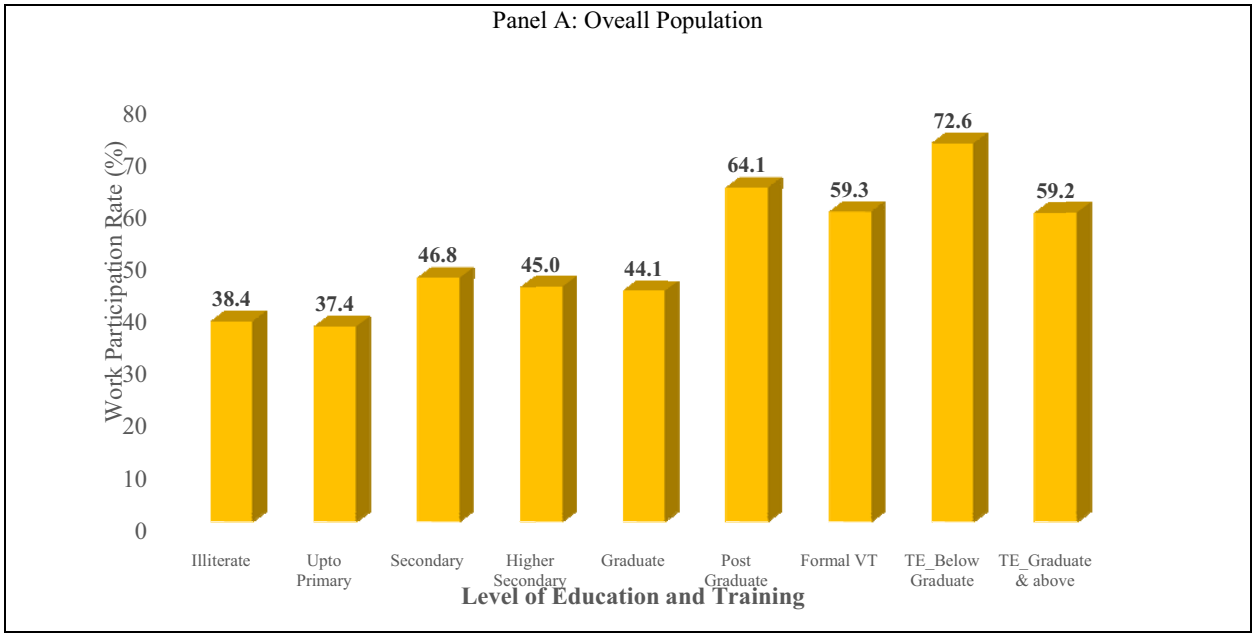


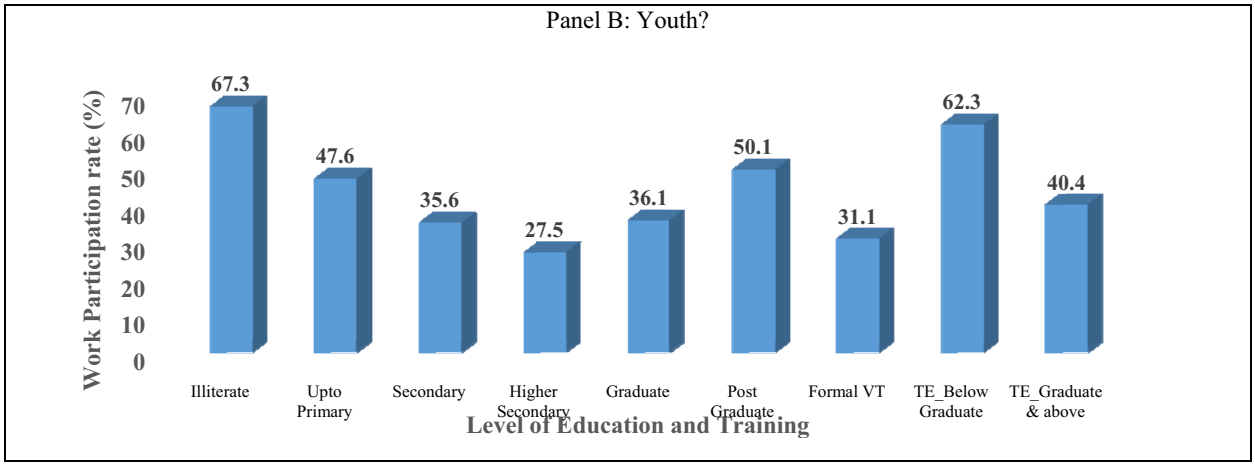
Source: Authors calculation and plot using PLFS unit level data

The above argument is further substantiated by the education and training-wise WPR figures (See **Figure 5.7**). It shows that the WPR of illiterates or the persons with up to primary level education are the lowest. WPR increases with the increase in the level of general education. That means the WPR of persons with secondary and above level of education is relatively higher than that of less educated persons. Moreover, the WPR of technically and vocationally trained persons are the highest.

However, in the case of youth a U-shape WPR curve is noted (**Figure 5.7).** This implies the fact that WPR of illiterates and less educated youth are higher; and the WPR of better educated (graduates and above: in general education, and with both technical and vocational training) is also higher; but the WPR of secondary and higher secondary education are the lowest. Since, a large number of youth (boys and girls), are still attending various level of education, their WPR is the lowest. They would rather search relatively skilled jobs in either manufacturing or service sectors.Based on this result, it is suggested that policy measures that focus on creating the conditions for growth of better skilled non-farm sector jobs would likely help increase the employability of these educated youth in the state.

Figure 5.7: Work participation rate of overall population by Education and Training, 2019-20





Source: Authors calculation and plot using PLFS unit level data

5.3.2: District-wise Scenario of Work Participation

The district-wise comparison reveals that the work participation rate is the highest in the district Hassan during 2019-20(Table 3). In terms of WPR, the district Hassan is followed by the districts viz., Chitradurga, Yadgir, Koppal, and Vijayapura. It is noted that during 2011-12 and 2019-20, the WPR has declined in many districts. This has resulted in a marginal decline of the overall WPR in the state. However, the districts like Vijayapura, Bidar, Gadag, Chitradurga, Davanagere, Shivamogga, Hassan and Kalaburagi have registered an improvement in either the female WPRorboth(**Table 5.3**). The State average is 41.7 percent and 11 districts are below the State average. Ramanagara has a significant decline in Female labour force participation rate from 30.7 percent to 24 percent.

Table 5.3: District-wise work participation rate by sex in Karnataka, 2011-12 & 2019-20

Name of the District	Workforce Participation Rate (%)					
	Male		Female		Total	
	2011-12	2019-20	2011-12	2019-20	2011-12	2019-20
Belgaum	57.4	60.7	32.6	28.6	44.2	44.4
Bagalkot	59.9	51.7	29.5	32.4	44.1	41.9
Vijayapura	59.6	57.0	26.1	35.8	42.0	46.4
Bidar	48.2	63.2	23.8	29.8	36.4	46.0
Raichur	60.2	49.9	30.9	33.0	46.7	41.7
Koppal	52.1	62.6	18.4	32.0	35.6	47.6

Gadag	53.6	68.4	18.2	23.0	34.8	42.6
Dharwad	62.5	62.6	20.6	22.6	42.9	42.6
Uttara Kannada	59.6	57.6	27.4	27.1	44.4	42.9
Haveri	63.0	58.2	34.1	28.0	49.2	42.9
Bellary	63.4	54.9	18.1	26.4	42.5	40.5
Chitradurga	66.4	57.9	25.8	40.9	45.5	49.8
Davanagere	57.4	62.6	17.7	24.6	37.3	44.4
Shivamogga	49.3	56.3	10.0	27.1	29.8	42.8
Udupi	66.3	43.7	29.0	46.4	47.2	45.2
Chikmagalur	59.0	57.0	8.8	13.5	33.0	33.0
Tumkur	66.8	56.6	31.9	21.1	49.5	39.0
Bengaluru	62.4	57.5	19.4	18.1	41.9	38.7
Mandya	67.4	64.4	28.0	20.8	48.6	43.0
Hassan	49.0	72.8	17.0	39.6	34.4	55.6
Dakshina Kannada	58.6	49.7	31.2	29.9	44.7	39.7
Kodagu	62.8	57.6	24.7	30.3	41.9	42.2
Mysore	57.2	57.5	26.8	21.9	41.9	40.2
Chamarajanagar	66.5	62.7	20.5	24.4	42.4	42.1
Gulbarga	60.0	54.6	28.1	36.5	43.1	45.2
Yadgir	-	48.6	-	44.7	-	46.6
Kolar	62.5	66.4	36.3	10.3	49.7	35.6
Chikkaballapura	61.9	53.1	17.7	20.9	40.1	38.1
Bengaluru Rural	60.5	59.6	15.2	15.7	39.4	38.4
Ramanagara	65.8	52.3	30.7	24.0	49.8	28.1
Karnataka	**60.0**	**58.4**	**24.3**	**25.0**	**42.3**	**41.7**

Source: Authors' Estimation using NSS and PLFS unit level data.

5.3.3: Comparison with All India and other Southern States:

Though the overall Work Participation Rate of the state Karnataka is much higher than the WPR of all India level, it is lower than many Southern Indian states. The overall WPR in Karnataka is lower than that in its neighbouring states like Andhra Pradesh, Tamil Nadu and Telangana (**Table 5.4**). But it is noted that the WPR of Karnataka is higher than that of Kerala and Goa. This is also true in case of both female and male WPR.Telangana has the highest WPR.

Table 5.4: Comparison of Work Participation Rate by Sex in South Indian States

Name of the States	Workforce Participation Rate (%)					
	2011-12			2019-20		
	Male	Female	Total	Male	Female	Total
Andhra Pradesh	58.6	35.6	47.0	58.2	30.4	44.2
Karnataka	60.0	24.3	42.3	58.4	25.0	41.7
Goa	52.9	18.4	35.8	55.7	19.9	37.6
Kerala	56.2	21.3	37.7	52.3	22.4	36.5
Tamil Nadu	59.1	30.0	44.4	58.1	30.9	44.2
Telangana	-	-	-	55.3	34.1	44.8
All India	**54.4**	**22.0**	**38.6**	**53.9**	**21.9**	**38.2**

Source: Authors' Estimation using NSS and PLFS unit level data.

5.4: SectoralEmployment Patterns: Structural Transformation

Agriculture and allied sector continued to register decline in employment (at the rate of 6.5lakhs per annum during 2004-05 and 2011-12; and 3.6 lakhs per annum during 2011-12 and 2018-19) until the Covid-19 year. The employment in agriculture and allied sector increased abnormally by about 25 lakhs during 2019-20. It is purely due to the distress caused by the Covid-19 pandemic. It is a short-term phenomenon, and hence has nothing much to worry about.

Total employment in manufacturing sector increased from about 22 lakhs to about 34 lakhs during 1999-2000 and 2019-20, with an increased share of employment 10 percent to about 12 percent. This is,in fact, a sector desirable to harness the demographic dividend in the state. The non-manufacturing sector consists of construction, mining and quarrying, electricity, water and gas supply etc. But most of the employment in this sector is being generated in the construction sector only. Total employment in non-manufacturing sectors was about 9 lakhs during 1999-2000, which increased hugely to 25 lakhs during 2018-19, but during covid-19 pandemic it decreased temporarily by 4 lakhs in the entire state (**Table 5.5**). The construction sector also plays a crucial role in the process of structural transformation of employment in Karnataka. The share of employment in this sector increased from 4 percent to about 10 percent during last twenty years.

It is noted that the service sector is the most dominant contributor to the structural transformation in Karnataka. Total service sector employment increased from 46 lakhs to 95 lakhs (more than doubled) during 1999-2000 and 2018-19, but later declined to 93 lakhs in 2019-20. As a result, the share of service sector employment in total employment of the state increased from 20 percent to about 38 percent during the last two decades (**Table 5.5**).

Table 5.5: SectoralEmployment Trends in Karnataka, 2005-2019

Broad Sectors	Absolute Number (Lakh)					
	1993-94	**1999-00**	**2004-05**	**2011-12**	**2018-19**	**2019-20**
Agriculture	149.3	153.8	174.2	129.8	103.2	128.2
Manufacturing	22.9	21.9	27.5	32.0	29.6	33.8
Non-manufacturing	9.1	9.6	12.5	17.7	24.5	20.7
Service	41.5	46.1	61.1	80.4	94.6	92.6
Work Force (WF)	**222.8**	**231.5**	**275.2**	**259.8**	**251.9**	**275.2**
Labour force (LF)	225.9	234.6	278.7	264.0	261.4	287.4
Unemployed (Open)	3.1	3.1	3.5	4.1	9.5	12.2
Share of Employment (%)						
Agriculture	67.0	66.4	63.3	49.9	41.0	46.6
Manufacturing	10.3	9.5	10.0	12.3	11.7	12.3
Non-manufacturing	4.1	4.2	4.5	6.8	9.7	7.5
Service	18.6	19.9	22.2	31.0	37.6	33.6
Total	**100**	**100**	**100**	**100**	**100**	**100**

Source: Author's estimation based on NSS and PLFS unit level data.

5.4.1: SectoralEmployment Scenario Across the Districts of Karnataka:

The existing inequality in economic development among the districts is partly reflected by the district-wisesectoral employment figures. The districts in which the agriculture and allied sector holds a relatively larger share of employment is considered as relatively backward districts,whereas the districts in which the industry (manufacturing and non-manufacturing) and service sectors hold a relatively higher share of employment are normally considered as relatively advanced districts.

It is noted in the districts like Hassan, Raichur, Tumkur, Yadgir the share of agriculture and allied sector employment is relatively higher. While on the other hand, the share of service sector

employment is highest in the districts like Bengaluru, Mandya, Kolar, Kodagu and Mysore. These are mostly the economically advanced areas. The share of industrial (mainly in manufacturing and construction units) employment is also noted to be relatively higher in these advanced districts (**Table 5.6**).

This is also reflected by the number of establishments (Own account and Employers) in**Table5.7** and **Table 5.8** below. Hence, it can be argued that a rapid economic transformation can be achieved through initiating and promoting structural transformation in the poor and backwards districts of Karnataka.

Table5.6: District-wise Sectoral Employment Scenario in Karnataka

Name of the District	Sectoral Employment Share (%)							
	Agriculture & Allied		Manufacturing		Non-manufacturing		Services	
	2011-12	2019-20	2011-12	2019-20	2011-12	2019-20	2011-12	2019-20
Belgaum	66.7	46.2	8.5	21.6	2.9	5.7	21.9	26.4
Bagalkot	57.3	39.4	19.2	23.5	5.5	7.5	18.1	29.7
Vijayapura	63.0	66.8	5.3	2.2	9.3	3.5	22.3	27.5
Bidar	52.8	60.4	5.9	8.1	10.2	10.6	31.0	20.9
Raichur	68.2	83.5	1.8	2.0	6.4	9.0	23.6	5.5
Koppal	49.2	66.3	8.9	1.7	11.6	4.0	30.3	27.9
Gadag	56.1	57.5	3.2	9.3	17.4	11.7	23.4	21.6
Dharwad	40.4	48.4	16.0	12.9	5.5	8.0	38.2	30.8
Uttara Kannada	43.7	47.0	11.5	10.2	10.2	7.4	34.7	35.4
Haveri	77.6	67.3	2.3	5.3	9.4	12.4	10.8	15.0
Bellary	42.2	63.5	24.8	7.8	9.0	7.1	24.0	21.6
Chitradurga	63.7	67.4	7.4	8.4	4.8	3.0	24.2	21.2
Davanagere	62.7	63.4	5.1	5.3	6.5	9.3	25.8	22.0
Shivamogga	70.9	57.9	3.1	9.9	3.4	5.9	22.6	26.3
Udupi	34.3	28.9	17.2	16.0	9.3	14.7	39.2	40.4
Chikmagalur	67.3	53.6	3.0	10.7	2.2	3.4	27.5	32.3
Tumkur	66.3	75.2	15.3	2.7	4.2	7.1	14.2	15.0
Bengaluru	4.2	3.6	21.8	19.0	7.2	10.4	66.8	67.1
Mandya	61.1	27.4	10.0	10.5	5.2	3.3	23.7	58.8
Hassan	79.8	83.6	4.6	2.9	1.6	1.8	14.0	11.8
Dakshina Kannada	27.1	32.0	28.0	29.5	8.9	10.1	36.0	28.5

Name of the District	Sectoral Employment Share (%)							
	Agriculture & Allied		Manufacturing		Non-manufacturing		Services	
	2011-12	2019-20	2011-12	2019-20	2011-12	2019-20	2011-12	2019-20
Kodagu	54.8	34.4	4.2	11.0	7.1	9.1	33.9	45.6
Mysore	48.0	32.5	15.0	10.4	7.5	10.3	29.6	46.8
Chamarajanagar	75.7	65.5	2.3	7.0	5.3	7.9	16.7	19.6
Gulbarga	68.0	64.8	4.4	7.8	5.8	8.2	21.8	19.1
Yadgir	-	78.5	-	4.6	-	3.0	-	13.9
Kolar	63.5	22.4	11.8	20.5	10.1	5.9	14.7	51.2
Chikkaballapura	60.5	44.6	8.3	16.9	5.8	0.2	25.4	38.3
Bengaluru Rural	47.7	47.5	18.9	17.6	5.6	4.3	27.8	30.6
Ramanagara	62.1	62.8	9.0	11.9	8.1	5.8	20.8	19.5
Karnataka	**49.9**	**46.6**	**12.3**	**12.3**	**6.8**	**7.5**	**31.0**	**33.6**

Source: Author's estimation based on NSS and PLFS unit level data.

Table 5.7: Distribution ofAgriculturalEstablishmentsand Employment

District	OwnAccount				With atleastoneHired Worker				Total			
	No.ofEstablishment	TotalNo.ofEmployment			No.ofEstablishment	TotalNo.OfEmployment			No.ofEstablishment	TotalNo.ofEmployment		
		Male	Female	Total		Male	Female	Total		Male	Female	Total
Belgaum	57556	42195	33213	75408	3326	6227	3871	10098	60882	48422	37084	85506
Bagalkot	6401	5234	3864	9098	551	1199	699	1898	6952	6433	4563	10996
Bijapur	2382	2228	1075	3303	584	2056	1135	3191	2966	4284	2210	6494
Bidar	5544	4513	2960	7473	466	1054	468	1522	6010	5567	3428	8995
Raichur	2556	2733	703	3436	515	1412	425	1837	3071	4145	1128	5273
Koppal	1806	1602	878	2480	300	1034	502	1536	2106	2636	1380	4016
Gadag	7470	5500	6629	12129	653	1633	1152	2785	8123	7133	7781	14914
Dharwad	9930	6735	5104	11839	741	2229	914	3143	10671	8964	6018	14982
UttaraKannada	2763	2881	962	3843	754	3207	954	4161	3517	6088	1916	8004
Haveri	4951	4379	1717	6096	473	2409	838	3247	5424	6788	2555	9343
Bellary	8343	8491	3723	12214	1799	4521	1942	6463	10142	13012	5665	18677
Chitradurga	3867	4289	1589	5878	589	2397	875	3272	4456	6686	2464	9150
Davanagere	4239	3864	2195	6059	380	889	538	1427	4619	4753	2733	7486
Shimoga	12936	12879	10099	22978	13934	42780	40393	83173	26870	55659	50492	106151
Udupi	15469	10370	6534	16904	1363	10950	5524	16474	16832	21320	12058	33378
Chikmagalur	9905	9857	5017	14874	1213	3045	1325	4370	11118	12902	6342	19244
Tumkur	45793	42082	20010	62092	2856	6962	3305	10267	48649	49044	23315	72359
Bangalore	8619	7857	4355	12212	4056	15391	4865	20256	12675	23248	9220	32468

Mandya	93349	80287	52602	132889	6533	15479	9981	25460	99882	95766	62583	158349
Hassan	65630	62294	41272	103566	7301	20785	14912	35697	72931	83079	56184	139263
Dakshina Kannada	8838	5728	4020	9748	830	2573	959	3532	9668	8301	4979	13280
Kodagu	79	64	33	97	205	342	191	533	284	406	224	630
Mysore	39258	46684	32123	78807	15226	42704	32035	74739	54484	89388	64158	153546
Chamarajanagar	45345	39399	16557	55956	1398	3383	1425	4808	46743	42782	17982	60764
Gulbarga	1085	910	544	1454	180	511	251	762	1265	1421	795	2216
Yadgir	1239	1334	332	1666	171	399	82	481	1410	1733	414	2147
Kolar	43052	42759	31643	74402	4102	9881	7199	17080	47154	52640	38842	91482
Chikkaballapura	33035	36234	27452	63686	7060	17854	13425	31279	40095	54088	40877	94965
BangaloreRural	23898	29203	13955	43158	3490	22323	10552	32875	27388	51526	24507	76033
Ramanagara	41513	39021	26117	65138	3788	9478	6391	15869	45301	48499	32508	81007
Karnataka	**606851**	**561606**	**357277**	**918883**	**84837**	**255107**	**167128**	**422235**	**691688**	**816713**	**524405**	**1341118**

Source: Compiled from 6th economic census

Table5.9: Distribution of Non-Agricultural Establishments and Employment

District	OwnAccount				WithatleastoneHiredWorker				Total			
	No.of Establishments	TotalNo. ofEmployment			No.of Establishments	TotalNo.ofEmployment			No.of Establishments	TotalNo.ofEmployment		
		Male	Female	Total		Male	Female	Total		Male	Female	Total
Belgaum	72279	76130	15819	91949	39786	138907	44443	183350	112065	215037	60262	275299
Bagalkot	43448	49606	14458	64064	18935	73440	26622	100062	62383	123046	41080	164126
Bijapur	41536	40840	9324	50164	15925	48642	15752	64394	57461	89482	25076	114558
Bidar	28123	30061	5481	35542	15618	52025	16334	68359	43741	82086	21815	103901
Raichur	30575	30820	7828	38648	20150	54385	17716	72101	50725	85205	25544	110749
Koppal	23183	24045	6981	31026	11377	32522	11235	43757	34560	56567	18216	74783
Gadag	21777	26473	8779	35252	10173	32594	13605	46199	31950	59067	22384	81451
Dharwad	40896	39985	9830	49815	21310	83172	27557	110729	62206	123157	37387	160544
UttaraKannada	29844	28004	7110	35114	19316	53331	28224	81555	49160	81335	35334	116669
Haveri	34599	33418	7653	41071	13770	42930	17510	60440	48369	76348	25163	101511
Bellary	54229	52359	17909	70268	25693	108142	39349	147491	79922	160501	57258	217759
Chitradurga	29815	28547	9220	37767	14393	39073	18921	57994	44208	67620	28141	95761
Davanagere	39557	38144	10818	48962	15629	46742	16971	63713	55186	84886	27789	112675
Shimoga	48603	46506	13039	59545	26924	77717	33446	111163	75527	124223	46485	170708
Udupi	50188	32268	21925	54193	20201	68662	48643	117305	70389	100930	70568	171498
Chikmagalur	35260	33915	13476	47391	26106	63881	37450	101331	61366	97796	50926	148722
Tumkur	82595	75208	25943	101151	33578	108056	52141	160197	116173	183264	78084	261348
Bangalore	185718	176999	51261	228260	209737	1043447	383198	1426645	395455	1220446	434459	1654905

Mandya	52036	47768	17085	64853	19602	60293	30875	91168	71638	108061	47960	156021
Hassan	45618	43867	11824	55691	22427	58715	26771	85486	68045	102582	38595	141177
DakshinaKannada	171153	72809	119887	192696	38289	129000	90126	219126	209442	201809	210013	411822
Kodagu	5594	5503	1265	6768	5708	13760	4509	18269	11302	19263	5774	25037
Mysore	50808	49339	12516	61855	34940	120920	43851	164771	85748	170259	56367	226626
Chamarajanagar	29069	25007	11087	36094	9859	26020	12926	38946	38928	51027	24013	75040
Gulbarga	36493	37016	7888	44904	21545	70031	21584	91615	58038	107047	29472	136519
Yadgir	23827	22512	5650	28162	8847	23928	7906	31834	32674	46440	13556	59996
Kolar	30865	29927	9136	39063	18391	58624	25092	83716	49256	88551	34228	122779
Chikkaballapura	25196	24862	8738	33600	15100	39702	19954	59656	40296	64564	28692	93256
BangaloreRural	20592	21652	5695	27347	13376	62736	22819	85555	33968	84388	28514	112902
Ramanagara	26451	24143	7260	31403	12228	49236	25986	75222	38679	73379	33246	106625
Karanataka	**1409927**	**1267733**	**474885**	**1742618**	**778933**	**2880633**	**1181516**	**4062149**	**2188860**	**4148366**	**1656401**	**5804767**

Source: Compiled from 6th economic census

5.4.2: Comparison of SectoralEmployment with All India and Across Southern Indian States:

The comparison of the sectoral employment share in Karnataka with all India level employment pattern reveals the fact that the process of structural transformation in Karnataka is much faster. That means the state Karnataka is in a much advanced position as compared to the all India level trend. However, the comparison across the southern Indian states indicate that the state like Kerala, Tamil Nadu and Goa are currently at much advanced stages of their structural transformation as compared to the state Karnataka (**Table 5.9**). Whereas the state Andhra Pradesh and Telangana are a bit lagging behind the state Karnataka in terms of their structural transformation. The state in which the share of both industry and services are more are considered as a relatively advanced state of development.

These figures shows that the state Karnataka needs immediate measures to boost its structural transformation process in order to achieve a faster growth trajectory than their neighbouring states like Kerala and Tamil Nadu.

Table5.9: Sectoral Employment Scenario in Southern States

States	Sectoral Employment Share (%)							
	Agriculture & Allied		Manufacturing		Non-manufacturing		Services	
	2011-12	2019-20	2011-12	2019-20	2011-12	2019-20	2011-12	2019-20
Andhra Pradesh	52.9	49.0	10.0	9.1	9.4	10.9	27.7	31.0
Karnataka	49.9	46.6	12.3	12.3	6.8	7.5	31.0	33.6
Goa	3.9	15.3	14.2	13.7	16.3	10.3	65.5	60.7
Kerala	25.5	21.9	13.4	10.6	18.4	20.2	42.7	47.3
Tamil Nadu	35.2	30.1	20.0	17.1	13.9	16.1	31.0	36.8
Telangana		48.4		10.7		7.6		33.3
All India	**48.9**	**45.6**	**12.6**	**11.2**	**11.7**	**12.5**	**26.8**	**30.8**

5.4.3:Sectoral Employment patterns of Youth

The employment trend of youth shows a contrasting picture. While total youth unemployment increased massively (from 3.4 lakhs to 11.2 lakhs) during 2011-12 and 2019-20(**Table 5.10**), total youth employment during the same period actually declined by 6lakhs (**Table 5.10**). That means those who are completing their education and training are not getting jobs. The depth of the labour market crisis could be revealed by the rate of growth of youth unemployment, which blown up further from 8.2 lakhs to 11.2 lakhs during Covid-19 pandemic (**Table 5.10).**

For youth, agriculture and allied sector also continued to register decline of during 2004-05 and 2018-19. About 40 lakh youth have left agriculture during this period of structural transformation. This is resulted in a fall in its share of youth employment in agriculture and allied sector from about 60 percent to 28 percent (**Table 5.10**).

During 2004-05 and 2018-19 period, manufacturing sector also recorded 3 lakhs decline in jobs for youth, in contrast to 1 lakh job increase in its previous decade (during 1993-94 and 2004-05). This falling manufacturing jobs is the opposite of the goal of 'Make in India', and the opposite of what is desirable if the process of structural transformation is to be sustained to harness the demographic dividend in the state.Hence, this point should be noted for possible corrective policy measures.

The non-manufacturing sector (mostly construction and utilities) continues to register positive growth of youth employment in Karnataka during last three decades (**Table 5.10**). This rise in youth employment in construction and utility sectors is an outcome of the increased investment in infrastructure. This implies the fact that the low skilled youth job seekers (illiterates or having upto primary and middle level of education) are finding alternatives, particularly those who tend to lose their livelihoods (in rural and suburb areas) due to growing mechanization in agriculture.

The service sector not only contributed to growth of youth employment in absolute terms, but the share of employment in service sector also increased. While absolute number of youth

engaged in service sector increased from 14 lakhs to about 28 lakhs (doubled) during last three decades, the share of employment in this sector also increased by more than double.

Although the service sector contributed to the structural transformation, the slow growth of manufacturing sector jobs and a relatively low share of construction sector employment in the case of youth, puts a question on the future of this structural transformation. Because the current stock of youth unemployment is about 11 lakh. About 50 lakh youth are Neither Employed, nor do they attend any Education and Training (NEET). They are passive job seekers. At any time they may enter into the labour force to increase the youth unemployment rate to a massively high level in the state. Over and above this, about 53 lakh youth are currently attending education and training, who will soon start join the labour force (in the next 5 to 10 years) and probably look for non-farm sector jobs (**Table 5.10**).

The above figures shows that the labour market of the state Karnataka is at a cross road. In fact, it is at a critical juncture, which needs immediate and effective policy interventions. It may be implemented through a set of reform measures.

Table 5.10: SectoralYouth Employment trends in Karnataka, 1993-94 to 2019-20

Broad Sectors	Absolute number of youth (Lakh)					
	1993-94	**1999-00**	**2004-05**	**2011-12**	**2018-19**	**2019-20**
Agriculture	54.1	54.1	58.2	30.4	17.1	27.2
Manufacturing	10.0	8.7	11.6	13.0	8.0	8.6
Non-manufacturing	3.2	4.2	5.2	6.5	7.8	6.1
Service	14.7	15.9	23.5	24.6	28.4	26.5
Work Force (WF)	**82.1**	**82.8**	**98.4**	**74.5**	**61.4**	**68.3**
Labour force (LF)	84.8	85.2	101.3	77.9	69.6	79.5
Unemployed (Open)	2.7	2.4	2.9	3.4	8.2	11.2
Participating in Education	18.7	21.4	29.8	52.8	53.0	53.2
NEET	30.5	36.6	36.2	46.0	52.8	50.3
Share of Employment (%)						
Agriculture	65.9	65.4	59.2	40.9	27.9	39.8
Manufacturing	12.2	10.5	11.8	17.4	13.0	12.6
Non-manufacturing	3.9	5.0	5.2	8.7	12.8	8.9
Service	18.0	19.2	23.8	33.1	46.3	38.8
Total	**100**	**100**	**100**	**100**	**100**	**100**

Source: Author's estimation based on NSS and PLFS unit level data

5.4.4: Manufacturing Subsectors and theGrowth of Jobs

It is found that most of the labour intensive subsectors contributed to the growth of overall employment in manufacturing during the last one and half decade.Thelabour intensive subsectorslike: Food and Beverages, Tobacco Products, Textile, Wearing Apparel, Wood products and Furniture etc.,havecontributed significantly to the growth of manufacturing employment in Karnataka. Since, the output of most of these subsectors hold a greater share in total exports of the country, promotion of foreign trade (through export promotion measures) would help improve employability in these labour intensive sub-sectors.

Nonetheless, capital intensive sub-sectors including: Medical instruments, Chemical Products, Rubber & Plastics, Basic and Fabricated Metals, Machinery and Equipment, Electronics Computing Machinery, Electrical Machinery, Motor vehicles and Other Transports, and Jewelry & Sports goods manufacturing etc., have contributed to the overall manufacturing employment growth in the state (**Table 5.11**). These are the subsectors which normally demand relatively skilled and professionally trained workers. Boosting growth of employment in these sectors is very crucial because it is likely to increase the share of regular salaried employment and formal jobs. But it seems a bit difficult because the capital intensity in these sub-sectors is growing rapidly in recent years (Rodrik, 2012; Goldar, 2013; Mehrotra et al., 2014). Hence, addressing the skill issues along with a structured industrial policy are the need of the hour, for boosting growth of jobs in these sub-sectors.

Table5.11: Sub-sectoralEmployment trends in the Manufacturing Sectors, 2005-2020

Sub-sectors of the Manufacturing Sector	Number of Workers (Lakhs)			Share of Employment (%)		
	2004-05	2011-12	2019-20	2004-05	2011-12	2019-20
Food & Beverages	2.5	4.0	4.3	9.1	12.4	12.6
Tobacco Products	4.6	3.9	2.6	16.8	12.1	7.7
Textiles	3.0	2.0	1.8	10.9	6.2	5.3
Wearing Apparel	6.0	6.2	6.9	21.8	19.4	20.4
Leather Products	0.5	0.0	0.1	1.7	0.1	0.4
Wood Products	3.3	2.7	2.4	12.2	8.4	7.0
Paper Products	0.2	0.1	0.2	0.7	0.2	0.7
Printing media	1.0	0.3	0.2	3.8	1.0	0.7
Coke and Petroleum Products	0.0	0.0	0.1	0.1	0.1	0.4
Chemical Products	0.6	0.8	0.9	2.2	2.5	2.5
Rubber & Plastics	0.2	0.4	0.6	0.6	1.1	1.9
Non-metallic Products	0.8	0.1	0.3	2.9	0.4	0.8
Basic metals	0.3	1.4	0.3	1.0	4.5	1.0
Fabricated Metals	1.2	2.2	1.5	4.2	6.9	4.3
Machinery and Equipment	0.8	1.9	1.0	3.0	5.9	3.1
Electronics Computing Machinery	0.2	0.4	0.6	0.8	1.3	1.6
Electrical Machinery	0.4	0.5	0.6	1.4	1.6	1.7
Medical instruments	0.0	0.8	4.2	0.0	2.6	12.5
Motor vehicles	0.4	1.0	1.1	1.3	3.2	3.3
Other Transports	0.2	0.3	0.5	0.7	0.9	1.4
Furniture	1.3	0.8	1.4	4.7	2.5	4.1
Jewelry & Sports	0.0	0.4	1.1	0.0	1.1	3.3
Recycling	0.0	1.8	1.1	0.0	5.5	3.1
Manufacturing Total	**27.5**	**32.0**	**33.8**	**100**	**100**	**100**

Source: Author's estimation based on NSS and PLFS unit level data

5.4.5: Service Sector and its Employment Structure

Given the large size of the services sector in the economy, it is expected that it would also create a large demand for employment. There have been a number of studies that have explored the pattern of employment in the period of India's economic growth led by services. The major share of working population is still engaged in agriculture and allied activities. There are also fluctuations in the structure of employment even during the three recent years of 2017-18 to

2019-20. There was a sharp increase in the share of services in employment in Karnataka in 2018-19 from the previous year. But in the subsequent year, the services share dropped sharply, with offsetting employment changes in the agriculture sector. Two major sub-sectors of services which saw significant decline in employment share in 2019-20 are construction and Real estate, Ownership of Dwellings and Professional/ Business services(**Table 5.12**).

Table5.12: Share of Employment in Different Sectors: (in percentage)

Sectors	All India				Karnataka			
	2011-12	2017-18	2018-19	2019-20	2011-12	2017-18	2018-19	2019-20
Agriculture & Allied Activities	49.1	44.6	42.9	45.9	49.8	46.0	41.5	46.6
Industry	12.9	12.0	11.7	10.9	12.6	12.1	11.5	12.0
Services- Total	**38.0**	**43.5**	**45.5**	**43.3**	**37.6**	**41.9**	**47.0**	**41.4**
i. Construction	10.5	11.7	12.1	11.6	6.0	7.9	8.7	6.8
ii. Trade	9.1	9.8	10.5	11.3	9.1	8.5	10.1	10.5
iii. Hotels & Restaurants	1.6	1.9	1.9	1.7	2.9	2.9	2.8	2.6
iv. Communication	0.4	0.4	0.4	0.3	0.3	0.4	0.4	0.2
v. Financial Services	0.9	1.1	1.2	1.1	1.0	1.2	1.7	1.3
vi. Public Administration	1.7	1.6	1.7	1.5	1.6	1.8	1.6	1.3
vii. Transport & Storage	4.0	4.8	4.8	4.6	4.3	6.0	7.1	5.9
viii. Real Estate, Ownership of dwelling, Professional and Other Service	9.8	12.3	13.0	11.2	12.4	13.1	14.7	12.8
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Source: Calculated based on NSS 68th round for 2011-12 and PLFS I, II and III rounds for the subsequent years. Economic Survey 2021-22

While there are some important changes in the structure of employment, with the services sector increasing its share over time, how has the employment fared? Between 2011-12 and 2019-20, the estimates point to an increase in the employment of 44 million as employment increased from 469 million in 2011-12 to 513 million in 2019-20, or 5.5 million per year for the country as a whole. Employment in services sector at All India level show an increase of 49 million over the period of 8 years, suggesting a decline in the other sectors. In Karnataka the employment in service sector went up from 9.5 million to 11.4 million i.e. an increase of 1.9 during 2011-12 to 2019-20.

Among the services, only trade, hotels and restaurants segments have registered positive growth of employment in 2019-20. At the national level, there was positive growth in employment in all the three main sectors: agriculture and allied, industry and services. The large fluctuations in the annual growth rates of employment at the sub-sector level are a concern in terms of the implications to the workers. While there is more stability at the aggregate level indicating flexibility in the labour market to absorb the shocks, there is a need to be watchful of these patterns.

Though service sector employment is driven by both traditional and modern services. The traditional services like retail trade (25 lakh), land transport[1] (14.5 lakh), public administration and defense (3.7 lakh), and whole sale trade (2.5 lakh) etc., are still holding a major share (about 50 percent) of total service sector employment in the state as in 2019-20 (**Table 5.13**).

The modern services (in descending order)- Education (11 lakh), Post and telecommunication (8 lakh), Hotel and Restaurant business (7.2 lakh), Health and Community and Social Services (about 4 lakh), financial intermediation (2.7 lakh), Business support service activities, sale, maintenance and repair of motor vehicles (2.6 lakh), computer related activities (1.4 lakh), research and development (about 1 lakh), real estate services, and insurance and pension funding (about 1 lakh) - have been driving the growth of overall as well as youth employment in services.

Table 5.13: Sub-sectoral Employment trends in the service sectors, 2005-2020

Sub-sectors of the Service Sector	Number of Workers (Lakhs)			Share of Employment (%)		
	2004-05	2011-12	2019-20	2004-05	2011-12	2019-20
Sale, maintenance and repair of motor vehicles	2.0	3.0	2.6	3.2	3.8	2.8
Wholesale trade except motor vehicles	3.2	2.9	2.5	5.2	3.6	2.7
Retail trade except motor vehicles	17.7	17.8	25.4	29.1	22.2	27.5
Hotels & Restaurants	4.6	7.7	7.2	7.5	9.6	7.8
Transport	8.4	10.4	14.4	13.8	13.0	15.6
Supporting and auxiliary transport activities	0.2	0.4	1.7	0.3	0.6	1.8
Post and telecommunications	1.2	6.6	8.0	2.0	8.2	8.6

[1] It is mostly includes the traditional transports of tangible goods and people by heavy vehicles (Bus and trucks), cycle rickshaw or auto rickshaw etc. But, it partly also includes the modern transport services in the cities and towns by the light vehicles like taxi and e- rickshaws.

Sub-sectors of the Service Sector	Number of Workers (Lakhs)			Share of Employment (%)		
	2004-05	2011-12	2019-20	2004-05	2011-12	2019-20
Financial intermediation	1.6	2.1	2.7	2.6	2.6	2.9
Insurance and pension funding	0.2	0.4	0.2	0.4	0.5	0.3
Activities auxiliary to financial intermediation	0.2	0.1	0.6	0.3	0.1	0.7
Real estate activities	0.3	0.7	0.5	0.4	0.9	0.5
Renting of machinery and equipment	0.1	0.6	0.4	0.1	0.7	0.4
Computer and related activities	1.1	1.6	1.4	1.8	2.0	1.5
Research and development	0.0	1.1	0.8	0.0	1.4	0.8
Other business activities	1.5	2.1	1.9	2.5	2.6	2.1
Public Administration and Defence	4.1	4.2	3.7	6.7	5.2	4.0
Education	6.2	8.7	10.9	10.2	10.8	11.7
Health & Social work	2.0	2.5	3.9	3.3	3.1	4.2
Other Social Service	6.6	7.4	3.8	10.8	9.2	4.1
Services Sector Total	**61.1**	**80.4**	**92.6**	**100**	**100**	**100**

Source: Estimation based on NSS and PLFS unit level data

5.4.6Labour Productivity

The impact of economic growth on productive employment creation depends not only on the rate of growth, but also on the efficiency by which growth translates into productive jobs. The latter depends on a range of factors, such as the sector composition of growth and the capital/labour intensity of growth within the individual sectors. There is usually a need to increase both the number of jobs and the productivity as well as incomes from employment.

Bringing together the dimensions of output and employment is the concept of labour productivity (**Table 5.14**). Despite the relatively lower productivity in the sector as a whole, some of the subsectors within the service sector are showing very high productivity. For Karnataka Computer services is an important subsector in terms of value addition. Between 2018-19 and 2019-20 both at all India level and Karnataka, productivity growth has been significant for communication, financial and real estate, dwelling and professional services sub sectors.

Table 5.14: Labour Productivity in Rs lakh (2011-12 prices) per year per worker employed

Labour Productivity	All India				Karnataka			
	2011-12	**2017-18**	**2018-19**	**2019-20**	**2011-12**	**2017-18**	**2018-19**	**2019-20**
Agriculture & Allied activities	0.75	1.07	1.10	0.97	0.61	0.87	0.91	0.83
Industry	2.60	4.54	4.77	4.61	3.26	6.09	6.56	5.69
Services	2.63	3.72	3.70	3.79	3.68	5.97	5.68	**6.29**
Construction	1.55	1.81	1.80	1.73	3.19	2.96	2.80	3.45
Trade	1.84	3.21	3.18	2.89	2.07	3.95	3.58	3.38
Hotels & Restaurants	1.16	1.54	1.65	1.78	1.40	1.87	2.07	2.09
Transport & Storage	2.12	2.72	2.79	2.77	2.25	2.95	2.60	3.01
Communication	7.52	11.96	11.92	15.17	10.23	10.63	13.78	23.16
Financial Services	11.20	15.13	13.82	14.44	11.10	16.44	12.66	16.25
Public Administration	6.22	9.17	9.26	9.75	3.52	4.78	6.22	7.57
Real Estate, Ownership of Dwellings, Professional Services and Other Services	3.39	4.72	4.70	5.42	5.42	10.38	9.95	11.13
Total	**1.70**	**2.64**	**2.71**	**2.59**	**2.10**	**3.64**	**3.80**	**3.67**

Source: Calculated based on value added and employment data from (1) Ministry of Statistics and Programme Implementation (2) DES, Government of Karnataka, and (3) NSSO Employment & Unemployment and PLFS surveys. Economic Survey 2021-22

The pattern of productivity in the services sector also points to the skewed nature of productivity across sub-sectors. Subsectors with a cumulative employment share of over 62 per cent in 2019-20 have productivity lower than the average for the sector. Implications of the pattern emphasizethe urgency of the need for upgrading of skills and education so that sectors with higher productivity can absorb more labour leading to further growth of these sectors.

As year-to-year fluctuations in output cause some of these large changes in productivity, the main point emerging from the pattern of productivity changes is also the need to secure stability in output growth and also ability of the labour markets to find alternative employment for those when who may lose employment when output shrinks in one of the sectors (**Table 5.15**)

Table 5.15: Growth in Labour productivity: Year on Year % change

Growth in Labour Productivity in Rs. Lakhs	All India			Karnataka		
	Between 2011-12 to 2017-18	2018-19	2019-20	Between 2011-12 to 2017-18	2018-19	2019-20
Agriculture & Allied activities	5.08	3.35	-11.70	5.15	5.31	-9.39
Industry	8.31	5.20	-3.41	9.33	7.67	-13.22
Services	4.50	-0.38	2.17	6.60	-4.86	10.71
Construction	2.23	-0.43	-3.73	-1.07	-5.10	22.89
Trade	8.34	-1.20	-9.11	9.71	-9.40	-5.44
Hotels & Restaurants	4.19	6.90	8.02	4.22	10.29	1.31
Transport & Storage	3.61	2.61	-0.71	3.95	-11.94	15.91
Communication	6.86	-0.35	27.33	0.55	29.65	68.08
Financial Services	4.39	-8.67	4.44	5.77	-22.99	28.31
Public Administration	5.71	0.96	5.32	4.47	30.04	21.74
Real Estate, Ownership of Dwellings, Professional Services and Other Services	2.41	-0.57	15.36	7.92	-4.13	11.85
Total	**6.21**	**3.00**	**-4.75**	**7.95**	**4.60**	**-3.47**

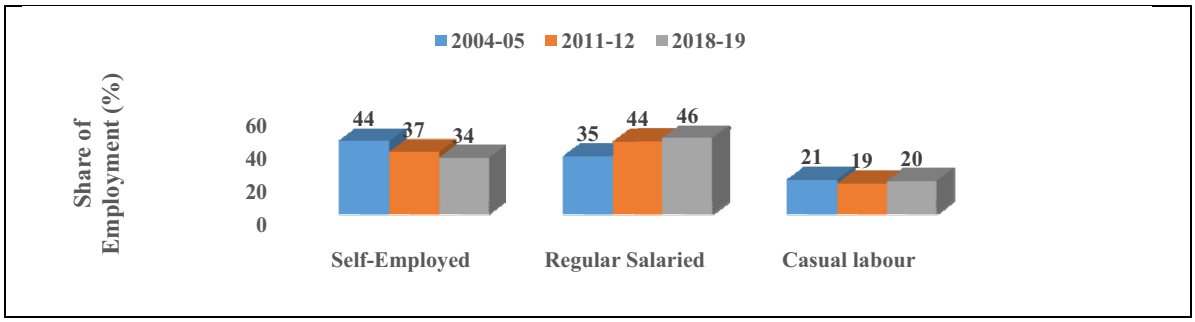
Note: Productivity change is annualised under each column.

5.5: Nature &Quality of Employment &Earnings - Impacting Quality of Life AndHDI

5.5.1: Rising regular salaried jobs:A very good news

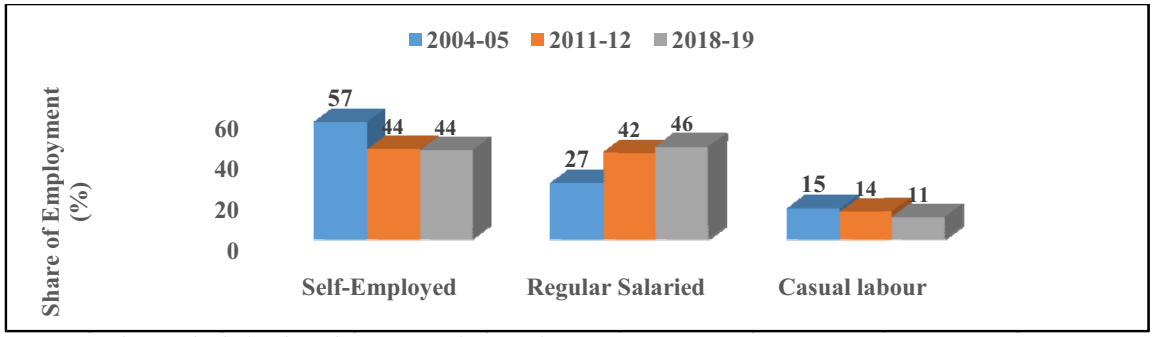
The increase in the share (as well as number) of regular salaried workers and decline in casual employment are always desirable. Because, it is likely to increase the share of formal employment within the non-farm sector. This result is clearly visible from **Figure 5.8** (for overall non-farm sector employment), **Figure 5.9** (for manufacturing sector jobs) as well as from **Figure 5.10** (for service sector employment). All the figures have shown a decline in the share of both self-employment, and casual employment, with corresponding rise in the share of regular salaried workers.

Figure 5.8: Types of employment (%) in the non-farm sectors, 2005-2019



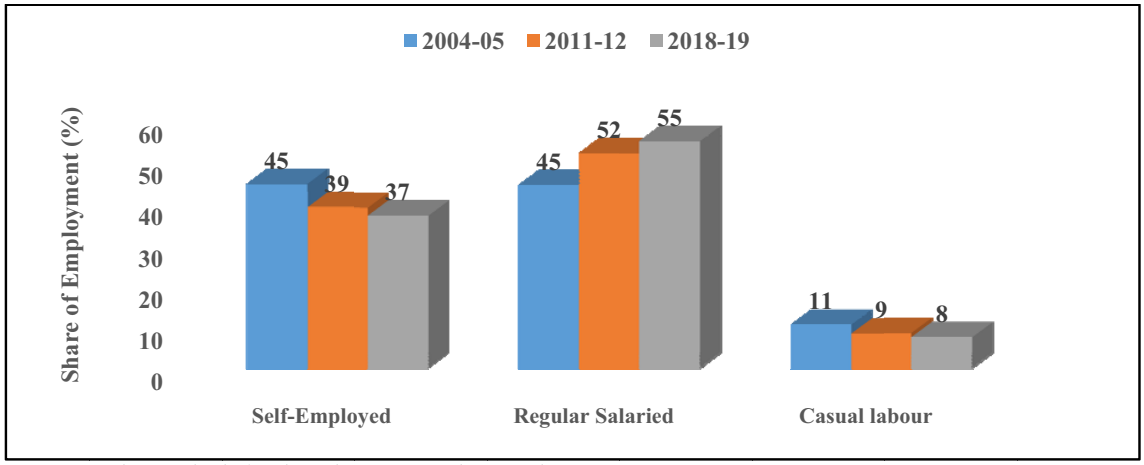
Source: Authors calculation based on NSS and PLFS data.

Figure 5.9: Types of employment (%) in the manufacturing sectors, 2005-2019



Source: Authors calculation based on NSS and PLFS data.

Figure 5.10: Types of employment (%) in the Service sectors, 2005-2019



Source: Authors calculation based on NSS and PLFS data.

Table5.16 : Recent Employment Trend by Type of Employment (in%)

	Karnataka			India		
	2017-18	**2018-19**	**2019-20**	**2017-18**	**2018-19**	**2019-20**
Self employed	47.7	45.6	48.5	52.2	52.1	53.5
Regular Salaried	25.5	27.2	27.7	22.8	23.8	22.9
Casual Worker	26.8	27.2	23.8	25	24.2	23.6
Total	**100**	**100**	**100**	**100**	**100**	**100**
Absolute No. of Workers Based on Projected Population of Census (in Million)*						
Self employed	11.76	11.43	13.27	236.9	242.7	272.3
Regular Salaried	6.29	6.82	7.58	103.6	110.9	116.6
Casual Worker	6.61	6.82	6.51	113.2	112.6	120.1
Total	**24.66**	**25.07**	**27.37**	**453.6**	**466.3**	**509.1**
Recent Employment Trend by Sector of Employment						
% of Workers						
Formal Sector	16.8	20.5	16.1	15.9	16.7	15.3
Informal Sector	83.2	79.5	83.9	84.1	83.3	84.7
Absolute No. of Workers (in Million)						
Formal Sector	4.14	5.14	4.41	72.27	78.01	77.99
Informal Sector	20.52	19.93	22.96	381.38	388.26	431.07
Total	**24.66**	**25.07**	**27.37**	**453.64**	**466.26**	**509.06**

Source: *Calculated by Authors, based on Projected Population and Unit level data of PLFS 2017-18, 2018-19 & 2019-20.

As per the above **Table5.16**, the share of informal sector employment has increased in 2019-20 over previous years in Karnataka. There is an addition of approximately 3 million workers in the informal sector in 2019-20 over 2018-19.

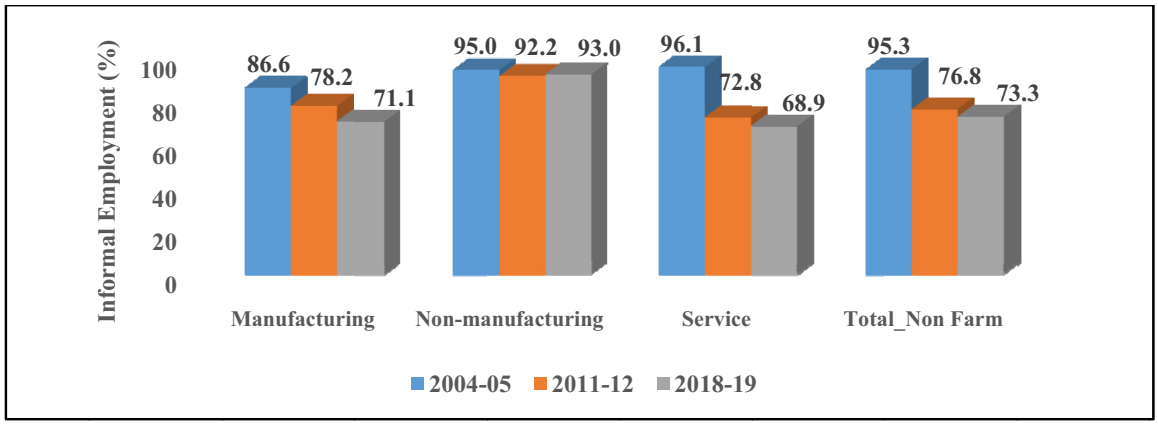
5.5.2: Informal Employment

The share of formal employment (with provision of social sector benefits) in the non-farm sectors increased substantially by 22 percentage points (**Figure 5.11**). While the share of informal employment in the manufacturing sector has declined substantially from 87 percent to 71 percent during 2004-05 and 2018-19; in the service sector it has declined even more rapidly from 96 percent to 69 percent during the same period. But in the case of non-manufacturing

employment, the share of informal employment still holds a very high (93 percent) share. This is only because of a large chunk of employment in this sector is created by the construction sector.

It is important to note that the state Karnataka not only stands among the top HDI ranking states, but it also able to reduce the extent of informality to a greater extent. However, in order to achieve the decent job norms of International Labour Organization (ILO), a substantial change on the ground is yet to happen.

Figure 5.11: Informal Employment (%) in the non-farm sectors, 2005-2019



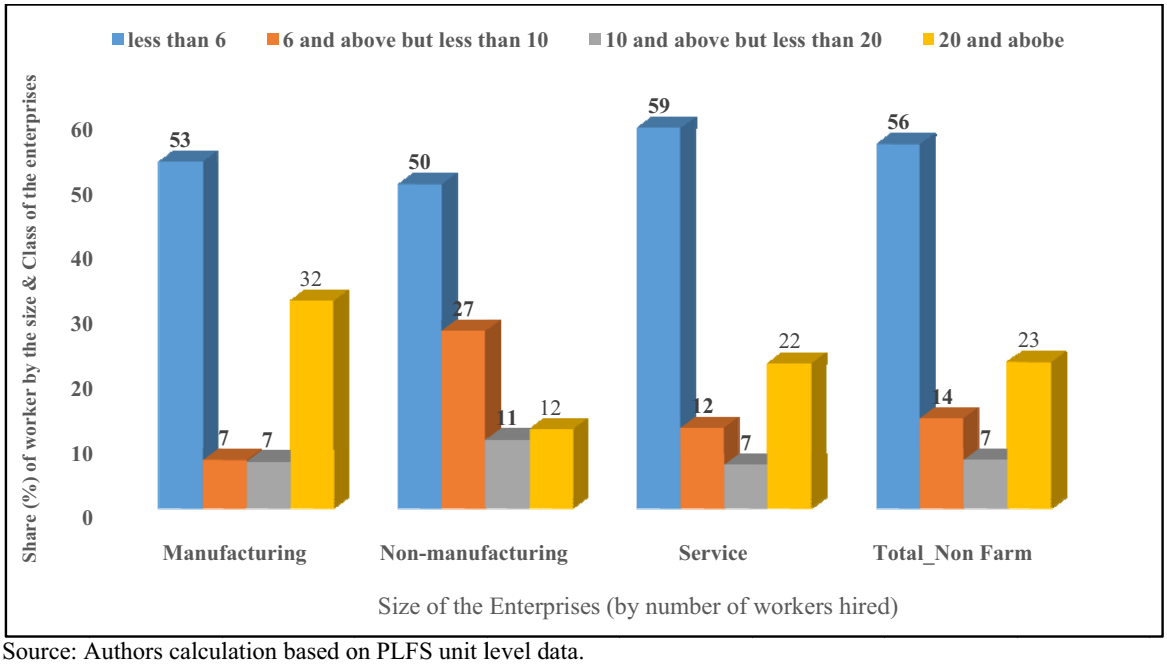
Source: Authors calculation based on PLFS unit level data

5.5.3: Micro and Small Enterprises still hold the key

Overall growth in non-farm sector employment is driven by enterprises which hire less than 10 workers in Karnataka. These enterprises contributed about 56 percent of the total non-farm employment during 2019-20. In manufacturing their share is 53 percent, while in non-manufacturing and services their share is about 50 and 59 percent respectively (**Figure 5.12).**This result shows why the share of informal and unorganized sector employment are still so high in Karnataka, despite a rise in the number of registered enterprises in the state. Because even though these enterprise might have registered themselves under GST to continue their business (and pay sale tax), but they could not provide employment with social security benefits to their employees because of the size of their business.

Hence, in order to reduce the extent of informality, the main objective of the state government should be to promote the growth of micro and small enterprises. As these industries, will start growing the share of regular salaried employment in total non-farm employment, and the jobs with social security and written job contracts are likely to increase.

Figure 5.12: Non-farm sector Employment by size of operation, 2019-20



Source: Authors calculation based on PLFS unit level data.

5.5.4: Jobs without written contracts and gig jobs-

The number and share of jobs "without any written job contract" increased massively during 2004-05 and 2018-19, among regular salaried workers (**Table 5.17**). It is noted across the manufacturing, non-manufacturing and service sectors in Karnataka.

The share of employment "without any written job contract" in manufacturing sector had increased from 61 percent to 84 percent during 2004-05 and 2018-19. In non-manufacturing it increased from 34 percent to 76 percent; while in services it also increased from 51 percent to 85 percent during the same period. If informality is defined by lack of social insurance, these are additional dimensions of informal work that show no signs of change even a state which is relative advanced in term of urbanization.

The number of jobs with job contract for a period of "1 year of less" also increased across the sectors, at the cost of jobs with a contract "more than 3 years". This result is consistent with the employment data of the Annual Survey of India (ASI), which claims that the share of contract jobs at all India level and in many states including Karnataka has increased during 1997-98 and 2014-15. This shows the phenomenon of rising gig jobs in the states of India.

Table 5.17: Types of job contract among regular salaried workers (%), 2004-05 to2018-19

Sectors of Employment		Types of Job Contract among Regular salaried Workers (%)			
		No written job contract	*Job Contract for 1 year or less*	*Job Contract for 1 to 3 years*	*Job Contract more than 3 years*
Manufacturing	2004-05	60.5	1.4	5.1	33.0
	2011-12	71.1	3.0	5.5	20.4
	2018-19	84.1	7.6	1.3	7.0
Non-manufacturing	2004-05	34.3	0.0	1.3	64.4
	2011-12	63.6	1.6	9.3	25.5
	2018-19	76.2	13.2	1.9	8.8
Service	2004-05	51.3	2.6	3.7	42.4
	2011-12	65.2	3.9	5.2	25.8
	2018-19	84.7	4.4	2.1	8.8
Non-Farm Sector Total	2004-05	52.8	2.3	4.0	40.9
	2011-12	66.5	3.6	5.4	24.5
	2018-19	84.3	5.3	2.0	8.4

Source: Author's estimation based on NSS and PLFS unit level data

5.5.5: Government and Private sector jobs

Although the number of jobs increased in both public and private sector enterprises during 2004-05 and 2018-19, the share of jobs generated in the public sector is quite lower as compared to the number of jobs created by the private sector enterprises.

Government or public sector enterprises contribute only about 12 percent of total non-farm sector jobs in Karnataka. The rest 88 percent of the non-farm sector jobs is still being generated by private enterprises. In the manufacturing sector, the share of public sector employment is only 2.3 percent (0.7 lakh) during 2018-19; while in the non-manufacturing and services it is about 3.7 percent (0.9 lakh) and 17 percent (15.8 lakh) respectively (**Table 5.18**).

Based on these employment figures it is argued that private sector always plays an important role in driving the growth of jobs in the state. This is also true for all other states of India. In this context, the government measures to boost investment, output and trade and commerce, monetary policies, fiscal measures, health, education, demography and migration policies are crucial.

Table 5.18: Government and private sector jobs in Karnataka, 2005-2019

Broad Sectors	2004-05		2011-12		2018-19	
	Govt.	Private	Govt.	Private	Govt.	Private
Number of workers (in Lakhs)						
Manufacturing	0.63	26.9	0.33	31.6	0.69	28.9
Non-manufacturing	0.45	12.0	0.85	16.8	0.91	23.6
Service	10.7	50.3	12.5	67.9	15.8	78.9
Total Non-Farm	**12.0**	**89.0**	**13.7**	**116.4**	**17.4**	**131.4**
Share of employment (%)						
Manufacturing	2.3	97.7	1.0	99.0	2.3	97.7
Non-manufacturing	3.6	96.4	4.8	95.2	3.7	96.3
Service	17.6	82.4	15.5	84.5	16.7	83.3
Total Non-Farm	**11.9**	**88.1**	**10.5**	**89.5**	**11.7**	**88.3**

Source: Author's estimation based on NSS and PLFS unit level data

5.6 : On Earnings and Wages

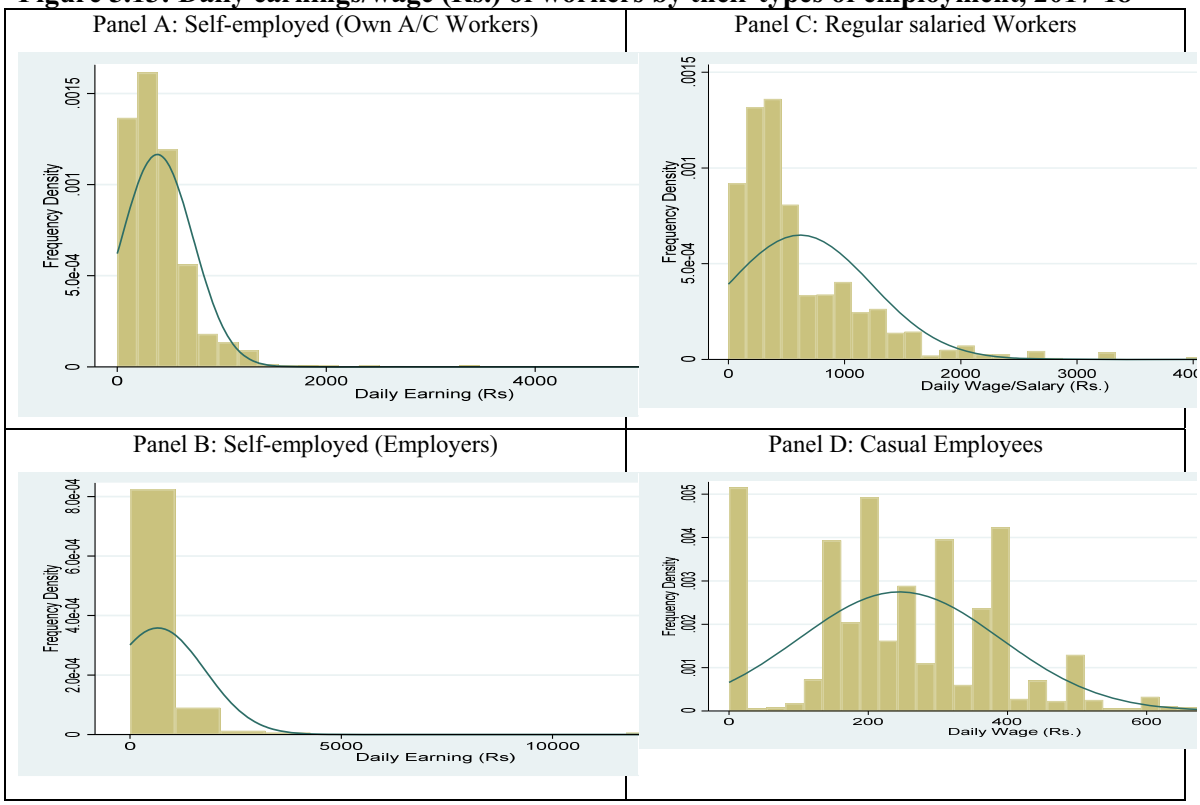
The standard of living of the workers employed as either self-employed, casual labour or regular salaried workers could be revealed through the comparison of their earnings/wages. There are mainly two major group of self-employed[2] (viz., (i) own account workers and (ii) employers) who play the role of bread winner for their family. Though, the wage distribution of the causal workers in Karnataka appears like a normal distribution, its mean value is concentrated around Rs. 200/- per day (**Figure 5.13 Panel D**). This substantial low level of earning could be the main reason for a relatively higher incidence of poverty among these self-employed folks. Hence, the **labour laws need to be re-examined** by state governments if this

[2] The third category of self-employed is out of the discussion here. Because, they normally do not receive any financial benefit for the work they do for their family business.

trend towards informal employment is to be strengthened. However, in the case of employers (**Figure 5.14 Panel C**), although it is also heavily concentrated around origin, but the frequency begins with a relatively higher value (Rs. 1000/- per day). On the other hand, the frequency density of wages/earnings of the regular salaried workers is highly concentrated around Rs. 500 per day (**Figure 5.13 Panel B**).

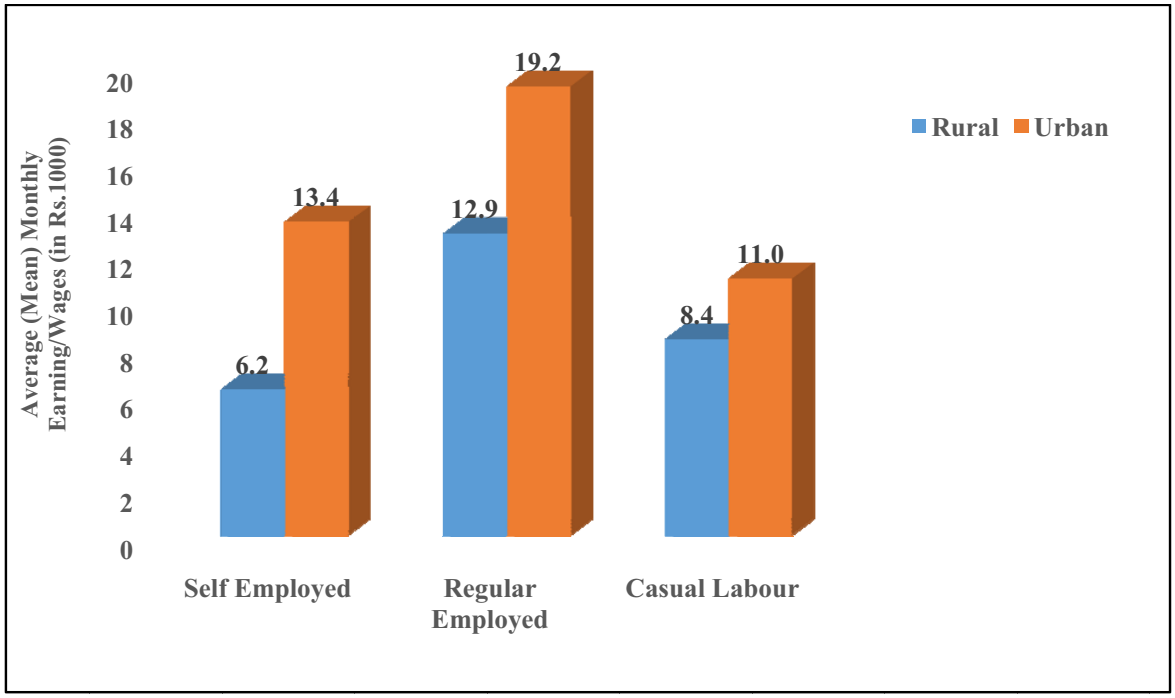
The comparison of earnings/wages of the workers employed in rural and urban areas shows that the condition of rural self-employed (mostly own account workers) are even worse than their casual worker counterparts, but the situation is just the opposite in urban areas. On the average, while a self-employed in rural areas earns Rs. 6000/- per month, the casual labour in rural areas earns about Rs.8000/- per month. In urban areas, a self-employed person tends to earn Rs. 13000/- per month, whereas a casual labour earns about Rs.11000/- per month, on the average. (**Figure5.14**).

Figure 5.13: Daily earnings/wage (Rs.) of workers by their types of employment, 2017-18



Source: Author's estimation and plot based on LFS unit level data, 2017-18

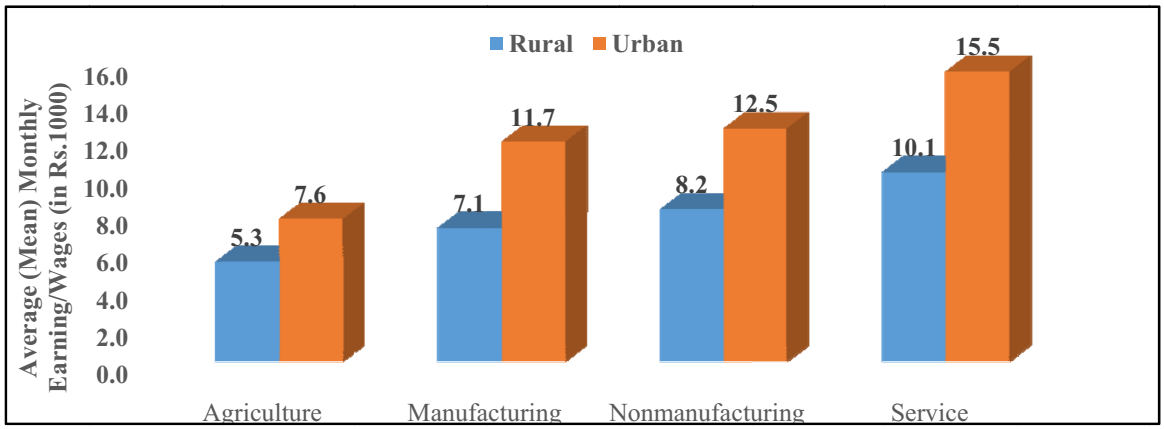
Figure 5.14: Average monthly earnings/wages by types of employment, 2019-20



Source: Authors calculation based on PLFS unit level data

As expected, the comparison of earnings/wages of the workers employed in farm and non-farm sector activities again shows that the average earnings/wages of agriculture and allied sector workers is much lower than that of their non-farm sector counterparts. While workers engaged in agriculture and allied sector, on the average, earn Rs.5300/-per month in rural areas and Rs. 7600/- per month in urban areas; the persons engaged in manufacturing sector earn Rs. 7100/- per month in rural areas and Rs. 11700/- per month in urban areas (**Figure 5.15**). The persons working in non-manufacturing sector (mostly construction) earn about Rs. 8200/- per month in rural areas and Rs. 12500/- per month in urban areas. But the workers engaged in service sector jobs, on the average, earn a better age premium (about Rs. 10100/- per month in rural areas and Rs. 15500/- per month in urban areas).

Figure 5.15: Average monthly earnings/wages by sectors of employment, 2019-20



Source: Authors calculation based on PLFS unit level data.

5.7 : On Harnessing Human Resources and Demographic Dividend: Issues and Challenges

The first and foremost hurdle in the process of harnessing demographic dividend is the rising youth unemployment. Hence, in order to tackle this issue, it is important to examine the pattern of youth unemployment in the state.

5.7.1: The Overall and Youth Unemployment Scenario

The share of youth in the total work force has constantly been declining despite the fact that their share in total population still continues to be around 28 percent. The falling share of youth in total workforce could be due to both supply and demand side factors. On the supply side, since a large number of youth (both boys and girls) were attending higher education (Hirway, 2012; Kanan and Raveendran, 2012; Mehrotra and Parida, 2019 & 2021), they could be remained out of the labour force for a considerable period of time. But in Karnataka, they have already started joining the labour force, which is reflected by massive increase in educated unemployment. The negative income effect due to rising standard of living and falling incidence of income poverty (Chauhan et al., 2016) and stagnant real wages (Mehrotra and Parida, 2021) might have discouraged many youth to remain out of labour force. On the other hand, demand side factors like lack of growth of industrial employment, skill miss-match issues (NSDC, 2013; Mitra, 2013; Mehrotra, 2014; Singh &Parida, 2020) and growing mechanization/automation in agriculture

(Mehrotra et al., 2014) etc., might have negatively affected the growth of youth employment in the state.

The number of unemployed youth increased massively to an unprecedented level in the recent years. While total unemployment (based on UPSS,) increased from about 3 lakhs during 1993-94 to about 9.5 lakhs until 2011-12, it increased further to a massively high number of 12.2 during 2019-20. Among total 12.2 lakhs unemployed, youth alone constitutes about 11.2 (about 92 percent). The overall open unemployment rate in the state was almost constant around 1.4 percent until 2011-12. However, during post 2011-12, it increased to 4.5 percent (**Table 5.19**). As a resultthe number of open unemployed population (those who were searching for jobs during most of the period in a year) increased from about 4 lakhs to about 12lakhs during 2011-12 and 2019-20.

Among youth, the open unemployment rate also increased massively during the post 2011-12 periods. During 1993-94, youth unemployment rate was about 3.3 percent, which almost constant around 3 percent until 2004-05. But during 2011-12, it increased to 4.5 percent, and thereafter to a massively high rate of 14.3 percent (**Table 5.19**). The incidence of youth unemployment among females is even more than that of their male counterparts. The open unemployment rate among male youth is about 11 percent whereas among females it is just the double (22 percent). This shows the fact that those girls who were attending education and training have already started joining the labour force.

Table5.19: Open Unemployment Rate (UR) by Gender and age groups in Karnataka, 1993-94 to 2019-20

Age Groups	Open Unemployment Rate (%)-by UPSS				
	1993-94	1999-00	2004-05	2011-12	2019-20
Males					
Youth Population (15 to 29 years)	3.5	3.4	2.2	4.2	10.7
Working Age Population (15 to 59 years)	1.7	1.6	1.1	1.7	3.7
Elderly Population (60 years & above)	0.0	0.0	0.0	0.0	0.0
Total Population (All ages)	**1.3**	**1.6**	**1.1**	**1.6**	**3.3**
Females					
Youth Population (15 to 29 years)	2.9	2.1	4.1	5.1	22.1
Working Age Population (15 to 59 years)	1.4	1.0	1.7	1.4	6.6
Elderly Population (60 years & above)	0.0	0.5	0.0	0.0	0.0
Total Population (All ages)	**1.4**	**0.9**	**25.1**	**1.2**	**6.4**

Age Groups	Open Unemployment Rate (%)-by UPSS				
	1993-94	1999-00	2004-05	2011-12	2019-20
Total (Males+ Females)					
Youth Population (15 to 29 years)	3.3	3.0	2.9	4.5	14.3
Working Age Population (15 to 59 years)	1.5	1.4	1.3	1.5	4.5
Elderly Population (60 years & above)	0.0	0.0	0.0	0.0	0.0
Total Population (All ages)	**1.3**	**1.4**	**1.2**	**1.4**	**4.4**

Source: Authors calculation using NSS and PLFS unit level data

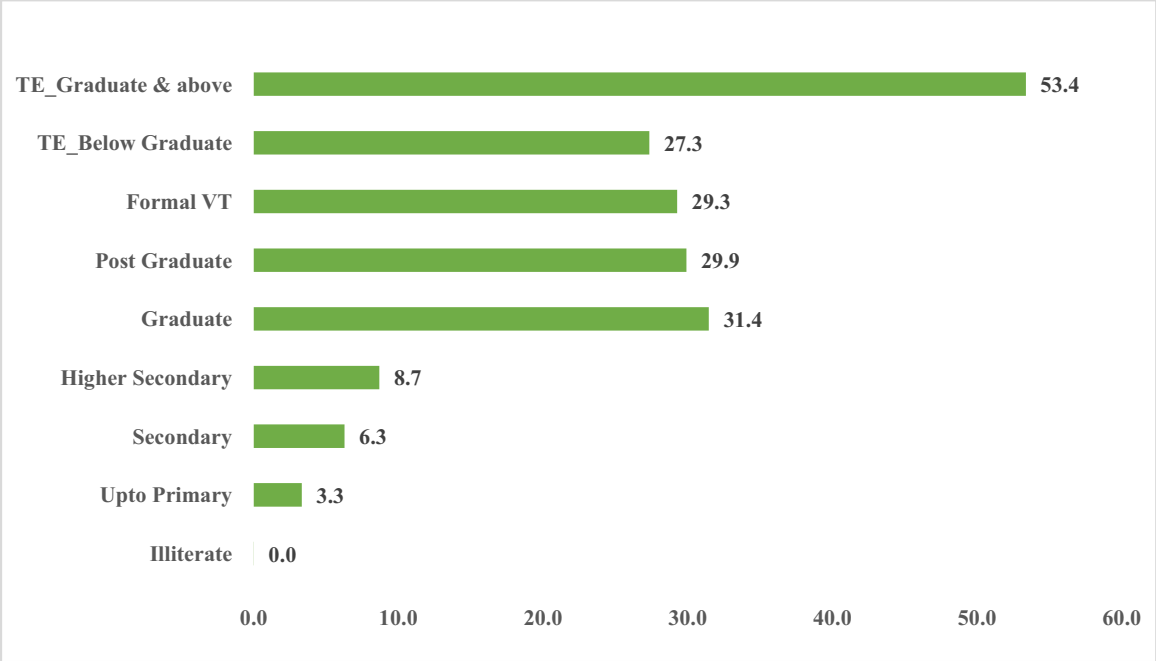
The rise is not surprising. But it is very important that these unemployed persons need to be accommodated in the labour market now.

5.7.2: Youth Unemployment by Education and Training

The education wise distribution of youth unemployed during 2019-20 revealed that about 0.1 lakh were either illiterate or were with up to primary level of education, 1 lakh were with secondary education, 1 lakh were with higher secondary education, 2.8 lakhs were with graduate level of education, about 68thousandwere with post-graduation level of education, about 57 thousand were formally vocationally trained, about 95 thousand were technically graduated, and about 3.5 lakhs were having post-graduate level of technical education.

It is also noted that with rising level of education the youth unemployment rate is also rising.Among illiterates it is almost zero percent. For youth having upto primary education it is3.3 percent. For secondary education, it is6.3 per cent; for higher secondary education, 8.7 percent; for youths having graduate level of general education, it is31.4 per cent; and for youths having post-graduation level of general education, it is 30 per cent. The open unemployment rate among vocationally trained youth is 29.3 per cent. Moreover, for youth having below graduation level of technical education (27.3 percent), and graduation and above level of technical education (53.4), it is even more(**Figure 5.16)**.

Figure 5.16: Open Unemployment rate among youth by Education and Training, 2019-20



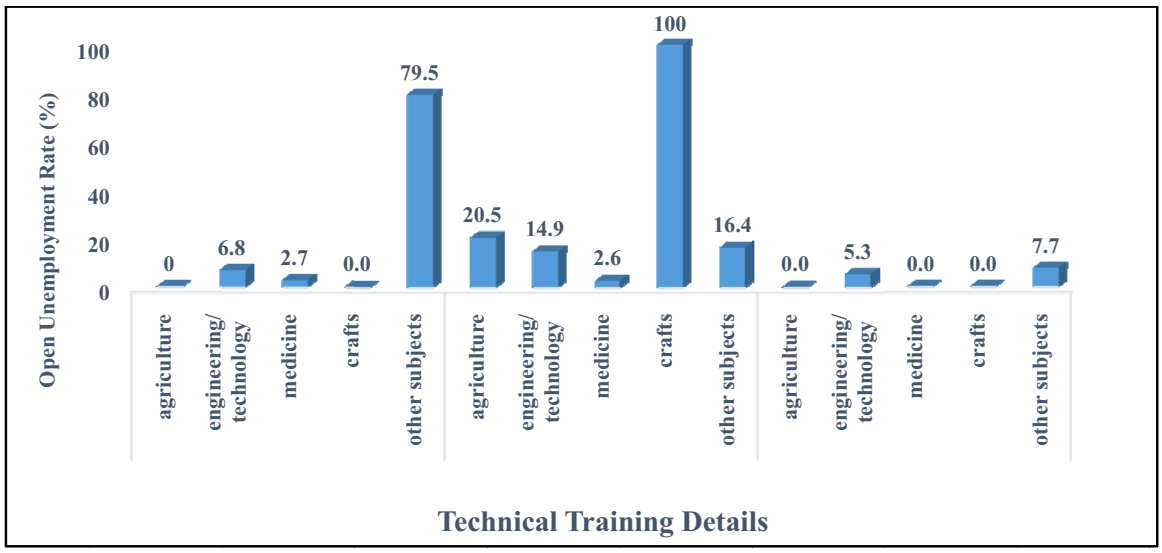
Source: Authors calculation and plot using PLFS unit level data

The unemployment rate is much higher in case of the technical trades like: crafts, agriculture and engineering technology in case of below graduation level of technical education. In case of graduate level training, the unemployment rate is also higher among those, who were trained under these specialization trades. However, at the post graduate level of technical education, the youth unemployment is very low across the trades (**Figure 5.17**).

Moreover, in the case of formal vocational training, youth unemployment rate is relatively higher in case of the trades like: Informational Technology (54 percent), Beauty and wellness (40 percent), Electrical, power and electronics (23 percent), Civil Engineering including-construction, plumbing, paints, and coating etc. (16.2 percent),Office and business related works (15.6 percent), and other trades3 (40 percent). In case of all other trades unemployment rate is quite negligible in the state (**Figure 5.18**).

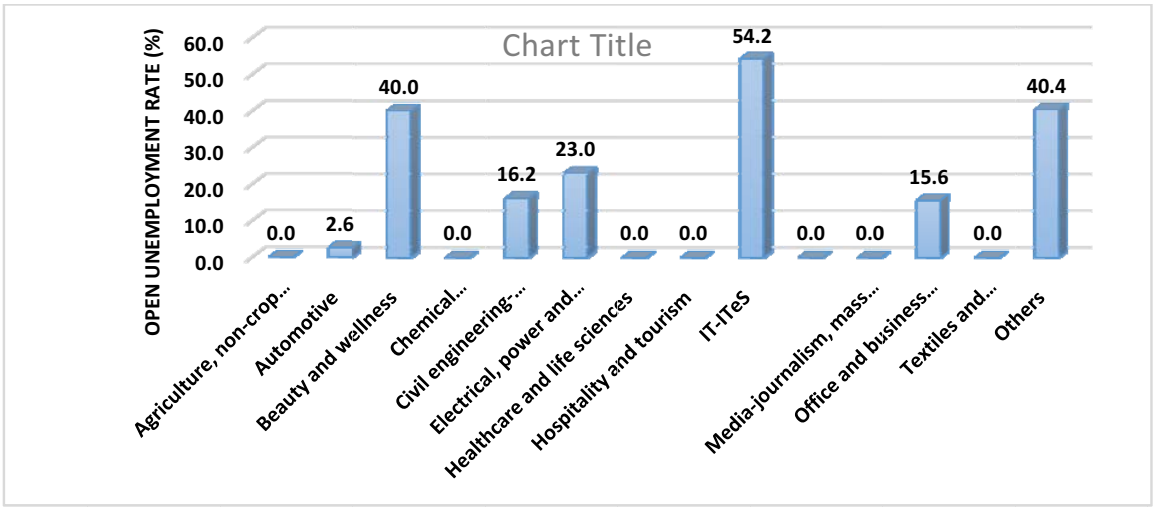
[3] These are not specified in the interview Schedule of the PLFS, 2019-20.

Figure 5.17: Overall Unemployment among Technically Trained ersons by Trades, 2019-20



Source: Authors calculation and plot using PLFS unit level data

Figure 5.18: Overall open unemployment rate among vocationally trained persons by trades, 2019-20 Restructure with only imp. areas



Source: Authors calculation and plot using PLFS unit level data

This increased youth unemployment (to 11 lakhs), particularly among educated and trained youth could be the main reason for declining overall LFPR in the state. This is the reason for recent growth of the volume **of discouragedlabour force**, which is otherwise, defined as "Neither in Labour Force nor in Education and Training (NLET)."

5.7.3: Growth of Discouraged/NLET LabourForce

The number of youthremained out of the labour force in the state, even after completion of their education and training is about 39 lakhs during 2019-20 (**Table 5.20**). It increased from28 lakh to 33 lakh during 1993-94 and 2004-05. But,since then it has been rising at an increasing rate. In fact, the situation is alarming because more than 53 lakhs youth are currently attending education and training (in addition to those currently unemployed or currently NLET). They are currently out of labour force because of the participation in education. After completing education/training they would either search for jobs or remain NLET. If they don't join the labour market, the unemployment rate would increase further. But if they prefer to remain NLET, it would increase the volume of discouraged labour force.

Table 5.20: Youth Unemployed, Participating in Education and NLET, 2019-20

Education and Training	Youth Population (in Lakh)		
	Open Unemployed	NLET Population	Currently Attending Education
Illiterates	0.1	2.5	NA
Upto Primary	0.8	12.8	12.2
Secondary	1.0	9.3	16.3
Higher Secondary	1.0	7.7	18.5
Graduate	2.8	4.1	3.9
Post Graduate	0.68	0.67	0.24
Formal VT	0.57	1.18	1.32
TE_Below Graduate	0.95	0.29	0.28
TE_Graduate& above	3.5	0.6	0.4
Total	**11.2**	**39.1**	**53.1**

Source: Authors calculation using Census and PLFS unit level data.

5.7.4: Role of Emigration and Remittances Policies

India consistently ranked first among the top remittance receiving countries of the world with a receipt of about US $ 69 billion (about 2.6 % of India's GDP) during 2017, keeping its competitors like China, Philippines, Mexico, France, Nigeria, and Pakistan etc., much behind (Rath, 2003; Parida and Raman, 2018; Parida, 2019). Various research studies have also found that inflow of remittances have far reaching positive and developmental consequences including: poverty and inequality reduction, raising domestic savings and investment on human capital, boosting economic growth through increased domestic demand for goods and services etc. (Parida et al., 2015) The best example are states Kerala, Punjab, Tamil Nadu and Gujarat, which are benefiting a lot due to huge inflow of remittances (Noushad et al., 2020).

Hence, it is argued that a suitable emigration and remittance policy at the state level (the state Kerala is already having an emigration policy) would not only help ease the labour market problems (by reducing extend of youth unemployment) in Karnataka, but it would also be resulted in a large scale inflows of foreign money that would help increase household level saving and investment in the state.

5.8: Way Forward

Improving Employment:Decent Work and Human Development

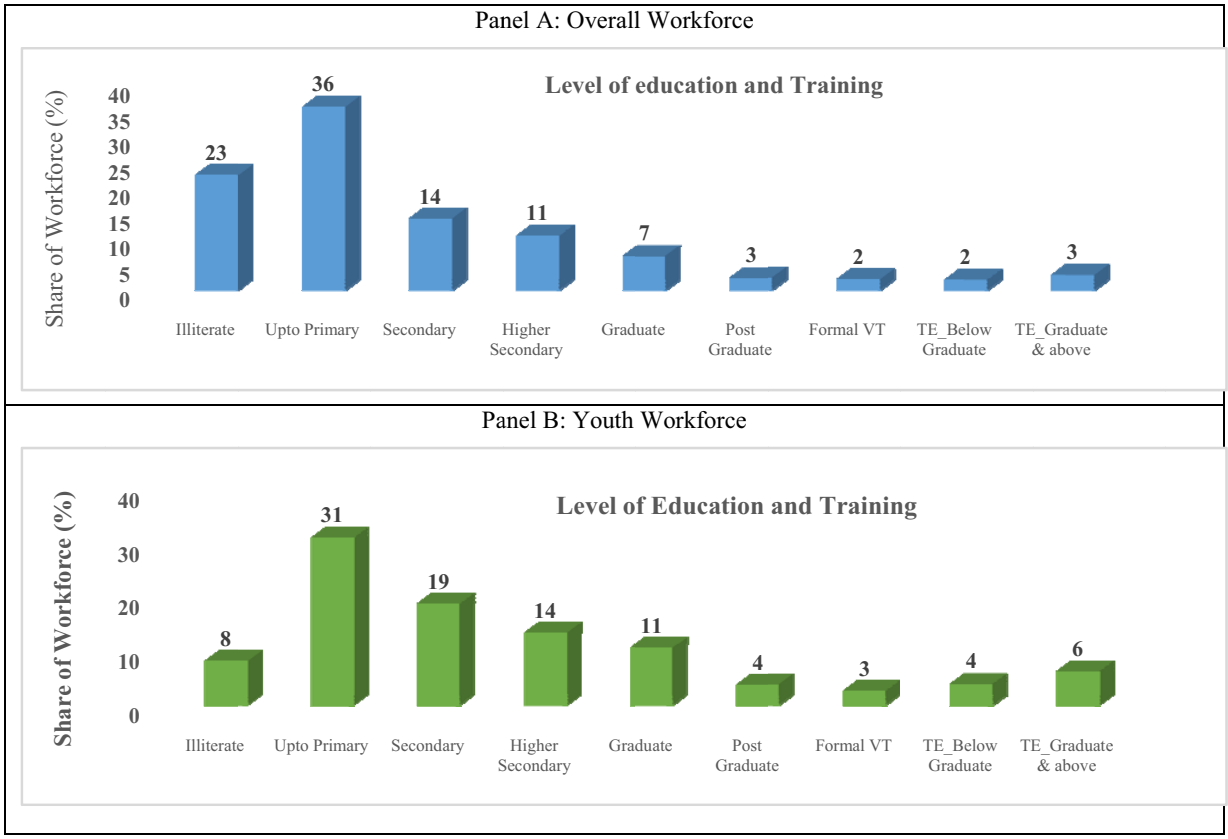
Karnataka still has job concentration in informal sector (83.9%) where the earnings are very low in both self-employment (Rs6000 (R)- 13000 (U)) and casual labour (8000 (R) 11000 (U)). Further, in the non-farm sector the contribution of Govt. is only 12 percent. This indicates the low quality of work and lack of decent work. Among the youths 53 lakhs youth are currently attending education and training& 39 lakhs are in NLET category. This indicates the pressure on the system to generate decent jobs and the need for formalization of work force.

5.8.1: On Skilling the Workforce

It is important to note that about 59 percent of the total work force of the state are either illiterate or having up to primary level of education (**Figure 5.19: Panel A**). These are the

workers who are expected to be engaged in the low skilled jobs. Only about 10 percent of the work force is having graduation and above level of education, which is believed to be engaged in quality jobs. Finally, only about 7 percent of the work force is having either technical or vocational training qualifications. This poor is the quality of the workforce puts question on the process of harnessing demographic dividend. However, there is a silver lining, which is reflected through a relatively higher share of skilled, and a lower share of low and semi-skilled workers in the youth workforce (**Figure 19: Panel B**).

Figure 5.19: Quality of workforce in Karnataka (by education and Training), 2019-20



Source: Author's calculation and plot based on NSS and PLFS unit level data.

5.8.2:Role of Vocational Education and Training

Though the number of vocationally and technically trained youth increased during 2004-05 and 2019-20, open unemployment rate among these also increased substantially. Moreover, even though the successful implementation of the "new education policy-2020" is likely to

increase the supply of vocationally trained youth further, due to introduction of vocational training curricula at school level, it will have little impact on the labour demand conditions.

Hence, supplementary measures including development of infrastructure (roads, canals, electricity and warehouses etc. for promoting agriculture growth), and local industrialization (may be through PPP or private model and focusing on existing SEZs) are necessary. The development agriculture and agro-based industries will have both forward and back linkages on the growth of large-scale industries and on the expansion of service sectors; which will definitely help improving quality jobs through reduction of informality over long run in India.

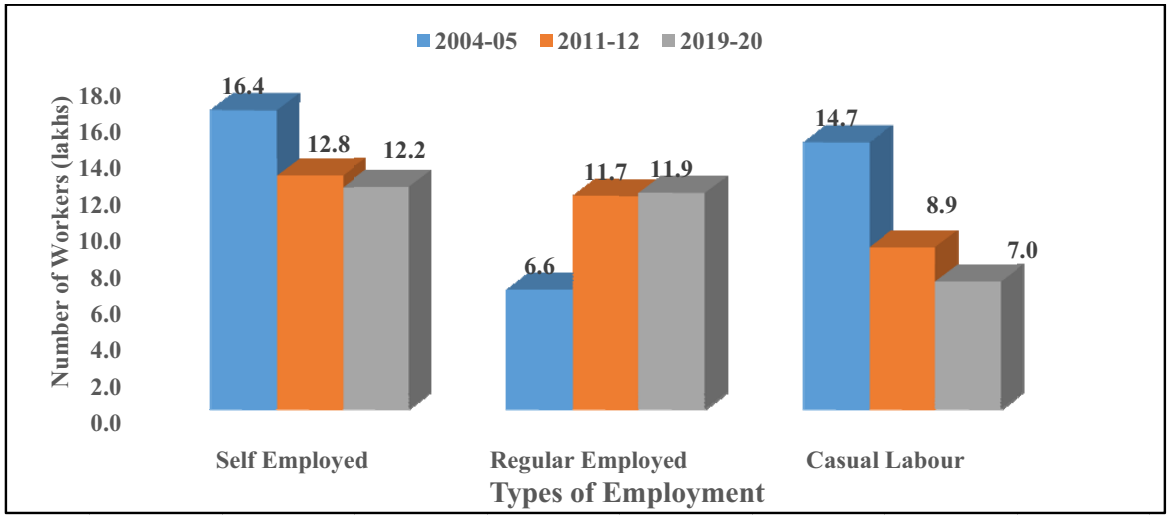
5.8.3: Self-Employment Programmes

It is clear that despite central[4] and state government's measures to promote the growth of self-employment activities, the number of youth engaged as self-employed activities has been (in both farm and non-farm sectors) declined from 16.4 lakhs to 12.2 lakhs during 2005 and 2020. This could be due to several reasons. First, educated youth could not acquire the required level of skill that could help them to set up their own business. Secondly, the inclination of youth for self-employed activities is shattered, perhaps due to either low level of earnings or due to the existing constraints (mostly financial and other kinds of legislations etc.) in setting up of new businesses. Hence, youth instead prefer to look for a regular salaried job.

The number of youth engaged as regular salaried workers, has consistently been rising in the state. Youth engaged as regular salaried (with and without of written job contract or social security measures) increased from 6.6 lakhs to about 12 lakhs during 2005-2020 (**Figure 5.20**).

[4] The self-employment schemes/programmes of the government of India include: IRDP, JRY,SGSY, NFWP, *NRLM,* SGRY,PMKVY*,* HRIDAY, PMEGP *etc.*

Figure5.20: Youth Employment Trends their type of Employment in Karnataka, 2005-2020



Source: Author's calculation and plot based on NSS and PLFS unit level data.

5.8.4:Fostering Entrepreneurship Development and Livelihood Promotion

The strategic focus points for successful entrepreneurship development among youth are given below.

- Efforts should be made to identify potential and early stage entrepreneurs from among those attending formal skilling courses as well as others. In order to educate and equip them, entrepreneurship education curricula would bedeveloped.The Department should provide entrepreneurship curriculum to aspiring entrepreneurs with the help of ICT.
- Colleges and universities, both public and private, would be encouraged to start entrepreneurship courses. Electives should be initiated at the engineering, general graduation level to foster entrepreneurship.
- Karnataka government should encourage the creation of new incubators and scale up of the existing incubators through appropriate support.The government may undertake steps to rationalize business procedures and regulations to improve ease of doing business.
- Access to institutional finance is key for the success of business. The government should initiate steps to ensure the flow of adequate and timely credit to budding entrepreneurs by strengthening coordination between entrepreneurs and banks/other financial institutions.

- The curriculum, tools and training materials, web and mobile platforms, e-hubs, assessments, access to finance, etc. would be made accessible to people with disabilities and reasonable accommodations and appropriate support would be ensured for people to access them easily.

5.8.5: Action Plan for Skill Development and Employment Generation in Karnataka

- **Strengthening Employment Exchange** to facilitate employment and entrepreneurship in collaboration with leading industrial houses and multilateral agencies. The center to be further strengthened to facilitate skill development programs, act as Recognition of Prior Learning (RPL) centers, building skill ecosystem at the district level.
- Initiatives for **Organized Labour Force:** Skilling labour force in the unorganized sector will be taken upextensively through the district skill mission through RPL process, imparting systematically planned short term skill development programs particularly on customer relationship management, EDP and business / professional ethics.
- Six **In**ternational **S**kill **T**raining and **In**novation **C**entres (**Instinct)** shall be established with an industry and international collaboration for advanced vocational training with a total intake capacity of 12,000. This is primarily to cater the demand for Highly Skilled Persons both within and outside the state as well as at the overseas market. This would also serve as a career advance centres for in-service ITI and Polytechnic faculties. The centres will be strategically located considering the geographical advantages, need for promoting inherent skills / occupations of the region, local industry sectors (for eg: Automobile in Dharwad, ESDM in Mysuru, Artificial Intelligence, Nano Technology and Robotics in Bengaluru). The centre will also be supporting innovation, constantly update curriculum to match the global standards, providing virtual experience of technological advancements and industry to the students of other polytechnics, ITIs and other technical courses.
- **Recognition of Prior Learning (RPL) in Farmers Community:**Upskilling, reskilling and recognizing prior learning of farmers is vital. The District Skill Mission will work in coordination with the Agricultural department and KrishiVigyana Kendra to establish a certification and recognition program for the farmers.

- Establishing **Centre of Trade Excellence (CTE)** at the existing polytechnic colleges situated at the district headquarter. Each CTE with an excellence in one special trade which is primarily relevant to the district's business environment in particular while continuing to have other regular trades in general
- Initiating **Livelihood Facilitation Centre at the block or cluster level** to support rural women, particularly those who are part of Self Help Groups. This is expected to function as one stop facilitation centre providing convergence, provision of different schemes of Government departments, credit linkages and marketing support.
- **Summer Vocational Programs** at the hobli level to reach children of secondary schools may be initiated. This is expected to build motivation and aspiration in the children to pursue vocational training and education. Basic vocational training will also be provided at the L1 to L4 level in this summer programs.
- **Digital Skills & Entrepreneurship Mindsets in Schools and Colleges: (i)**Conduct a sample survey to assess status of digital skills among students in the State. (ii) Introduce Digital Skills for School and College students through Gram Panchayat Libraries. (iii)Introduce mandatory curriculum on entrepreneurship mindset development from class 9 onwards to develop entrepreneurship mindset among students.
- **Career Information and Guidance: (i)**Make career guidance a mandatory part of education from class 8 onwards. (ii)Career guidance should be a part in school education. (iii) Establish a Central Career Guidance Cell at the State level to develop uniform content and curriculum for career guidance.
- **Youth Entrepreneurship Incubation at colleges: (i)** Develop a District level hub and spoke model for entrepreneurship incubation with all educational institutions in the district as spokes. (ii)Extend the New Age Incubation Network (NAIN) Scheme to all Districts. (iii)Establish Karnataka Research and Innovation Authority (KRIA) as a nodal agency for strengthening incubation ecosystem in the State on the lines of Technology Transfer Offices (TTOs) of Israel.
- **Building entrepreneurship ecosystem at Districts to drive local jobs/services: (i)** Set up Enterprise Facilitation Centres (EFCs) at District level. (ii) EFC to facilitate market access, support in getting investments from government schemes/programs, to raise

investment from angel investors, soft loans from bank/financial institutions for budding entrepreneurs.

- **Digital Services and Tech Based Models: (i)** Design and develop tailor-made skill courses for graduate students to address skill gap and demand for skilled manpower in the emerging digital economy sector. (ii)Create internship opportunities for graduates in Future Skills in companies like Infosys, Microsoft, IBM etc., through Karnataka Digital Economy Mission (KDEM). (iii)Launch Future Digital Jobs Initiative for engineering colleges in Beyond Bengaluru Clusters.
- **Agri and Agri Tech: (i)**Agriculture Universities, RDPR University and Farmer Producer Organizations (FPOs) should conduct regular capacity building programme for FPO executives in association with B-Schools of the State. (ii)Startup companies in Agri-tech sphere should be linked to FPOs. (iii)Launch a pilot programme for promoting agripreneurs by linking them to FPOs and farm universities. (iii)Promote Integrated Farming System (IFS) among small and marginal farmers with financial assistance and technical mentoring by farm universities.

5.9: Employment Policy

The state is expected to generate employment of around 60 to 75 lakhs by 2025 which is primarily due to the growth in the following sectors – Tourism, IT&BT, Services, MSME, manufacturing and other industries like Electronics System Design & Manufacturing etc. The current employment generation in the state is around 4 lakhs per year. While about 3.6 lakh people are leaving agriculture every year since 2011-12, the non-farm sectors job is not growing adequately (grown only about 2.6 lakh per annum during post 2012 periods) to accommodate them. Government of Karnataka has announced formulating new employment policy focusing on job creation and reducing unemployment in Karnataka.

A**n integrated employment policy should include:**

(i) A medium- to long-term employment strategy.

(ii) Regulatory interventions in informal enterprises should ensure that a minimum quality of employment is maintained and the basic rights of workers are respected.

(iii) Measures to address the issue of education and skills acquisition, and of skills mismatches need to be urgently put in place.

(iv) The social and regional dimensions of access to employment.

(v) Promoting labour intensive industries. -: tax incentives for particular types of investment or economic activity, public sector investment in infrastructure or institutional support which promotes enterprise development, research and development.

(vi) Focus on regions dominated by the tribal and backward populations, as also remote regions of the state, to unpack the full potential of both programmes and regions.

(vii) Simplification and modernization of labour laws, The state has also pre published the draft rules on two labour codes namely the code on wages 2019 & the industrial relations code 2020 against the four Labour Codes introduced by the Center propagated as a major labour reforms. The approval of the state is yet to be accorded on two remaining codes i.e., Code on Social Security, 2020 and OSH & WC Code, 2020.

(viii) Given the widespread insecurity of livelihoods, it is extremely important to provide a minimum level of social security to all workers.

(ix) Mapping of the skills required region/district wise

(x) Integrating apprenticeship training into the regular curricula andcertificatecoursestobe initiated. **Adapt the German dual system into the ITI system wherein atraineeisgiventheopportunitytospendmoretimeintheindustry**& promote apprenticeshipin big companies.

(xi) Ensure regionally inclusive development of skills and livelihood opportunities with focus on women and marginalized groups.

(xii) **Karnataka was the first state to produce a Labour-Intensive Industry policy.**The**Invest Karnataka group** can be activated and developed to deploy resources, much like the Economic Development Board of Singapore.

(xiii) Industry clusters can be developed throughout the state, focusing on North Karnataka, and connected to Bengaluru and the coastal ports via high-speed railways and road transport facilities. The state already has a strong MSME base of 70,000 registered companies with a 17,000-strong factory and heavy engineering base.

(xiv) Increasing Manufacturing employment as a Percentage of total employment from existing 11.74%. Developing manufacturing sector particularly in Tier2 and Tier3 cities. Higher PPP investments on- transport connectivity (viz., air, road, water) and creation of development zones (viz., science city, innovation city, industrial city) using public-private partnership (Atmanirbhar and Asset Monetization). MSME clusters should be developed to provide skills-based training, to promote jobs.

(xv) Karnataka's performance in attracting private and foreign investments and increasing exports is significant. Total domestic investment approvals in 2020-21 and 2021-22 is 602 projects, investment of Rs.78264.24 crore and potential employment generation of 1,89,351 jobs.

(xvi) The construction industry has highest backward linkage in terms of metal consumption, mass employment, and generation of taxes. The China model can be deployed in Karnataka. Tourism also has high potential to create jobs and the state must invest heavily in this area.

(xvii) Among the districts, Bengaluru Urban leads with 83.4% services sector value added, with Dharwad and Hassan after it. This clearly shows that urbanisation and the service sectors create high paying jobs. Karnataka has created 21 lakh jobs in Bengaluru from the information technology services sectors, which will create an additional 2.5 to 3.5 lakh high-skilled jobs in the next five years with the industry's complementary environment.

(xviii) Focus on NEET – Youth Neither in Education nor in Employment and Training

Increasing employment opportunities through (i) Establish self-sustaining social enterprise at each GramaPanchayath to provide a platform to bridge the gaps in livelihood and jobs through skill development, (ii) Incentivising rural and social business initiatives, (iii) Localised training such as agriculture and allied services in agricultural regions, (iv) Initiating diploma courses in agricultural and allied sectors, (v) Easy access and facilitation to financial assistance for upcoming entrepreneurs and (vi) Placement services through job mela and employment exchanges.

(xix) An effective Labour Market Information System to establish an effective coordinating and monitoring mechanism involving both state and civil society organisations.

(xx) It is also strongly advocated that the introduction of a programme like MGNREGA in the urban areas in critical situations.

(xxi) State government has equally large potential to monetize existing assets to generate funds and re-invest in future infrastructure needs of state. This will fuel the economic growth for state at local level and generation of employment.

5.10: Conclusion

Karnataka has received 53% in IT sector and 38% of the overall FDI. Ease of Doing Business has to further simplify to enable foreign companies to invest in India. It is envisaged that low skilled manufacturing provides opportunities for India. Tourism, Garment, IT, Food and Automotive industry provide huge opportunities for India. Proximity to Japan, South Korea – growing E-mobility provides huge opportunity for Indian Auto component makers to grow to USD 200 billion market in next 5 years. Karnataka has an organized auto component manufacturing hub and robust EV policy, shares 55% of the global IT services and is expected to consolidate in future. Bengaluru contributes to 34% of IT exports.In this context, an integrated approach of development through a structured industrial policy for the promotion of micro and small enterprises along with skill development, infrastructure development and emigration and remittances policies are necessary to create decent job in the state Karnataka, which is already moving ahead in overall human development among the Indian states.

Chapter - 6

Bridging the Gaps in Human Development - Gender, Social and Regional

Chapter 6

Bridging the gaps in Human Development - Gender, Social and Regional

(No one is left behind)

6.1: Introduction

Reducing inequality is enshrined in the 2030 Agenda for Sustainable Development with the basic several Sustainable Development Goals (SDGs) addressing to the aspiration to reduce inequality across multiple dimensions. For this we need to go beyond income in exploring inequality—and especially in confronting the new inequalities of the 21st century (HDR 2019). The dynamics of inequality in human development is essentially a 'holistic' exercise as it goes beyond income inequality and include inequalities in multiple dimensions of life and society and the deprivations caused by them, that have inter-generation all impacts leading to vicious circle and gap widening. It, therefore, becomes a complex endeavour and needs adequate explorations to address them for generating a sustainable virtual circle leading to empowerment and equality. This chapter makes a situational analysis of inequalities in human development across the categories of Gender, social groups and regions in Karnataka in a comparative framework to assess the gaps and achievements.

6.2: Why do Striking Inequalities Persist?

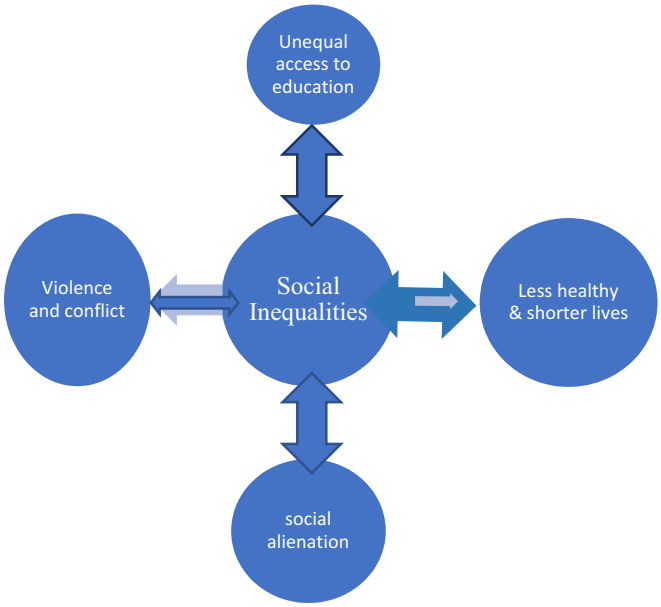
The global HDR-2019 has brought out the inequality dimensions of human development. Inequalities persist partly because of social structures—many with historical roots—that remain entrenched in formal and informal institutions, adamantly resisting change. To shift the curve of human development inequalities, it is not enough to improve just one or two indicators. Instead, the social structures that perpetuate inequity need to change. This requires changes in attitudes, behavioural patterns and social value systems and the formal and informal institutions shaping them. The driver of this change is education and education only.

The educational inequalities begin with lower levels of learning starting at an early age that drag on throughout school careers. Hence, children already start out unequal when they enter the formal education system. This can explain part of the intergenerational persistence in education inequalities. Children with less capacity and lower test scores are less likely to continue education, even though it may be available and accessible.

The low education levels impacts income earnings and access to health resulting in poor quality of life.

Therefore, in addition to access to formal schooling, substantial investment in early childhood development interventions is thus needed, especially in low human development regions in an economy with concentration of SC, STs & Minorities with focus on gender, the approach has to be integrated to attack all the dimensions simultaneously to turn the vicious cycle into a virtuous cycle.

Figure 6.1: Exploring Dynamics of Inequality in Human Development – Correlation across the Sectors/ Indicators.



Source: UNDP HDR 2019

The operational process is as follows:

"Inequality lowers mobility because it shapes opportunity. It heightens the income consequences of innate differences between individuals; it also changes opportunities, incentives, and institutions that form, develop, and transmit characteristics and skills valued in the labour market; and it shifts the balance of power so that some groups are in a position to structure the policies and opportunities in favour of them. Inequality in opportunity is thus a link between intergenerational mobility. (UNDP:HDR 2019) Hence, equitable distribution of opportunities and developing capabilities to utilise them provides a sustainable solution.

The Inequality adjusted Human Development Index (IHDI) represents an index which explicitly accounts for inequalities. The IHDI is particularly critical in the Indian context because average indicators mask inequalities in human development attainments across India's states. The discussion paper by Suryanarayana, Agrawal and Seeta Prabhu (2011) provided for the first time IHDI estimates for Indian states following the methodology proposed in the 2010 Human Development Report. It is suggested that human development outcomes alone, without measurement of inequalities, may significantly mask the performance of individual states.

The IHDI is measured at all India level along with human Development Index (HDI) and presented in the second chapter of this report. Delhi stands first in HDI but in IHDI Kerala stands first and Delhi is at 2nd place. Loss due to inequality is lowest for the State Kerala. Kerala is a way ahead of other states after accounting for inequality in terms of educational attainment. Karnataka on the other hand slid down by two positions after accounting for inequality in the dimensions and stands **at 13th position**. Highest loss is witnessed by Bihar, Jharkhand and Telangana around 27.35%. States Assam, Madhya Pradesh and Odisha

improved their position at least by two or more after accounting for inequality whereas Telangana, Jharkhand and Karnataka went down at least by two or more in their position indicating the rising dimension of inequality. The loss in human development due to inequality is 24.40 percent and at all India level it is slightly lower at 24.36 percent.

The Public Affairs Index estimated by PAC (2021) is based on the three pillars of Growth equity and sustainability. Karnataka is ranked at 7th place in overall index but in equity its rank is 16th among 18 major states, 6th on growth and 4th on sustainability pillars. Thus, Karnataka is performing low on equity front as evident from the available evidence.

6.3: Human Development & Disparities across Social Groups.

The ministry of Social Justice and Empowerment has estimated the development indices for SC, OBC, and general category and the HDI for elderly and for disabled. The **National Institute of Labour Economics Research & Development** (earlier IAER) NITI Aayog has prepared the report. The HDI for various categories of people is presented in the following table.

Table: 6.1 HDI for Different Social Groups

Index Type	Group	HDI Value		% Change in HDI Value	Rank of States in 2011-12	
		1999-00	2011-12		Top Five	Bottom Five
Human Development Index	ALL	0.25	0.35	39.5	Kerala	Bihar
	SC	0.20	0.30	50.4	Himachal	Orissa
	OBC	0.23	0.35	47.3	Tamil Nadu	Madhya Pradesh
	GEN	0.29	0.48	61.9	Maharashtra	Uttar Pradesh
					Haryana	Rajasthan
Higher Education Index	ALL	0.07	0.15	114.3	Tamil Nadu	Assam
	SC	0.03	0.09	200	Kerala	Orissa
	OBC	0.04	0.14	250	Andhra Pradesh	Bihar
	GEN	0.12	0.23	91.7	Himachal	Gujarat
					Jammu&	Madhya Pradesh
Human Development Index for Elderly	Rural	0.38	0.48	26.3	Kerala	Madhya Pradesh
	Urban	0.61	0.75	22.9	Tamil Nadu	Orissa
	Total	0.43	0.56	30.2	Punjab	Rajasthan
					West Bengal	Andhra Pradesh
					Maharashtra	Bihar
Human Development Index for Disabled	Rural	0.16	0.21	31.3	Kerala	Uttar Pradesh
	Urban	0.30	0.34	13.3	Tamil Nadu	Orissa
	Total	0.19	0.25	31.6	Maharashtra	Andhra Pradesh
					Jammu&	West Bengal
					Himachal	Gujarat

Source: IAER 2015

Income and education indices are playing important role in improving human development of SC and OBC in India. This change is due to growing financial support to the students through scholarship and incentives and the hostel facilities. The employment generation programmes-self as well as wage employment- have played a major role in providing livelihood security. The HDI of elderly population is 0.56 indicating better position of Senior citizens. The HDI of disabled group is 0.25 indicating their low status. HDI for All is 0.35 and has marginally increased over the decade. The progress in General category is 62% and in SC category it is 50.4% which indicates positive impact of government interventions.

The following sections provide an overview of convergence and disparities across gender and social groups.

6.4: Gender & Human Development

The Fourth World Conference on Women (1995) & Beijing Platform for Action laid the targets and action for marching towards gender equality, the progress in reducing gender inequality over the 20th century was remarkable in basic achievements in health and education and participation in markets, but, even after interventions for a quarter century at the Global, National and State level, many challenges to equality remained, particularly for enhanced capabilities that alter power relations and enhance agency. The world and the countries are not on track to achieve gender equality by 2030. Based on current trends, and policy set up the World Economic Forum has estimated that it would take 202 years to close the gender gap in economic opportunity indicating a strong requirement for affirmative action.

The UNDP Report (1995:1): states that 'Human development, if not engendered, is endangered'. This has set forth the global agenda very clearly after two decades of International Women's year and the subsequent international women's decade and Conferences. A Gender Development Index was introduced to measure the achievements on gender front. Despite the progress made over the last two and half decades, we are not on a confident stand to acknowledge that we are near to gender parity. Women still lag men when it comes to economic opportunity, education, employment, and participation in decision-making. The SDG-5 focuses mainly on gender equality agenda. The targets to achieve Gender Equality are fixed at National and State levels, which requires a strong gender budget and action plan.

6.5: Why Gender Equality?

A society in which women cannot get adequate space and rights to realise their full potential, loses out on the significant potential for innovation, sustainable economic growth, and job creation. For instance, a recent study (IMF 2018) showed that **in India, measures to close the gender gap could lead to a 6.8-percent gain in GDP**. **Another study by MGI** estimated that advancing women's equality in India could boost its **GDP by $0.7 trillion in 2025 or 16** percent as compared to the 'business as usual' scenario.

The International Monetary Fund estimates **that India's gross domestic product (GDP) could expand by 27 percent** if the number of female workers increases to the same level as that of male workers. United Nations Economic and Social Commission for Asia and the

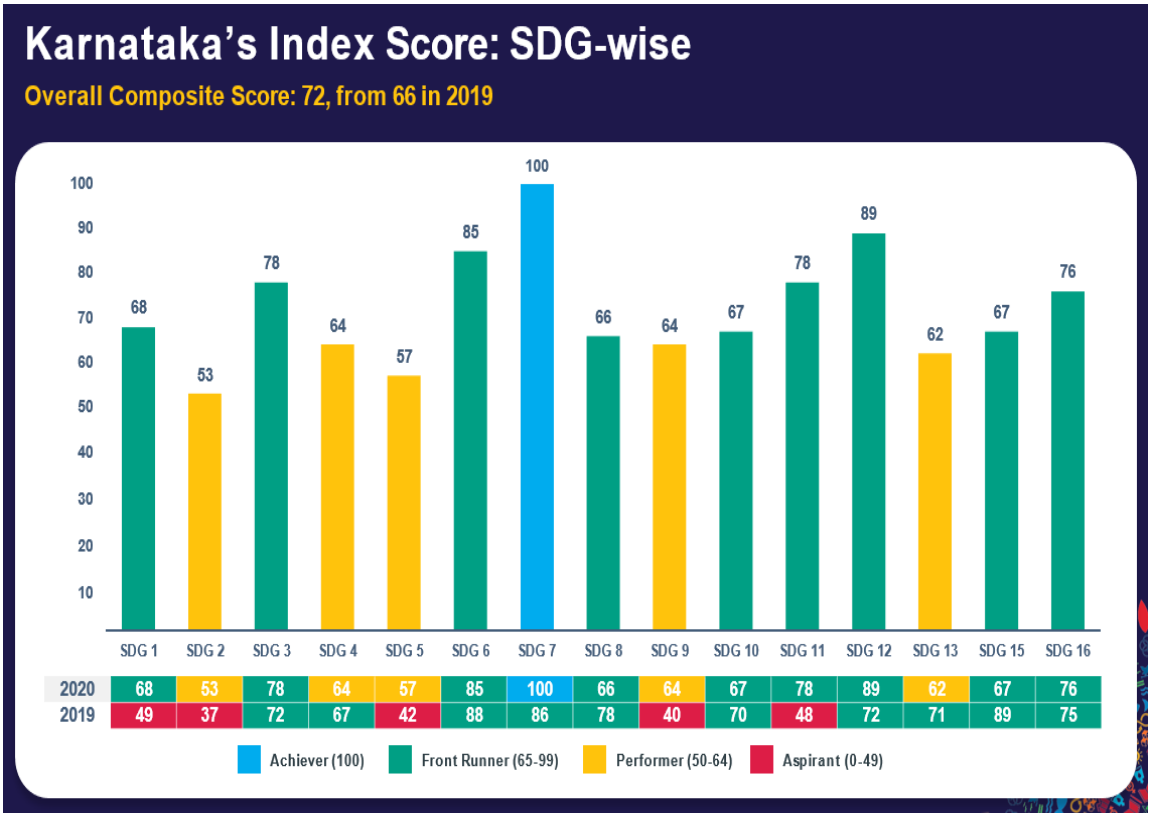
Pacific, estimates that if India's female labour force participation reached parity with that of the United States (86 percent), its GDP could gain US$19 billion. Hence, entrepreneurship and labour force participation remain critical to harness the economic potential of women and thus, achieve the sustainable development goals by 2030.(Sabrina Korreck)

In India and Karnataka, in recent years more focused interventions (laws, policies and schemes) inclusive of gender budgeting by the State and Central governments have been under taken to address the issues of women which result from their situation of subordination, oppression and marginalization in the gender, class and caste hierarchies. The transgender groups also have been brought into the gender related development discourse and State has directed welfare actions during the last decade through a policy frame work.

6.6: SDG Goals 2030 & Gender

Attainment of SDG-2030 agenda is strongly associated with Gender equality. The Goal is directly linked to many other goals- SDG-1,2,3,4,6,8 & 10.

Figure: 6.2: Karnataka's index score:-SDG wise



Karnataka is in Performer category for the critical goals SDG-2, SDG,4 and SDG-5 and SDG-9 and SDG-13. In gender equality the Score is 57 and in goal 1, 8 and 10 also our score is less (68, 66 and 67). Al these are closely associated with Gender equality- Nutrition, education, health & hygiene, Industry and infrastructure, sustainable cities and communities and Life on Land. This reflects on the fact that though we are progressive state, yet the gains from development are disproportionately distributed. Thus, attaining Gender equality is critical to attain SDG-2030 Agenda.

6.7: Gender Equality- Attainments in Critical Targets

Table 6.2 Performance in Gender Equality (SDG-5)

Indicator	Karnataka	India Value	Best State
Rate of crimes against women per 1,00,000 female population	42.50	62.40	4.1 Nagaland
Sex ratio at birth	924.00	899.00	958 Chandigarh
Ratio of female to male average wage/salary earnings received among regular wage/salaries employees	0.75	0.74	0.94 Uttar Pradesh
Per lakh women who have experienced cruelty/physical violence by husband or his relatives during the year	7.70	19.54	0.0 Nagaland
Percentage of elected women over total seats in the state legislative assembly	3.14	8.46	14.44 Chandigarh
Ratio of female to male Labour Force Participation Rate (LFPR) (15-59 years)	0.34	0.33	0.8 Himachal Pradesh
Proportion of women in managerial positions including women in board of directors, in listed companies (per 1,000 persons)	209.00	190.00	250 Chandigarh
Percentage of currently married women aged 15-49 years who have their demand for family planning satisfied by modern methods	82.50	72.00	93.6 Andhra Pradesh
Operational land holding gender wise (percentage of female operated operational holdings)	20.07	13.96	34.32 Meghalaya

Source: NITI SDG India Index 2021.

To understand the dimensions and magnitude of inequality, a situational analysis of women in different fields of the economy is essential.

6.8 Situational Analysis of Women

Table 6.3 Gender Profile of Karnataka-

Year	Women		Men		Total	
	No.	Percent	No.	Percent	No.	Percent
1991	2,20,25,284	48.97	2,29,51,917	51.03	4,49,77,201	100
2001	2,59,51,644	49.10	2,68,98,918	50.90	5,28,50,562	100
2011	3,01,28, 640	49.32	3,09,66,657	50.68	6,10,95,297	100

Census of India 1991, 2001, 2011

Table 6.4 Demographic Dividend

Age group	Total	Male		Female		Male Female Diff.	
		No.	Percent	Percent	Percent	No.	Percent
0-4	5046719	2582024	51.17	2464695	48.83	117329	2.34
5-9	5241509	2696670	51.45	2544839	48.55	151831	2.90
10-14	5736646	2955287	51.52	2781359	48.48	173928	3.04
15-19	5827277	3042048	52.20	2785229	47.80	256819	4.40
20-39	21217995	10697522	50.40	10520473	49.60	177049	0.80
40-59	12188268	6220624	51.04	5967644	48.96	252980	2.08
60-79	5165722	2478570	47.99	2687152	52.01	-208582	-4.02
80 and above	625310	268502	42.94	356808	57.06	-88306	-14.12
Age not Stated	45851	25410	55.42	20441	44.58	4969	10.84
All ages	61095297	30966657	50.69	30128640	49.31	838017	1.38

Source: Census 2011

About 50% of women are in productive age group equal to men. This potential needs to be harnessed by increasing female LFPR. One of the basic indicators of women's status is the sex ratio. The declining Child Sex Ratio (CSR) indicates that girls are not in safe position.

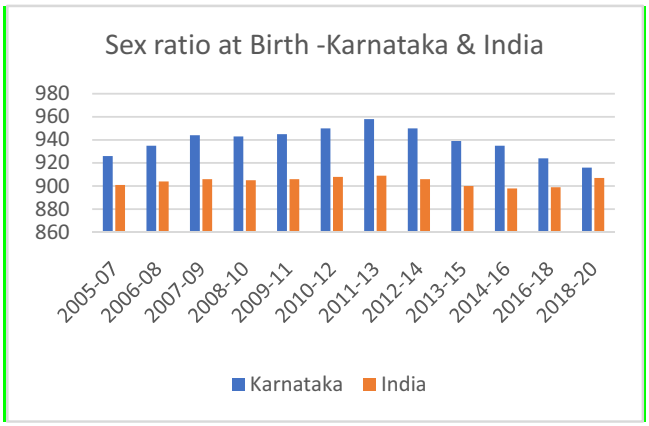
Table 6.5 Sex Ratio-Rural and Urban

	Sex Ratio –Rural and Urban								
	1991			2001			2011		
	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total
Sex ratio (General)	973	930	960	977	942	965	979	963	973
Child sex ratio (CSR)	963	951	960	949	940	946	950	946	948

Census reports 1991, 2001 &2011

Sex Ratio at Birth -Karnataka & India

Year	Karnataka	India
2005-07	926	901
2006-08	935	904
2007-09	944	906
2008-10	943	905
2009-11	945	906
2010-12	950	908
2011-13	958	909
2012-14	950	906
2013-15	939	900
2014-16	935	898
2016-18	924	899
2018-20	916	907

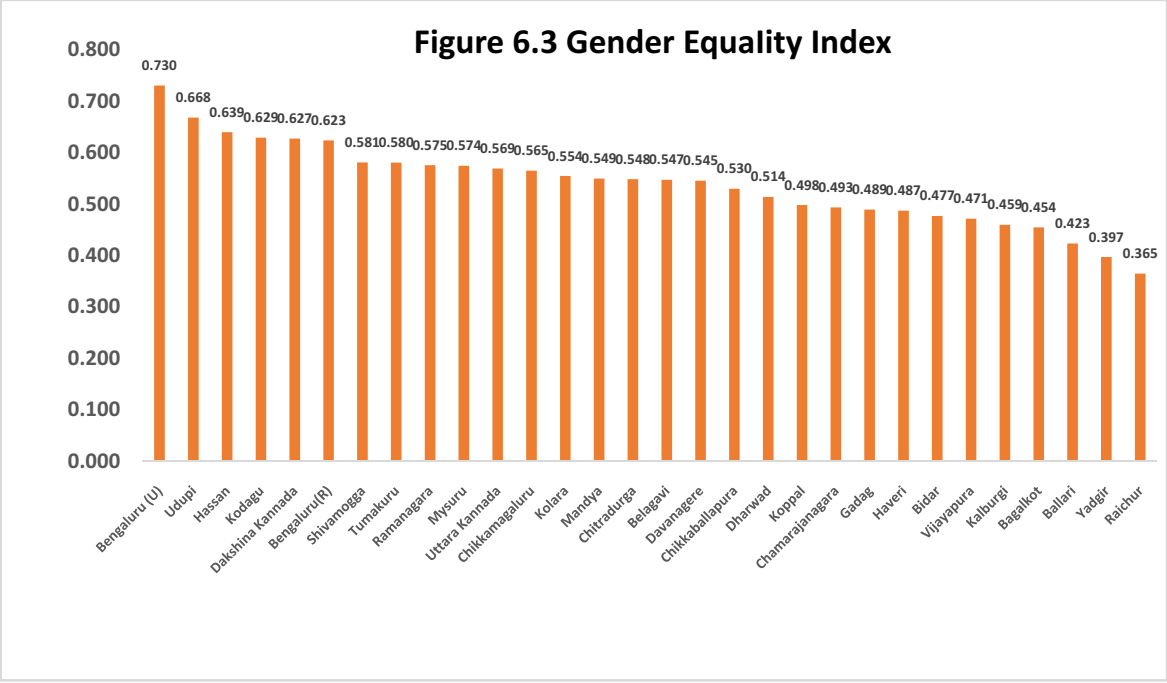


Source: SRS Bulletins for respective years

There is a growing concern about the declining Sex Ratio at Birth to 916 in 2020 SRS report. There is an urgent need to implement the promotional schemes like Beti Bachao Beti Padhao and Bhagyalaxmi to improve the Sex ratio at birth.

6.8.1: Gender Equality Index

A gender equality index is estimated across the districts and talukas based on a comprehensive set of indicators cover in all the dimensions.



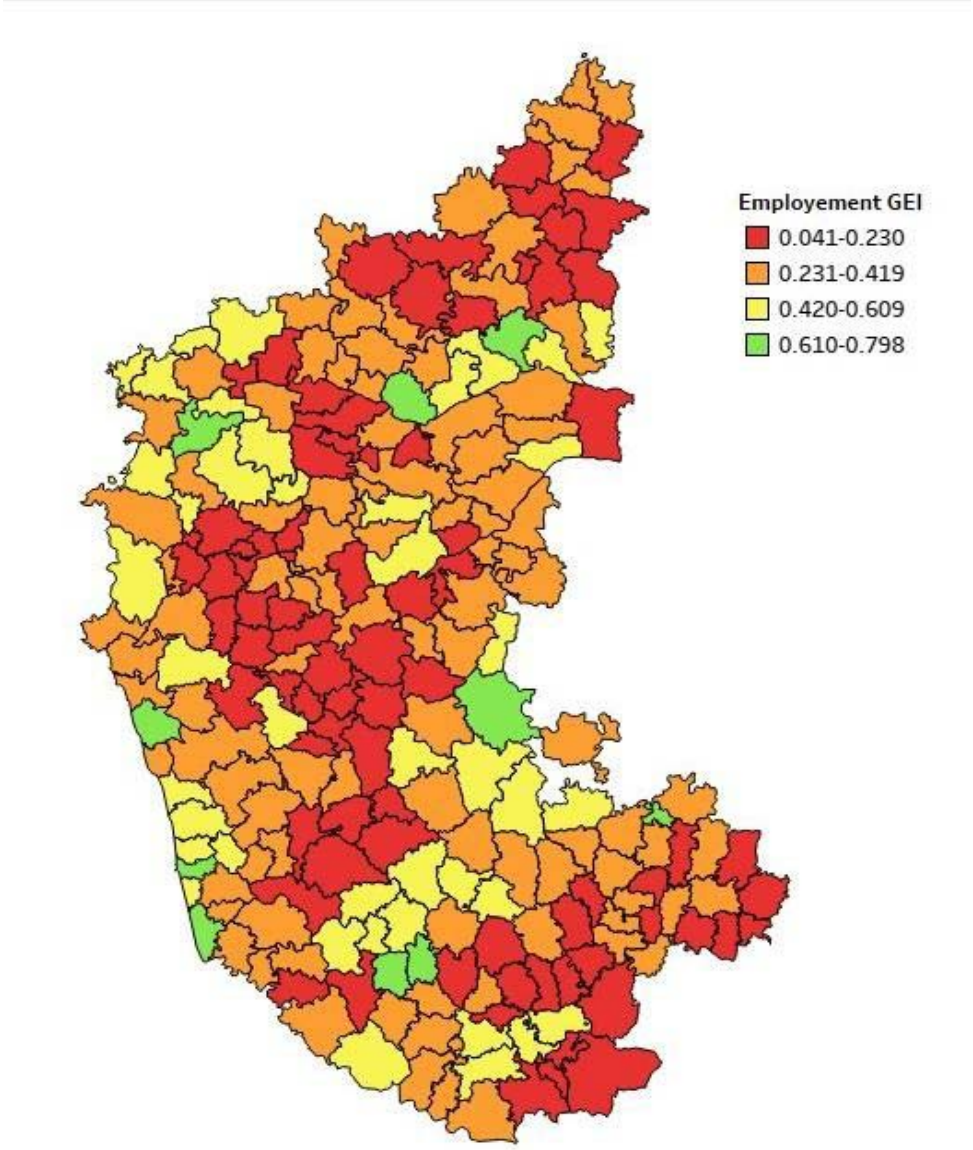


Figure 6.4: Women Employment

The Gender Equality Index (NITI Aayog model) was computed at the District and taluka level. It is based on 14 indicators covering Education, Health, Empowerment, employment and infrastructure. The top five districts are :Bengaluru(U), Udupi, Hassan, Kodagu and Dakshin Kannada – All from South and the bottom five are :Kalaburagi, Bagalkot, Bellary, Yadgir & Raichur. The State average index is 0.530 indicating that the achievement is only 53 percent. 12 districts are below State average **The Max. Min. Gap is 0.360.** Raichur is at halfway compared to Bengaluru.

Table 6.6- GEI for Districts in Karnataka

Sl.No	District	GEI	Sl.No	District	GEI
1	Bengaluru (U)	0.7299	**16**	Belagavi	0.5469
2	Udupi	0.6676	**17**	Davanagere	0.5450
3	Hassan	0.6392	**18**	Chikkaballapura	0.5295
4	Kodagu	0.6286	**19**	Dharwad	0.5135
5	Dakshina Kannada	0.6269	**20**	Koppal	0.4978
6	Bengaluru(R)	0.6232	**21**	Chamarajanagara	0.4932
7	Shivamogga	0.5806	**22**	Gadag	0.4889
8	Tumakuru	0.5802	**23**	Haveri	0.4868
9	Ramanagara	0.5753	**24**	Bidar	0.4766
10	Mysuru	0.5739	**25**	Vijayapura	0.4711
11	Uttara Kannada	0.5688	**26**	Kalburgi	0.4593
12	Chikkamagaluru	0.5645	**27**	Bagalkot	0.4544
13	Kolara	0.5542	**28**	Ballari	0.4230
14	Mandya	0.5492	**29**	Yadgir	0.3968
15	Chitradurga	0.5481	**30**	Raichur	0.3646

Source: Planning Department, CODR 2021.

6.8.2: Gender Budget and Outcomes

Among south Indian states, Karnataka was the first state to take the gender budgeting initiative in 2006, along with Gujarat. The Gender Budget Cell has been regularly bringing out a Gender Budget document reflecting allocation of funds under various schemes cutting across different departments. The schemes are presented in two parts; Category-A and Category-B The classification is broadly on the lines adopted by GOI in the Expenditure Budget Vol-II. The categorization of schemes is :

- Category–A which presents women specific budget provisions in which 100% budget provisions are meant for women.
- Category-B which present women–specific budget provisions wherein at least 30% provisions are meant for women. Details of allocation are given below.
- Category-C which present women–specific budget provisions where in below 30% provisions are meant for women. Details of allocation are given below.

Table- 6.7 Gender Budget -Karnataka

Category	2019-20 (Accounts)	2020-21 (Budget)	2020-21 (Revised)	2021-22 (Budget)
1. Cat 'A'	546882	472646	463697	458566
2. Cat 'B'	10714411	11085181	10929979	10867422
3. Cat 'B' (30% grants)	3214323	3325554	3278994	3260227
4. Total Allocation	3761205	3798200	3742691	3718793
5. Cat 'C'	11142338	12231506	11598797	13294704
6. Karnataka Fund Allocation	22403631	23789333	22992473	24620692
7. Allocation Percentage	16.79	15.97	16.28	15.10

Source: Budget documents GoK

A large proportion of allocations goes to Women in the two categories namely 'women in difficult circumstances' and 'women's education'. Allocations for the women in difficult circumstances aims at welfare, especially to the vulnerable. The health and livelihood allocations under gender budgeting were very low earlier and they are gaining momentum now.

The Comptroller Auditor General (CAG 2017) report finds that the general increase in allocation under the gender budget for the welfare of women in Karnataka has not translated into higher investment for women-specific schemes (Mohammed, 2021). For instance, despite having comparatively high allocations under the health department, the IMR in Karnataka according to NFHS-5 is 23, whereas in Kerala it is 7. In the same way, Anemia among pregnant women is 45.7 percent & among children 65.5 percent. The labor force participation rate is 26.6 percent.

6.9: Focus Areas

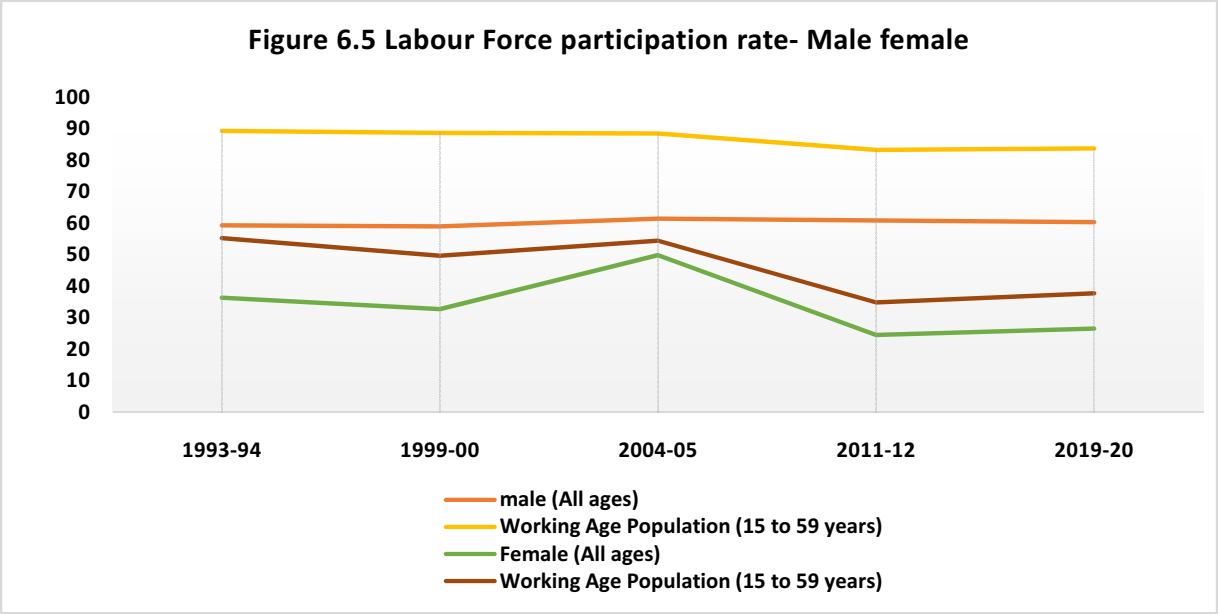
6.9.1 Women's Work- Visibility, Causality& Care Economy

Unpaid care work refers to all unpaid services provided within a household for its members, including care of persons, housework, and voluntary community work (Elson, 2000). These activities are considered work, because the activity involves mental or physical effort and is costly in terms of time and resources. It is unpaid because the individual performing this activity is not remunerated. The work in the care economy is skewedly distributed across gender. Men devote 36 minutes to unpaid care responsibilities, out of which 36% goes into housework, with the remaining time spent on shopping, care for household members, and travel related to household activities. Out of the six hours women devote to unpaid care activities, the portion of time specifically spent on housework reaches 85%. (Unpaid Care Work: The missing link in the analysis of gender gaps in labour outcomes OECD Development Centre, December 2014). The efforts to quantify women's work and create an exchange value to it, that are going on since Nairobi conference (1978) are yet to yield fruits. The Labour Force Participation rate among women is declining after 2004-05 form 49.9 it has come down to 26.6.

Table- 6.8 Gender perspectives on Labour Force Participation Rate (%)

Age Groups	Labour Force Participation Rate (%)				
	1993-94	1999-00	2004-05	2011-12	2019-20
Males					
Youth Population (15 to 29 years)	79.7	78.5	78.05	63.7	63.5
Working Age Population (15 to 59 years)	89.3	88.7	88.5	83.3	83.8
Elderly Population (60 years & above)	62.2	52.7	53.01	55.7	41.7
Total Population (All ages)	**59.4**	**59.04**	**61.5**	**60.9**	**60.4**
Females					
Youth Population (15 to 29 years)	49.5	42.3	44.3	24.3	28.5
Working Age Population (15 to 59 years)	55.3	49.7	54.5	34.9	37.8
Elderly Population (60 years & above)	21.3	20.2	21.4	16.7	12.3
Total Population (All ages)	**36.4**	**32.8**	**49.9**	**24.6**	**26.6**

PLFS-2019-20



In the working age population, the LFPR is 37.8 percent, and the gender gap is 46 percent. The overall LFPR is 26.6 percent. There was decline in Male LFPR between 2004-05 &2011-12 by 5 percent but the decline for women is significant from 50 % to 24.6 percent. The low and falling FLFPR after 2004-05 is a cause of concern, given that, economic empowerment of women is the right path for gender equality is globally accepted.

The Female Worker Population Ratio (FWPR)is 35.3 percent in working age population and the same is 80.7 among males & the gender gap is 45.4%. the male female ratio is 2.3:1.

Table – 6.9 Nature of Employment

	Male					
	own account worker, employer	helper in household enterprise	all self employed	Regular wage salary	Casual Labour	All

Karnataka	46.3	15.0	61.2	13.4	25.4	100.0
all India	**48.0**	**10.4**	**58.4**	**13.8**	**27.8**	**100.0**
	Female					
Karnataka	15.2	**36.0**	51.2	11.9	36.9	100.0
all India	**20.6**	**42.3**	**63.0**	**9.5**	**27.5**	**100.0**

Source PLFS 2019-20

The employment security and quality of work is assessed from the nature of employment. Though self-employed women are 51.2 percent, only 15% of them are employer. 36 percent work as helpers without any remuneration and economic powers. **Further, only 37 percent of women reported worked for cash in NFHS-5.** The share of women in employment in total agricultural enterprises is 39.10 percent and in non-agricultural enterprises it is only 28.53 percent. (6th Economic Census-2014) These enterprises are overwhelmingly comprised of single person enterprises; many these enterprises are in traditional sector. Further, studies indicate that several enterprises reported as women owned are not in fact controlled or run by women. This indicates the concentration of women in agricultural own account enterprises, more as helpers, indicating the low wage and employment status and vulnerability of employment. Women's participation in production in manufacturing sectors is low indicating lack of entrepreneurship and other required skills. Karnataka is below national average. The Skill. Entrepreneurship & Livelihood Dept. has to impart the necessary skills and the Women Entrepreneurs' Organizations like AWAKE must enable the self-help groups and potential women entrepreneurs to get main streamed in the production process.However, women's access to assets is increasing. 89 percent of women have a bank account and 67.6 percent of women have joint ownership of land or house. 62 percent of them have a mobile phone. 82.7 percent of them participate in household decisions (NFHS-5). The provision of

An Evaluation of Udyogini scheme of State govt. has brought out that out of 1006 respondents, 47% have utilised the loan for improving/ expanding existing business, 49% have utilised it for starting new business. Overall, 86% beneficiaries are continuing the business, while 14% are not. It may be inferred that majority of the respondents expressed considerable improvement in access to credit (64%), habit of savings (58%), involvement in decision making in household and financial matters (42%) and individual income for personal use (50%). 83% have either repaid loan or are repaying it. Women expressed need for training in modern enterprises.

85% suggested to enhance the maximum loan amount to above Rs. 1,00,000 upto Rs. 2,00,000, 10% said it could be made Rs. 2,00,000 – 3,00,000/ and to increase the income limit to access the scheme. The Govt. has increased the loan amount to the maximum of Rs. 2 lakhs and the income limit to 1.5 to 2 lakhs in the budget announcement for 2018-19.

technical and managerial skills and credit and marketing support will enable them to manage the enterprises effectively.

One of the powerful approaches to women empowerment and rural entrepreneurship is the formation of Self-Help Groups especially among women. The Self-Help Groups approach has proved successful not only in improving the economic conditions through income generation, but in creating awareness about education, health and hygiene, sanitation and cleanliness, environmental protection.

The effects of the COVID-19 pandemic have significantly reduced and almost reversed the limited progress that has been made on gender equality and women's rights, from health and the economy, to security and social protection. The pandemic has also led to a steep increase in violence against women and girls. Women have played a disproportionate role in responding to the virus, including as frontline healthcare workers and carers at home. Women are hit by the economic impacts of COVID-19, as they are disproportionately working in insecure labour markets. Nearly 80 per cent of women work in the informal economy that was bad hit by covid.

6.9.2: Increasing FLFPR

Entrepreneurship and labour force participation remain critical to harness the economic potential of women and thus, achieve the sustainable development goals (SDGs) by 2030.(Sabrina Korreck). Entrepreneurship among women is a vital component of the overall solution. It not only boosts the economy through job creation, but also delivers transformational social and personal outcomes for women.

> The findings of the study on self Help Groups under National Rural Livelihood Mission that are based on secondary and primary data analysis in the five districts, viz, Gadag, Koppal, Mysore, Tumkuru and Uttara Kannada, covering a sample of 1791 SHGs and 7100 members, indicated that 46.5 percent members feel more confident after joining SHGs. Access to credit by SHG members ranges between an average of 50 % to 76.5% and reducing their dependence on money lenders. There is increase in assets between 8 to 16%. Difference in income before and after turned out to be statistically significant in respect of all income groups. The average change is in the range of 25 -30 percent. 60 percent of women enterprises use personal contacts for marketing. But the enterprises are concentrated in farming, Dairy, and pretty trade. Their requirements are- training in managerial skills, financial literacy, credit, and marketing. (Source: Status of self -help groups under SRLM, KEA, Planning Dept.)

Therefore, an integrated approach is required to make women enterprises sustainable. The basic components of the strategy are:

a. Individual and Group Entrepreneurship- (SHGs).

b. Training & Skilling in modern production enterprises- The 'Skill Sakhi' model

c. Provision of credit facilities- under Atma Nirbhar and other such packages.

d. Marketing Linkage- e-marketing platform e-trading, Asmita

e. Credit facilities-Interest subvention schemes, micro credit, Udyogini, STEP, Milk Incentives, Ksheera Sanjeevani Schemes etc.

f. Provision of **support facilities** like **Special Industrial Parks &Zones, infrastructure** facilities higher subsidies, raw materials to women entrepreneurs and groups. Sppedy implementation of the four industrial parks at

g. Gender labs, incubation centres to provide technical support.

h. Support to SC/ST women in SHGs. There are 163813 Stree Sahkti Groups in the State with 30% of women SC/ST members. These to be focused for empowerment of these marginalised communities.

6.9.3: Women & Health

According to the NFHS-5 the health status of women has not improved. Anaemia among adolescent and women has increased over the years. About 50% women and adolescent suffer from anaemia. The incidence of anaemia among children, women and adolescent is high in North Karnataka region. There is no special supplementary nutrition scheme except Mid-Day-Meal (MDM) for adolescents who again need proper care and supplements at the growing age. The urgency of strategies to address the issue among adolescent and women could reduce the risk for future generation

Table 6.10: Health Status of Women

Sl. No.	Indicator	2019-20 NFHS- 5	2015-16 NFHS -4	NFHS-5
1	Children age 6-59 months who are anemic	65.5 (-)	60.9	Yadgir 76.0
1a	Women whose Body Mass Index (BMI) is below normal (BMI)	17.2(-)	20.7	Yadgir 26.0
2	Pregnant women age 15-49 years who are anemic	45.7 (-)	45.4	Vijaypura 71.5
3	Non-pregnant women age 15-49 years who are anemic	47.8(-)	44.8	Raichur 59.9
4	All women age 15-49 years who are anemic	47.8(-)	44.8	Raichur 60.4
5	All women age 15-19 years who are anemic	49.4 (-)	45.3	Raichur 64.8
6	MMR (2018) (SRS) (India)	83(2017-19) (103)	108(2016-17)	Yadgir 235*
	IMR (SRS 2019) (India)	**21 (2019) (30)**	**25 (2017)(33)**	**Mysore 23***

Source NFHS -4&5 & SRS bulletins * HMIS data

There is an urgent need for the State to focus on nutrition of women and children. An integrated nutrition policy is the need of the hour. The following tables gives a snapshot of nutrition policy and strategy.

Table 6.11: Nutrition-Strategy and Plan

Strategy	Action	Department
Strengthening existing system by converging the activities such as immunization, Vitamin 'A', IFA, ICDS, Water and Sanitation and supported interventions such as horticulture, agriculture, and food processing.Monitoring of the Schemes	Strengthen VHSNC, SDMC, SHG, BVS Integrating the nutrition plan into GPDP Rewarding GPs &ULBs	RDPR, WCD, Health Education. Urban Development
One Saksham Anganwadi in each GP @ 2 Lakhs Capacity Building	Nutrition, Health Learning Skills On line training modules **e**-learning modules for stakeholders	WCD
Exclusive breastfeeding within first hour and in the first 6 months	Breast Milk Banks in critical districts	Health, WCD
Addressing Anaemia	Ayush Kits/wellness Centre	Health (Ayush)
Encourage Folic acid tablets for pregnant mothers (to be given by Asha worker- Accountability through tracker)	Ensure sufficient folic acid tablets for pregnant women. Create awareness of its importance through local institutional set up.	Health WCD GP
Promote healthy lifestyle & healthy local diet for people in all age groups	Yuva Spandana NSS, Kishori Shakti Yojane NSS Volunteers as VNVs (Village Nutrition Volunteers)	Youth Empowerment & Sports, WCD Higher Education
Engage Village Nutrition Volunteers SHGs or MahilaMandals	To generate awareness an behavioural change	Youth Empowerment & Sports NRLM
Integrate nutrition in the school curriculum.	Nutrition modules to be introduced in School and college curriculum and in Health education	Education (P &SE) Medical education
Introduce Best Practices Awareness and Capacity Building	School Shakti Veeta/Sai Sure in MDM Two Teachers as Health Ambassadors per school Nutrition awareness programs at village/ school and college levels.	Education (P & SE)
Establish Nutrition Food Processing Units- 67 blocks of 16 districts that require focus.	Food Processing Units- One unit per block Linking to SHG/MahilaMandals Encourage Nutri Gardens/ Horticulture Gardens Fortification of food	MSME, Skill WCD Horticulture Fisheries department
Real time monitoring of the beneficiaries' nutrition indicators through Poshan tracker /Sneha App.	Data Management & real time monitoring at Anganwadi Integration with Avalokana	WCD/Planning

6.9.4: Violence Against Women

Violence against women is partly a result of gender relations that assume men to be superior to women. Given the subordinate status of women, much of gender violence is considered normal and enjoys social sanction.

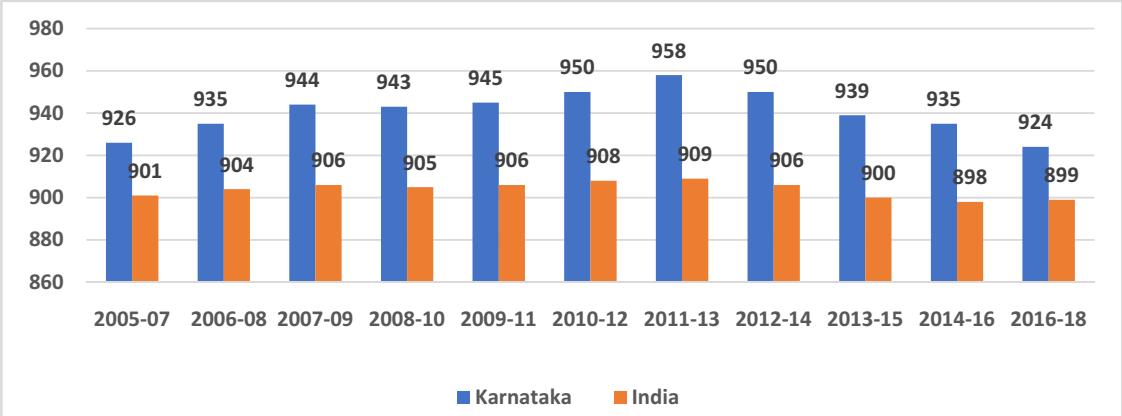
Karnataka shares 3.4 percent of total crimes against women in the country (NCRB 2019 4.2% in 2016). The reported crimes are less and the rate is 42.5 per lakh, as compared to national average of 62.4 (NCRB 2016) & Karnataka ranks 10th in the country among 29 States.

The percentage of women in the 18-49 age group who experienced spousal violence -physical and sexual — was 20.6% in Karnataka in 2015-16 in NFHS-4 but rose to 44.4% in 2019-20 (NFHS-5) with not much difference between rural and urban areas. Karnataka topped the list of 17 states and five UTs included in the survey followed by Bihar (40%). This has deep impact on both physical and mental health of women.

Women are also subject to social customs and prejudices. The **Devadasi & Dasappa** systems though are abolished by Law yet prevail in different informal structures. The Superstitions also put women under social pressures.

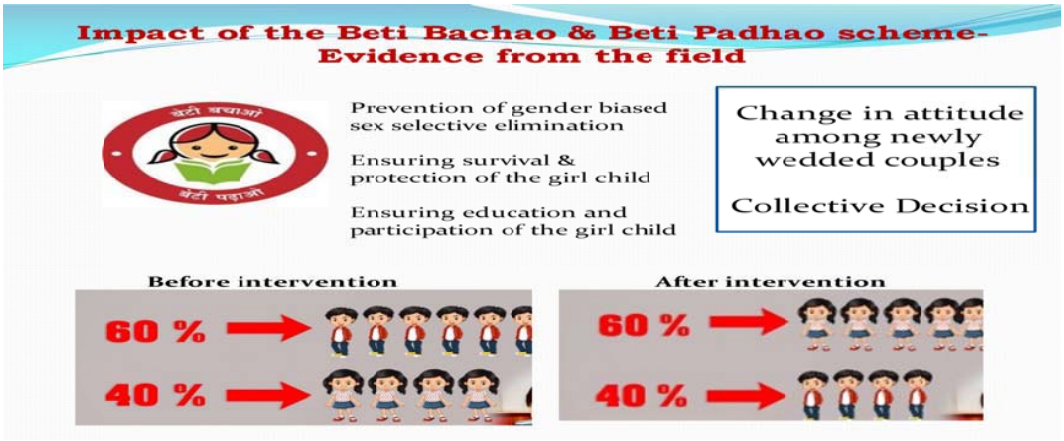
As per the National Crime Records Bureau (NCRB) data of 2020, a total of 785 cases were registered under the Prohibition of Child Marriage Act. Karnataka registered the highest number of cases, 184, (followed by Assam at 138, West Bengal at 98, Tamil Nadu at 77 and Telangana at 62. The cases of dowry deaths are 5.96 per ten lakh population and rape cases are 16 per ten lakh population.

Figure 6.6: Child Sex Ratio



PCPNDT Act 1994 was implemented to eradicate discriminatory practices against girl child and arrest the declining sex ratio at birth, yet the desired outcomes are not achieved.

Beti Bachao beti Padhao



The evaluation of Beti Bachao Beti Padhao scheme in Vijayapura district noted that within a span of four years of implementation of the scheme, the awareness given to the newly wed couples has led to It was found by the researchers that the TV campaigns had a positive impact on the psyche of the parents. significant that the impact is more on men.

To improve the sex ratio at birth and child sex ratio the State Government has implemented **Bhagyalakshmi** scheme. Change in attitude towards girl child. Registration of the birth of a girl child was 100% The evaluation report noted, "With 18 years of age and minimum eighth standard education, the scheme looks somewhat marriage oriented." as majority of parents (76.7%) the Bhagyalakshmi scheme used money for marriage purpose when the girl child attains the age of 18

The State Cabinet took a decision on Oct. 22, 2021 to increase the age limit to 21 for withdrawal of the full amount under the scheme. The remodeled scheme allows for withdrawal of a portion of the total amount of 1.27 lakh to be withdrawn at the age of 18 for pursuing education and the remaining at 21 years. (The Hindu Oct. 23, 2020)

6.10: Early marriages

The proportion of cases of early marriages to total crimes reported against children is 1.14 percent. This indicates that the phenomenon of child marriage is declining.

A higher incidence of child marriage in the State is revealed by the NFHS-4 (2015-16) – which places the percentage of women age 20-24 years married before age 18 years in the State at 21.4 percent. It is 21.3 percent in NFHS-5. Proportion of women aged 15-19 years who were already mothers in Karnataka is 5.4 percent.

As per the Judgment of High court of Karnataka a core committee was formed under the chairmanship of honorable retired supreme court judge Dr.Shivaraj V Patil to prepare the action plan for the effective implementation of child marriage act, 2006. As per the recommendation of this core committee Child Marriage Prohibition and Monitoring Cell is established in the department of women and child development on 16-11-2011. The main function of the Cell is preventing child marriages and creating awareness about child marriage prohibition. Core committees are formed at the State, District, Taluka and gram

Panchayat level to prevent and monitor child marriages and generate awareness about the law and against child marriages. Further, Karnataka Government further made amendments in the Prohibition of Child Marriage Act (PCMA),2006 known as **Prohibition of Child Marriage (Karnataka Amendment) Act, 2016.**

6.11: Legal Measures to ensure Safety & Security

The State is 'gender friendly' and has implemented several measures to ensure safety and security of women. The low rates of crimes are likely to be the outcomes of the State initiatives in implementing the Central as well as State Acts/programmes. These include legislations such as 'The Criminal Law (Amendment) Act, 2018', 'The Criminal Law (Amendment) Act, 2013', 'The Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013', 'The Protection of Women from Domestic Violence Act, 2006', 'The Dowry Prohibition Act, 1961', etc. The schemes/ projects include One Stop Centres (OSCs); Universalisation of Women Helplines (WHL), Emergency Response Support System (ERSS) which is a pan-India single number (112)/ mobile app based system for emergencies; a cyber-crime reporting portal to report obscene content; safe city projects in 8 cities (Ahmedabad, Bengaluru, Chennai, Delhi, Hyderabad, Kolkata, Lucknow and Mumbai)Fast Track Special Courts (FTSCs) for speedy disposal of cases of rape and cases under POCSO Act etc.Though the crimes against women are declining, but the pendency of cases continues to be high impacting the reporting. The conviction rate in Karnataka is 4.8 percent against national average of 23.7 percent.

6.12: Education and Skills

Education in every sense is one of the fundamental factors of development. No country can achieve sustainable economic development without substantial investment in human capital. Education enriches peoples' understanding of themselves and the world. It improves the quality of their lives and leads to broad social benefits to individuals and society. Education increases the productivity and creativity and promotes entrepreneurship and technological advances. In addition, it plays a very crucial role in securing economic empowerment.

The percentage of women with 10 or more years of schooling is increasing but certain parts of North Karnataka, especially the districts of Raichur, Yadgir, Vijayapura, Bellary, Koppal, & Bagalkote have less than 40 percent of women have 10 or more years of schooling.

Table 6.12: Districts with less than 40% women with 10 or more years of schooling

District	<40% women with 10 or more years of schooling
Yadgir	26.4
Raichur	31.7
Koppal	34.4
Bijapur/Vijayapura	37.1
Baglkote	37.7
Bellary	39.9
Bangalore Urban. State Best	**70%**

Source: NFHS-5

A study (Prakash et al. (2017) found, economic factors (household poverty; girls' work-related migration), social norms and practices (child marriage; value of girls' education), and school-related factors (poor learning environment and bullying/ harassment at school) were associated with increased school dropout and absenteeism for girls. The effective implementation of multi-level interventions, involving individuals, families, villages and schools to synergistically address the social, economic and structural determinants of girl school dropout. The study emphasized the fact that improving secondary school education entry and completion of girls, especially from rural and marginalized populations, will have health and economic benefits both for them and for the next generation.

Enrolment of girls in **Engineering** courses is 37.3 percent (2019-20) and is more or less stable over last ten years. (DTE, Annual Administration Report (2019-20). In **polytechnic** courses, it is 24.5 percent in 2019-20. It was 40 percent in 2014-15 but declining thereafter. Girls' participation in technical courses that provide opportunities to participate in global technology markets with high remunerative jobs is not increasing.

6.12: Promoting Education

Holistic development of women's social, economic, cultural and political rights is critical to achieving economic growth and alleviating through education.

i. Reduce dropouts of girl children in secondary education to zero in next 5 years by 2027 and increase enrolment by 5% in tertiary education. Incentives shall be provided to girls from poor economic backgrounds to pursue higher education in any field of their choice. Parental awareness is to be enhanced through various communication channels using '*Beti Bachao Beti Padhao*' scheme campaigns.

ii. Focus on 112 talukas which are performing low in Gender equality. Infrastructure is critical in supporting women. Provision of basic infrastructure like drinking water and sanitation and awareness about education.

iii. Provide interest subvention for educational loans given to all Girl students pursuing higher education through schemes like **Arivu** Educational Loan etc.

iv. Provide career counselling facilities for girl students opting for higher education. Retired Teachers / College professors may be roped in at Village / ward levels (both urban and rural) to support them with information on career options available covering all categories. CSR initiatives may be explored and partnership initiatives with UNICEF, UNDP etc. specific focus towards needs of Girl Children.

v. Train teachers in schools and Colleges in counselling skills and refresher programmes on gender sensitive training conducted periodically. Additional stipend shall be provided for girls who are taking up skill training in no-gender stereotyped categories. Apprenticeship can be provided to girls passing out from ITIs and Polytechnics along with a matching grant from the State.

vi. Girl friendly and security shall be provided to all girls in all educational institutions with napkin vending machines, incinerators, dust bins, etc.

6.13: Drinking Water and Sanitation

Women's access to basic needs of drinking water and sanitation is critical to their progress. Girls drop out at secondary education level due to lack of toilet facilities. Though, schools have toilets, but many of them are non-functional due to lack of availability of water. There has been an increase in improved sanitation facilities across all districts in Karnataka. Bidar, Chamarajanagar, Chikkaballapura, and Chikkamagaluru have shown significant improvement. The access to sanitation is 74.8 % The percentage of households with access to clean drinking water is 95.3 (NFHS-4 &5). The improvement can possibly be attributed to the implementation of drinking water and the mission mode project Swachh Bharat Abhiyan, which focuses on open defecation free behaviours, and that solid and liquid waste management facilities are provided adequately.

Pro-Active State

The State has taken up significant steps for empowerment of women. The State has formulated Women Empowerment Policy

6.14: Policy support

6.14.1: Girl Child Policy

- The State has formulated and implemented the Girl Child Policy. The basic objectives of the policy are:
- Improve the sex ratio in all age groups throughout the State through elimination of gender biased sex selection and neglect of girls;
- ensure survival, healthy growth and development of the girl child by providing equal and equitable access to immunization, nutrition and quality early child care.
- Ensure free and compulsory education of all girls in socially and economically disadvantaged section of society up to 18yrs of age or completion of class 12 ,whichever is applicable, and facilitate their access to higher education
- Empower girls to participate actively in decisions that affect their lives and to take control of their life situation; and promoting their active participation for leadership, political representation and governance;
- Protect girl children from all forms of violence, abuse and discriminatory practices through effective enforcement of legislation and policies; promote change in attitudes and behaviors within families, communities and society at large regarding girls and women by elimination of customs, beliefs, practices, and conduct that perpetuate discrimination and gender stereotypes.

6.14.2: State Policy for Empowerment of Women -2018

Objectives:

a. Creating an enabling environment through progressive economic and social policies for the holistic development of women to enable them to realize their full potential and lead lives with dignity.

b. The de-jure and de-facto enjoyment of all human rights, including reproductive rights, sexual health rights and fundamental freedoms by women as individuals in all spheres.

c. Recognising the contributions of women in all spheres, especially in the economy and ecology.

d. Ensuring equal access to health care, quality education up to higher education, career and vocational guidance and employment, equal and fair remuneration, occupational health and safety, and social security. Ensuring equal access to and control of economic resources including common property, forest, land, water and other means of production.

e. Strengthening legal systems aimed at elimination of all forms of gender-based violence and discrimination against women and the girl child.

f. Changing social attitudes and community practices by active participation and involvement of both men and women.

g. Mainstreaming a gender perspective in the development process and prioritization of strategic and practical gender needs through building and strengthening partnerships with civil society, particularly women's organizations.

h. Mitigation of intra-state regional disparities in attaining women's development and women's empowerment.

6.15: Transgender Issues

Karnataka State is also promoting the welfare of the Transgender in the State. The State has been implementing Karnataka State Transgender Policy, 2017.

6.15.1: Karnataka State Transgender Policy, 2017.

The State Government of Karnataka has issued a landmark Policy for Transgender. The Karnataka State Policy for Transgenders, 2017 aims to integrate the TG communities into mainstream society and guarantee a secure future for them. The policy is a significant step towards ensuring a stigma-free, inclusive and equitable environment for the transgender. It addresses their vulnerabilities holistically and proposes initiatives for their social, psychological, financial welfare.

Some of the proposed initiatives of the Policy include creating awareness about the TG community in all educational institutions of the state; reaching out to the family members of TGs through Anganwadi workers to sensitise them about trans-children and setting up a monitoring committee/ cell at educational institutions to address the issues of discrimination, sexual abuse and violence against transgender.

The Policy has made an attempt to include the private sector as well. Workplaces in the public and private sector must include and implement anti-discrimination policies at all levels. Further, it has mandated that workplace sexual harassment policies should be made transgender inclusive.

Mythri Pension Scheme, Housing Scheme, Self Employment Scheme, Anti Retro viral Treatment, Antyodaya Cards etc are some of the schemes implemented to promote the welfare of these people.

Section II- Social Inequalities-Caste & Minorities

6.16: Caste

Marginalisation, exclusion and exploitation based on class, gender, race and ethnicity have been part of every society including the Indian society. But what is typical of India is the caste-based exclusion and exploitation. Caste has been one of the most dominant and determining factors not only in social but also in economic and political exclusion.

Social exclusion is a state in which individuals are unable to participate fully in economic, social, political and cultural life, as well as the process leading to and sustaining such a state. Participation may be hindered when people lack access to material resources, including income, employment, land, and housing, or to such services as education and health care. It is multi- dimensional and occurs at different levels including individual, household, group, community, country and global levels.

However, a segregated society is not socially and economically viable. A sustainable path toward ending extreme poverty and promoting shared prosperity essentially involves creating an inclusive society, not only in terms of economic welfare but also in terms of the voice and empowerment of all groups. An inclusive society must have institutions, structures and processes that empower local communities, so they can hold their governments accountable. It also requires the participation of all groups in society, including traditionally marginalized groups, such as ethnic minorities and indigenous populations, in decision-making processes.(World Bank Group- International Bank for Reconstruction and Development / The World Bank (2013), Inclusion Matters: The foundation for shared prosperity).

Social inclusion is the process of improving the terms on which individuals and groups take part in society through improving the ability, opportunity, and dignity of those disadvantaged based on their identity.

6.16.1 : Social Stratification and Exclusion

In Karnataka the marginalised group has diverse structure and social identity. The group includes Scheduled Caste, Scheduled Tribe, Backward caste. And other social and religious minorities. The SC/ST projected population for 2021

Table 6.13: Growth of SC& ST population in Karnataka

Sl. No	State	Total Population (in lakhs)	SC Total (in lakhs)	SC (%)	Growth Rate	ST Total (in lakhs)	ST (%)	SC+ST
1	1991	449.77	73.69	16.4	21.12	19.16	4.26	20.64
2	2001	528.51	85.64	16.20	17.51	34.64	6.55	22.75
3	2011	610.95	104.75	17.1	15.60	42.49	6.95	24.10

Table 6.14: Top 14 Talukas with Highest SC/ST population (20% share)

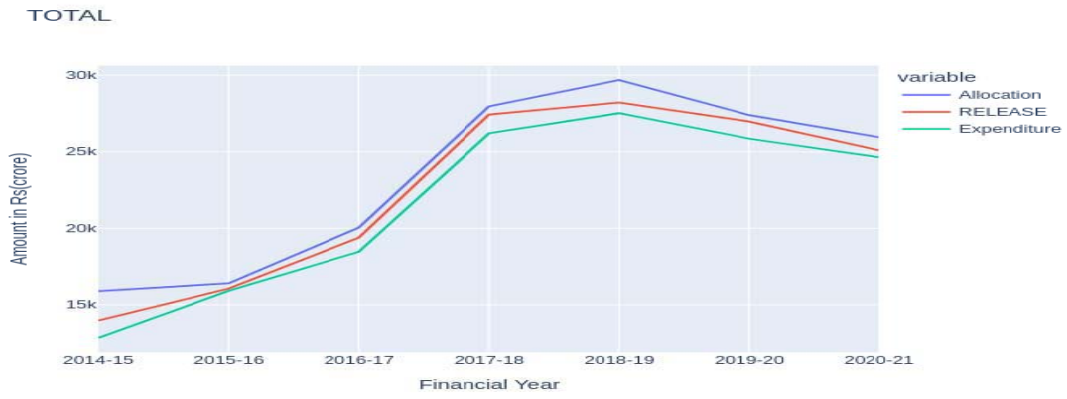
Sl.No	Taluk	SC/ST Population	Percentage
1.	Bangalore (North)	664242	4.5113
2.	Bangalore-South	264680	1.7976
3.	Mysuru	260204	1.7672
4.	Bangalore-East	220360	1.4966
5.	Ballari	213281	1.4485
6.	Challakere	190539	1.2941
7.	Davanagere	176262	1.1971
8.	Chitradurga	171161	1.1625
9.	Raichur	168027	1.1412
10.	Devdurga	157013	1.0664
11.	Gulbarga	151747	1.0306
12.	Bidar	145240	0.9864
13.	Hospet	143347	0.9736
14.	Nanjangud	140366	0.9533
15.	**Total**	**3066469**	**20.82**
16.	**State**	**14723979**	**100**

Source census 2011

Scheduled Caste Special Assistance and Scheduled Tribe Special Assistance Plan

The government is implementing the SCP TSP now SCSA and TSA development schemes for the welfare of these groups. The allocations Release and Expenditure under SCP/TSP has been steadily increasing and the maximum is nearing Rs. 30,000 crores in 2018-19 and the expenditure is also increasing accordingly. But the outcomes in terms of human development indicators are not as expected. The following analysis reflects on it.

Fig 6.7:Scheduled Caste Special Assistance and Scheduled Tribe Special Assistance Plan



Outcomes

Ministry of Social Justice and Empowerment, Government of India has brought out a report on Development of Indices for Scheduled Castes (SCs), Other Backward Classes (OBCs), Persons with disabilities (PWDs) and Senior Citizens. The report is prepared by **National Institute of Labour Economics Research & Development (earlier IMAR) NITI in 2015.** The index is presented in the following table.

Table – 6.15 Human Development Index-SC/ST & OBC

State	1999-00				2011-12				Rank SC	Rank OBC
	All	SC	OBC	GEN	All	SC	OBC	GEN		
Andhra Pradesh	0.24	0.16	0.22	0.34	0.35	0.29	0.35	0.57	13	13
Assam	0.27	0.25	0.24	0.25	0.33	0.30	0.40	0.36	12	9
Bihar	0.18	0.11	0.17	0.25	0.27	0.24	0.26	0.38	17	18
Gujarat	0.30	0.25	0.24	0.35	0.41	0.42	0.36	0.55	4	12
Haryana	0.31	0.21	0.29	0.34	0.48	0.34	0.39	0.75	8	11
Himachal Pradesh	0.40	0.56	0.45	0.33	0.49	0.46	0.56	0.58	3	2
Jammu & Kashmir	0.31	0.20	0.30	0.28	0.39	0.32	0.39	0.49	11	10
Karnataka	0.29	0.19	0.26	0.33	0.42	0.32	0.43	0.60	10	5
Kerala	0.63	0.32	0.61	0.67	0.76	0.34	0.41	0.87	9	7
Madhya Pradesh	0.19	0.15	0.20	0.31	0.30	0.27	0.32	0.46	15	14
Maharashtra	0.35	0.32	0.48	0.36	0.47	0.64	0.46	0.57	1	4
Orissa	0.20	0.15	0.21	0.26	0.29	0.27	0.30	0.43	14	16
Punjab	0.33	0.25	0.30	0.34	0.45	0.40	0.67	0.55	6	1
Rajasthan	0.22	0.17	0.21	0.26	0.31	0.26	0.32	0.46	16	15
TamilNadu	0.33	0.41	0.33	0.39	0.48	0.41	0.50	0.51	5	3
Tripura	0.40	0.42	0.32	0.31	0.43	0.63	0.42	0.52	2	6
UttarPradesh	0.21	0.15	0.20	0.26	0.31	0.23	0.27	0.45	18	17
WestBengal	0.31	0.24	0.27	0.30	0.36	0.40	0.41	0.39	7	8
All India	**0.25**	**0.20**	**0.23**	**0.29**	**0.35**	**0.30**	**0.35**	**0.48**		

Source: (Development of Indices for SC/ST & OBC National Institute of Labour Economics Research& Development) IMAR NITI 2015

In 2011-12 Kerala is the top performer for All and General category, Maharashtra being the top ranker for SC and Punjab for OBC in 2011-12. Uttar Pradesh is at the bottom with HDI value of 0.230.

Karnataka is at 10th position with HDI of 0.320, the HDI of SC in Maharashtra is 0.640 and Karnataka is at half a way. The gap between the SC and General group has increased from 0.14 in 1999-00 to 0.28 in 2011-12.

Table 6.16: Human Development Index for SC - Taluka Level

District	Taluk	health index	education index	standard of living index	HDI	perfor mance	Gene ral HDI	Gap
Kolar	Mulbagil	0.64	0.67	0.68	0.66	Front runner	0.57	-0.09
Bengaluru rural	Devanahalli	0.54	0.67	0.79	0.66	Front runner	0.64	-0.02
Bengaluru rural	Doddaballa pur	0.5	0.7	0.77	0.65	Front runner	0.68	0.03
Chamaraja nagar	Yelandur	0.66	0.47	0.8	0.63	Perfor mer	0.65	0.02
Kodagu	somawarpet	0.73	0.55	0.6	0.63	Perfor mer	0.6	-0.03
Bengaluru urban	Bengaluru North	0.57	0.51	0.82	0.62	Perfor mer	0.69	0.07
Kolar	Bangarpet	0.56	0.55	0.77	0.62	Perfor mer	0.39	-0.23
Bidar	Basavakaly an	0.72	0.54	0.61	0.62	Perfor mer	0.53	-0.09
Kolar	Srinivasapu r	0.72	0.43	0.73	0.61	Perfor mer	0.43	-0.18
Chamaraja nagar	Kollegal	0.59	0.5	0.76	0.61	Perfor mer	0.53	-0.08

Source : CODR Planning Dept.

SC HDI closer to General HDI or even better than it. All talukas are in front runner or performer category.

Table 6.17: Top Ten Talukas in ST HDI

Districts	Taluka	Health	Education	Living Std.	HDI	Category	General	Gap
Bengaluru urban	Bengaluru North	0.83	0.68	0.74	0.75	Front runner	0.69	-0.06
Chitradurga	Challakere	0.76	0.68	0.78	0.74	Front runner	0.60	-0.14
Chitradurga	Molakalmuru	0.75	0.71	0.74	0.73	Front runner	0.65	-0.08
Bengaluru urban	Bengaluru South	0.77	0.77	0.64	0.73	Front runner	0.79	0.06
Chikkaballpur	Gouribidnur	0.81	0.57	0.79	0.71	Front runner	0.59	-0.12
Kolar	Malur	0.73	0.69	0.71	0.71	Front runner	0.57	-0.14
Chitradurga	Hiriyur	0.97	0.49	0.73	0.7	Front runner	0.63	-0.07
Chikkaballpur	Bagepalli	0.82	0.56	0.75	0.7	Front runner	0.57	-0.13
Chikkaballpur	Gudibande	0.75	0.55	0.83	0.7	Front runner	0.52	-0.18
Tumakuru	Madhugiri	0.63	0.71	0.69	0.68	Front runner	0.50	-0.18

ST HDI> General HDI in these top 10 talukas & all are in front runner category (HDI 0.66to0.79). These talukas are in performer category in general HDI, except Bengaluru South which is front Runner.

6.17.1: Access to Knowledge and Education

While Karnataka is well known for its prowess in technology, start-ups, aerospace and other sectors, the dark side of it is engrossed with inequalities across gender caste, class and is added by rural urban divide.

Education can create strong social bonds among different groups in a society by teaching people about divergent cultures and bringing them into contact with people of different backgrounds. Likewise, it can teach norms and values and promote participatory and active citizenship. But schools can also act as a 'attender for the health gradient, teaching children healthy habits and how to follow a balanced and nutritious diet and convergence in primary and secondary education. thus, gives hope for creating virtuous cycles of equity in the future.

Table 6.18: Literacy rates

	State average	SC/ST	Gap	SDG Target
Literacy rate- Total	75.60	67.0 (SC) 62.08(ST)	8.6 (SC) 13.52(ST)	100%
Female Literacy	68.08	58.0 (SC) 53.0 (ST)	10.08 (SC) 15.08 (ST)	100%

Census 2011

6.17.2: Enrolment & Dropouts

The enrolment in primary and elementary education has increased significantly with sustained efforts under Sarva Shiksha Abhiyan & the schemes like- Mid Day Meals, Scholarships, Right to Education Act along with schemes from the State Government. The enrolment has reached saturate level. But the problem continues with Secondary education.The enrolment is less than 10 percent in the following talukas. These are mainly in Uttar Kannada and Dakshina Kannada districts, which are progressive districts in education. There is an urgent need to identify the bottlenecks and find solutions for the same.

Table 6.19: Bottom Talukas with Enrolment less than 10 percent

District	Taluk	Enrolment <10 percent
Dakshina kannada	Bantwal	9.243
Uttar kannada	Karwar	7.641
Uttar kannada	Joida	7.608
Dakshina kannada	Mangalore	7.228
Uttar kannada	Bhatkal	7.145
Uttar kannada	Kumta	7.111
Uttar kannada	Honnavar	4.862

Table 6.20: Top Talukas with SC&ST Enrolment >50 percent

District	Taluk	SC & ST Enrolment >50 percent
Chitradurga	Molakalmuru	62.905
Raichur	Devdurga	58.192
Mysuru	Heggadadevanakote	57.992
Davangere	Jagaluru	55.989
Chitradurga	Challakere	55.857
Ballari	Kudligi	53.606
Bidar	Aurad	51.245
Chamrajanagara	Yalandur	50.697

Drop out and transition -across the categories -2019-20

It is observed that the dropouts in secondary education are high among the general category.

Table 6.21: General Category - Highest Dropouts

General - Highest Dropouts >50%-60%			
Districts	**Girls**	**Boys**	**Total**
Haveri	59.49	60.91	60.23
Mandya	51.32	65.65	60.13
Chitradurga	54.46	55.36	54.94
Belagavi	52	50.56	51.23
Yadagiri	35.74	59.75	49.65

The highest dropouts in SC ST Category range between 38-31 percent among boys and 34 to 26 percent among girls Dropouts are highest across all categories in Bidar district.

SC/ST/OBC -highest dropouts Districts				
Districts	**Category**	**Girls**	**Boys**	**Total**
Bidar	SC	33.95	37.97	36.1
Bidar	OBC	33.14	36.62	34.92
Bidar	ST	30.29	37.97	34.27
Kalburgi	ST	32.75	33.46	33.15
Davanagere	SC	27.44	36.24	31.93
Uttara kannada	ST	27.47	33.83	30.8
Belagavi chikkodi	ST	28.77	30.82	29.89
Davanagere	ST	26.38	33.32	29.88

Bidar has the highest drop out in SC/and ST and OBC category- 36 & 34 & 35 percent respectively. 19 educational districts (among 34) are with SC/ST &OBC drop out above **State average (16.84**). The Max-Min range is 36.1 to 8.5 for SC& for ST 34. 3 to 5.9 For **General** category-**63.23 in Haveri to 0 in Udupi.**

Why students drop out?

A specific study of Dropouts in Indian Context observed the following factors significantly correlated to dropouts. The poor quality of schooling, b) financial constraints,c) engagement in domestic/economic activities,d) distance of school,e) inability to cope up with studies/failure) and marriage. Drop-out in government schools was significantly higher compared to the non-government schools&factors like gender, educational attainment of the head of the family, demographic factors like caste, tribe, religious minority, etc as directly leading to drop out. (Rani and Mukesh

It is important to note that the dropout rate at secondary education is declining and low among the SC/ST & OBC students, when compared to the general category students**.** In general Category the highest drop out rate is 60. 23 in Haveri district. In Yadgiri -the lowest literacy district- the drop out in General category is 49.65 percent but in SC/ST category it is 20.77 & 16.23 percent. The lower drop outs is a welcome trend and needs to be strengthened. It is an outcome of the financial assistance -Pre & Post Metric scholarships, Hostel facilities, incentives & better infrastructure in schools, Mid-Day Meals, RTE-2009 etc.– that have reduced the dropouts among SC/ST and OBCs significantly.

But there is a need to stabilise the allocation and expenditure to ensure the sustainability of outcomes. The following figure shows the variations in allocation, release, and expenditure over the last six years under SCP/TSP schemes in education Department.

Fig 6.8: Department of Primary and Secondary Education

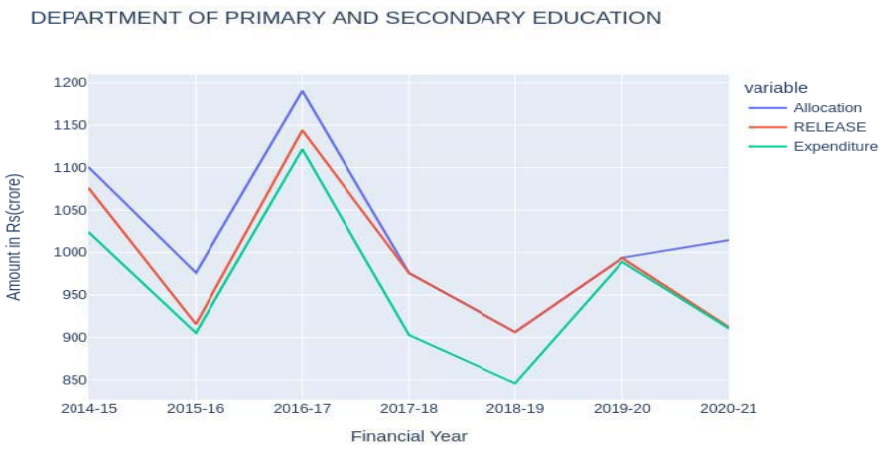


Table 6.22: Access to Higher Education

Social Group	2019-20 % of Total	Population % Census 2011	2012-13 % of Total	7 Yr CAGR FY 2013-20
Women	50.04	49.31	46.98	3.33
Men	49.96	50.69	53.02	1.43
SC	13.14	17.15	12.01	3.81
ST	4.78	6.95	4.03	5.03
OBC	49.59	55.50	41.96	5.03
Muslim	6.31	12.92	4.61	7.75
Other Minorities	4.10	3.09	2.99	6.73
General Merit	22.07	4.39	34.39	-4.61
All	**100.00**	**100.00**	**100.00**	**2.35**

Source: AISHE 2019-20

The enrolment of marginalised communities in higher education is increasing and the growth rates for ST and OBCs are 5 percent and for SC 3.8 percent. The growth rate in general students is negative -4.61 percent. This is again the outcome of scholarships, incentives and food and accommodation facilities. Yet, the enrolment is below their respective shares in population and for Muslims, it is just the half. This requires more intensive and integrated efforts and timely disbursement of the scholarships and other facilities.

Table 6.23: Health Indicators – 2016-18

State Indicator No.	Value	Target 2030
IMR-State (2015-17)	27	
IMR among STs (per thousand)	37.70	10
IMR among SCs (per thousand)	33.00	10
IMR among OBC (per thousand)	26.40	10
IMR among Minorities (per thousand)	24.2	10
CMR among STs (per thousand)	42.3	05
CMR among SCs (per thousand)	39.3	05
CMR among OBC (per thousand)	31.1	05

Source: SDG- 2030 Strategy and Action Plan for Karnataka

The IMR & CMR is higher in SC/ST & OBC category compared to state average indicating the magnitude of health deprivation in these communities. The child mortality rate is also high and to achieve the SDG targets a focused attention is required

The Suchi Sambhrama Kit scheme was started in the State of Karnataka in the year 1994 with the objectives of creating awareness about and promoting personal hygiene among students staying in government hostels in the state and providing the necessary resources for maintenance of personal hygiene in the kit. The main personal hygiene practices which the SSK scheme inculcated are: having a daily bath; changing clothes twice a day; cutting one's nails at least once a formight; brushing the teeth after meals and washing hands after using the toilet. As for girls, their understanding of the need to keep themselves clean during their menstrual cycle increased. Children in pre metric hostels have carried the message to their homes during summer vacation. (source: KEA)

Economic Inclusion

6.17.3: Access to Resources - Productive Assets and Income

The vicious circle of poverty is operating in these marginalised households due to their lack of access to land and other productive assets. 56 percent of SC and 47 percent of ST farmers are small and marginal farmers with less capital base to adopt modern technologies. However, the credit flow to them is increasing in recent years. The occupational pattern indicates that they largely work as agricultural labourers.This is reflected in the income gap estimated below.

Table 6.24: Access to Production Assets.

Indicators	No.	%	% share in population	Gap
General & Institutional	7167460 18.846	82.57 0.77	75.90	+6.89
Sc	973172	11.21	17.15	- 5.94
ST	521261	6.0	6.95	- 0.95
Total	**8680739**	**100.00**	**100,0**	

Table 6.25: Income gap

Indicator	Value (Rs.)	Gap	SDG Target 2030
Average SC Income (State)	22,800	25,200	50,000
Average ST Income (State)	20,000	28,000	50,000
Average OBC Income (State)	26091	21,909	50,000
Average Minorities income	28,500	19,500	50,000
Average income - General	48,000	--	

Source: SDG- 2030 Strategy and Action Plan for Karnataka

6.18: Crimes and Atrocities

Incidents of atrocities and discrimination across various parts of the country are still common despite having a legislation in place for protection of civil rights and prevention of atrocities against this group. The crime rate against SCs has increased by an estimated 25 percent between 2001 and 2016, which is reflective of the alarming extent of discrimination.

Rate of crimes against SCs per lakh population is 14.4 and against STs it is 7.7. (NITI-2020-21). While the number of cases registered are low, the conviction rates are still lower. Between 2020& 2021, there have been 2,327 cases of murder, exploitation and other cases (including 'honour killing') on members of the Scheduled Caste/Scheduled Tribe (SC/ST) community in Karnataka.This is an increase of over 54% from the previous year in which there were a total of 1,504 cases registered, which includes murder, exploitation, burns and other crimes against the members of the community, according to data from National Crime Records Bureau.

While the number of cases registered are low, the conviction rates are lower, data shows. The **conviction rate** in atrocity cases was **seven per cent in 2021.**(NCRB2020)

6.19: Backward classes & Minorities

The religious minorities constitute around 16% of the total population in Karnataka. Muslims are the major chunk within the minority group followed by Christians and Jains. Muslims and Christians are concentrated in the districts of Bangalore, Dakshina Kannada and Gulbarga regions; Jains in Hassan, Belgaum and Bangalore ; Buddhists in Gulbarga, Chamarajnagar and Bangalore; Sikhs in Bidar and Bangalore and Parsees in Bangalore city. Dakshina Kannada, Dharwad, Haveri, Bidar and Kalaburagi are mainly the minority concentrated districts where the share of minorities in total population is 20 percent and above, and Muslims form the majority among the minorities.

Human Development Status among Minorities

Table 6.26 Top-Ten Talukas in HDI-Minorities

District	Taluk	Health Index	Education Index	Standard of Living Index	HDI	Performance	General HDI	Gap
Bengaluru urban	Bengaluru North	0.99	0.41	0.69	0.66	Front runner	0.69	0.03
Dakshina Kannada	Mangaluru	0.72	0.64	0.53	0.62	performer	0.72	0.1
Udupi	Kundapura	0.74	0.5	0.65	0.62	performer	0.69	0.07
Dakshina Kannada	Bantwal	0.83	0.59	0.47	0.61	performer	0.75	0.14
Uttara Kannada	Bhatkal	0.59	0.58	0.64	0.6	performer	0.79	0.19
Bengaluru urban	Bengaluru South	0.83	0.48	0.46	0.57	performer	0.79	0.22
Dakshina Kannada	Puttur	0.59	0.55	0.57	0.57	performer	0.69	0.12
Udupi	Udupi	0.79	0.34	0.67	0.57	performer	0.62	0.05
Kodagu	somawarpet	0.69	0.4	0.66	0.57	performer	0.6	0.03
Dakshina Kannada	Beltangadi	0.78	0.59	0.36	0.55	performer	0.71	0.16

Source: CODR Planning Dept.

Convergence trend is seen as development in HDI is also shared by Minorities. Yet, the gap is significant except in Bengaluru South & Somwarpet.

PM's 15-point programme focuses on earmarking certain proportion of outlays of various developmental schemes to minority communities in order to make progress in a definitive list of 15- point goals. Goals under the program for improving socio-economic outcomes for minority communities will be implemented through both beneficiary-based targeting schemes and area-based targeting schemes that target districts/blocks/towns with high minority community population (>25%) referred to as Minority Concentrated Areas.

Various schemes to promote human development of minorities focus on

- Enhancing Opportunities for Education of Minority Communities:
- Equitable Share in Economic Activities and Employment for Minorities
- Improving Living Conditions of Minorities
- Promoting peace and communal harmony.

PM 15-point Programme is a major integrated scheme for promoting all round development of Muslim Community. Along with this, other schemes for employment, skill development, education loans and scholarships are being implemented for empowerment of the people.

> The evaluation report on PM 15 Point Programme brings out that, Schemes like 0perationalisation of Anganwadi Centres Under ICDS, Indira Awas Yojana (IAY), Pre-Matric Scholarship, and Post-Matric Scholarship have excellent performance under 15 Point Programme, and have great impact on the minority population of the country.
>
> Schemes like construction of primary schools under SSA, construction of additional class rooms under SSA, Swarnajayanti Gram Swarojgar Yojana (SGSY), Priority Sector Lending (PSL), and merit cum means scholarship scheme have average performance under 15 PP and noticeable impact on the minority population of the country.
>
> Apart from the above schemes, all other schemes under the 15 Point Programme have below average performance, and thus have very little impact on the minorities of the country.(Evaluation of prime minister's New 15-Point Programme for welfare of minorities (Ministry of Minority Affairs New Delhi- 2016)

6.20: Impact of Scholarships

There is a sharp increase in the number of post-matric scholarship recipients in Karnataka from 2007- 08 to 2017-18 and the **share of females remains higher throughout**. Although there is a marginal decrease in the percentage share of scholarships awarded to the Muslim students from 2007-08 to 2017-18, the share of the same remains very high at 84 percent. Both Muslim and Jain religious groups possess greater share of scholarships compared to their share in total minority population. However, Christian, Buddhist and Sikh religious group students possess lower share of scholarships compared to their share in total minority population in the state. Therefore, government should focus on the adequacy and a proper distribution of scholarships across different religious minority groups.

Backward Classes

Backward classes form about 50 percent of total population in Karnataka State. In this OBCs form about 20 percent of the total population. The Backward classes Development Corporation implements similar schemes covering hostels, scholarships, Residential and Ashram schools, and stipends for Law graduates. The Ganga Kalyan scheme for irrigation, Micro credit scheme, Chaitanya subsidy scheme and other self-employment schemes are implemented for the economic upliftment of the people.

> Arivu Education loan scheme by D Devaraj Urs Backward Class Development Corporation is to facilitate the entry of poor backward class students in higher education. The Scheme is showing promises of improving participation of backward class poor students in higher education, as 81.7% of student beneficiaries are seen in the BE course and their access to gainful employment opportunities has also increased. The course completion ratio is 46.5 per cent among beneficiaries, of which highest proportion is in PG courses (82.8%). The scheme needs to be continued further, however, serious effort is required to identify and target the most vulnerable households. Enhancing the loan amount as per the requirements of technical and professional courses, priority to girl students, relaxing the document requirements, increasing the coverage in in rural areas and developing an effective monitoring system. The programme design may also examine the feasibility of up scaling the non-CET students to bring them on par with the CET category. (KEA 2020)

6.21: Multi-Dimensional Poverty Index- Human development Deprivations.

Human development is a positive process of enhancing the capabilities and freedoms of the people. But it does not reflect the deprivations. Many have argued that human poverty and deprivation go beyond income or ownership of material wealth (Drèze and Sen 2002). Direct attention to other variables such as education, health, and nutrition is required because income is not a sufficient proxy for these outcomes and policies to reduce income poverty have not consistently reduced other deprivations.

The Multidimensional Poverty Index (MPI) has been used by the United Nations Development Programme in its flagship Human Development Report since 2010 and is the most widely employed **non-monetary poverty index** in the world (Godinot & Walker, 2020). It captures overlapping deprivations in health, education and living standards (UNDP, 2010). It complements income poverty measurements because it measures and compares deprivations directly.

In this context, a State Multidimensional Poverty Index will enable estimation of poverty at District/ Taluka/ GP level, across twelve indicators, capture simultaneous deprivations and indicator-wise contribution to poverty, and most importantly, will facilitate formulation of sectoral policies and targeted interventions which contribute towards ensuring that "no one is left behind". It will also ensure reaching out to the furthest behind first through focused efforts on specific indicators and dimensions.

A deep dive across the caste categories is essential to understand the extent of deprivations and also the outcomes of programmes and schemes.

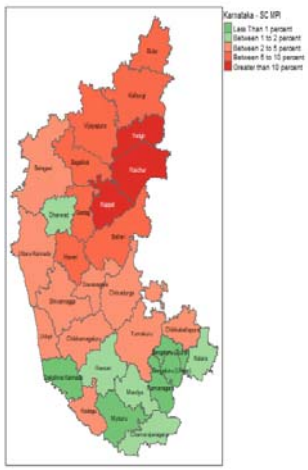
Table 6.27: MPI across the Categories

	SC	ST
Incidence	0.113	0.157
Intensity	0.42	0.43
MPI	0.0471	0.0672
Projected Population for 2022	1,20,06,500	51,17,536
Estimated Poor Population (as per 2022 population projections)	13,57,599	7,96,817
Estimated multi-dimensionally Poor Population (as per 2022 population projections)	5,65,165	3,44,183

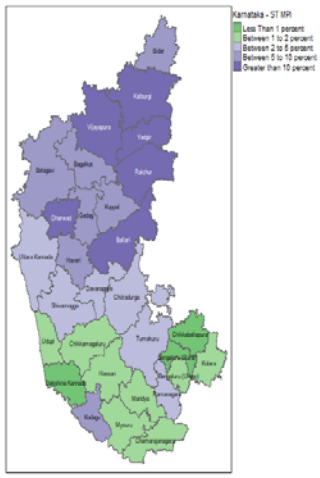
The overall estimated poor population is about 67.45 lakhs & SC/St population is 21.5 lakhs- 32 percent of it. About 9 lakh population of SC & ST is estimated multi-dimensionally poor.

The SCP TSP allocations need to be focused on outcomes. In poor HDI districts with low literacy levels, the allocations should be based on needs and requirements to reach the state average at first and then the State best. For ex. The literacy rate in ST community

MPI SC



MPI ST



Yadgir Koppal Raichur & Bellary has high % of population under MPI.

6.22: Regional Deprivations

The regional deprivations in terms of economic development have been brought out by the High-Power Committee on Redressal of Regional Imbalances. The committee submitted its report in 2002. It estimated a Comprehensive Composite Development Index (CCDI) with 35 indicators, covering Agriculture, Industry, Trade and Finance, Economic and social Infrastructure and Population and based on this, it identified 114 talukas as backward talukas and 61 talukas as relatively developed talukas out of the total then 175 talukas. The 114 backward talukas were further reclassified as 39 'most backward' talukas, 40 'more backward' talukas and 35 'backward' talukas. The committee recommended a Special Development Plan (SDP) with investment of Rs.31,000 crores in backward talukas for a period of 8 years, which began in 2007-08 and was completed in 2014-15. However, in the Belagavi session on 23.11.2017, it was decided to extend the implementation of Special Development Plan from 2015-16 to 2019-20, with an annual allocation of Rs. 3,000 crores, to address the regional imbalance.

From 2007-08 to 2020-21, an amount of Rs. 35,822 crores was allocated in the budget under the Special Development Plan to various departments out of which Rs. 28,972 crore was released (81%). The expenditure incurred is Rs. 27,341 crore which is 94.37% of the released amount.

However, the human development outcomes are not achieved as f**or Human Resource Development only 12.5% of the allocation was provided (Education-5.8%, Health-5%, Women and Child Development 1.6%). The allocation provided to Agriculture sector is 6.5% and for Industry and Trade is only 0.89%. The major share went to** Water Resources-19%, Department of Rural Development-17%, Housing Department-11%, Public Works Department-7% and Energy Department-6%. (CODR -2021)

The human development analysis in the report indicates that all the talukas in the Kalyan Karnataka Region are at the bottom of human development and there is a need to shift the focus of Special Development Plan to human development sectors. The growth perspective in regional disparities is now being replaced by human development with infusion of NITI Aayog's 49 aspirational indicators framework and in the budget 2022-23 the below State average talukas in Health (100), Nutrition (102) and Education (93) are identified for focused attention under Special Development Plan.

6.23: Way Forward

The State has tonow focus on development which is critical to attain the SDG-2030 agenda. An integrated action plan is required through convergence of schemes and departments – WCD, Health, Education, RDPR, Agriculture, watershed development and MSME. The action points are:

Awareness Programmes

- Bring about social and attitudinal change for changing the stereo type gender roles through awareness, **Gender Sensitization** Programmes through social and religious platforms.

- **Introducing modules** on gender equality in family and society in school curriculum
- Compulsory 4 ANC registration from 78 percent to 100 percent.
- Coverage of about 60 thousand SC/ST women as members in SHGs under different economic activities through training, skill, and loan assistance.
- State support to Poshan 2.0 &Saksham Anganwadi as an integrated nutrition support programme, to strengthen nutritional content, delivery, outreach and outcomes with focus on developing practices that nurture health, wellness and immunity to disease and malnutrition.
- Strengthening Stree Shakti Groups
- Active Involvement of Gram panchayats in women empowerment schemes
- NSS Volunteers, Nehru Yuvak Kendras – Boys & Girls for generating awareness and assistance in need.
- Gender equality modules in school curriculums.
- Gender sensitization/ awareness on all public Platforms.
- Sharing & implementation of best practices. IEC component in women welfare and empowerment schemes to be strengthened.
- NGOs, Voluntary organizations to be strengthened – Mahila Samakhya, Nari Adalat models to be evolved.
- Social Accountability systems for all stakeholders.
- Networking and linkages among Women – Media empowering women

6.23.1: Home Department

- Increasing women police staions in violence concentrated districts specifically in North Karnataka. Increasing the police population ratio Increasing Women police force. The target is to give 33 per cent representation to women. (Now reservation given to 25%)
- Effective implementation of prevention of Domestic violence Act2005 by providing adequate implementation machinery. Protection Officers at district levels,
- Increasing the number of women police stations in coming years to reduce crime against women.
- Gender sensitization and giving special training/ refresher course to existing police officers/ staff to face the present situation of crimes and violence.
- Population to Police ratio will be improved to the international level and standards.
- Implementation of new technologies, like fixing of CCTV cameras at sensitive places so that easily foot prints of accused will be find out.
- ***Holistic policy framework for defining the Structures and Processes to Stop Child Marriage in Karnataka***. Providing *voice* to the Girl Child through programs like

Makkala Snehi Gram Panchayat, etc. and creating empowerment through committees like GPETF.

- Incentivize the GPs reporting zero child marriage every year with an appreciation plaque and cash awards.

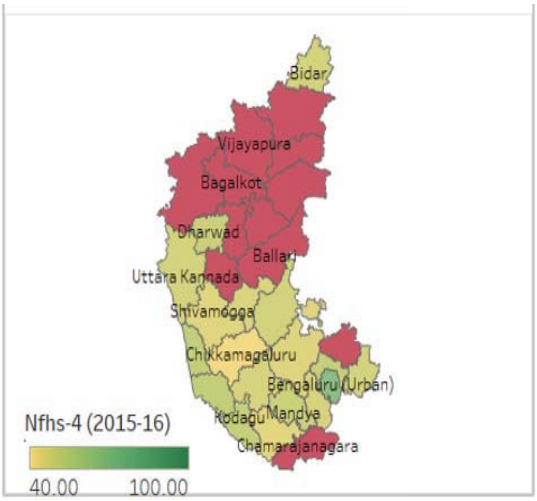
6.23.2: Health & Family Welfare & Women & Child Development Department

- Increase the coverage of One Stop centres, Santwana Centres, Special Diagnostic Centres and establishing comprehensive institutional set up to provide immediate assistance to women in distress.
- Effective implementation and monitoring of PC&PNDT Act. Dept. to conduct Inspections to all Scanning Centers once in a Three Months by District Inspection and Monitoring Committee.
- Planning for Deploy Team by the NGO's for the Suspicious Scanning Centers in Various districts in Karnataka (that have Low Sex Ratio at Birth).
- Conducting PC&PNDT awareness program / workshops for ASHA/Aganawadi workers and Conducting district level workshop / taluk level workshop to create awareness of PC&PNDT Act among the people.
- To reduce the MMR an important programme has been launched by the National Health Mission to improve the skills of the service providers in all Government delivery points. The programme is called "LaQshya" which aims at improving the intra partum and postpartum services.
- All High Risk Pregnancy identification will be done with the support of all front line health workers such as ASHA, Anganawadi workers and Health Assistants (Female).
- PMSMA Programme is conducted on 9th of every month to provide quality antenatal care to all High risk pregnant women. Besides, antenatal care is conducted on every Wednesday in PHCs, CHCs, GHs and District hospitals. Additional interventions to be taken if required.
- 100% tracking of all pregnant women and ensuring high quality in antenatal care is planned.
- Supplementation of Albendazole during 14-16 weeks of pregnancy.
- Early registration of all pregnancies (registration within 12 weeks of pregnancy).Tackling of Anaemia in pregnancy by supplementation with Iron Sucrose Injection, Iron Folic Acid & Calcium tablets.
- 100% tracking of all pregnant women and ensuring high quality in antenatal care is planned with the integration of IT services of WCD and Health department.
- Adopting multi-sectoral approach through SHGs for addressing Malnutrition.

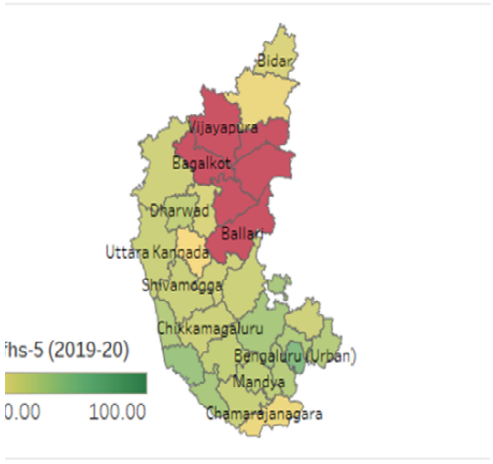
6.23.3: Increasing Labour Force Participation rate- Education & Skill Development

- **Provision of enabling facilities** to reduce the burden of domestic work.
- Valuation of women's unpaid work. **Developing suitable methodology** and its application in Census and other sample surveys to account for women's work in care economy
- **Providing support** facilities like ShishuVihars, crèches, old age care to help women to reduce their burden in care economy and enable their participation in labour market. **Strengthening of Anganwadi** Centres to take care of children in 0-3 age group
- To bring about social and attitudinal change for changing the stereo type gender roles through awareness, **Gender Sensitization** Programmes. **Introducing modules** on gender equality in family and society in school curriculum.

Figure 6.9: Women with 10 or more years of schooling (a) NFHS-4 & (b) NFHS-5



Source: NFHS-4



Source: NFHS-5

- The coverage of dark zone in North Karnataka remains the same between NFHS-4& 5 but is changed in south Karnataka (Kolar & Chamarajanagar districts) the burden of low literacy levels is a major hurdle for women empowerment pushing women in unorganised sector low paid jobs in North Karnataka.
- Increasing access of girls to education at all levels by creating enabling environment- Girls hostels at Hobli/ sub taluka levels, more female teachers in schools, safe transport facilities.
- **Increasing enrolment of girls in higher education**-Technical and Professional education by expanding the scale and coverage of scholarships. Career Counseling centers in schools and colleges.
- The Skill Development Department will take up effective **IEC measures to generate awareness** and facilitate the enrolment of girls in various skill development courses.
- SDEL is established in 2016 to enable the State's youth to acquire necessary skills for decent employment, and to promote sustainable livelihood. **SDEL will identify**

gender friendly courses and promote enabling factors to increase the access of women to these courses.

- Coverage of transgenders through skill development programs and enhance their labour participation ratio.
- I**ncreasing the provision for women from 33 % to 50%** under **Chief Minister's Koushalya Karnataka Yojane** skill training and placement of 5 lakh candidates is targeted under this programme and is being implemented in following two streams. **Specific targets** will be fixed for women and girls in all the programmes of Central and State Governments- RGCY, DDUGKY.
- **Comprehensive Training programmes** for women to promote their effective participation in decision making process in Local governance.
- **Establishment of coaching centres, training institutes** to train girls for competitive examinations.
- **Removing social barriers** to women's entry in political field by providing support services. **Gender sensitization** workshops for officers and male members

6.23.4: Women Entrepreneurship

- **Promoting** and strengthening women co-operatives. Promoting **entrepreneurship** among women- Focused schemes in Animal Husbandry, Dairy, Household industries. Expanding coverage of Udyogini scheme,
- Increasing the scope of economic activities among SHGs and increasing coverage of **bank linkage of SHGs** under SRLM. **Micro Credit** to SCs and STs through Self Help Groups (SHGs) **Institutional Loans** to SHGs at concessional rate of Interest-(Cooperative Dept.)
- **Capacity building** of women in e-trading and e-commerce. **Re-training and skill upgradation.**
- Banks should adopt a **single window approach** to overcome the procedural and other barriers to accessing loans by women, especially those belonging to marginalized groups and communities. A public sector bank to be identified as Anchor Bank.
- Karnataka has launched '**Elevate WomEN'** initiative **exclusively for women entrepreneurs**, by partnering with Not-for-Profit organizations who have considerable experience in running these programs and by extending support through **grant-in-aid fund**, on similar lines as Government of India's **NIDHI Accelerator Program**.
- **cooperative entrepreneurship** to be promoted among SHG groups in both urban and rural areas. Promoting production and marketing models in economic sector.
- As per the industrial policy 2014-19, 5% **additional investment promotion subsidy**, interest subsidy & other incentives concessions are also provided for encouragement of women entrepreneurs.
- Labour legislation and social security measures for women in unorganized sector.

6.23.5: Women's Access to Resources

- **Women's access to land rights** should be ensured through property and inheritance rights; direct government transfers (for poverty alleviation, resettlement, rehabilitation etc); and credit support to poor women to purchase or lease land from the market. Promote Joint ownership of land and
- **Legal awareness** and legal support should be provided to women about their property and inheritance rights.
- Making registration of individual assets in the name of women under different government schemes- housing, Animal Husbandry etc.
- Maintaining **gender disaggregated data** in all programmes and schemes for effective and evidence-based gender policy.

6.23.6: Social Groups- SC& ST

There is significant achievement in HDI of SC/ST & OBC category but the progress is not complete and the gap continues to exist as discussed above. There is a need to prioritize the spending for achieving the human development outcomes and the SDG-2030 agenda. The specific action points are:

- Outcome based budgeting and implementation of schemes under SCP/TSP, Backward classes and minorities. Identification of gaps in Human development sectors as per the directions given in the Act 2013 & Guidelines 2017 for planning under SCP/TSP & Minorities budgets.
- Focus on Bottom 10 aspirant talukas

Table 6.28: Bottom 10 aspirant talukas

District	Taluka	Health Index	Education Index	Standard Of Living Index	HDI	General HDI	Gap
Chikmagalur	Koppa	0.29	0.27	0.46	0.33	70.67	70.34
Koppal	Kushtagi	0.75	0.11	0.43	0.32	53.95	53.63
Bagalkot	Hungund	0.26	0.22	0.49	0.3	53.09	52.79
Chikmagalur	Sringeri	0.38	0.24	0.3	0.3	64.36	64.06
Chamarajanagar	Gundlupet	0.13	0.31	0.64	0.3	50.59	50.29
Uttara Kannada	Siddapur	0.55	0.13	0.32	0.28	62.93	62.65
Uttara Kannada	Bhatkal	0.71	0.12	0.27	0.28	79.8	79.52
Bagalkot	Beelagi	0.47	0.15	0.3	0.28	60.92	60.64
Uttara Kannada	Honnawar	0.75	0.09	0.24	0.26	58.68	58.42
Dharwad	Kundgol	0.23	0.18	0.36	0.25	54.22	53.97

Table 6.29: Bottom 10 Talukas in ST HDI

District	Taluka	Health	Education	Std.	HDI	Category	General	Gap
Tumakuru	Kunigal	0.46	0.09	0.47	0.27	Aspirant	0.6	0.33
Mandya	Maddur	0.5	0.08	0.31	0.23	Aspirant	0.63	0.4
Tumakuru	Tiptur	0.63	0.06	0.56	0.28	Aspirant	0.65	0.37
Dakshina Kannada	Mangaluru	0.56	0.06	0.36	0.23	Aspirant	0.72	0.49
Bagalkot	Hungund	0.47	0.07	0.34	0.23	Aspirant	0.53	0.3
Ramanagar	Channapatna	0.32	0.11	0.35	0.23	Aspirant	0.55	0.32
Bagalkot	Bagalkot	0.58	0.04	0.32	0.2	Aspirant	0.64	0.44
Kalaburgi	Kalaburgi	0.48	0.04	0.38	0.19	Aspirant	0.63	0.44
Gadag	Gadag	0.08	0.15	0.38	0.17	Aspirant	0.57	0.4
Vijayapura	Vijayapura	0.02	0.32	0.29	0.13	Aspirant	0.58	0.45

- The State should focus on low HDI districts & Talukas of North Karnataka like Yadgir, Raichur, Kalaburagi, Koppal Haveri. These are also highly SC/ST concentrated districts indicating more deprivation for these groups and also
- Priority to be given to education, skills, entrepreneurship. Health and nutrition and livelihood schemes over the infrastructure schemes.
- There are 3 lakh SC and 1.2 lakhs ST population without houses. These should be covered under Dr. B R Ambedkar Vasati Yojane, PMAY and other housing schemes. All the talukas in Bengaluru Urban District, talukas in Bellari, Chitradurga, need focused attention.
- Focus on the following bottom 10 talukas on Minority development under PM 15 Point programme.

Table 6.30: Bottom 10 Talukas in Minority HDI

District	Taluk	Health Index	Education Index	Standard Of Living Index	HDI	Performance	General HDI	Gap
Chitradurga	Holalkere	0.64	0.05	0.45	0.24	Aspirants	0.61	0.37
Mandya	Srirangapatana	0.63	0.04	0.41	0.22	Aspirants	0.68	0.46
Mysuru	T Narasipur	0.6	0.06	0.37	0.23	Aspirants	0.67	0.44
Mandya	Mandya	0.33	0.07	0.41	0.21	Aspirants	0.64	0.43
Davanagere	Honnali	0.56	0.07	0.29	0.23	Aspirants	0.59	0.36
Davanagere	Davanagere	0.52	0.06	0.25	0.19	Aspirants	0.56	0.37
Haveri	Hirekerur	0.42	0.05	0.27	0.18	Aspirants	0.62	0.44
Davanagere	Harihara	0.07	0.15	0.46	0.17	Aspirants	0.59	0.42
Davanagere	Jaglur	0.52	0.03	0.28	0.17	Aspirants	0.56	0.39
Tumakuru	Koratagere	0.47	0.02	0.28	0.14	Aspirants	0.56	0.42

- The children from poor and marginalised groups go to government schools, Therefore, provision of quality infrastructure is in these schools is essential. Good hostel facilities, quality food and good learning environment and support to these

children to enhance the learning outcomes. This will further arrest the dropouts.

- Public participation in Planning and implementation of SCP/TSP schemes and social audit of schemes &Transparent monitoring and evaluation of the schemes.
- Strategy for promoting equity in livelihoods through investment in minor irrigation, ground water enrichment, rainwater harvesting, lake / tanks restoration and development, diversion of rivers, and creation of barrages.
- Legal / political / cultural literacy of women and men for representation in local bodies.
- Focus on economic mobility along with social inclusion.
- 'Make in India' initiatives, skill development from KSDC / KSDEL to boost the MSME sector, Soft credit to MSMEs with export potential.
- To promote women entrepreneurship in SC/ST Women, 25 percent of the target under self-employment under various corporations and infrastructure in Industrial areas/ parks to be reserved for women.
- Provision of self-employment opportunities for youths in manufacturing, retail trade and commerce sector.
- Awareness against evil and social exclusion practices through social media, religious platforms and youth associations.

6.23.7: Re-orienting the Special Development Plan to bridge the Human Development Gap

- Technology for monitor the Special Development Plan (SDP) for backward taluks for effective implementation.
- Participative micro-level targeting – Panchayati Raj at GP level development
- Poverty alleviation programmes should be intensified in districts on the low end of the scale of poverty ratios.
- Rationalize district-sector outlays and increase budget outlays of six districts of North eastern Karnataka region.
- Promote legal/political/environmental/cultural literacy to all and political space for women in elected bodies.
- Involvement of FPOs, SHGs, Social groups& NSS volunteers for need focus and intensive attention under awareness and development initiatives at GP level.
- Expenditure to be re-oriented towards human development sectors. Government expenditures should be ensured to deliver expected outcomes.
- Focus on aspirational talukas, 93 in Education, 102 in Nutrition and 100 talukas in provision of health infrastructure and quality services.

6.24: Conclusion

Inequality is a major international development challenge. This is so from both an ethical as well as economic perspective. Greater inequality is perceived to be detrimental to key socio economic and political outcomes. Bridging the gaps in human development across the gender and social groups and regions in Karnataka is critical for increasing the HDI and rank of Karnataka state at national and global level. It is also equally essential to attain the targets under Sustainable Development Goals - 2030. In this direction, the state plans at local and state levels need to be outcome oriented with localization of SDGs. It is high time to look into our gender and child budgets, SCP/ TSP and minorities development programmes and assess why the human development gaps are still persisting despite of the resource transfer. Questions regarding, relevance, adequacy, implementation, and outcomes need to be addressed on urgent footing to reach the final goal **'No one is left behind'.**

Chapter - 7

Investing in Youth for Accelerating Demographic Dividend

Chapter – 7

Investing in Youth for Accelerating Demographic Dividend

7.1: Demographic Dividend and Karnataka's Youth Population

7.1.1: Introduction

The whole world today is watching closely the rapid economic and technological progress taking place in India and Karnataka. The demographic dividend is at the centre of all discussions. At the same time, India and Karnataka are continuously engaged in designing the innovative programmes and policies that will increase the dividend and also its optimum utilisation and equitable distribution.

Youth capital requires enormous resources to increase the stock and provide opportunities for harnessing its potential, making visible the capacity, capabilities and expectations of young people. This is a challenge, as empowering youths requires along with the provision of quality education but also to enhance skill development with equal emphasis on health and wellbeing. Karnataka will be able to reap demographic dividend, only if adequate investments are made to build the youth capital and to harness it.

In the early 1900s, women in India bore six children on average. Most children born then didn't livefor very long—the average life expectancy was around 20 years (Ram & Ram, 2021). Now, over a century later, women bear two children on average, (Ministry of Health and Family Welfare, 2020). Children born now also live much longer and the **average life expectancy has risen from around 20 to around 70 years** (Ministry of Health and Family Welfare, 2019). Economic, social, and technological progress have driven this decline in fertility and mortality rates. While these declining rates are testament to the development of India, they also indicate that India's demographic makeup is changing. **India now has one of the youngest populations in the world (UNFPA India, 2020).** These young people hold tremendous potential that is waiting to be tapped. While there is no universally accepted definition of youth, this chapter follows the definition set out by the National Youth Policy, 2014: individuals between 15 and 29 years of age (Ministry of Youth Affairs and Sports, 2014).

This chapter makes a situational analysis of youth population in Karnataka and suggests the ways and means to enhance the demographic dividend and its optimum utilisation.

7.1.2: The Demographic Dividend

The Population Reference Bureau defines demographic dividend as the accelerated economic growth that may result from a decline in a country's birth and death rates and the subsequent change in the age structure of the population (Population Reference Bureau, 2012).

In 2018, India's working-age population began to grow larger than its non-working age or dependent population.[1] Estimates indicate that the working age population in India will continue to outnumber the dependents for about three more decades until 2055 (UNFPA India, 2018). This period of time during which a region's working age population outnumbers its dependent population is called the **demographic windowof opportunity.** Since there are more people who can contribute to economic growth and fewer people that require support during such periods, regions can capitalise on their demographic dividends. An analysis of the window of opportunity among Indian states conducted in 2018 revealed that **Karnataka has time until 2028 before its window starts closing (UNFPA India, 2018).Hence for the next 5 years State's plan should focus on capitalising Youth power to achieve exponential growth.**

Evidence from East Asian countries is proof of the transformative potential of investments in youth. Between 1965 and 1990, the demographic window of opportunity was open for Malaysia, Singapore, South Korea, Taiwan, and Hong Kong. **By investing in youth,[2] each of these countries was able to capitalise on their demographic dividend and grow exponentially (Kibaru-Mbae & Chatterjee, 2017).** The challenges which preclude young people from achieving their full potential need to be identified and redressed on top priority.

[1] The working-age population refers to individuals aged 15 to 64, while the non-working-age population (or dependents) refers to individuals aged 14 and younger and 65 and older.

[2] By way of **policies and monetary investments in education, employment, healthcare, and gender equality.**

7.1.3: Youth Development Index

The 2020 Global Youth Development Index published by the Commonwealth Secretariat found that the overall condition of young people around the world improved by around 3% between 2010 and 2018 indicating there has been slow progress. **India ranked 122nd among the 181 countries** covered by the index, however it ranked 2nd in terms of making progress with its scores increasing by almost 19% between 2010 and 2018. The Youth Development Index (YDI) 2020 suggests that the participation of young people remains critical to the achievement of SDG Agenda 2030.

Karnataka's Youth Profile

Currently, youth account for a little less than a third of Karnataka's and the country's total population.[3]

Table 7.1: A snapshot of the state's youth population (individuals between 15 and 29 years of age) for the year 2021. (Estimated using data from the 2011 census.)

District	Total estimated population	Estimated youth population	Youth share of population	% share in Youth population in the State
Bengaluru Urban	1,48,45,494	46,02,103	31%	21.73%
Belagavi	54,95,365	1483748	27%	7.00%
Bellary	34,50,138	10,42,287	30%	4.92%
Mysore	34,84,946	10,10,634	29%	4.77%
Kalaburagi	30,80,568	8,93,365	29%	4.22%
Tumkur	28,01,751	7,56,473	27%	3.57%
Vijayapura	26,75,460	7,49,129	28%	3.54%
Raichur	23,62,864	7,08,859	30%	3.35%
Dakshina Kannada	23,34,222	6,26,545	28%	3.09%
Dharwad	21,60,500	6,26,545	29%	2.96%
Bagalkot	21,99,604	6,15,889	28%	2.91%
Bidar	19,60,684	5,68,598	29%	2.68%
Shivamogga	18,88,777	5,28,858	28%	2.50%
Davanagere	18,10,133	3,41,518	29%	2.48%
Haveri	17,94,980	5,20,544	29%	2.46%
Mandya	18,54,997	5,19,399	28%	2.45%

[3] Estimate based on data from the 2011 census: 29%.

Chitradurga	18,35,140	5,13,839	28%	2.43%
Hassan	18,56,010	5,01,123	27%	2.37%
Kolar	17,23,330	4,99,766	29%	2.36%
Koppal	16,39,732	4,91,919	30%	2.32%
Uttara Kannada	15,35,252	4,14,518	27%	1.96%
Yadgir	14,75,547	4,13,153	28%	1.95%
Chikkaballapur	13,93,053	3,90,055	28%	1.84%
Udupi	13,41,933	3,62,322	27%	1.71%
Bengaluru Rural	11,86,702	3,56,011	30%	1.68%
Gadag	11,77,866	3,41,518	29%	1.61%
Ramanagara	11,54,457	3,34,793	29%	1.58%
Chikkamagalur	11,36,849	3,06,949	27%	1.45%
Chamarajanagar	10,88,493	3,04,778	28%	1.44%
Kodagu	5,61,645	1,46,028	26%	0.69%
Karnataka	**7,33,06,492**	**2,11,81,723**	**29%**	

Source: Sustainable Development Goal Coordination Centre, UNDP - Created with Data wrapper

Figure 7.1: A snapshot of distribution of Karnataka's youth population across divisions.

This shows that youth are attracted to the regions, where the economy is thriving as their major concern is to find suitable educational and employment opportunities.

7.2: Leveraging the Youth Human Capital

The current status of Karnataka's youth: An assessment of historical data from over 80% of the countries in the world found that the economic benefits of demographic dividend are driven by human capital and not age alone (Lutz et al., 2019). The World Bank defines **human capital as the knowledge, skills, and health that people accumulate throughout their lives, enabling them to realise their potential as productive members of society (World Bank, 2019).** Economists describe it as qualities that can be employed as capital in production (Sen, 1999). Sociologists view it as skills and abilities that allow people to act in new ways (Coleman, 1998). Political scientists construe it as skills and knowledge that can be drawn upon to produce outputs of value (O'Neill, 2006). The current thinking on human capital envisages- **Investments in education, skill formation, and health increase worker productivity, leading to economic growth and to human development.**

An alternative and a more empowering construction of the concept is that Human capital is the set of physical, intellectual, emotional, and spiritual capabilities an individual possesses that afford them the agency to lead and sustain their life (Balasubramaniam, 2020).

This construction expands the skills or abilities component of human capital to include emotional and spiritual aspects as well. Second, it shifts the focus of the concept from economic development to development of the individual or human development. Third, it underscores the importance of empowering individuals and affording them agency.

Hence, four key dimensions of human capital that can help gauge the current status of human capital development among Youth in Karnataka and also suggest policy and programmatic pathways for equitable and sustainable development are:

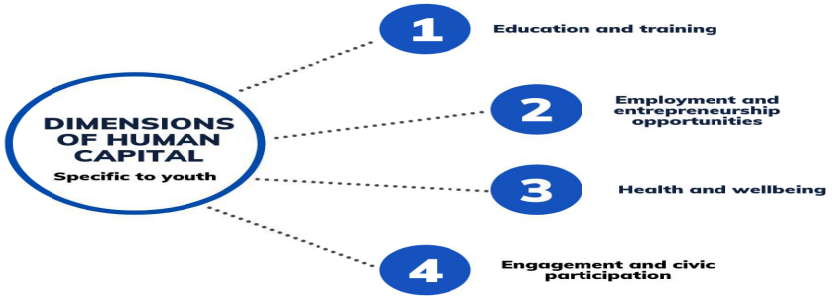


Figure 7.2: The Four Dimensions of Human Capital.

7.2.1: Education and skills

The first dimension of human capital focuses on the ecosystem that equips youth with the knowledge, skills, and abilities necessary to lead and sustain their lives.

A large labour force is an important component of progress, but it is the knowledge, skills, and abilities of the labour force that serve as crucial determinants of its success. Without proper education and training, individuals entering or re-entering the labour force are less likely to possess the knowledge, skills, and abilities required by the labour market. This mismatch is referred to as the **skill gap** and in most cases, it renders individuals unemployable.

A cross-sectoral study conducted by the Karnataka Knowledge Commission in 2017 found significant skill gaps in each sector selected for the study (Karnataka Jnana Aayoga, 2017). While the problems of skill gaps and unemployability stem from many root causes, most important are:-

7.2.2: Education – Access & Quality

Aside from ensuring that youth receive education and training, it is imperative to also focus on the quality of education and training imparted. Even if enrolment and attainment levels are high, students and trainees will not benefit if the quality of education and training is not adequate. Since education (especially the initial years) forms the base for learning and skill acquisition later in life, identifying and closing gaps early on is crucial. Data from the Karnataka State Education Report 2018-19 provides some indicators of education access for primary and secondary education in the state. (Here, primary refers to grades 1-5, upper primary refers to grades 6-8, secondary refers to grades 8-10. Elementary refers to an aggregate of primary and upper primary i.e., grades 1-8).

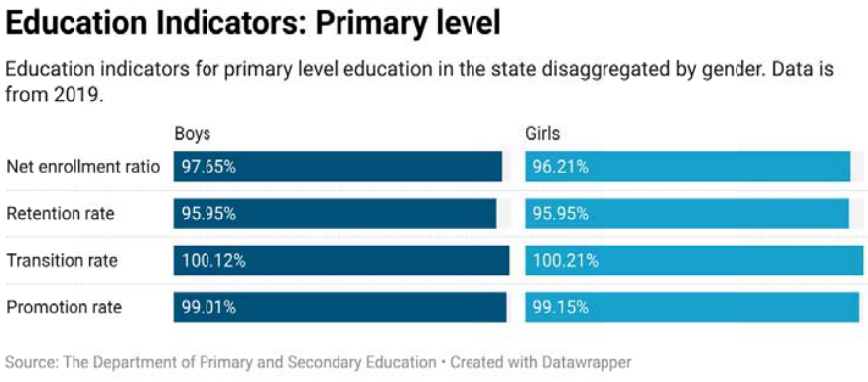


Figure 7.3: Indicators of enrolment and quality at the primary school level in Karnataka.

At the primary level (grades 1-5), the net enrolment rate indicates that only a fraction of the children at this level were not enrolled in school, with the figure slightly higher for girls. Since many children enrol in primary school slightly later, it is likely that these children were either already or eventually enrolled in grades lower than their age-expected grades. The retention, transition and promotion rates were high.

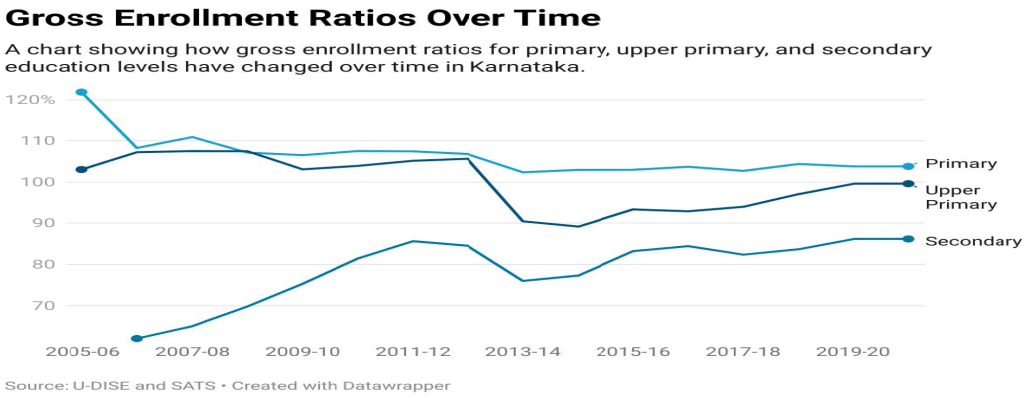


Figure 7.4: Gross Enrolment Ratio Over Time

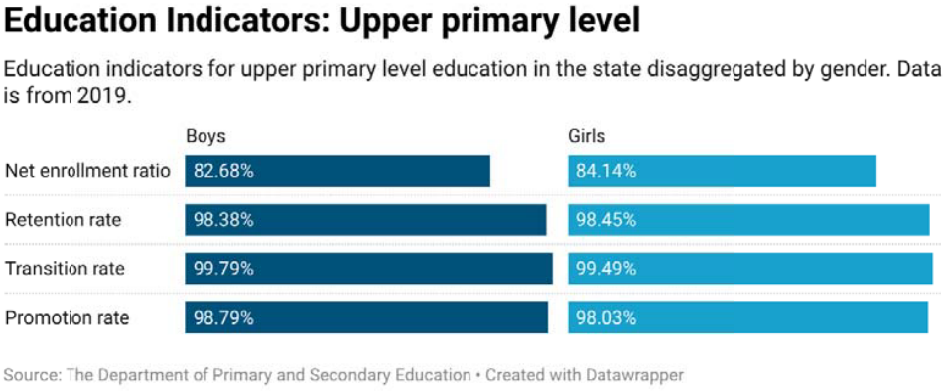


Figure 7.5: Indicators of enrolment and quality at the upper primary school level in Karnataka.

At the upper primary level (grades 6-8), the net enrolment ratio drops significantly, indicating that over 15% of children at this level were not enrolled in school. While a small percentage of these unenrolled children are probably enrolled in grades lower than their age-expected grades, several might have dropped out of school. The retention, transition and promotion rates remained fairly high for this level of education as well.

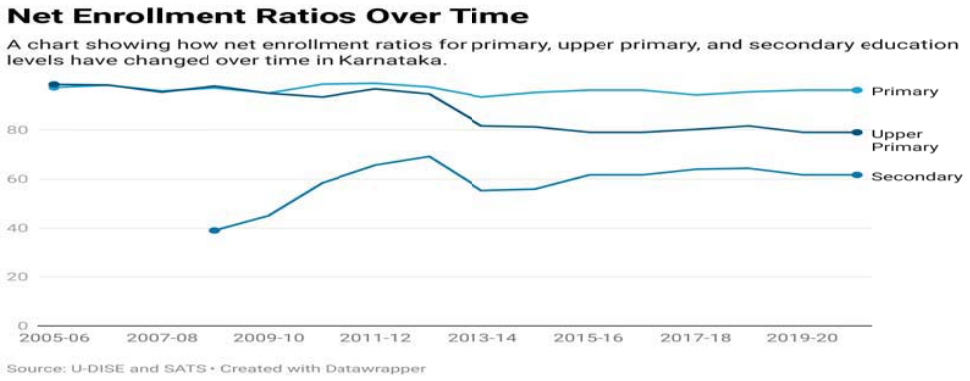


Figure 7.6: Net Enrolment Ratio Over Time

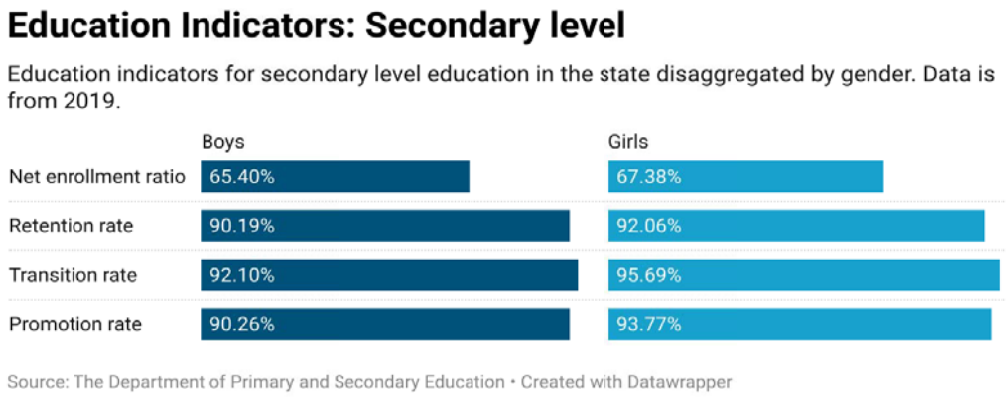


Figure 7.7: Indicators of Enrolment and quality at the secondary school level in Karnataka.

At the upper secondary level (grades 9-10), the net enrolment ratio drops even further, indicating that around a third of the children at this level were not enrolled in school. While a small percentage of these unenrolled children are probably enrolled in grades lower than their age-expected grades, some might have dropped out of school. The retention, transition and promotion rates dipped slightly, indicating a drop in education.

The difference between the gross and net enrolment for each of these years shows that many students were enrolled in levels not appropriate for their age. Also, since the rates were clustered by levels of education, the number of students enrolled in grades not appropriate for their age was likely higher.

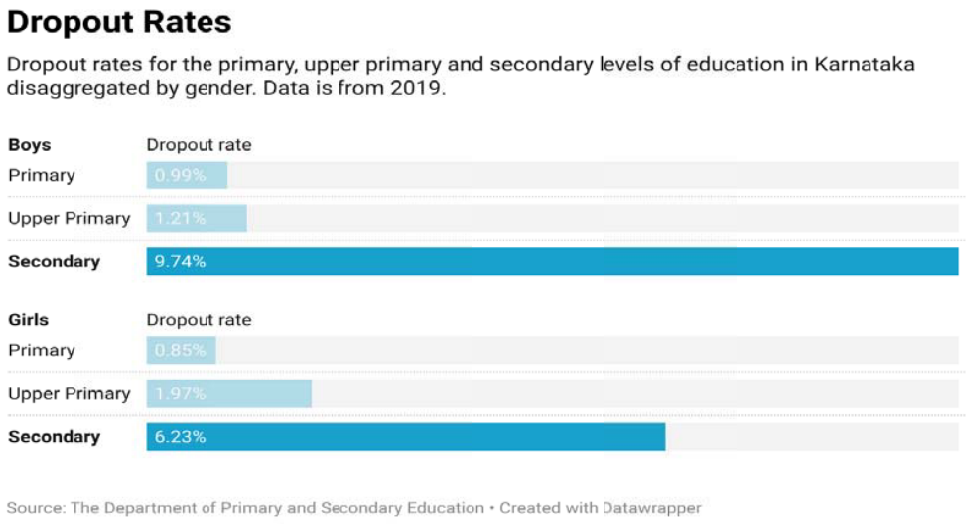


Figure 7.8: Dropout rates across school levels in Karnataka.

Dropout rates for each level indicate the percentage of students that dropped out of the school. They provide some insight into educational attainment among those who leave the school system before finishing 10th grade.

This data indicates that only a fraction **(less than 1% for both boys and girls) of all children dropped out of primary school.** The figures were slightly higher for upper primary school (1.21% for boys and 1.97% for girls). However, **at the secondary school level, the figures were significantly higher (9.74% for boys and 6.23% for girls).** As children start dropping out of school at secondary level, special interventions are needed to retain them for making them skilled and employable. As Right to Education ensures compulsory schooling up to 8th standard, the same needs to be extended to 10th Standard.

7.2.3: Education Attainment

UNESCO defines educational attainment as the highest level of education that an individual has completed. Data from the National Family Health Survey-5 provides a general overview of the state of education attainment in Karnataka.

Though the state's performance on each indicator is better than the national average, the overall level of attainment is far from ideal. A breakup of the educational attainment levels of Karnataka's youth is given below.

Education Attainment among youths in Karnataka (15-20) – Male Vs Female

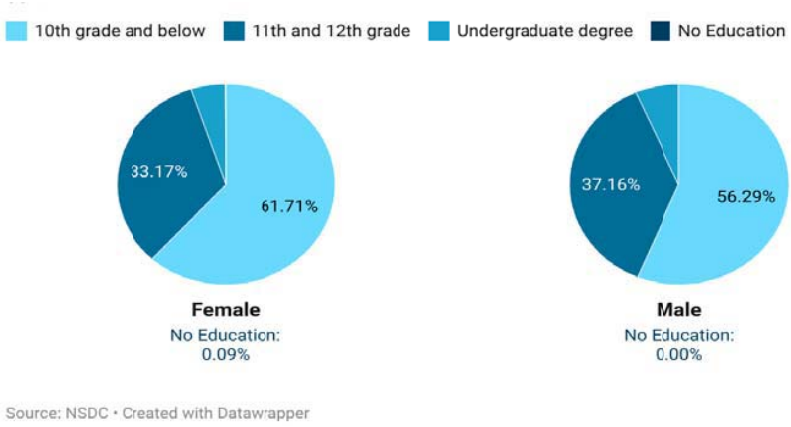


Figure 7.9: Youth Educational Attainment in Karnataka disaggregated by sex (15-20).

Youth Education Attainment in Karnataka (21-30) – Male Vs Female

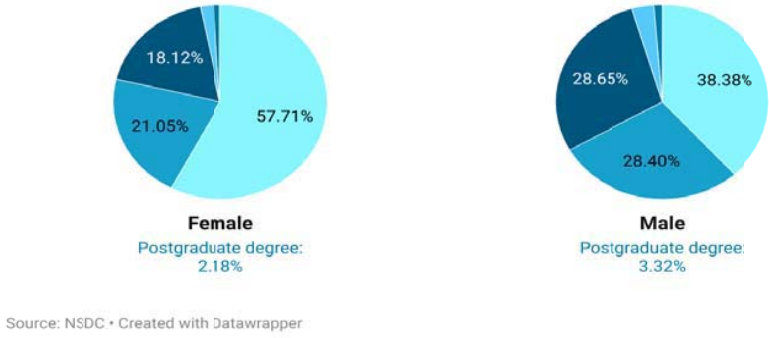


Figure 7.10: Youth educational attainment in Karnataka disaggregated by sex (21-30).

In 2018, **around half (48%) of the state's youth population were in the lowest bracket of attainment (10th grade and below).** 32% of the youth population had completed higher secondary education (11th or 12th grade), and only 21% completed tertiary education (undergraduate or postgraduate education). The youth gender gap is visible with 62 percent of girls at the lower ladder of education.

The fact that almost half of Karnataka's youth population had either not completed basic education (10th grade) or not moved beyond is concerning. Early education forms the basis for all of an individual's future learning and has also been shown to determine future success

(Frazier, 2019). Focusing on improving *attainment* will help build youth human capital and bring about social and economic progress.

Attainment also suffers at the pre-university level (11th and 12th grade). Data from the Karnataka Economic Survey 2020-2021 indicates a significant amount of attrition at the pre-university level, with **over 11% students having dropped out between the first and second year of their pre-university education.**

While overall enrolment rates at the degree college level are also low, the number of students enrolling in degree colleges has been growing every year. Between 2020 and 2021, the number of boys enrolling increased by almost 7% and the number of girls enrolling increased by almost 15%. Commerce-focused courses attracted most students. Arts courses had the second highest demand, and science courses the third highest.

There were around 500 institutes providing technical education in the state. For medical education, there were 52 medical colleges, 40 dental colleges, and 323 nursing colleges. (Economic Survey 2020-21), **For a state with a sizable youth population, the low number of institutions is unlikely to keep up with the demand.**

7.2.4: Learning Outcomes

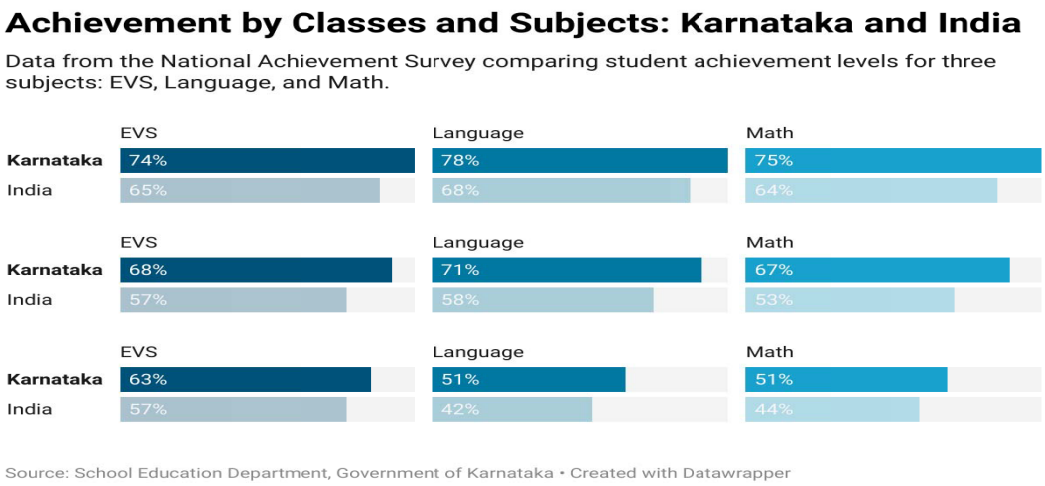


Figure 7.11: Achievement by Classes and Subjects: Karnataka and India.

Data from the National Achievement Survey on the performance of students in Karnataka shows that the state performs better than the national average. That said, there is a noticeable decline in achievement levels as the grade level increases. Gaps in early learning compound as students' progress through levels. One reason for this could be that learning outcomes earlier in a student's education have lasting effects on their performance in the future.

Between 2019 and 2020, at the pre-university level, around **42% of students enrolled in arts courses, 66% enrolled in commerce courses, and 76% enrolled in science courses passed their examinations.**This shows that 58% of students enrolling in art courses are not quite serious about the course due to the feel that Arts subjects do not have high correlation with employability. Hence, a re-engineering of Arts courses becoming relevant to economy is needed. The National Education Policy 2020needs to be implemented effectively.

7.2.5 Employment &Skill / Training Attainment

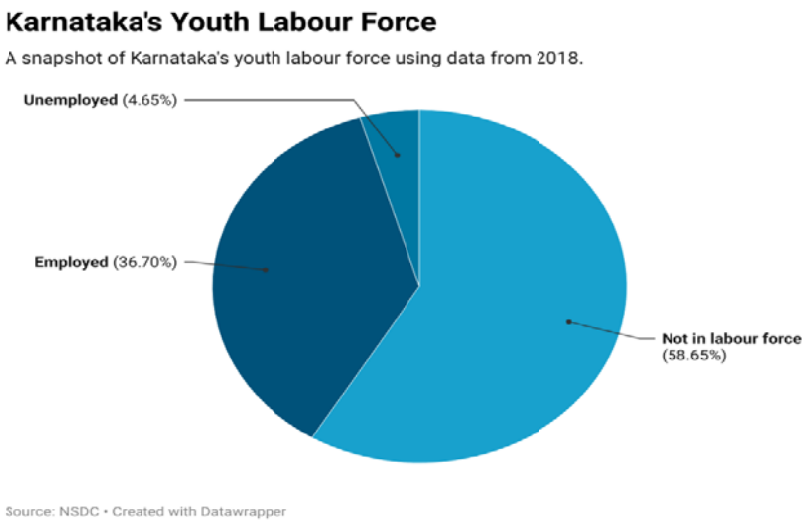
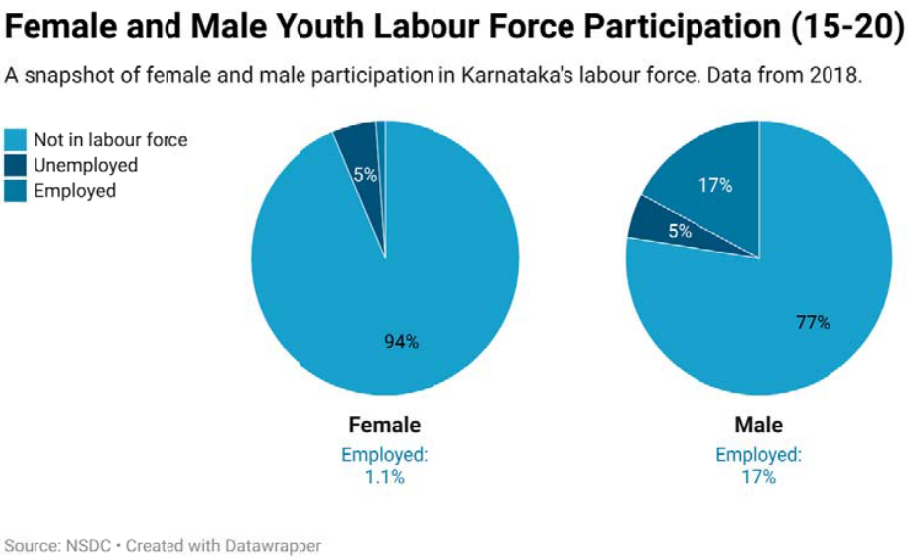


Figure 7.12: Youth labour force participation in Karnataka.

Data from the NSDC report indicated that in 2018, over 36% of Karnataka's youth population was employed, around 5% was unemployed, and over 58% was not participating in the labour force. It is likely that many individuals were not participating in the labour force because they were not able to find suitable employmentor are in education.



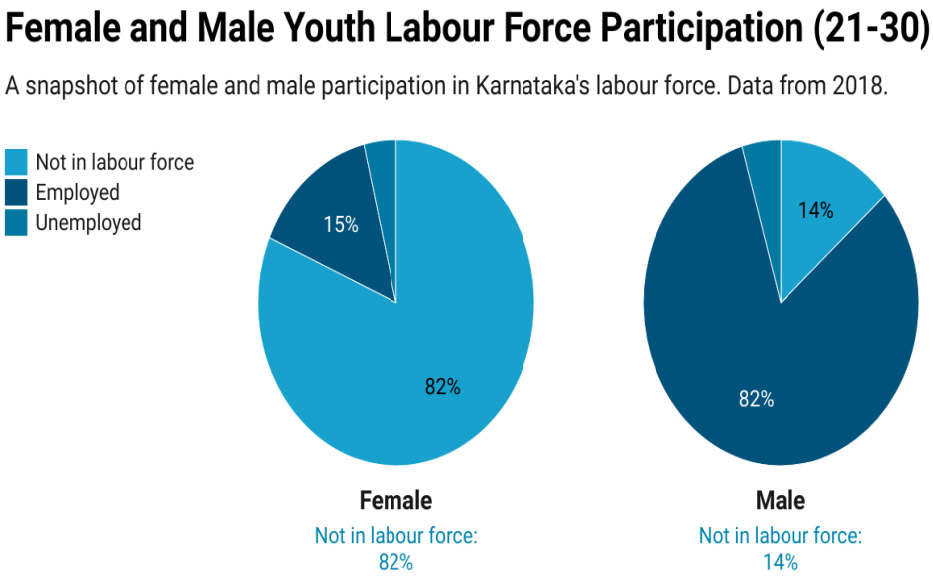


Figure 7.13 Youth labour force participation rates in Karnataka disaggregated by sex 15-20 & 21-30.

Data from the report 2018 also indicated that labour force participation was starkly lower for females despite the fact that more females are joining the higher education sector. While around 56% of males were employed and 39% were not participating in the labour force, **only 6% of females were employed and 91% were not participating in the labour force.** This clearly

indicates that special policies and incentives are needed to bring in females into appropriate labour markets vis-a vis the marriage market.

In 2018, there were roughly 199 lakh youth in Karnataka. Out of these, around 82 lakh (41%) were a part of the labour force. Approximately 16 lakh **(20%) of the youth labour force had completed formal training**.which leads to 80% of the youth entering the unorganised, less skilled and lowly paid labour market. It shows that 59% should be in the education sector.

Over 11% of the entire youth labour force was estimated to be unemployed. In comparison, less than 1% of formally trained youth workers were estimated to be unemployed (NSDC, 2020). Hence, low level of training attainment points at immediate needs for skill development training opportunities to be provided at the village level itself. The considerably lower rate of unemployment among formally trained youth indicates that formal training played a role in significantly reducing chances of unemployment. Looking at who enrolled in formal training programs will break down the demand for training by level of educational attainment.

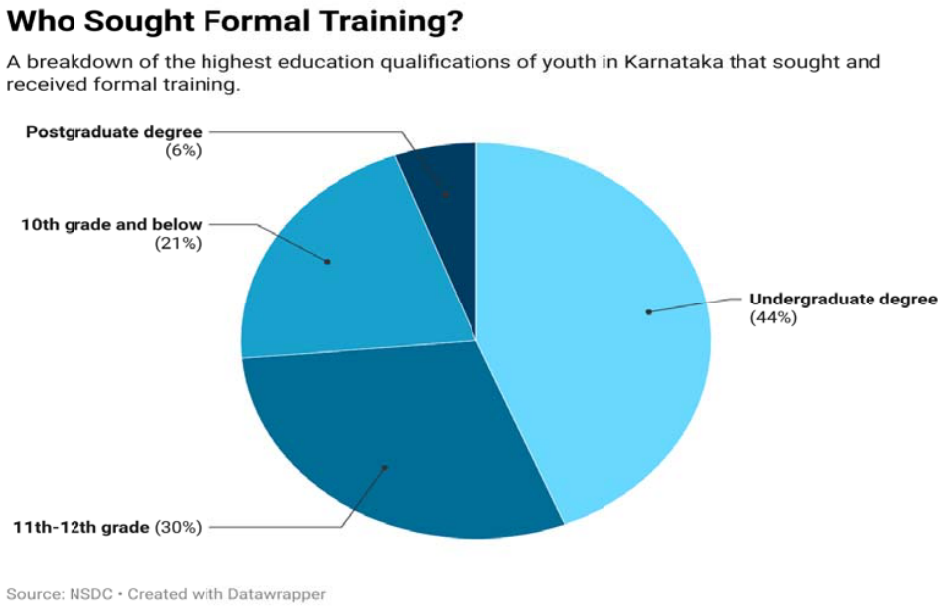


Figure 7.14: Educational attainment levels of youth that sought and received formal training in Karnataka.

In 2018, youth that either completed or dropped out before 10th grade only accounted for 21% of all trainees.[4] In contrast, **youth that completed their 11th-12th grade or undergraduate education made up around 74% of all trainees**. Ideally, this number should have been much higher because youth in this bracket accounted for around half of the entire youth population and were also comparatively less qualified on paper. Hence, a strong case for vocationalization of education from 8th standard onwards as per National Educational Policy 2020 is made.

7.2.6: Training quality

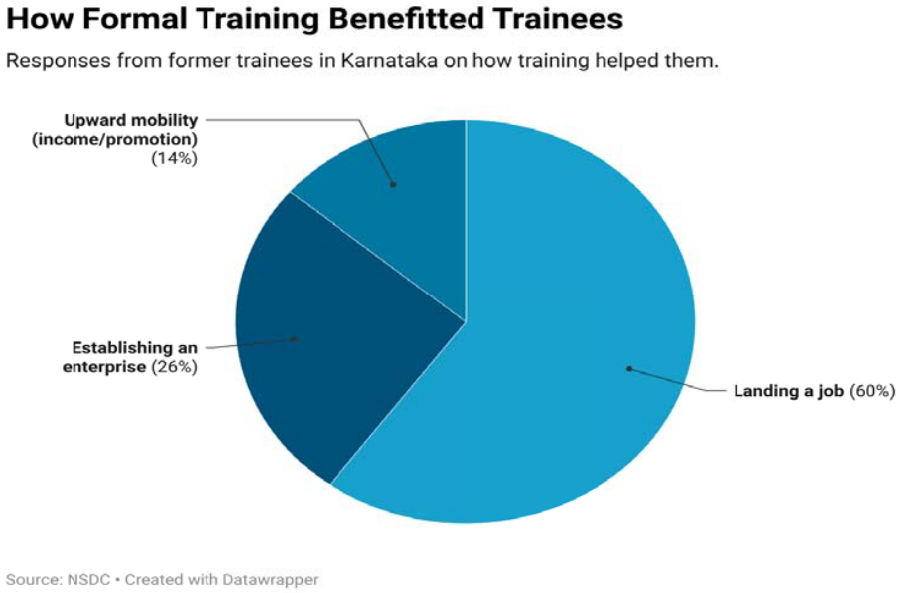


Figure 7.15: Reported benefits of formal training in Karnataka.

In a survey of formally trained individuals who found employment after their training, over **70% of the respondents stated that they benefited from the training.** Further, when asked how they benefited, they indicated that training mainly helped them secure employment (60%), establish enterprises (26%), and receive raises or promotions (14%). It is crucial that training is increasing the employability of the youths.

[4] Here, trainees refer to both individuals that received training as well as individuals that were undergoing training.

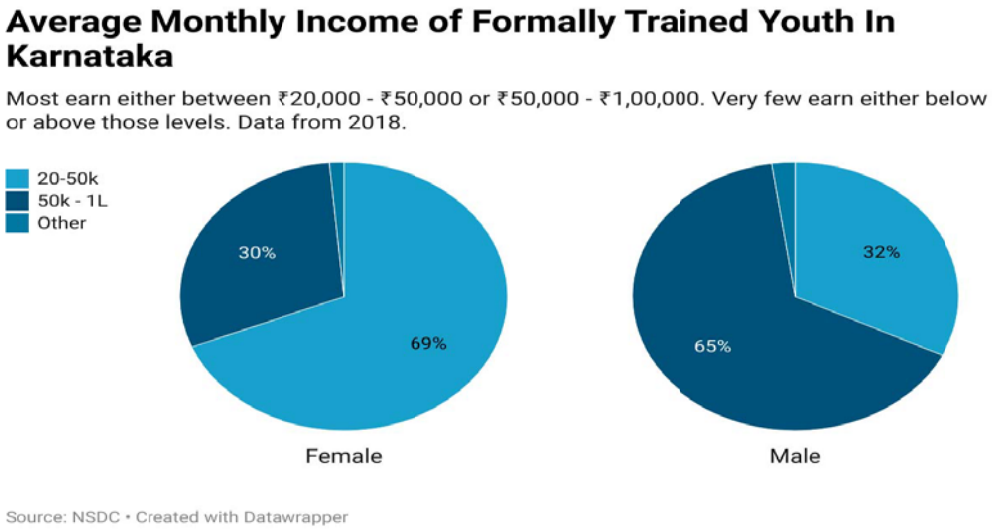


Figure 7.16: Average monthly income of formally trained youth in Karnataka.

According to a report by the NSDC from 2020 titled Estimating the Skill Stock in Karnataka, most formally trained youth that secured employment were found to be earning either between 20,000 - 50,000 or 50,000 - 1,00,000 every month. On average, males were earning a lot more than females. While over two thirds of the female youth population earned between 20,000 - 50,000 each month, around two thirds of the male population earned between 50,000 - 1,00,000 each month.

7.2.7: Youth unemployment

While the lack of employment and entrepreneurship opportunities plagues the entire working-age population, data from across the globe shows a disproportionate impact of the lack of these opportunities on youth. In 2016, the global youth unemployment rate was 13.1%—three times the adult unemployment rate (United Nations, 2016). Conditions in the developing world were found to be worse. 20% of all youth in developing nations were not in education, employment, or training. An analysis of household survey data or 11% from **Karnataka found that 4.3% of the state's labour force was unemployed**. Disaggregating the data by age group revealed that **87% of these unemployed individuals were youth**. Figures at the national level were similar. 5.9% of India's labour force was unemployed and youth accounted for 90% of this figure (NSDC, 2020).

Over 11% of the entire youth labour force was estimated to be unemployed. In comparison, less than 1% of formally trained youth workers were estimated to be unemployed (NSDC, 2020). This identifies the crucial requirement for training and skills.

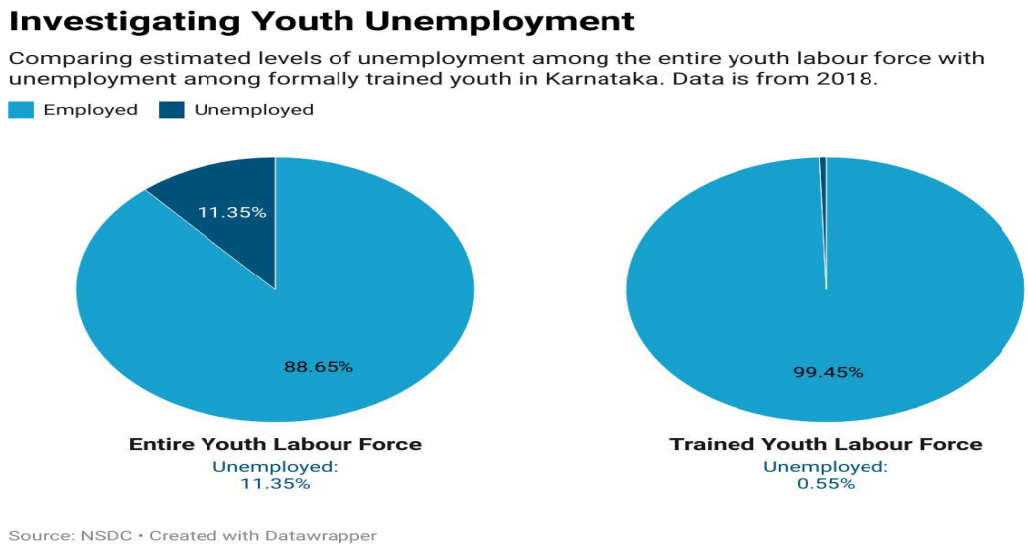


Figure 7.17: Youth unemployment in Karnataka.

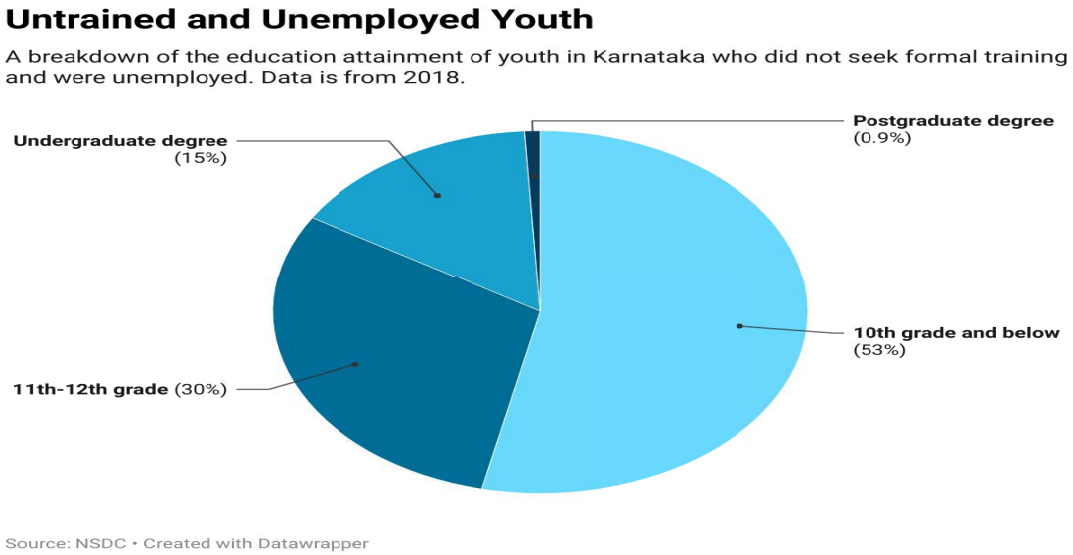


Figure 7.18: Education attainment levels of untrained and unemployed youth in Karnataka.

An analysis of data about youth who did not seek formal training and were unemployed revealed that over half of untrained and unemployed youth had dropped out of school before or after finishing 10th grade. It is these youths and the secondary education stage is the appropriate intervention point to tap the youth potential.

7.2.8: Employment and Entrepreneurship

The second dimension of human capital focuses on opportunities available for youth to put their knowledge, skills and abilities to economically and socially productive uses.

Education and skill development help the transform a large labour force from a liability into an asset by increasing overall employability. Employment and entrepreneurship opportunities pave the path for labour force productivity by creating avenues for individuals to be meaningfully employed. Without sufficient opportunities to engage in employment or entrepreneurship, large proportions of the labour force are forced into low-skill jobs or remain unemployed for extended periods. This is severely detrimental in two ways. First, it results in skill underutilisation or underemployment and in many cases, also loss of skills. Second, it hinders social mobility and discourages participation in the workforce.[5]

Entrepreneurship, especially among youth, is integral to employment in two ways. First, entrepreneurs start their own ventures instead of turning to the labour market for jobs. This frees up jobs for other youth entering the workforce. Second, the ventures started by entrepreneurs also create jobs, helping increase the total number of jobs available.

The National Policy of Skill Development and Entrepreneurship, 2015 highlights five pillars of an ideal entrepreneurial environment:

i. access to funding,
ii. entrepreneurial culture,
iii. supportive regulatory and tax regime,
iv. an educational system that promotes entrepreneurial mindsets,
v. and a coordinated approach that links the public, private and voluntary sector.

In 2020, Karnataka was adjudged by the Department for Promotion of Industry and Internal Trade (DPIIT) to be the top performing state for the second consecutive year (Business Line, 2020). The report considers performance across many parameters including funding support, incubation support, ease of procurement, and awareness. The success of startups

[5] The OECD defines social mobility as the movement of individuals, families, households, or other categories of people within or between social strata in a society.

from Karnataka indicate that the state indeed does well on each of these fronts. The state is home to India's first unicorn (InMobi), largest unicorn (Flipkart), and fastest unicorn (Mensa). Further, Most of India's 80-odd unicorns[6] are from Karnataka (Narayan, 2022).However, there is a need for 'Beyond Bengaluru' strategy to diversify opportunities across the State. The growth of MSMEs needs to be supported by adequate credit and working capital.

7.2.9: Demography, Health and Wellbeing

The third dimension of human capital focuses on the ecosystem of preventive, curative, and rehabilitative care that enhances the quality of life among youth.

In the early 1900s, women in India bore six children on average. Most children born then didn't live very long—the average life expectancy was around 20 years (Ram & Ram, 2021). Now, over a century later, women bear two children on average, which is significantly lower than six (Ministry of Health and Family Welfare, 2020). Children born now also live much longer and the average life expectancy has risen from around 20 to around 70 years (Ministry of Health and Family Welfare, 2019). Economic, social, and technological progress have driven this decline in fertility and mortality rates. While these declining rates are testament to the development of India, they also indicate that India's demographic makeup is changing. India now has one of the youngest populations in the world (UNFPA India, 2020). These young people or youth hold tremendous potential that is waiting to be tapped.

Table 7.2: Karnataka's Demography Over Time

Karnataka's Demography Over Time

Key demographic indicators show a decline in birth and death rates as well as the infant mortality rate in the state.

Indicators	1990	2000	2010	2016	2017	2018
Birth rate	26.9	22.0	19.2	17.6	17.4	17.2
Death rate	9.0	7.8	7.1	6.7	6.5	6.3
Infant mortality rate	77.0	57.0	38.0	24.0	25.0	23.0

Source: Planning Department, Government of Karnataka • Created with Datawrapper

[6] A unicorn is a startup with a valuation of over $1 billion. Ola Cabs, Zomato, Byjus, and Swiggy are some examples of unicorns.

In its constitution, the World Health Organisation defined health as a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity (WHO, 1948). The interconnected concepts of health and wellbeing are integral to both economic progress and human development. While the health and wellbeing of individuals matters throughout their life, the stages of childhood and adolescence are particularly important.

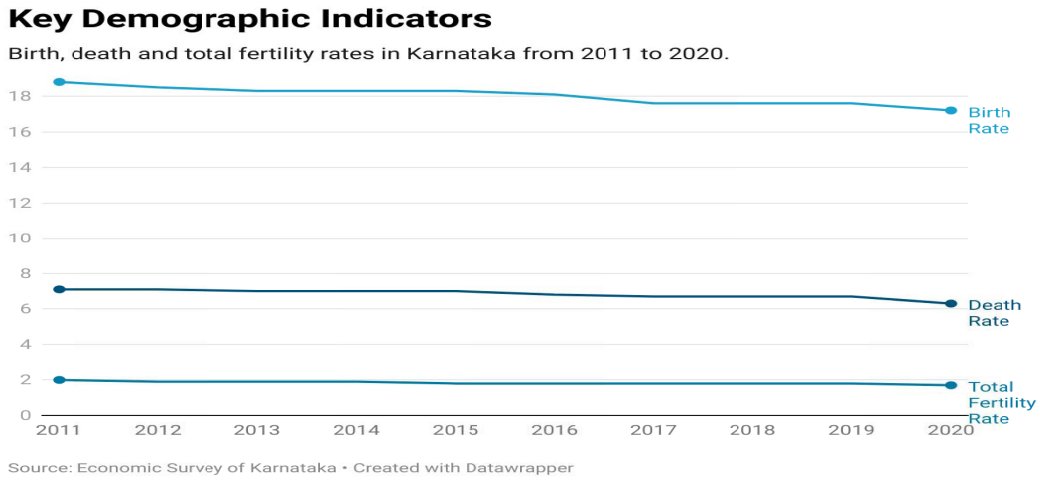


Figure 7.19: Key Demographic Indicators for Karnataka.

Childhood

The first five years of every child's life are foundational in helping them reach their full potential. Studies conducted across disciplines show that experiences from these years have lifelong implications on a child's learning, health, and behaviour (Centre on the Developing Child, 2007). Ensuring that children are healthy and well during these early years will help them accumulate human capital and empower them to do well later in life. Research shows that investments made in children's health and nutrition during childhood positively affect them at each later stage of their life (Nandi et al., 2018).

There are three parts to improving the health and wellbeing of children. First is ensuring survival beyond infancy. Second is supporting mothers. Third is focusing on providing children with adequate nutrition and the requisite vaccinations. Data from the Sample Registration System and National Family Health Surveys help measure and track progress along each of these parts.

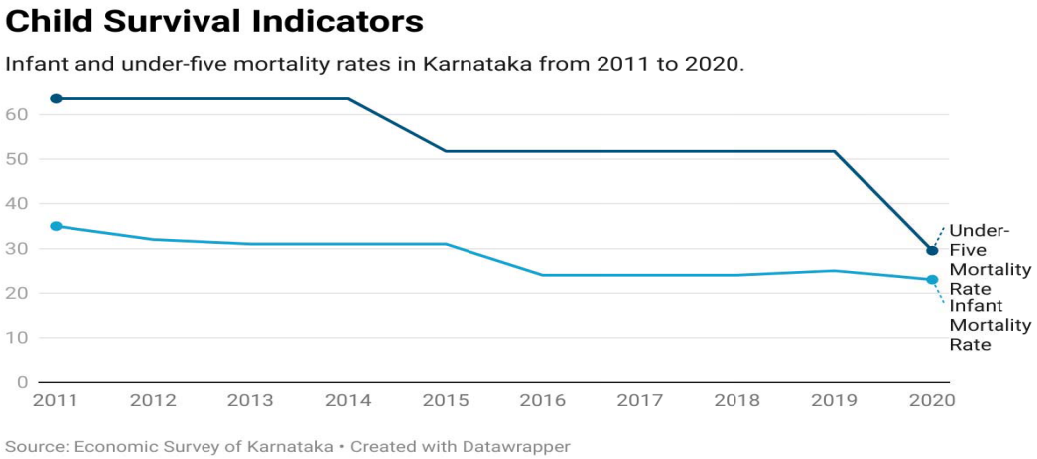


Figure 7.20: Child Survival Indicators for Karnataka.

Survival indicators show that the number of children in Karnataka that make it past the age of 1 (infancy) and the age of five has risen drastically. Between 2011 and 2020, the Infant Mortality Rate has dropped by almost a third, and the Under-Five Mortality Rate has almost halved.

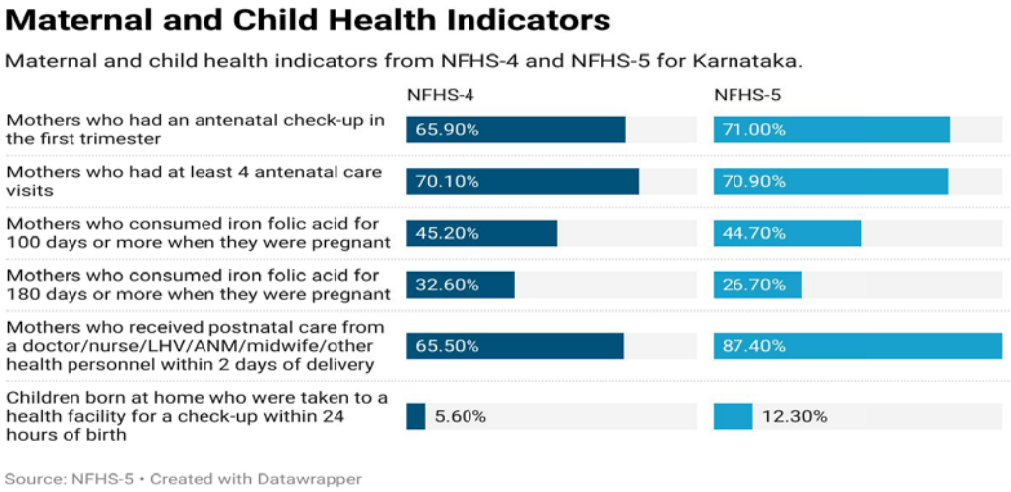


Figure 7.21: Maternal and Child Health Indicators for Karnataka.

Data about support provided to mothers during maternity show that a higher percentage of mothers in Karnataka were receiving support in 2020 than were a few years ago 2016. This support involved antenatal care (check-ups and visits), supplementation (iron folic acid consumption), delivery support, and postnatal care (check-ups).

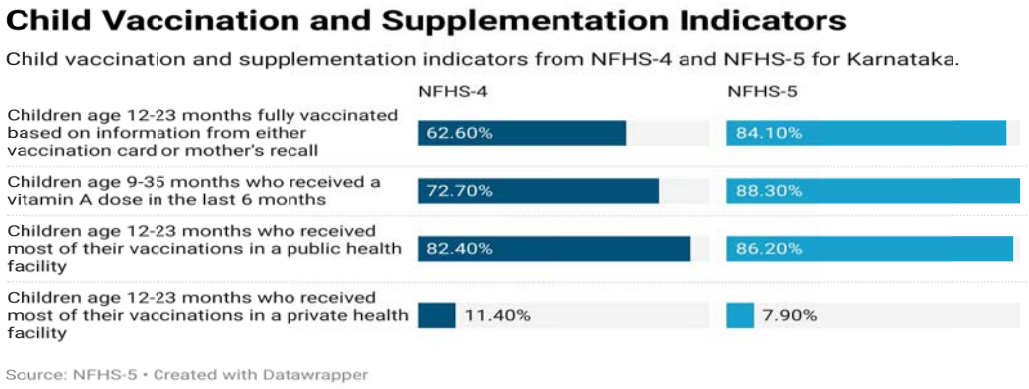


Figure 7.22: Child Vaccination and Supplementation Indicators for Karnataka.

Data about vaccinations and nutritional support provided to children in Karnataka show a marked increase in the percentage of children that received vaccinations between 2016 and 2020. The vaccinations were for diseases such as tuberculosis, polio, and measles. There is also a shift in where support with childcare is sought and provided, with the percentage of children receiving vaccinations at private facilities dropping by almost a third between 2016 and 2020.

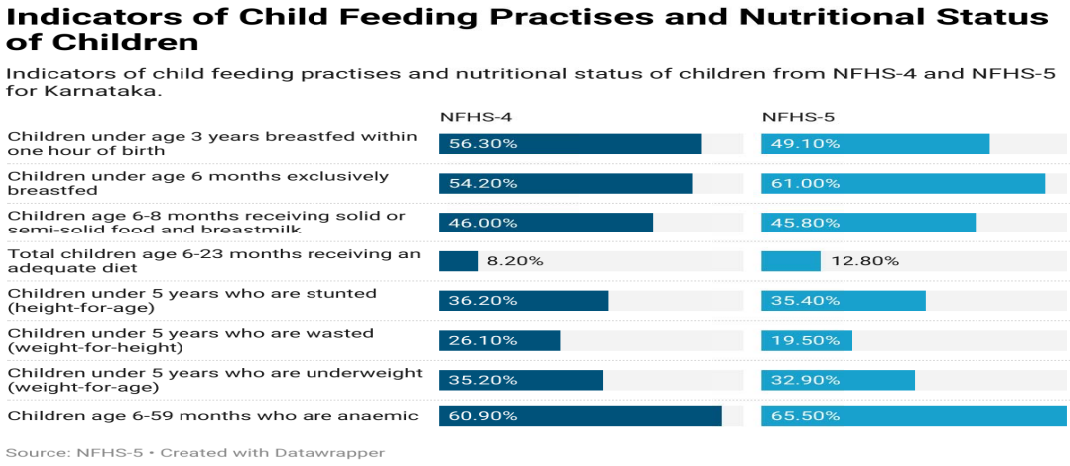


Figure 7.23: Indicators of Child Feeding Practices and Nutritional Status Of Children in Karnataka.

Data about child feeding practises show slight stagnation and even decrease for some indicators between 2016 and 2020. The indicators also show that there is a lot of room for overall progress on these fronts. Total children 6-23 months who received adequate diet is only 12.8 percent. Data about the nutritional status of children is in line with slightly poor nutritional and feeding

practises. While there has been a reduction in the number of children who are stunted, wasted, and underweight, the overall percentage of children who are stunted, wasted, and underweight is still relatively high.

Adolescence

Like childhood, adolescence too is a period during which focusing on health and wellbeing is imperative since adolescents experience rapid physical, cognitive, and psychosocial growth. The WHO defines adolescence as the phase of life between childhood and adulthood, from ages 10 to 19. **In addition to serving as a foundation for future health and wellbeing (Sawyer et al., 2012), this period also has the potential to mitigate the ill-effects of childhood undernourishment (Georgiadis & Penny, 2017).**

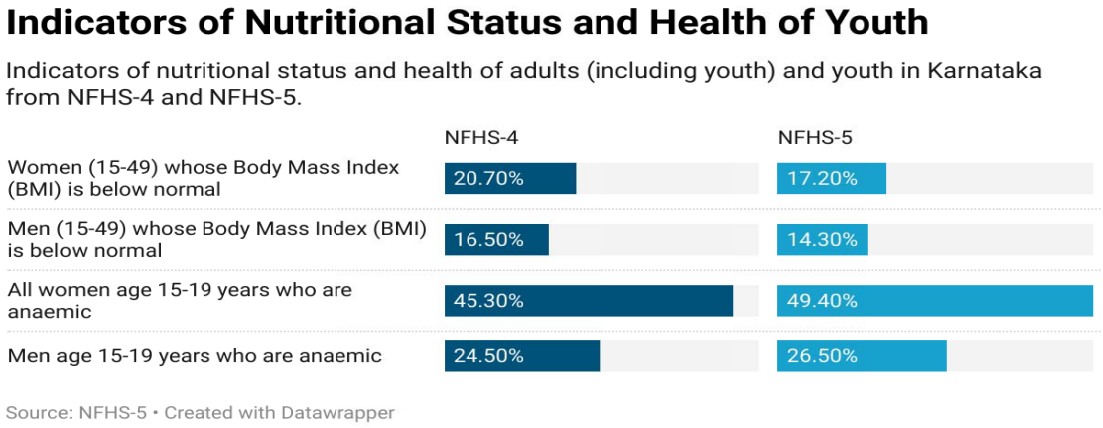


Figure 7.24: Indicators of Nutritional Status and Health of Youth in Karnataka.

The health and wellbeing of adolescents in India has been found to suffer in four ways. First, malnutrition, which often leads to micronutrient deficiencies and obesity, both of which have life-long implications. Second, engaging in **high-risk sexual behaviour**, which increases chances of contracting sexually transmitted diseases. Third, the **onset of mental health disorders** such as depression and anxiety, which severely affect day-to-day life and can lead to stress, self-harm, and also suicide. Fourth**, harmful usage of alcohol, tobacco, and other substances**, which can lead to dependencies, cause irreparable damage, and also result in death (Sunitha & Gururaj, 2014). Research and data from the state indicates that adolescent health and wellbeing in Karnataka is affected by the same four issues.

Recent small-scale studies conducted in different parts of **the state indicate that the prevalence of depression is alarmingly high among adolescents**. One cross-sectional study conducted among school going adolescents (age 15-18) in an urban area of Karnataka found that over three in every five children surveyed were found to be suffering from some degree of depression (Sinha et al., 2020). Another cross-sectional study conducted among school going adolescents (age 10-19) in a rural area of Karnataka found that almost two in every five children surveyed screened positive for depression (Hanspal, et. al., 2019).

While the prevalence of high-risk sexual behaviour and consumption of alcohol, tobacco, and other substances is hard to ascertain, one study from an urban area of Karnataka points to a potential coexistence between such multiple risk behaviours. The prevalence of alcohol consumption, tobacco use and sexual activity was found to occur in 5.7%, 7.2% and 5.5% of all adolescents (age 15-19) surveyed (Mohanan et al., 2014). Another study about the knowledge and attitude regarding tobacco conducted among 13–15-year-olds in an urban area of Karnataka found a poor knowledge of hazards associated with tobacco use (Ballal et al., 2016). Hence, primary secondary education has to focus on prevention of these debilitating factors to give a healthy workforce to the society.

7.2.10: Engagement and Participation

The fourth dimension of human capital focuses on the ecosystem that enables youth involvement in shaping the future. It captures the extent to which young people have accessed opportunities for participation as well as measures of the state of the enabling policy and institutional environment for participation.

In Karnataka, youth account for almost one third of the total population. Their involvement in shaping the future is critical to all forms of progress. In addition to being placed well to understand and act on barriers that hinder progress, youth also stand to gain the most from working towards eliminating those barriers. Economic, social, and cultural changes they bring about today will shape the society they will continue to be a part of for decades to come. Youth involvement is also likely to mainstream youth issues and ensure that decision making at all levels factors in their perspective.

Conceptually, youth involvement can be broken down into two components. First, the *levels* that involvement happens at. Second, the *channels* that involvement happens through.

Table 7.3: Levels and channels of involvement.

Levels	**Channels**
Youth involvement happens at two levels: civic and political. While the *civic level* relates to involvement of youth in their communities, the *political level* relates to involvement of youth with political institutions. Both levels are different yet complementary. Involvement of youth with communities paves the way for their involvement with political institutions (Sairambay, 2020).In-turn, involvement of youth with political institutions encourages and creates more opportunities for youth involvement at the community level.	Youth involvement happens through two channels: *engagement* and *participation*. While *engagement* refers to the steps taken to encourage the involvement of youth, *participation* refers to the initiative that youth themselves take to be involved. The two are strongly interdependent. Neither the opportunities to engage nor the willingness to participate alone can drive youth involvement.

7.2.11: The India Youth Development Report and Index 2017

The report prepared by Rajiv Gandhi National Institute of Youth Development provides data that can help quantify and measure youth participation at both civic and political levels. The indicators used to measure youths' civic and political participation and the index score of India and Karnataka is provided in the following table.

Table 7.4: Youth civic and political participation scores in Karnataka as per the Youth Development Index, 2017.

No.	Measure	Indicators	Score	Overall Score	National Average	Rank
1	Youth Civic Participation	i) Share of youth participating in the Nehru Yuva Kendra Sangathan (NYKS).[7]	0.1447	0.2277	0.191	8th
		ii) Share of college students participating in the National Service Scheme (NSS) and the National Cadet Corps (NCC). [8]	0.3107			
2	Youth Political Participation	i) Share of youth participating in the legislature, which looks at youth representation in legislative and law-making activities.[9]	0.333	0.354	0.436	16th
		ii) Share of youth electors, which looks at youth representation in the process of elections.[10]	0.375			

[7] NYKS is a grassroots-level youth organisation focused on volunteering, encouraging self-help, and promoting community participation. Based on data from the NYKS Annual report.
[8] While the NSS focuses on instilling democratic values and encouraging selfless service among youth, the NCC empowers youth to contribute towards nation building through social service and national integration. Based on data collected from NSS and NCC websites.
[9] Based on data from the Election Commission.
[10] Estimates based on Census data.

While Karnataka is doing better in Civic Participation, its rank is very low (16th) in youth political participation. However, there is scope for increasing their participation in both the fields. The youths have talents and it needs to be mobilised through community and political organizations and support.

7.2.12: The status of youth in other Indian states

Data from the India Youth Development Report and Index 2017 prepared by Rajiv Gandhi National Institute of Youth Development benchmarks the performance of different states on six indicators of youth development: education, health, work, political participation, civic participation, and social inclusion.

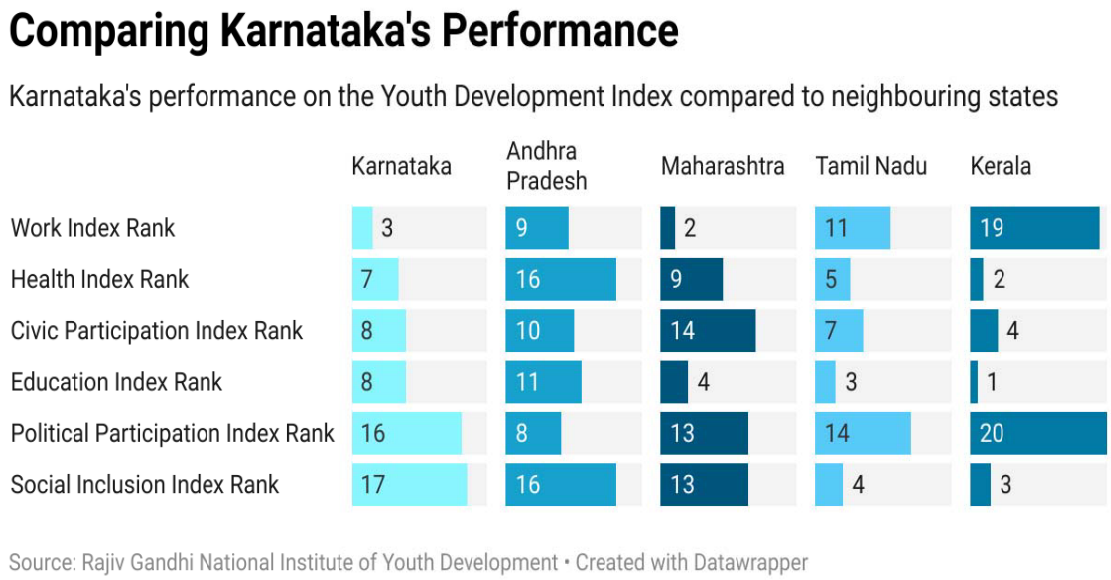


Figure 7.25: Karnataka's performance on the Youth Development Index compared to neighbouring states.

Karnataka's overall rank on the index was 8th. In comparison, Andhra Pradesh was ranked 13th, Maharashtra was ranked 6th, Tamil Nadu was ranked 2nd, and Kerala was ranked 3rd. More specifically, Karnataka ranked 8th on the education index, 7th on the health index, 3rd on the work index, 16th on the political participation index, 8th on the civic participation index, and 17th on the social inclusion index.

7.3: Inclusive Development and Social Transformation-Agenda for the Youth

The complementary concepts of inclusive development and social transformation are important lenses to evaluate the current status of and plan for progress on each dimension of human capital discussed in the previous section. While inclusive development lends itself to ensuring that the gains from development are equitably distributed, social transformation suggests pathways for meaningful change through youth. Together, these two lenses can help ensure that efforts to build youth human capital in Karnataka factor in existing inequalities and focus on bringing about effective social change.

7.3.1: Inclusive Youth development

Inclusive development can be defined as a process that occurs when social and material benefits are equitably distributed across divides within societies, across income groups, genders, ethnicities, regions, religious groups, and others (Hickey, Sen, & Bukenya, 2016). Since many of these inequalities are structural[11] and are often perpetuated in cycles, focusing on bringing about changes for and among youth will help break these cycles and build youth human capital equitably in the state.

This section focuses on inequalities among genders, socio-economic groups, and geographies. While each one of these are discussed separately, they are not independent of each other. In fact, these inequalities compound each other.

7.3.2: Gender

Gender inequality exists across social, economic, cultural and demographic groups in India as well as the state of Karnataka. Here, gender refers to the characteristics of women, men, girls and boys that are socially constructed. This includes norms, behaviours and roles associated with being a woman, man, girl or boy, as well as relationships with each other (WHO, 2019). At its heart, the issue of gender inequality is one of perceptions and treatment which results in a phenomenon called the gender gap. The gender gap is defined as the difference between women and men as reflected in social, political, intellectual, cultural, or economic attainments or attitudes (Harris, 2017).

The World Economic Forum's Global Gender Gap Index measures the gender gap across four areas: educational attainment, economic participation and opportunity, health and survival, and

[11] Structural inequality refers to the large-scale historical, social, political and economic factors that shape disparities in society.

political empowerment (Schwab et al., 2017). Each of these four areas correspond to a dimension of youth human capital discussed in the previous section. This indicates two things:

a. First, gender inequality runs deep across each dimension of human capital, adversely affecting women globally.
b. Second, working to achieve gender equality is integral to building youth human capital.

Scores from the India Youth Development Report (IYDR) 2017 help further quantify gender inequality among youth in Karnataka across three dimensions of human capital: education, health, and work.[12] A score of 1 on the education-gender, health-gender, and work-gender indices indicate parity.

Table 7.5: Indicators of gender equality in Karnataka as per the Youth Development Index, 2017.

No.	Measure	Indicators	Female Score	Male Score	Overall Score	National Average
1.	Education	i. A comparison of the male and female literacy rates.	0.602	0.716	0.840	0.749
		ii. A comparison of the male and female education levels.				
2.	Health-gender	i. A comparison of the male and female youth mortality rates.	0.663	0.842	0.960	1.122
		ii. A comparison of the male and female youth morbidity rates.	0.850	0.883		
		iii. A comparison of the male and female physical fitness levels for youth.	0.328	0.415		
		iv. A comparison of the male and female alcohol abuse rates for youth.	0.981	0.652		
		v. A comparison of the male and female tobacco abuse rates for youth.	0.922	0.587		
3.	Work	i. A comparison of the male and female unemployment rates.	0.820	0.855	0.755	0.747
		ii. A comparison of the male and female share of total unemployment.	0.090	0.422		
		iii. A comparison of the male and female labour force participation rates.	0.300	0.766		
		iv. A comparison of the male and female employment levels.	0.589	0.569		
4.	Overall (aggregate of the three measures)	Overall youth development indices.	0.602	0.710	0.848	0.856

[12] These data were equally weighed.

- ➔ The score on the **Youth Education Gender Index** was, indicating Karnataka's performance was above national average.
- ➔ The State average score on the **Youth Health Gender Index** was, very low and Karnataka'sperformance contributed to the **20th rank**.
- ➔ The national average score on the **Youth WorkGender Index** was **0.747**, indicating Karnataka's performance was slightly above average.

Overall state of gender inequality among youth in Karnataka

Measures of each of these three dimensions (education, health and work) were aggregated to calculate overall youth development indices (YDI) for females and males. The female score was and male score was. Karnataka's overall youth gender development index (YGDI) score was **0.848**. In contrast, at the national level, the female YDI score was **0.535**, male YDI score was **0.625**, and the YGDI score was **0.856**. Karnataka lagged slightly behind the national average and was **ranked 15** on the Youth Gender Development Index.

7.3.3: Socio-Economic Groups

At both the national and the state level, there are significant disparities in achievements and progress of different socio-economic groups. These disparities are particularly disadvantageous for youth. Across each dimension of human capital, individuals from certain socio-economic groups are starkly disadvantaged.

In 2011, individuals from two specific socio-economic groups, the scheduled castes and scheduled tribes (SC/ST) accounted for over 24% of Karnataka's total population. Given their share of the state's total population, it is likely that they account for a large proportion of the state's youth population as well. The India Youth Development Report's Social Inequality Index benchmarked performance of SC/ST youth to non-SC/ST youth to quantify inequalities among socio-economic groups. The index used two indicators to do this.

Table 7.6: Indicators of social equality in Karnataka as per the Youth Development Index, 2017.

Measure	Indicators	Score	Overall Score	National Average
Youth Social Inequality	i. Ratio of the performance of SC/ST youth to non-SC/ST youth in education.	0.602	0.863	0.886
	ii. Ratio of the performance of SC/ST youth to non-SC/ST youth in work.			

Based on data about the above from Karnataka, the score for the state on the Youth Social Inequality Index 2017 was **0.863**. The national average score on the Youth Social Inequality Index was **0.886**, indicating Karnataka's performance was slightly below average, which indicated lower level of inequalityacross social groups.

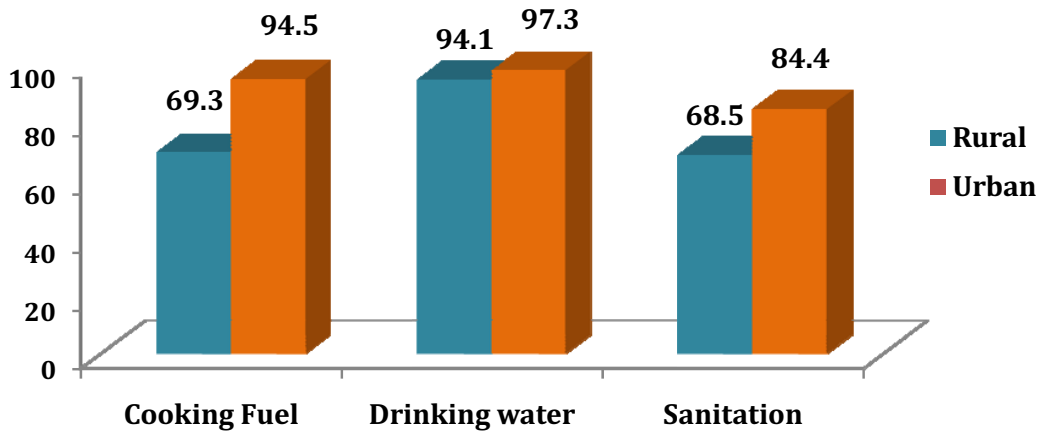
7.3.4 Rural-urban

There are disparities across geographic areas within India too. The disparities between rural and urban areas are particularly stark. The term urban areas usually refers to cities and the regions surrounding them where the population density is high. The term rural areas, on the other hand, refers to areas outside towns and cities that have a relatively lower population density.

While the disparity between rural and urban areas exists across state lines within India, a few common factors affect the degree of disparity throughout the country. Data indicate that disparity is higher in states where the per-capita state domestic product, degree of urbanisation, level of agricultural development, and per-capita remittance received by rural households is lower (Shergill, 2021).

Data about access to basic household facilities from the past two iterations of the National Family Health Survey show the urban-rural gap in Karnataka. While the difference in access to some facilities might not seem like a lot, these small differences have serious implications for rural households.

Figure 7.26: Indicators of access to basic household facilities in karnataka NFHS-5



Only a little less than 6% of all urban households in Karnataka use unclean fuels for cooking. In contrast, over 30% of all rural households use unclean cooking fuels for cooking. Research has clearly linked this use with heart disease, strokes, cancers, chronic lung diseases, and pneumonia (WHO, 2022). Given that the use of unclean fuels is more prevalent in rural Karnataka, the likelihood of their detrimental effects is also higher than it is in urban Karnataka. Similarly, households in rural Karnataka are more likely to face the detrimental effects of not having improved drinking water sources[13] and improved sanitation facilities.[14] 21.5 % do not have access to sanitation.

The India Youth Development Report 2017 found specific ways in which the rural-urban manifests among youth. The likelihood that a woman would be married early was much higher for young women in rural areas than in urban areas. It was also harder for young women from rural areas to access sexual and reproductive healthcare services.

Youth from the state residing in urban areas also have more access to employment opportunities within the gig economy since platforms operate primarily in urban areas. Further, since the entrepreneurial culture is most prevalent in urban agglomerations, youth from rural areas also miss out on that.

7.3.5: Social Transformation

The three prominent types of inequality discussed above are all deeply intertwined with Indian society as well as each other. Moving towards equality will require a social transformation, which entails the restructuring of all aspects of life; from culture to social relations; from politics to economy; from the way we think to the way we live (Rabie, 2013). Social transformation is different from social change in terms of its scale and intensity. While social change refers to gradual or incremental changes in society over a period of time, social transformation refers to a fundamental restructuring of society (Khondker & Schuerkens, 2014).

This section focuses on three drivers of social transformation among youth: social awareness, social value systems, and social entrepreneurship. Together, these three drivers can help reshape the way youth perceive, interact with and contribute to society, which in turn will contribute to rooting out structural inequalities.

[13] Improved drinking-water sources are defined as those that are likely to be protected from outside contamination, and from faecal matter in particular.

[14] Improved sanitation facilities are defined as those that hygienically separate human waste from human contact.

First relates to promoting social awareness. Social awareness is defined as being aware of the problems that different societies and communities face on a day-to-day basis and to be conscious of the difficulties and hardships of society (Stellenbosch University, 2013). Instilling social awareness among youth will help them take the important first step of acknowledging and understanding inequalities. It will also nudge them towards taking action against inequalities.

Second deals with fostering progressive social values. Social values are defined as standards, which individuals and social groups employ to define personal goals and essentially shape the nature and form of social order in a collective i.e., what is acceptable and not acceptable, what ought or not to be, what is desirable or undesirable (Tsirogianni & Gaskell, 2011). Focusing on the social value system and promoting progressive social values among youth will help tackle inequality by changing prevailing norms that perpetuate it.

Final driver relates to encouraging social entrepreneurship. Much like entrepreneurship, social entrepreneurship entails using the principles of entrepreneurship to work towards achieving social change. Empowering youth to start their own social enterprises and tackle social problems will make them drivers of change and enable economic sustenance for themselves. **Social entrepreneurship** also brings in the practical dimension of ensuring private gains without losing sight of the public good that it can create for society.

A non-zero-sum game

It is important to note that development and inclusive development are not mutually exclusive—there is no need to make a choice between the two. Removing structural barriers to growth and development stand to benefit society as a whole. In fact, the lack of inclusivity is likely to stymie development. It is also important to treat youth as catalysts for inclusivity. Promoting awareness among youth, instilling progressive values in them, and empowering them to become agents of change is key to reducing inequality and effectively building human capital.

7.4: The Way Forward: Building Youth Human Capital in Karnataka

The current support ecosystem in the state

While the potential of young people to contribute to economic growth is undeniable, the challenges of our ever-changing world preclude young people not only from achieving their full potential and contributing to economic growth but also leading decent lives. Acknowledging these challenges, countries around the world have been categorising young people as a separate

group (youth) and working to tackle issues that affect them. More than two thirds of all countries in the world including India have formulated and adopted dedicated youth policies.

While India's National Youth Policy, 2014 provides a framework for youth development across the country, it is not tailored to each state's specific needs. In a bid to better contextualise support to young people, some states have formulated their own state-level youth policies. Karnataka first adopted a youth policy in 2012 and is now **framed a new policy** to address challenges that have cropped up over the past decade.

Karnataka is also supporting the state's youth population through schemes, programs and policies. The state adopted New Education Policy in 2020 that is student centred and focuses on the holistic development of students in the state. The Sarva Shiksha Abhiyan Karnataka Scheme (2000) and the implementation of the National Skills Qualification Framework also help govern the quality of education in the state.

The affirmative action in terms of RTE, Mid-Day mills, Pre and Post Metric scholarships, education loans, hostel facilities, skill development schemes, have yielded the positive outcomes. The department of Skill Development, Entrepreneurship, and Livelihood executes many national and state initiatives such as the Urban and Rural Livelihood Missions and the PM and CM Kaushalya Karnataka Yojanas. The Karnataka Skill Development Policy: 2017-2030 also focuses primarily on providing skills to the state's youth population and making them more employable. Youth employability centres set up by the state support this effort by helping place young people in jobs and apprenticeships.

7.4.1: Priorities for each dimension of Youth Human Capital

a) Education and Training

Table 7.7: Findings, Implications and Priorities for Education and Training.

Findings and implications	Priorities
Low overall education attainment levels. The educational attainment of a child directly affects their future outcomes.	➔ Driving up enrolment up to 10th std. ➔ Keeping children in school. ➔ Enabling the return of those who earlier left school.

Low learning levels of schoolchildren. Early losses in education have lifelong implications.	➔ Strengthening pre-primary and primary education. ➔ Learning environment and quality infrastructure ➔ Training teachers.
Low training attainment levels. Formal training significantly reduces the chances of unemployment.	➔ Increasing awareness about training programs. ➔ Improving school-to-training institute transition.

A large-scale study analysed historical data from over 165 countries. It found that improving educational attainment[15] drives economic growth across countries. It also found that countries with large workforces that had low educational attainment levels saw negative impacts on income growth (Lutz et al., 2019). These findings underscore the importance of education attainment in building human capital and harnessing the demographic dividend.

Focusing on enrolment, quality and attainment at the school level will help by providing young people with a strong foundation which they can build upon later in their lives. The dropouts at secondary level are very high. Similarly, increasing the number of young people that pursue higher education and improving the quality of education they receive will make them more employable. Finally, giving young people the skills required to be self-sufficient and socially aware will help empower them to lead their lives comfortably and also help uplift others.

b) Employment and Entrepreneurship

The National Skill Development Corporation(NSDC) estimated that the incremental demand for the workforce in Karnataka during the period 2012 to 2022 is 84.76 lakhs of them, 27% are minimally skilled,43% are semi-skilled, 25% are skilled and 5% are highly skilled. NSDC estimates show that there is a mismatch between the demand and supply of skilled and highly skilled workers in Karnataka. If efforts to provide skills are not taken up in the coming ears, there will be **shortage of 7.12 lakh skilled and 3 .88 lakh highly skilled people in the state by 2022.**

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Table 7.8: Findings, Implications and Priorities for Employment and Entrepreneurship.

Findings and implications	Priorities
Low youth labour force participation rate. *Fewer youth are choosing to be engaged in employment or some other form of work.*	➔ Improving the school-to-work and training-to-work transitions ➔ Encouraging female involvement in the labour force.
High youth unemployment. *A significant number of youth are not able to find employment.*	➔ Identifying and remedying knowledge and skill mismatches. ➔ Encouraging enrolment in formal training programs. ➔ Creating a Karnataka Youth Employment Policy.
Substantial skill gap. *Employers across sectors find that youth lack the skills required for work.*	➔ Revamping skilling and training curricula at ITIs and VTIs. ➔ Industry involvement in training design. ➔ Mandatory on-the-job training ➔ Upgrading the skill policy with a focus on youth.
Not enough entrepreneurs. *Rural youth receive fewer opportunities to establish enterprises.*	• Develop a District level hub and spoke model for entrepreneurship incubation with all educational institutions in the district as spokes. • Extend the New Age Incubation Network (NAIN) Scheme to all Districts. • Establish Karnataka Research and Innovation Authority (KRIA) as a nodal agency for strengthening incubation ecosystem in the State on the lines of Technology Transfer Offices (TTOs) of Israel. • Set up Enterprise Facilitation Centres (EFCs) at District level as one stop shop centres. • Design and develop tailor-made skill courses for graduate students to address skill gap and demand for skilled manpower in the emerging digital economy sector. • Create internship opportunities for graduates in Future Skills in companies like Infosys, Microsoft, IBM etc., through **Karnataka Digital Economy Mission (KDEM).** • Introduce mandatory curriculum on entrepreneurship development from class 9 onwards to develop entrepreneurship mindset among students. • Establish a Central Career Guidance Cell at the State level to develop uniform content and curriculum for career guidance.

Encouraging equal involvement in the labour force by women and making the school/training-to-work transition will directly contribute to economic and social progress in the state. Further, making training programs more contextually relevant and encouraging entrepreneurship can also contribute greatly to progress in the state.

Addressing the skill gap

The number of young persons (16 to 35 years) who require skilling in Karnataka is projected for the period 2016 to 2030 at188 lakhs that includes, the persons in labour force, who have not completed higher education (including technical education) for new or better employment.

Second, those attending to the domestic workin their households (most of whom are women), very young homemakers (in the age group of16-25 years) are included. Third, physically challenged youth to promote appropriate skills among them. The Karnataka Skill Development policy 2017-2030 provides many pathways to attain the targets. The policy need to be implemented effectively through establishing the appropriate institutional mechanism.

Action Points

- There is need to introduce **vocational skills from the eighth standard**. This will ensure that dropouts will have some skill or will have an exposure to an alternative avenue of getting employed in the organized sector. Summer vocational school at the school or cluster level would be planned.
- Seamless mobility from work to formal education and vice versa for making vocational education as continuous and lifelong learning, so that young people will aspire for vocational education and skill training programmes. Exposure to different skill streams to map the skills through aptitude tests and making choices will be introduced.
- Karnataka Skill Development Agency to be set up to focus on skills regulation and quality assurance and will have close links with the NSDA.
- Karnataka government to adopt the NSQF framework and focus on quality
- Apprenticeships will not only accelerate skill development but also help to tackle the problem of un-employability of youth. Efforts aimed at integrating apprenticeship training into the regular curricula and certificate courses will be initiated.
- Adapt the German dual system into the ITI system wherein a trainee is given the opportunity to spend more time in the industry.
- Karnataka government will link with MSDE's National Apprenticeship Promotion Scheme where the central government will cover 25% of the cost of apprenticeship training to the industry.
- The government to facilitate 50,000 apprenticeships in 2017, one lakh in 2018, three lakhs in 2019 and 3.50 lakhs in 2020 in a phased manner.
- Students pursuing general education will be imparted a certified skill training course during the course of their regular studies in line with the finishing school concept.
- Soft skills, English language skills to suit ITES sector and back end operations of other priority sectors identified in this policy will be imparted to these students
- Three lakh students pursuing general education will be covered in a phased manner starting with 50,000 in 2017, one lakh in 2018 and so on.

c) Health and Wellbeing

Table 7.9: Findings, Implications and Priorities for Health and Wellbeing

Findings and Implications	Priorities
High prevalence of stunting and wasting. *Affects the future outcomes of children.*	Boosting child health and nutrition support programmes. Increasing pre and antenatal support to mothers Integrated and Intergenerational approach to tackle malnutrition.
High prevalence of mental health disorders among youth. *Affects their ability to function.*	Encouraging open discourse around mental health through programmes. Making counselling services more accessible. Partnering with mental hospitals for counselling.
Low yet concerning prevalence of tobacco and alcohol consumption among youth. *Adversely affects their health in both the short and the long run.*	Imposing stricter prohibitions on advertisements and also the sale of tobacco and alcohol to youth Holding campaigns that promote awareness about the negative impacts.
Low yet concerning prevalence of high-risk sexual behaviour among youth. *High chances of unexpected pregnancies and contracting sexually transmitted diseases.*	Holding campaigns that explain the risk involved. Making sexual and reproductive health and counselling services more accessible.

Yuva Spandana is the first youth mental health promotion program in India, developed using an empowerment model through the involvement of stakeholders' right from the stages of conception to implementation and monitoring.

It is implemented by the Department of Youth Empowerment and Sports, Government of Karnataka along with technical collaboration from Center for Public Health, Department Of Epidemiology, NIMHANS since 2014. Under the program, youth guidance centers named Yuva Spandana Kendras have been established in every district stadium across Karnataka. Trained youth named "Yuva Samalochakas" and "Yuva Parivarthakas" provide guidance and counseling services. Broadly, the issues are classified as – Education and academic issues, Health and lifestyle issues, Safety issues, Relationship issues, Gender Sex and Sexuality issues, Personality development and Emotional management issues. Thus far, in the past eight years, over 17,500 youth have received guidance and counseling services within Yuva Spandana Kendras across 30 districts in Karnataka. Approximately 2/3rd % of youth had Education and career issues, more than 1/3rd (36%) of them reported with Health and lifestyle issues and about 20% reported personality issues. Only one-tenth of youth reported having Relationship issues.

Improving child health and wellbeing will contribute greatly to building human capital. Research indicates that investments in adolescent health provide an estimated ten-fold health, social, and economic return (Sheehan et al., 2017). In addition to ensuring long-term well-being, it can improve educational attainment and boost labour productivity (Victora et al., 2008).

d) Engagement and Participation

Encouraging civic and political participation by young people will help give young people a voice in various important fora and help mainstream youth issues. It will also help inculcate a sense of social responsibility and ownership among the state's youth population and catalyse social action.

Engaging Youth in development-Innovations in Karnataka

Government of Karnataka has taken another unique initiative to organise **'Youth Grama Sabhas'** in every Grama Panchayath, as a part of **'Azadi ka Amrith Mahotsav'.** A new programme for setting up of one **'Swami Vivekananda Boy's Self Help Group'** per Grama Panchayath on the lines of women Self Help Group. from the village up to the taluk, district and State level, in the form of **'Youth federations.**

On 15th August 2021, a project called **'Amruth Samudaya Abhivruddhi'** scheme is initiated, wherein NSS volunteers through educational institutes have adopted 750 villages across the State to promote this socio-economic technological development through community involvement. This project can become a role model for the entire country/ world

Our Primary and Higher education department has made sports as a compulsory subject. **A Sports Science Centre** has been set up. **General Thimmayya National Academy of Adventure Sports** empowers the youths to build courage and confidence. Our **University campuses 'Cyber crime free'** with the involvement of NSS, NYK volunteers. An exclusive youth **helpline (155265)** has been launched to support and counsel the youth in need of help.

In collaboration with National Institute of Mental Health Sciences, Bengaluru (NIMHANS) a programme **'Yuva Spandana'** has been initiated where **life skills training** has been provided to about 60 lakh youths.

Credit-based volunteering system to be introduced in higher education to incentivise young tovolunteer their time by rewarding them with credits which they can use in many ways including education, training and employment.

7.4.2: Yuva Budget

Investment in youth is paramount to generate more demographic dividend. Therefore, for provisioning and allocation of adequate resources, a youth budget is essential. It will estimate the requirements of education and skilling, health, employment, and training of the youths and planning and budgeting will be undertaken to tap full youth potential and ensure a healthy and decent life for the youth population, the present schemes of different department in different sectors will be pooled together to ensure all round development of youth so that they are able to give their best to the economy and society.Government of Karnataka has prepared a **compendium of 540 Government schemes (given in Annexure-)** which can be availed by the

youth through different departments. A **Mobile app** is being developed for connecting the youth directly to the department officials/website. The total budget under the various schemes was Rs.11456.46 crores during 2021-22.

i) Youth Policy-2022

Karnataka has framed and implemented youth Policy 2012. The youth policy recognizes the critical role of the younger generation and focuses on facilitating the process of their seamless integration with the rest of society. The youth policy aimed to reach, engage and empower the youth to contribute to society and ensure its development. But, the changes that have taken place at global, national and State level and the changing requirements of youth in the dynamic world has necessitated the review and reformulation of the policy.

The State has formulatednew youth Policy -2022. This will focus on the holistic development of youth and to track development expenditure incurred by various departments on implementation of programmes for development of youth.The policy is being framed in the background of new challenges posed by technological progress and health crises such as COVID-19, that has necessitated to rethink the State's approach to youth development. Mental and physical well-being of the State's youth to be given priority.

With a whopping 82% of females in the age group of 21-30 years not participating in the labour force in 2018 against 14% males in the same age group, the policy would also focus on education, training, employment and entrepreneurship of the female labour force and their facilitation to join the labour market. This will help for optimum utilisation of their potential and the investment made in building the '**woman capital'. The policy is being designed in participatory mode, after consultation with youth leaders at the district level, and professionals in various fields. Over 14,000 youths have provided opinions on various issues ranging from education to leadership,** which are being incorporated in the policy.

The policy has recommended restructuring of the Department of Youth Empowerment and Sports, the creation of a Yuva Budget, and the formation of a youth advisory group.

The policy identifies six focus areas — education and training, employment and entrepreneurship, health and well-being, sports and fitness, arts and culture — and recommended an action framework for each of them.

The education section focuses on filling gaps through skill training programmes. The primary aim of the policy will be to provide skill training to the youth to address rising unemployment

and also tackle problems of malnutrition, mental health and addiction among youth. On health section the policy suggests on insulating youth from addictions to social media, tobacco, alcohol & narcotics.

In alignment with the 2030 Agenda for Sustainable Development, the Policy (2022), will be operational for a period of eight years until 2030. The State is revamping the whole institutional set up and is pooling resources for all round development of youth Force in the State. The road map is very clear – Entitlement, Education, Employment, Empowerment and Engagement- that will enable the State to emerge as Global Youth Leader.

Chapter - 8

Bridging the Gaps in Human Development Infrastructure

Chapter 8

Bridging gaps in Human Development Infrastructure

8.1: Introduction:

Human development is catalyzed by access to basic infrastructure such as drinking water, sanitation, energy, housing and roads. This relationship is accentuated in developing countries which are characterized by large numbers of resource-constrained individuals, governments and organizations. Research studies, including seminal works undertaken by the World Bank in the early 1990s, have unambiguously concluded that better access to infrastructure services positively impacts individuals and households, communities, and businesses. At the household level, better infrastructure services contribute to higher education and educational attainments thereby opening up new opportunities and also leading to employment creation.

India has adopted an infrastructure development-oriented planning approach since independence so as to create new opportunities for its citizens. For at least seven decades now, in India, the five sectors of water, sanitation, housing, electricity and fuel have been recognized as minimum needs or bare necessities which characterise development (more specifically, human development).Programmes such as the Jawaharlal Nehru National Urban Renewal Mission (JNNURM), Rajiv Awas Yojana (RAY), Pradhan Mantri Awas Yojana Gramin (earlier known as Indira Awas Yojana) and Housing for All (Gramin and Urban) were implemented to provide housing facilities while in the area of rural water, programs such as the Accelerated Rural Water Supply Program (1970s) and the subsequent Rajiv Gandhi National Drinking Water Mission followed by the National Rural Drinking Water Programme (2009) have contributed to drinking water-related infrastructure development across the country. Also, the Central Rural Sanitation Programme (1986), Total Sanitation Campaign (1999), Nirmal Bharat Abhiyan (2012) and the recent Swachh Bharat Mission (SBM-G and U) have created sanitation-related infrastructure in large numbers. The Remote Village Electrification Programme (2001), Rajiv Gandhi Grameen Vidyutikaran Yojana Programme (2005) and the ongoing Deendayal Upadhyaya Gram Jyoti Yojana aim to provide basic electricity services in rural areas of the country while the Pradhan Mantri UjjwalaYojana (2016) provides clean cooking fuel to poor households.

Karnataka has been making rapid strides in providing basic infrastructure to all its citizens, with a focus on effectiveness and efficiency of service delivery. It has been recognized as a pioneer in the adoption of renewable energy technologies for power generation with the State being home to large solar power parks, and innovative schemes being implemented for decentralized power generation, transmission and distribution. Also, recognizing transportation facilities (or roads) as a basic need that enables economic activities and thereby contribute to human development. significant improvements have been taken up in the State's road network with ample resources being allocated under national road improvement programmes especially for development of national and state highways.

While acknowledging the State's achievements on various fronts in providing access to basic/social infrastructure, the chapter takes an overall approach of identifying gaps, disparities or consolidation opportunities so as to encourage discussion and policy responses. The chapter concludes with a few recommendations for additional policy/programmatic interventions.

8.2: Drinking water

The United Nations General Assembly has declared safe drinking water and sanitation as basic human rights derived from the right to an adequate standard of living under Article 11(1) of the International Covenant on Economic, Social and Cultural Rights. International human rights law obliges nations to work towards achieving universal access to water and sanitation for all, without discrimination, while prioritizing those most in need. Fulfilment of the human rights to water and sanitation requires that the services be available, physically accessible, equitably affordable, safe and culturally acceptable.

The NSO report titled 'Drinking Water, Sanitation, Hygiene and Housing Condition' of NSS 76th round conducted during July - December 2018 observes that 29.4% of Karnataka's households had piped water into dwelling as the principal source of drinking water as compared to 21.4% of India's households having such a facility **(Table 8.1**). However, 12.4% of Karnataka's households (and 18.8% of Karnataka's rural households) had Public tap/stand pipe as the principal source of drinking water as compared to 9.2% of households (and 10.3% of rural households) at the national level. The rural households collect water from a source that is more than 1.5 kms away, while more than half of Karnataka's urban household have the principal source of water within the dwelling. Karnataka fares better than the national average on the parameter of sufficiency of drinking water to households although a

marginally higher percentage of the State's urban households that had public tap / stand pipe as the principal source reported insufficient availability as compared to the national average. However, as at the national level, disparities exist across rural and urban households in Karnataka especially on the measure of distance to principal source of drinking water.

Table 8.1: Conditions regarding Drinking Water in Karnataka's households (compared to India) (2017-18) (% of households)

	Karnataka			India		
	Rural	**Urban**	**All**	**Rural**	**Urban**	**All**
Principal source of drinking water						
Piped water into dwelling	21.5	39.1	29.4	11.3	40.9	21.4
Piped water to yard/plot	22.5	16.0	19.6	10.3	16.0	12.3
Public tap/stand pipe	18.8	4.6	12.4	10.3	7.1	9.2
Distance to Principal source of drinking water						
Within dwelling	22.7	51.3	35.5	27.5	56.1	37.3
1.5 km or more	1.3	0.2	0.8	0.5	0.6	0.5
Not getting sufficient drinking water throughout the year from principal source of drinking water						
Piped water into dwelling	5.0	9.1	7.4	15.0	9.7	11.5
Piped water to yard/plot	5.8	5.5	5.7	14.8	9.6	12.2
Public tap/stand pipe	13.1	14.8	13.4	18.1	14.4	17.1
Exclusive access to improved source of drinking water located in the premises andwater sufficiently available throughout the year						
Exclusive access to improved source of drinking water locatedin premises sufficiently available throughoutthe year	43.5	46.2	44.7	42.0	50.5	45.0
Improved source of drinking waterwithin 30 minutes for a round trip collection time	94.3	95.8	94.8	89.5	94.3	90.4

Source: NSS Report No. 584, 2019, National Statistical Office, MoSPI

8.2.1: Rural drinking water

Table 8.2: FHTC rural coverage in select Indian states (as of 2021-22)

State	Total Rural household as on (01/04/2021)	Total Household connections reported	% of total household connections with PWS reported till (31/03/2022)
Goa	263013	263013	100.00
Haryana	3096792	3096792	100.00
Puducherry	114908	114908	100.00
Telangana	5406070	5406070	100.00
Punjab	3440065	3427318	99.63
Karnataka	9791513	4720222	48.21
Tamil Nadu	12689045	5299034	41.76
Rajasthan	10568805	2524103	23.88
West Bengal	17722587	3807659	21.48
Chhattisgarh	4859443	1011583	20.82
Jharkhand	5923320	1160370	19.59
Uttar Pradesh	26427705	3556386	13.46
India	**193199823**	**93723195**	**48.51**

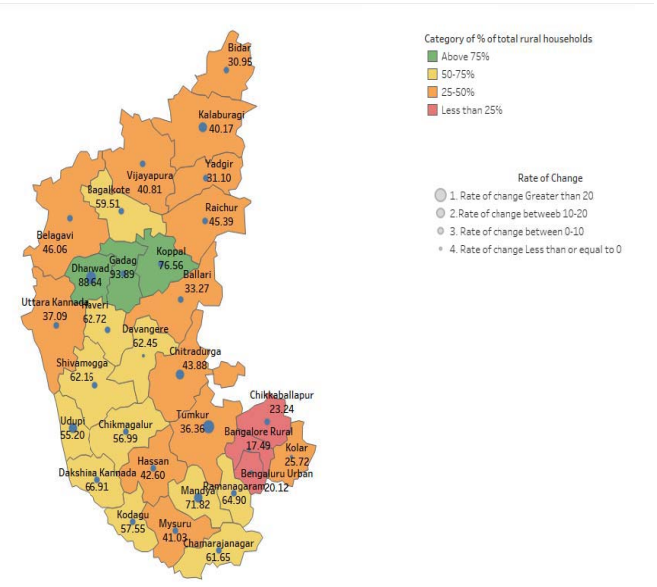
Source: Jal Jeevan Mission

The Strategic Plan 2011-2022 of the Ministry of Drinking water and Sanitation has defined a goal that 'By 2022, every rural person in the country will have access to 70 lpcd within their household premises or at a horizontal or vertical distance of not more than 50 meters from their household without barriers of social or financial discrimination'. The strategic plan also seeks to ensure that, by 2022, atleast 90% of rural households are provided with piped water supply; at least 80% of rural households have piped water supply with a household connection; less than 10% use public taps and less than 10% use hand pumps or other safe and adequate private water sources. In August 2019, the Jal Jeevan Mission (JJM) was launched with the goal of providing functional household tap connection (FHTC) to every rural household with service level at the rate of 55 litres per capita per day (lpcd).As of April 2022, despite the provision of more than six crore FHTCs since 2018-19, 48.51% of India's

rural households (19.31 crores) had piped water supply with a household connection. This implies that more than nine crore connections have to be provided (**Table 8.2)**
within the next two years so as to achieve the JJM target. Further, FHTC achievements vary across states with some states (e.g. Goa, Telangana) achieving 100% coverage while a few large states such as Uttar Pradesh, Jharkhand and Chattisgarh have provided FHTC to less than 25% of their rural households

As of April 2022, about 49% of Karnataka's rural households had FHTC with about 2.3 million connections being provided in Karnataka since 2019 under the JJM. Since the year 2020, Karnataka has been implementing the '*Mane Manege Gange*' (Ganga to every household) programme to provide safe and pure drinking water through FHTCs by ensuring access to sustainable water sources and supplying atleast 55 lpcd. However, as in the national context, gaps exist in the creation of tap water infrastructure across Karnataka's districts (**Table 8.2 and Fig.8. 1**).93.89% of rural households in Gadag district had FHTC in contrast to 17.49% of rural households in Bengaluru rural district having this facility. Bengaluru (urban & rural), Kolar and Chikkaballapur districts, which are classified as the Eastern dry zone, have the lowest levels of FHTC coverage with this level of achievement being attributed to the lack of sustainable water sources to meet demand. The relatively new districts of Gadag, Koppal, Ramanagaram and Haveri have FHTC coverage which is significantly higher than the state average as well as the national average.However, Karnataka's aspirational districts of Yadgir and Raichur have FHTC coverage at levels lower than the state and national averages.

Fig. 8.1 FHTC coverage in Karnataka's select districts (as of 2021-22)



At the taluk (block) level, the proportion of households with piped water connections varies with more than 95% of households of Naragund, Mundargi and Kanakagiri taluks having PWCs as compared to less than 10% of households of Nelamangala, Yelandur, Shidlaghatta and Sandur taluks having this facility.

To meet the JJM target by 2024, Karnataka would have to install more than five million connections during the period 2022 to 2024 implying that an average of about 7000 connections per day would have to be provided. The trends in provision of new installations during the last two years (2020-21 to 2021-22) shown that the provision of new connections during the last two financial years has significantly increased in the State (**Table 8.3**). On an average, a 518% increase in the rate of new installations has been recorded in Karnataka in 2021-22 as compared to 2020-21 with the highest acceleration being recorded in Tumkur and Dharwad districts. However, the rate of provision of new FHTCs in Bengaluru (rural and urban) district and Kolar district has been abysmally low during both the financial years.Gadag district has reported a very high level of achievement with more than 78% of the district's rural households obtaining FHTCs during the last two years. Considering the current levels of FHTC coverage and the rate of acceleration in 2021-22, it is seen that rate of new FHTC installations has to further increase during 2022 to 2024 especially in Belagavi, Raichur, Yadgir, Chitradurga, Mysuru, Tumkur, Ballari, Bidar and the fourEastern dry zone districts, so as to enable Karnataka to meet its JJM targets.

Table 8.3: Trend in provision of new connections (2020-21 to 2021-22)

District	2020-21			2021-22			Change in rate in provision of new FHTCs
	New Installations	% of households provided new connections	Cumulative coverage	New Installations	% of households provided new connections	Cumulative coverage	
Gadag	31162	16.66	33.33	120718	61.91	93.89	3.72
Dharwad	3093	1.73	46.48	82215	44.04	88.64	25.51
Koppal	16126	6.24	45.16	101524	35.60	76.56	5.71
Mandya	6104	1.58	57.41	64048	16.05	71.82	10.19
Dakshina Kannada	37464	12.92	52.74	67440	20.48	66.91	1.58
Bidar	3950	1.52	20.39	40457	13.39	30.95	8.82
Kolar	20	0.01	27.71	0	0.00	25.72	0.00
Chikkaballapur	905	0.40	20.74	7875	3.34	23.24	8.35
Bengaluru Urban	0	0.00	20.51	0	0.00	20.12	n.a.
Bangalore Rural	1557	0.88	19.28	123	0.06	17.49	0.07
State	342320	3.75	**30.88**	1904477	19.45	**48.21**	5.18

Source: Analysis based on JJM data

Along with access, quality of drinking water bears a significant influence on human development. Most of the quality affected habitations in Karnataka are in the categories of fluoride, nitrate and iron-affected habitations. 64 of the 234 watersheds in Karnataka also have serious water quality problems with groundwater being polluted with excess concentration of fluoride, arsenic, iron, nitrate and salinity due to both anthropogenic and geogenic factors in parts of the State.

As has been shown by various researchers in diverse contexts, the access to good quality piped water can contribute to better health outcomes. Studies have shown that access to improved sanitation reduces the risk of contracting diarrhoea while access to piped water and sanitation contributes to reduction in child mortality and, the distance and time spent on fetching water from the source is found to affect under-five child health. **Table 8.4** provides details of the PWS coverage in the priority districts and the status of these districts on the measure of 'Prevalence of diarrhoea in the 2 weeks preceding the survey (%)'.It can be seen that the prevalence of diarrhoea in the 2 weeks preceding the survey was higher in the NFHS-5 (as compared to NFHS-4) in most districts wherein the percentage of total household connections with PWS was lower in 2019-20 as compared to 2015-16. This hints at the hypothesis of the inverse relationship between diarrhoea prevalence and PWS connections although a more detailed study by including other causative factors would confirm the same. Such an inverse relationship is seen in seven of the twelve priority districts, and at the state level. However, this inverse relationship is not seen in the districts of Chikkaballapur, Bengaluru Urban and Bengaluru Rural thereby hinting at the role of other factors. But, it may be seen that lower PWS connections broadly correlates with higher prevalence of diarrhoea in children. Such a relationship (upon statistical validation) underlines the need to provide PWS connections on a mission mode at the earliest thereby contributing to some better health outcomes in children.

Table 8.4: Incidence of Diarrhoea in children and Anaemia in children/women, and access to PWS connections in proposed priority districts (2015-16 and 2019-20)

District	% of total household connections with PWS		Prevalence of diarrhoea in the 2 weeks preceding the survey (%)		Children (6-59 months) with anaemia (%)		Women (15-49 years) with anaemia (%)	
	31/03/2016	31/03/2020	NFHS-4 (2015-16)	NFHS-5 (2019-20)	NFHS-4 (2015-16)	NFHS-5 (2019-20)	NFHS-4 (2015-16)	NFHS-5 (2019-20)
Chitradurga	35.71	35.83	2.6	6.2	64.4	61.1	43.7	44.6
Mysuru	39.60	31.58	7.7	3.0	60.1	57.2	45.6	48.0
Tumkur	32.22	31.01	3.7	4.5	53.7	67.6	52.7	49.3
Ballari	58.57	28.67	3.6	5.1	72.3	67.5	49.9	58.1
Kolar	30.38	26.69	3.3	3.6	57.3	57.9	44.9	43.6
Belagavi	27.66	22.97	3.5	4.7	66.6	72.7	41.2	52.9
Bengaluru Urban	41.25	21.21	4.9	3.2	51.7	58.9	39.6	35.5
Bangalore Rural	26.90	19.92	4.2	2.2	48.8	60.8	46.2	44.2
Chikkaballapur	36.96	19.84	4.8	4.3	62.9	59.0	53.9	45.5
Raichur	30.75	19.65	1.5	5.2	70.6	73.6	58.7	60.4
Bidar	50.07	18.94	3.3	9.0	69.1	69.3	44.3	55.9
Yadgir	25.67	12.87	3.8	5.1	74.0	76.0	47.7	57.3
State	**36.96**	**27.00**	**4.3**	**5.6**	**60.8**	**65.5**	**44.8**	**47.8**

Source: JJM, NFHS-4 and 5

Further, the NFHS-5 reports that 65.5% of Karnataka's children in the age group of 6-59 months were anaemic thereby recording an increase from NFHS-4 wherein 60.8% of this age group's children were reported as being anaemic. Also, an increase is seen in the number of women being anaemic during the time periods 2015-16 (44.8%) and 2019-20 (47.8%). The situation appears to be grim in Yadgir, Raichur and Belagavi districts which have a high incidence of anaemic children and women with the proportion of such children and women having increased between NFHS-4 and NFHS-5 coupled with a decline in the proportion of households with tap water connections. It can be seen from **Table 8.4** that, in the proposed 12 priority districts, seven districts each have reported an increase in the proportion of children and women with anaemia. This again hints at a possible relationship between tap water

access and the incidence of anaemia especially considering the primary role of women in water collection.

Towards addressing the issue of water quality, drinking water supply schemes are being designed in rural areas with surface water as the primary source of water. Quality-affected habitations with drinking water that is contaminated with Arsenic, Fluoride, TDS, Nitrate and Iron are being provided safe drinking water after treatment at source of the surface water. Water quality, vis-a-vis drinking water standards (IS-10500:2012), is being measured by the Water Quality Monitoring and Surveillance Programme (WQM&SP), which includes a network of 30 district-level & 47 Taluk level laboratories in rural Karnataka. Field water testing kits have been distributed to all Gram Panchayats. Water Purification plants are being installed in rural habitations, and multi village water supply schemes (MVS) are also being implemented with surface water sources to cover clusters of villages, where water quality and slipped back habitation problems are noticed. As of November 2021, 18436 water purification plants have been commissioned in the State.

8.2.2: Urban Drinking Water

Karnataka is one of the rapidly urbanizing states in the country, with an estimated urban population of about 29.6million in 2019 residing in 274 urban centres. The urban conglomeration of Bangalore (Bruhat Bengaluru MahanagaraPalike (BBMP) region) has a population of about 11 million spread across an area of more than 800 square kms. Bengaluru, at an average altitude of 910 msl, does not have a perennial surfacewater source to meet the drinking water requirements of its citizens, and therefore, most of the city's water requirement is met by transporting water across a distance of about 100 kms from the River Cauvery.

It is estimated that, as of April 2018, 88.23% of Karnataka's urban households had access to piped water supply. Karnataka's Urban Drinking Water and Sanitation Policy, 2003, envisages the provision of piped water supply and sanitation services by Government in partnership with Urban Local Bodies (ULBs), the Karnataka Urban Water Supply and Drainage Board (Board) and Bangalore Water Supply and Sewerage Board. As of 2018, 237 urban local bodies (ULBs) in Karnataka were supplying drinking water from surface sources as compared to 133 ULBs in 1998 and 194 ULBs in 2014. However, as against the policy to provide atleast 135 LPCD in urban areas, most ULBs continue to provide only partial services due to the primary reasons of lack of adequate water sources and distribution

infrastructure. In the BBMP region which has about a sixth of the state's population and about 40% of its urban population, the present level of supply is about 110 lpcd while in other city corporations, in 2018, the per capita supply of water variede.g.,155 lpcd in Shivamogga to 55 lpcd in Kolar. The Urban Water Supply sector is heavily subsidized with the degree of subsidization varying across ULBs. Most ULBs in Karnataka have inadequate revenues to meet the entire O&M cost of water supply schemes, thereby resulting in dependence on Government grants/loans.

8.2.3: Source Sustainability

The total water availability of Karnataka is about 3,400 TMC which approximates to 1,500 cubic metres per person per year for all water uses including food production. As per the Falkenmark indicator, Karnataka is classified as experiencing "Water Stress". However, the utilization potential of the State's entire water resources is limited due to unfavourable distribution of water resources and technological, environmental and cost constraints for inter-basin river transfers. Thereby, The per capita availability of usable water is lower than 1,000 cubic metres per person per year, resulting in the State being classified as a region experiencing "Water Scarcity" (as per the Falkenmark indicator).

Provision of adequate good quality tap water to all households would be feasible if ample water resources are available in the vicinity of the consumption points. This calls for the conservation of water sources that are, *ipso facto*, not available equitably across all geographies. Water scarcity correlates the relationship between demand for water and its availability. A physical scarcity exists when demand for water outstrips supply, and this occurs when water resources are over-exploited. However, a socio-economic water scarcity exists when insufficient investment, skills or political leads to failure to meet growing demands for water, preventing access to the resource. Both forms of scarcity are derived from poor governance of water resources rather than absolute availability.

A crucial issue in supporting human development through the provision of drinking water infrastructure relates to the source security of water resources. The importance of secure water resources is evident in the eastern dry zone wherein the installation of FHTCs has been impeded due to lack of sustainable water resources. Karnataka has been making efforts to ensure adequate coverage by supplying drinking water through 1. Borewells fitted with Hand pump 2. Mini Water Supply Scheme 3. Piped Water Supply Scheme and 4. Multi Village Water Supply Scheme. Additional rural water supply schemes in drought prone districts of

Bagalkot, Ballari, Vijayapura, Davangere, Raichur and Koppal are being implemented under the centrally-sponsored Desert Development Programme (DDP) since 1997-98. Karnataka, which accounts for about 6% of the country's surface water resources, has seven river systems which have drainage areas with varied rainfall and agro-climatic conditions. Economic utilization of water from the West Flowing Rivers is constrained as they flow in the ecologically sensitive Western Ghats region. However, as part of the ongoing Yethinahole Project, attempts are being made to divert water from the West-flowing Rivers to water-starved regions in the plains and to benefit Chikkaballapur and Kolar districts in the Eastern dry zone. The state has already reached the stage where it cannot further enhance the utilization of water through construction of storage facilities (Multipurpose Irrigation Dams) by tapping surface water of the rivers due to potential and existing inter-state water disputes.

The groundwater situation in Karnataka is also stressed. As per the Dynamic Groundwater Resources of Karnataka 2020 (minor irrigation and groundwater development department, Govt of Karnataka and Central Ground Water Board), of the 234 assessment watershed units, 36 watersheds are semi-critical, 13 watersheds are critical and 61 watersheds are over-exploited. The assessment also shows that, of the 227 assessment taluks, 130 taluks are safe, 35 taluks are semi critical, 10 taluks are critical, and 52 taluks are overexploited. Since 2017, the groundwater situation in the taluks of Afzalpur (Kalburgi dist.), Sira (Tumkur dist.) and Chamarajanagar (Chamarajanagar dist.) has shown a deterioration. **Table 8.5** indicates the groundwater situation in the priority districts wherein the FHTC installations are to be accelerated. It can be seen that the situation in the eastern dry zone and Chitradurga district appears quite grim due to the high levels of groundwater extraction and the over-exploited groundwater situation in a few or most taluks in some districts.

Table 8.5: Groundwater situation in proposed JJM priority districts

District	Stage of Ground Water Extraction (%)		% of critical/ semi-critical/ over-exploited blocks	
	2017	2020	2017	2020
Kolar	211	200	100	100
Chikkaballapur	164	145	100	100
Bengaluru Urban	144	139	100	100
Bangalore Rural	123	137	100	100
Chitradurga	115	108	83	83

Tumkur	91	90	70	70
Belagavi	76	74	60	64
Ballari	54	60	43	36
Bidar	42	51	20	25
Raichur	44	48	40	28
Mysuru	51	46	14	12
Yadgir	34	37	33	33

Source: Dynamic Groundwater Resources of Karnataka 2020 and 2017

Box 8.1 : Karnataka'sAtmanirbhar water sector: Whither lakes and tanks?

Karnataka is home to about 40000 lakes and tanks which are spread over 685000 hectares of command area with about 90% of these water bodies being managed by Zilla Panchayats to provide water for irrigation. The highest number of lakes is in Hassan (5599), Kolar (4263) and Shivamogga (4890) districts. However, Belagavi district has the highest acreage under net irrigation by wells and tanks, followed by Vijayapur and Bagalkot districts. Water bodies have been playing a critical role in the hydrological cycle with significant ecosystem impacts including recharging of groundwater. However, in recent years, these tanks and lakes are increasingly threatened by pollution and encroachment which have been exacerbated by rising rates of urbanization.

Governmental efforts to protect and rejuvenate water bodies are led by the Karnataka Tank Conservation and Development Authority which has been functioning since November 2017. While this authority has been implementing the "Kere Sanjeevini" programme which has the objective of rejuvenating the lakes and cleaning their feeder channels. Also, as part of Jalamrutha programme, various projects are being implemented for rejuvenation of traditional water bodies and lakes.

Despite constant efforts by governments and non-government bodies, it is observed that encroachment of flood plain areas/Kharab lands and blocking of the natural drains reaching the destination lakes has led to the decline of the water bodies (Economic Survey of Karnataka, 2021-22). For instance, Bengaluru, which had more than 700 water bodies and was called as the City of Lakes, has lost about three-fourths of its lakesA CAG report of 2015 notes that removal of encroachments from lake areas was only partial, and that most lakes continued to remain polluted with the efforts to reduce sewage entry into lakes being inadequate.

In this grim scenario, tales of optimism seep through and keep hopes alive. The successful experience of Vijayapura's rejuvenation and filling of hundreds of tanks/lakes and their filling with river water to successfully meet the drinking water needs of people and livestock in the villages surrounding these tanks, and the recharging of groundwater can guide replication efforts in districts which have potential for development of river water-based sources. Similarly, the rejuvenation of Nidaseshi and Ginigera lakes in Koppal district, and the rejuvenation of water bodies in Bidar have lessons to share. Such initiatives remind us that it is high time for renewed efforts to conserve and rejuvenate Karnataka's tanks and lakes in our quest for source sustainability.

The conservation and management of water sources is being enabled by the State's *Jalamrutha* programme that is a community-based water conservation programme with components of rejuvenation of existing water bodies and creation of new ones, water literacy, smart water usage and afforestation. As part of the *Jalamrutha* programme, rejuvenation of 14000 traditional water bodies, 37000 lakes, 12000 multi-arched check Dams and about 20000 water conservation works under NRMS (Natural Resource Management Systems) have been taken up. Further, with the objective of providing safe and sustainable pure drinking water to the State's rural households, by drawing water from rivers or reservoirs, after purification, the Government of Karnataka launched the *Jaladhare* project in 2018-19.

Considering the current levels of water connections and the population growth rate, Bengaluru (urban) and Bengaluru (rural) are expected to pose challenges to water supply agencies due to the lack of sustainable major water sources and the growing demand. Bangalore's gross water demand, which was 1,556 MLD in 2010, is expected to rise to 3986 MLD by 2030, with the metropolis likely to account for about two-third of the State's urban water demand by 2030. While Bangalore's water supply increased from 900 MLD to 1400 MLD with the completion of Cauvery Stage 4, Phase 2, Bangalore Water Supply and Sewerage Board (BWSSB) has been supplying 1453 MLD of water to Bengaluru city as compared to 1383 MLD in 2018 and 1350 MLD in 2017. BWSSB hopes to increase its current supply of 1453 MLD of water to 3550 MLD by the implementation of Stage 5 of the Cauvery Water Supply Scheme (2023) along with drawing water from the reservoir proposed at Mekedatu to supply water to 110 villages too in the greater Bangalore area. With greater Bangalore having limited raw water resources to meet the water demands of its ever-growing population, the city is almost completely dependent on the Cauvery River, located more than 100 km away from the city for its water requirements with water being pumped by incurring high energy costs. Bangalore has an average precipitation of about 900 mm and about 60 rainy days in a year spread over five months. Researchers and sustainability experts note that the normal annual rainfall over Greater Bangalore, estimated at 1,800 MLD, if harvested, could replace most of the present river water supply.

The Bangalore Sanitation Plan notes that the BBMP region currently generates about 1440 MLD of sewage and has a sewage treatment capacity of 1057 MLD. STPs of capacity of 523 MLD are under construction and 225 MLD of capacity would be established before the completion of the Cauvery Water Supply Scheme Stage V (2023). Considering sewage

generation of about 1800 MLD by 2022 (BWSSB estimates), Bangalore, by then, is expected to possess adequate capacity to treat all its sewage.

8.3: Sanitation

The Sanitation scenario in India has seen a significant change since the launch of the Swachh Bharat Mission (SBM) in October 2014. This programme has accelerated India's transition towards becoming an Open Defecation Free (ODF) country by bringing government, NGOs, and corporates together to work for a cleaner India. SBM, which drew upon the erstwhile policy framework on sanitation in India (the rural sanitation-oriented Nirmal Bharat Abhiyan), has been successful in mainstreaming the issue of sanitation by overcoming various infrastructural constraints and socio-religious barriers which have persisted since centuries. In turn, the Nirmal Bharat Abhiyan, which was launched in 2012, was adapted from the national Total Sanitation Campaign which was kick started in 1999 as the world's largest sanitation intervention. However, in 2017, the SDG Joint Monitoring Programme estimated that 520 million people in India continued to defecate in the open every day.

The NSO's 76th Round report titled 'Drinking Water, Sanitation, Hygiene and Housing Condition' notes that, in 2017-18, 30.1% of Karnataka's rural households did not have a latrine (**Table 8.6**) as compared to 4.3% of the State's urban households which lacked this facility. Thereby, Karnataka fared poorly than the national average of 28.7% rural households and 3.8% urban households that did not have a latrine. However, on the whole (rural + urban), 18.5% of Karnataka's households did not have a latrine as compared to 20.2% at the national level. Regarding the issue of use of the available latrines, Karnataka fares better as compared to the national average.

Table 8.6: Conditions regarding Sanitation in Karnataka's households (vis-à-vis India) (2017-18)

(% of households)

	Karnataka			India		
	Rural	**Urban**	**All**	**Rural**	**Urban**	**All**
Access to latrine						
Exclusive use of household	67.9	87.5	76.7	63.2	77.6	68.1
No latrine	30.1	4.3	18.5	28.7	3.8	20.2
Use of latrine by persons in households having latrine						
Males						
Regularly	96.8	98.6	97.7	94.7	98.0	96.0
Never	0.5	1.3	2.0	3.6	1.8	2.9
Females						
Regularly	96.3	98.4	97.3	95.7	98.1	96.6
Never	3.3	1.5	2.4	3.4	1.7	2.8

Source: NSS 76th Round report No. 584

The NFHS 4 and 5 report a good improvement in the proportion of population that uses an improved, unshared sanitation facility (**Table 8.7 & Fig 8.2**). The NFHS 5 (2019-20) notes that 75.1% of the population living in Karnataka's households used an improved, unshared sanitation facility as compared to 68.6% reported in the NFHS 4 (2015-16). 97.1% of Dakshina Kannada's population living in households used an improved, unshared sanitation facility as compared to 36.5% of Kalburgi's population.

Table 8.7: Population living in households that use an improved, unshared sanitation facility (%)

District	NFHS-4 (2015-16)	NFHS-5 (2019-20)	Growth (%)
Dakshina Kannada	93.0	97.1	4.41
Udupi	89.8	94.5	5.23
Kodagu	85.2	93.9	10.21
Chikkamagaluru	63.0	92.3	46.51
Bengaluru (Urban)	88.4	90.4	2.26
Karnataka	**68.6**	**75.1**	**9.48**
Raichur	27.6	53.0	92.03
Bagalkot	23.0	51.3	123.04
Vijayapura	22.6	44.8	98.23
Yadgir	18.9	37.4	97.88
Kalburgi	30.2	36.5	20.86

Source: NFHS-4 and NFHS-5

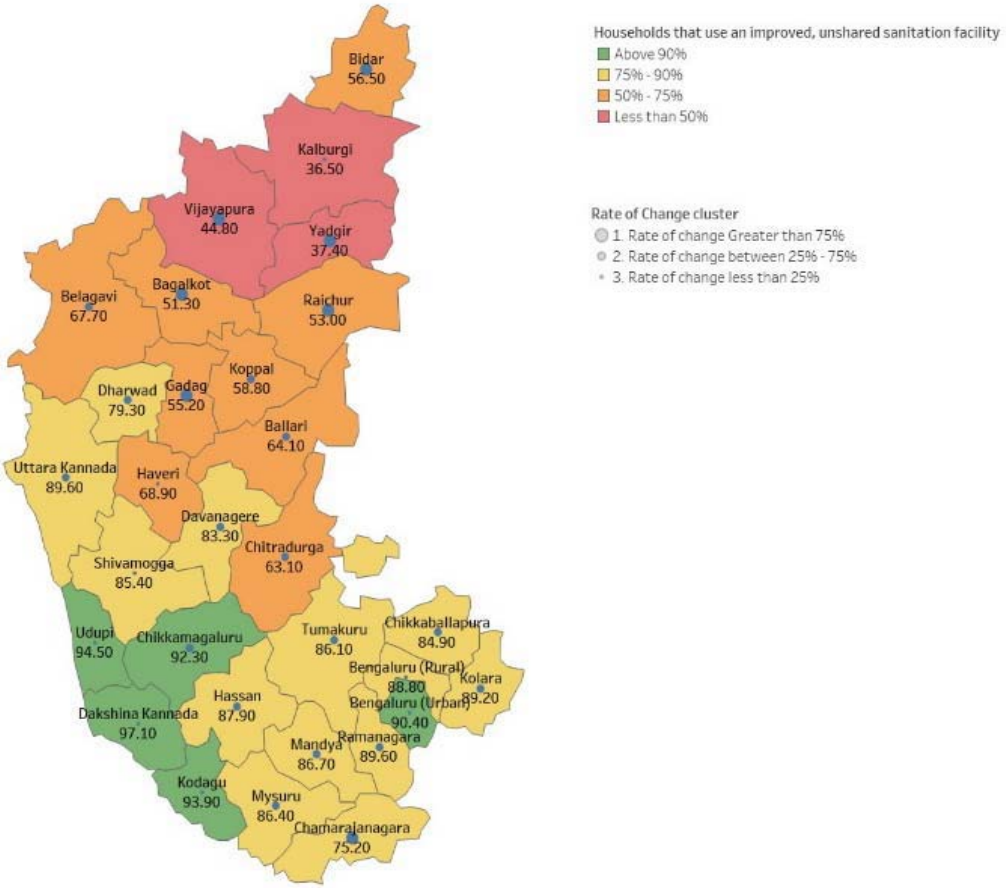
8.3.1: Rural Sanitation

The Government of Karnataka, in November 2019, declared that rural areas in the state were Open Defecation Free (ODF), and Karnataka was also declared as the 26th ODF state in India. The State has recorded a rapid transition from the 2011 census' findings which reported that 45 percent of Karnataka's populace practiced Open Defecation (O.D) with 68.1% people in the rural areas defecating in the open as compared to 10.7% in urban areas.

Despite the infrastructural improvements achieved in the State's sanitation sector during the last years, most urban areas and villages of Karnataka do not have underground sewerage systems and sewage treatment services for disposal of the wastewater. While black water is largely being disposed through septic tanks and soak pits, grey water is being directly discharged into sludge drains without any treatment, resulting in downstream pollution of

water bodies. Discharge of untreated sewage is the primary cause for pollution of surface and groundwater since there is a large gap between generation and treatment of domestic wastewater in Karnataka.

Fig. 8.2: Karnataka's population living in households that use an improved, unshared sanitation facility (%)



The Karnataka State Rural Sanitation Policy (2020, RDPR) recognizes the importance of providing integrated sanitation services including construction and management of toilets, septage management, and connectivity to underground drainage system, waste water, and solid waste management. The policy notes that having achieved ODF status, Karnataka proposes to move towards ODF plus activities where the focus is on total sanitation with inclusion of safe disposal of faecal sludge, personal hygiene practices, treatment of wastewater and scientific solid waste management.

As defined by the Department of Drinking Water and Sanitation (2020), an ODF plus village is "A village which sustains its Open Defecation Free (ODF) status, ensures solid and liquid waste management (SLWM) and is visually clean". Further, in September 2021, three sub-categories of villages were identified –ODF Plus Aspiring: ODF Plus Rising: (ODF Plus Model:

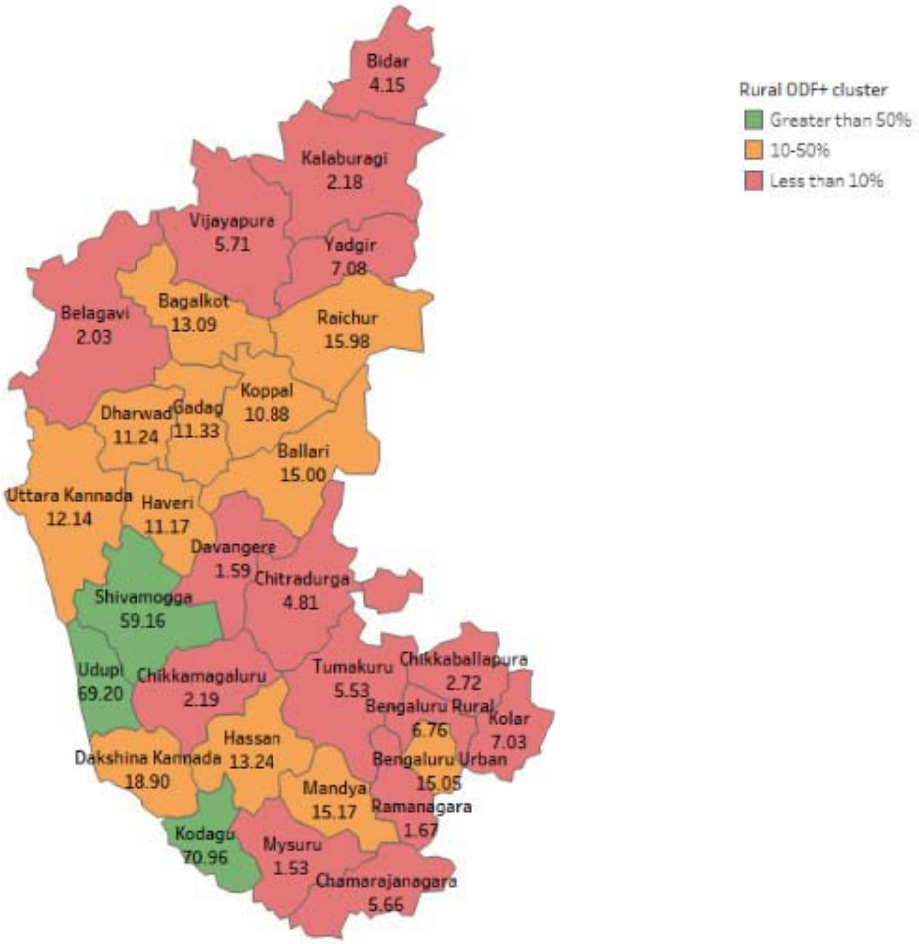
As of April 2022, of the 601526 declared ODF villages, 36864 villages were at the stage of ODF Plus Aspiring as compared to 10066 and 17897 ODF+ Rising and ODF+ Model respectively. Karnataka, with 2905 (10.74% of total villages), 36 and 59 ODF+ Aspiring, Rising and Model villages respectively, stands at the fifth place in the country among achievements with respect to Aspiring villages, with Tamilnadu topping the list at 92.12% ODF Plus Aspiring villages. The details of Aspiring, Rising and Model villages (as of end-April 2022) are provided in **Table 8.8 and Fig. 8.3**.

Table 8.8: ODF+ Villages in Karnataka (as of end-April 2022)

District	No. of ODF villages	ODF+ Aspiring	ODF+ Rising	ODF+ Model	Total No. of ODF+ Aspiring / Rising/ Model villages	% of ODF+ Aspiring / Rising/ Model villages
Kodagu	303	209	0	6	215	70.96
Udupi	250	167	0	6	173	69.20
Shivamogga	1452	777	36	46	859	59.16
Dakshina Kannada	365	69	0	0	69	18.90
Raichur	970	155	0	0	155	15.98
Kalaburagi	824	18	0	0	18	2.18
Belagavi	1183	24	0	0	24	2.03
Ramanagara	719	12	0	0	12	1.67
Davangere	693	11	0	0	11	1.59
Mysuru	1176	18	0	0	18	1.53
Total	**27044**	**3141**	**36**	**60**	**3237**	**11.97**

Source: ODF Dashboard, DDWS, and RDW&SD

Fig. 8.3: ODF+ Villages in Karnataka (as of end-April 2022)



While acknowledging that the ODF+ categorization has been operational for less than a year now, it can be seen from Table 8.9 that 11.97% of the State's ODF villages have attained ODF+ status with 70.96% and 1.53% of Kodagu and Mysuru districts respectively being ODF+. However, it may be seen that most (85%) of the ODF+ Rising and Model villages are reported from Shivamogga district. Treating this as an outlier, about two-thirds (63%) of the State's districts are below the State ODF+ average (11.97%) while 17 districts (57%) of the State are below the national average of 10.78% ODF+ districts.Based on the definition of categories of ODF+ villages, a mere 11.97% of the State's villages have functional toilets for households, Schools/ Anganwadi Centres/ Panchayat Ghar and arrangements for Solid Waste Management OR Liquid Waste Management. Efforts in Kalburgi district achievements in the area of sanitation need to be revamped considering the low access to improved, unshared sanitation facility along with the low level (2.18%) of ODF+ villages.

8.3.2: Urban Sanitation

Sanitation services in Urban Karnataka are being provided by multiple organizations that carry out complementary activities for infrastructure creation and maintenance. BWSSB and Karnataka Urban Water Supply and Drainage Board (KUWSDB) provide centralized services for the Bangalore Metropolitan Region and other urban areas of the State respectively. The Urban Development Department of the State Government is the managing Government Department for KUIDFC, KUWSDB, and the ULBs. KUWSDB designs and implements water supply and underground drainage schemes in 314 ULBs of the state and transfers them to respective ULBs. Out of 314 ULBs under the jurisdiction of the Board, UGD facilities have been provided in 78 urban areas. UGD projects in 65 ULBs are underway, and the Board has implemented assured safe drinking Water Supply Scheme to 238 urban areas from surface source and, as of April 2022, 76 urban areas are dependent on sub-surface water sources.

Bangalore generates over 1400 Million Litres Per Day (MLD) of wastewater which is treated in sewage treatment plants that have the capacity to treat 1,523 MLD of sewage. BWSSB has also commenced the treatment of 114 MLD wastewater from 110 villages under the Cauvery Stage 5 project in a decentralized manner by installing 14 sewage treatment plants. By end-2023, BWSSB's sewage treatment capacity is expected to rise to 1713 MLD. It is estimated that Karnataka generates 4,458 MLD of sewage while the State has 140 sewage treatment plants (STP) with an installed treatment capacity of 2,712 MLD.

The Ministry of Ministry of Housing and Urban Affairs (MoHUA) has, in 2020, developed protocols for urban regions/cities to obtain ODF+, ODF++ and Water+ status. As part of these protocols,

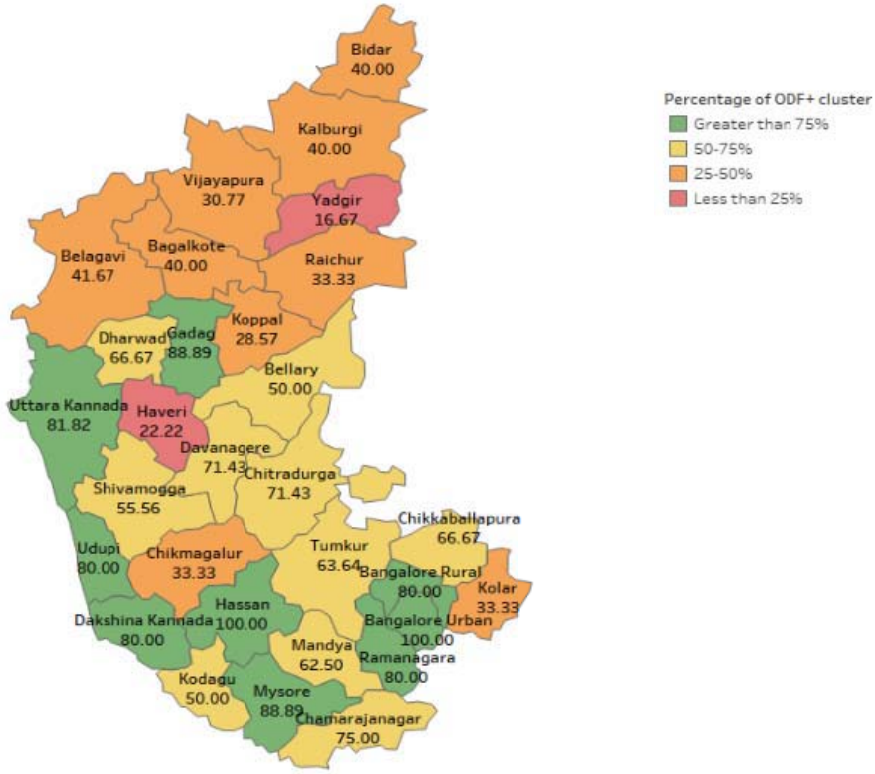
The status of Karnataka's urban bodies as per this classification, as of April 2022, is provided in **Table 8.9 and Fig. 8.4.** It can be seen that about 56% of the State's urban areas are classified as ODF+ with all cities of Bangalore Urban and Hassan districts conforming to the said protocol. Less than 1% of Karnataka's cities are ODF++ while none of the State's cities are categorised as Water plus (which focuses on wastewater management). The State's achievement can be compared with that at the national level wherein 76%, 22% and 0.2% of the cities are categorised as ODF+, ODF++ and Water+ respectively. It is evident that Karnataka has to take additional steps to manage its faecal sludge / septage and sewage, as well as wastewater so as to provide a comprehensive set of sanitation services to its citizens.

Table 8.9: Status of select urban areas as ODF/ODF+/ODF++ (April 2022)

District	ODF Certified	ODF+	ODF++	Water+	% of ODF+
Bangalore Urban	6	6	1	0	100.00
Hassan	8	8	0	0	100.00
Gadag	9	8	0	0	88.89
Mysore	9	8	1	0	88.89
Vijayapura	13	4	0	0	30.77
Koppal	7	2	0	0	28.57
Haveri	9	2	0	0	22.22
Yadgir	6	1	0	0	16.67
Karnataka	**272**	**151**	**2**	**0**	**55.51**
All India	**4316**	**3306**	**960**	**9**	**76.60**

Source: ODF Database, Ministry of Housing and Urban Affairs, Govt of India

Fig. 8.4: Status of Karnataka's urban areas as ODF/ODF+/ODF++ (April 2022)



With about 11% of Karnataka's villages being ODF+ (refer Section 8.3.1) and about 56% of Karnataka's cities/towns being ODF+, it can be inferred that about 70% of Karnataka's population resides in villages/cities/towns where improvements are required in the areas of functional toilets in Schools/ Anganwadi Centres/ Panchayat Ghar, solid/liquid waste management, faecal sludge / septage and sewage, and wastewater management. This situation is particularly stressed in the districts of Yadgir, Haveri, Koppal, Vijayapura, Raichur and Kalburagi wherein it is estimated that less than 15-20% of the population resides in ODF+ villages and cities/towns.To summarise the State's situation in the area of sanitation, it is crucial that Karnataka develop a set of synchronized interventions to address the crucial issues as identified above. These interventions are essential to accelerate equitable human development as developmental interventions in diverse contexts have proven that access to water and sanitation infrastructure has a strong impact on human health and individual/household welfare.

Box 8.2: Treated wastewater for Kolar and Chikkaballapur's barren lakes

In November 2021, it is estimated that Urban Karnataka released 3356.5 MLD of sewage of which about two-thirds was treated in 146 Sewage treatment plants and two Faecal sludge and septage management plants. With 62 STPs of capacity 569.04 MLD under construction in the state, about 1587 MLD of sewage was being released without treatment.

The Koramangala-Challaghatta Valley (KC Valley) project launched in 2019 envisages to fill 126 lakes in Kolar and Chikkaballapur with treated water from Bengaluru. This experience has encouraged the Govt. of Karnataka to launch similar interventions to fill 65 lakes in Bengaluru Urban, Bengaluru Rural and Chikkaballapur by releasing treated water from the Hebbal-Nagawara Valley (HN Valley), and to fill 82 lakes in Tumakuru, Bengaluru Urban and Bengaluru Rural districts by releasing treated water from the Vrushabhavathi Valley project. The KC Valley project was inspired by the successful experience (2010) of Jakkur lake (Bengaluru) which was rejuvenated by letting treated water into the lake to achieve groundwater recharge and enable agricultural activities etc. After a staying of the project in early 2019 by the Supreme Court and lifting of the stay (April 2019), treated water has been flowing to Kolar's tanks with the project being upscaled in June-2019.

8.4: Housing

The 'Drinking Water, Sanitation, Hygiene and Housing Condition' report of NSO, based on the 76th Round survey (2017-18),notes that 57.5% of Karnataka's households lived in houses which had a good structure, while the condition of 7.1% of houses was bad (**Table 8.10**). Karnataka fares better on this measure as compared to the national averages of 42.7% and 12.2% of house structure being good and bad respectively. Also, 86.2% of the State's dwelling units were Pucca constructions as compared to 83.3% at the national level. 2% of Karnataka's houses (estimated at about 3 lakh houses) were reported as Katcha structures with the percentage of urban Pucca houses being marginally lower in Karnataka as compared to the national average. The report also notes that about three-fifths of rural Karnataka's houses with a separate kitchen did not possess a water tap in the kitchen. On the whole, 44.9% of Karnataka's houses which had a separate kitchen did not have a water tap in the kitchen as compared to the national average of 35.2%. However, Karnataka fares significantly better on the measure of the percentage of houses having electricity for domestic use with 98.9% of the State's households having this facility (as compared to 95.7% in the country).

Table 8.10: Housing infrastructure of Karnataka's households (vis-à-vis India) (2017-18)

(% of households)

	Karnataka			**India**		
	Rural	**Urban**	**All**	**Rural**	**Urban**	**All**
Condition of structure						
Good	46.7	70.7	57.5	34.7	58.2	42.7
Bad	7.1	2.6	5.0	14.9	6.9	12.2
Type of structure of dwelling unit						
Pucca	79.2	94.9	86.2	76.7	96.0	83.3
Katcha	3.2	0.5	2.0	5.9	0.8	4.2
Of which, unserviceable Kutcha	0.2	0.0	0.1	1.4	0.2	1.0
Separate kitchen and basic amenities						
Separate kitchen without water tap	60.4	25.8	44.9	41.9	22.4	35.2
Having electricity for domestic use	98.4	99.6	98.9	93.9	99.1	95.7

Source: NSO Report No. 584, 76th Round

8.4.1: Rural housing

In Karnataka, rural housing is primarily being provided under the Basava Vasathi Yojane (BVY), Pradhan Mantri AwasYojane (G) (PMAY-G), Dr. B.R. Ambedkar NivasYojane (AAY), and Devaraj Urs Housing Scheme (DUHS) with these programmes focusing on providing houses and basic amenities to the rural poor. More than 5.3 lakh rural houses have been constructed under these programmes during the last three years (2018-19 to Nov. 2021) with an overall achievement of 75.81% of target (**Table 8.11**). Of the about 5.3 lakh rural houses, the shares of BVY, PMAY-G, AAY and DUHS were about 57%, 17%, 24% and 2% respectively. During this period, the highest level of achievement, at 92.58% of target, has been achieved by the Basava Vasathi Yojane, while the lowest level of achievement, at 56.82% of target has been achieved by the Devaraj Urs housing scheme that seeks to providing houses for disabled, leprosy cured, HIV-affected households, nomadic tribes, sanitation workers, people affected by riots, exploitation, free bonded labourers, widows and transgenders. Across districts, while the highest number of houses (absolute nos.) were installed in Belagavi district, the highest and lowest achievement as a percentage of target was reported from Yadgir district and Bengaluru Urban district respectively.

Although the State has achieved significant progress in providing houses to its rural homeless, trends for the period 2018-19 to 2020-21 indicate a decline in the number of houses completed under rural housing programmes. This trend is evident in the RAY/Basava and PMAY-G programs which have recorded a drastic decline during the said three-year period (**Annexure 8.1, 8.2 & 8.3**)

Table 8.11: Completed Rural Houses (2018-19 to 2020-21)

	2018-19	2019-20	2020-21
RAY/Basava	147125	64197	61651
PMAY-G	56136	14682	11536
AAY	58883	24994	27014
DUHS	6783	2782	2896
Total	**268927**	**106655**	**103097**

Source: Economic Survey of Karnataka, various editions

Despite Karnataka providing a top-up of Rs. 30000 for SC/ST beneficiaries in the PMAY-G, the State has not been able to achieve its targets set under PMAY-G. In 2021, Karnataka also surrendered 1.95 lakh houses from the target for the years 2019-20 and 2020-21. One of the

primary reasons stated for the lower achievements for PMAY-G in Karnataka is the non-availability of adequate numbers of beneficiaries in the permanent waiting list. Further, the delay in completion of houses, non-release of second instalment, non-updation on Awaas platform (non-synchronisation with RGHCL's own platform) etc. have reportedly contributed to the shortfall in achievement vis-à-vis targets.

8.4.2: Urban Housing

Karnataka has recorded high rates of urbanization with Bengaluru emerging as a metropolis that attracts migrants from all over the county. In this context, recognizing the need to provide housing facilities to its urban citizens, the Government of Karnataka has been implementing various urban housing programmes which also focus on the disadvantages sections of society. As in the case of rural housing, urban housing programmes in the State are implemented through the Rajiv Gandhi Housing Corporation Limited. The primary programmes currently in force for urban housing in Karnataka are – Vajpayee Housing Scheme, PMAY – U, Ambedkar Nivasa Yojane and Devaraj Urs Housing Scheme (Urban). The performance of these programmes (excl. PMAY-U) during the period 2018-19 to November 2021 is provided in **Annexure 8.3**. It may be seen that 48820 houses were completed during the said period with an achievement level of 57.44% of target. The highest achievement of these three programs, at 76.55% of target was achieved in Vijayapura district as compared to the lowest achievement of 32.63% in Hassan district. Ambedkar Nivasa Yojane has recorded 85.90% achievement in Vijayapura district.

With regard to PMAY-U, more than 2.71 lakh houses have been completed since the year 2014, with Karnataka recording a physical achievement of 38.70% of target which is lower than the national average of 47.76% (**Annexure 8.3**). Also, the percentage of funds released, at 47.05% is lower than the national average of 58.01%.Under the PMAY-U scheme, Karnataka accounted for 4.80% of houses completed in the country (excl. NE States and UTs) and 4.63% of houses completed in the country (incl. NE States and UTs).

Karnataka's urban slum population grew from 14,02,971 (2.6% of the State's population and 3.3% of India's slum population) to 32,91,434 (5.4% and 5.0%) during the period 2001 to 2011. SDG 11 that focuses on 'Making cities and human settlements inclusive, safe, resilient and sustainable' includes a subgoal (11.1) that seeks to, by 2030, ensure access for all to adequate, safe and affordable housing and basic services, and upgradation of slums. Census, 2011, notes that 4.2% of slum houses were in a dilapidated condition with this proportion

being 5.1% in CMCs and TPs. While the Karnataka Slum Development Board has been making efforts to provide better housing in slums through various approaches based on PPP models, it is evident that issues such as ownership, tenure and amenities need to be better addressed to ensure a better quality of life to slum residents.

Thus, while Karnataka has been able to make progress with respect to providing housing to significant numbers of its urban and rural poor, additional initiatives need to be taken to address the issues relating to affordable housing with private sector involvement, and slum development. The State needs to supplement its necessary approach of providing housing structures to one that focus on addressing 'housing poverty' by assuring the supply of water and electricity, by providing adequate space, and creating conditions for sanitation and hygiene.

8.5: Electricity

India, with an installed power capacity of 395.07 GW (January 2022) is the third-largest producer and second-largest consumer of electricity in the World. India's focus on clean energy is evident with renewable energy sources constituting 38.56% of the overall installed power capacity.The Government of India has been implementing DeenDayal Upadhyay Gram Jyoti Yojana (DDUGJY), Ujwal DISCOM Assurance Yojana (UDAY), and Integrated Power Development Scheme (IPDS) to promote energy consumption, distribution and generation in the country. Also, in October 2017, the Govt. of India launched the Pradhan MantriSahaj Bijli Har Ghar Yojana 'Saubhagya', to provide last mile connectivity and electricity connections to all the unelectrified households in the country and as of March 2021, 2.82 crore households have been electrified under this scheme.

As of November 2021, Karnataka's installed power generation capacity was 31249.85 MW which constitutes about 8% of India's installed capacity. The State generated 44759.34 MUs and recorded a total consumption of 55068.61 MUs in 2020-21. The largest consuming sector in the State, during 2020-21, was the highly subsidized irrigation sector (agriculture) (38.72%) followed by the domestic sector (24.57%). In terms of installed capacity by source, solar was the biggest source at 24.53% followed by Wind (16.64%) and Thermal (16.22%). Karnataka meets over half of its energy requirements through renewable sources and is also the country's highest seller in this category, with this growth in renewable energy reducing the state's dependence on coal-generated power for consumption. Karnataka's achievement in the area of renewable energy can be gauged by considering the fact that the State has

consistently exceeded its Renewable Purchase Obligation (RPO) from both non-solar and solar sources e.g.in 2019-20, Karnataka actual achievement in Solar RPO was 13.83% as compared to the target of 7.25%. The State has also been implementing the Saura Gruha Yojane to support grid connected solar rooftop installations by Individual Residential Consumers and Group Housing Societies/Residential Welfare Scheme (RWA) categories of consumers.

Box 8.3 Shakthi Sthala–Pavagada Solar Park:Abundant green energy with some greys

Shakti Sthala, the 2050 MW solar park, built on 13,000 acres of land across five villages in Pavagada (about 200 kms from Bangalore) with investments from ten developers was commissioned in December 2019. The facility, touted to be one of the largest solar parks in the World, was set up by taking land on lease from farmers at Rs 21,000 per acre for the first five years, with a five per cent increase every two years. This 2 GW park, developed by the Karnataka Solar Park Development Corporation, leverages the high average solar radiation of 5.35 kWh per square metre per day that is incident in the region.The electricity generated by each block of the solar park is transmitted to a 220kV pooling substation through 66kV/ 33kV double circuit underground cables, with the pooling substation being connected to a 400kV/220kV substation at Pavagada. This solar park has contributed to Karnataka emerging as the State having the highest capacity of solar power installations in the country, while also being economically beneficial to the region's farmers who could not derive adequate returns from farming on the land due to recurrent droughts.

NFHS-5 (2019-20) notes that 99.3% of Karnataka's urban population lived in households with electricity as compared to 99.0% of Karnataka's rural population, resulting in a total of 99.1% of Karnataka's population living in households with electricity (**Table 8.12 and Fig. 8.5 & 8.6).** These proportions compare well with the NFHS-4 (2015-16) which reported that a total of 98.3% of Karnataka's population lived in households with electricity (99.0% in urban, 97.0% in rural). Also, the 'Drinking Water, Sanitation, Hygiene and Housing Condition' report of NSO, based on the 76th Round survey (2017-18) reports that 98.4% of households (living in a house) in rural Karnataka had electricity for domestic use as compared to 99.6% in urban areas, and 98.9% of all households (rural + urban) in the state.

Thereby, it can be inferred that Karnataka has been able to provide near-universal access of electricity to its rural and urban households.

Table 8.12: Population Living in Households with Electricity and Households using Clean Fuel for Cooking

(%) (all households)

District	Population living in households with electricity (%)		Households using clean fuel for cooking	
	NFHS-5	NFHS-4	NFHS-5	NFHS-4
Chikkaballapur	99.9	98.0	89.4	47.3
Dakshina Kannada	99.8	98.1	82.0	54.2
Chitradurga	99.8	96.9	80.6	40.2
Raichur	99.7	98.0	64.9	26.7
Koppal	99.2	98.3	47.4	33.6
Yadgir	99.0	98.3	48.8	18.7
Chamarajanagar	98.7	95.2	89.0	36.3
Kodagu	98.7	96.9	78.3	47.9
Gadag	98.6	97.9	56.3	24.8
Mandya	98.4	98.8	90.5	53.8
Vijayapura	97.6	96.7	60.6	29.1
Total	**99.1**	**98.3**	**79.7**	**54.7**

Source: NFHS-4 and NFHS-5

Fig 8.5: Karnataka's Population Living in Households with Electricity

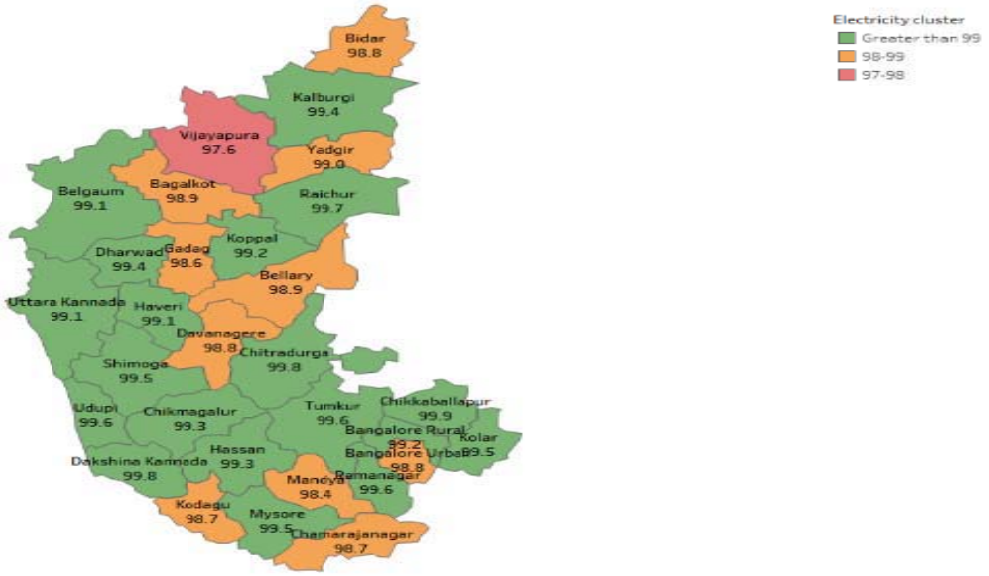
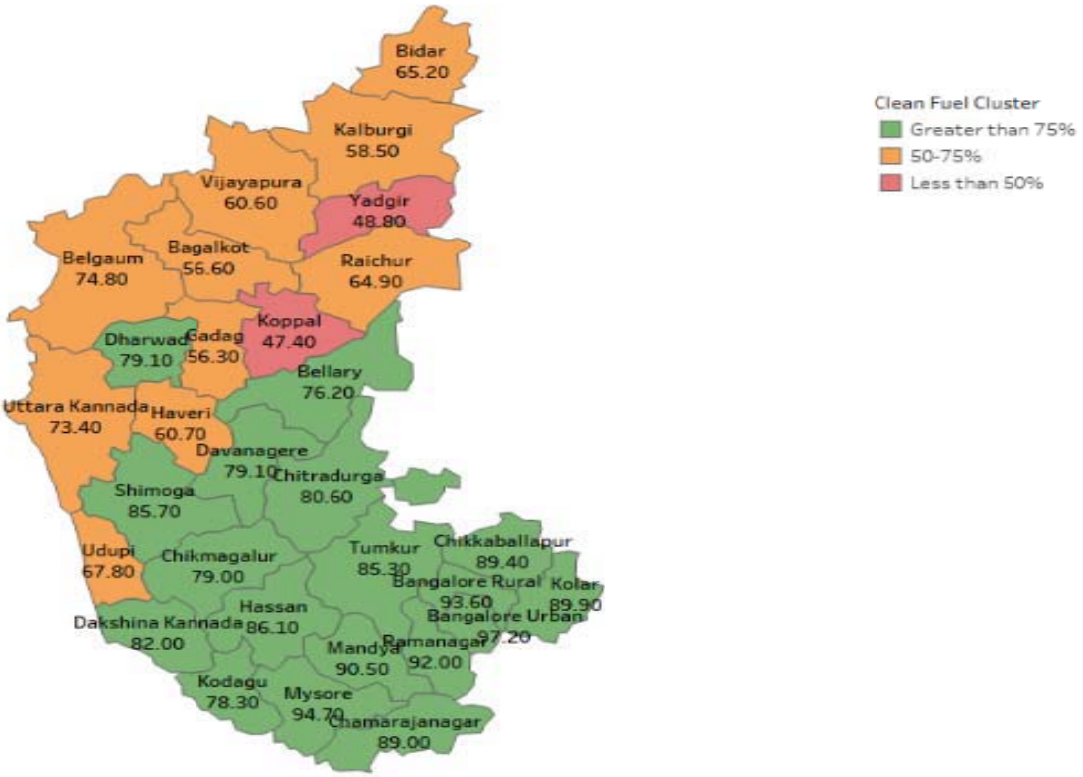


Fig. 8.6: Households using Clean Fuel for Cooking (%)



In contrast to the State's performance on electricity, additional efforts are required in providing the State's households with clean fuel for cooking. NFHS 5 notes that 79.7% of the State's households used clean fuel (Electricity, LPG/natural gas, biogas) for cooking with 94.5% and 69.3% of urban and rural households respectively using these fuels. Although these proportions are a marked improvement than that recorded by the NFHS 4 (54.7% of total households and 83.8% / 32.2% of Urban / Rural), it can be inferred that about two million households of the State did not use clean fuel for cooking in 2019-20. However, it is plausible that since 2019-20, additional households would have obtained LPG connections considering the fact that more than 35 lakh connections have been provided in Karnataka since 2016 under the Pradhan Mantri Ujjwala Yojana with about 3.7 lakh connections being provided under Ujjwala 2.0 which was launched in August 2021. Across districts, in 2019-20 (NFHS 5), Chamarajanagar district has recorded the highest growth in the number of households having electricity while all districts of Karnataka have more than 97% of households with electricity. In contrast, in 2019-20, less than half of Yadgir and Koppal's households used clean fuel for cooking.

Karnataka has performed well with respect to providing access to electricity in both rural and urban contexts, the reliability index of power supply varies across regions

Table 8.13: Reliability indices of Govt-owned DISCOMs in Karnataka (illustrative)

Discom	Circle/area	Urban / Rural	Reliability index* (%)	
			2020-21	2019-20
BESCOM	Tumakuru	Urban	95.62	98.05
	Bangalore South	Urban	99.50	98.95
	Bangalore Rural	Rural	97.67	91.42
MESCOM	Bhadravati	Rural	83.34	n.a.
	Kadaba	Urban	90.18	n.a.
	Thirthahalli	Urban	98.58	n.a.
CESC	Periyapatna	Rural	89.42	85.71
	Arsikere	Rural	90.85	83.08
	Mysuru	Urban	97.88	97.76
GESCOM	Hospet	Rural	98.89	82.18
	Shahabad	Urban	99.94	99.18
HESCOM	Kahanderayanahalli	Urban	95.48	88.08
	Ramdurg	Rural	54.28	51.65
	Haveri	Urban	98.37	99.25

*Consumer affected/interrupted basis n.a. = not available

To conclude, Karnataka has been a leader in the adoption of renewable energy for power generation. The state has also been able to turn around its DISCOMs through the use of technology and administrative innovations(**Table 8.13**). In most cases, reliability indices in rural Karnataka are also above 95% although urban areas have a consistently high reliability index as compared to rural. In the case of cooking fuel, significant opportunities exist to promote the use of clean fuel especially in the Kalyana Karnataka districts.

8.6: Roads

In India, road transport has gained importance over rail transport for the movement of passengers and freight. The total road length in the country increased from 3.99 lakh kms in 1951 to 63.72 lakh kms in 2019, with India currently having the second largest road network in the world. As of 31st March 2018, Maharashtra accounted for the largest share (11.79%) with 6,26,491 km in total road length followed by Uttar Pradesh (8.21%) with 4,25,420 km, Madhya Pradesh (6.85%) with 3,59,022 km, Karnataka (6.67%) with 3,51,034 km and Assam (6.46%) with 3,48,616 km (MoRTH), with these five States accounting for 39.98% of road length in India. Rural roads have the largest share of 71.3% of the country's road network with 65.4% of rural roads being surfaced (2018). In 2018, 60.8% of Karnataka's roads were surfaced as compared to the national average of 70.5%. In 2021, Karnataka had 5.43% (7656 kms) of the country's National Highways (140995 kms) with the State in the 7th position in the country in terms of length of National Highways.

In Karnataka, Public Works Ports & Inland Water Transport Department is responsible for the development and maintenance of National Highways, State Highways and Major District Roads. The state has also established the Karnataka Road Development Corporation Limited (KRDCL) in 1999 and Karnataka Rural Road Development Agency for the development of road infrastructure. Since 1999, Karnataka has implemented the Karnataka State Highways Improvement Project (KSHIP, Phase 1 to 3) and the State Highways Development Programme for improvement of the State's road network From 2013-14, the state has also been implementing the Chief Minister's rural roads development scheme through the Zilla panchayats for maintenance of rural roads.The State has also been implementing the PMGSY and has also launched the Namma Grama NammaRasteYojane in 2020 to provide rural connectivity as per PMGSY guidelines Details of Karnataka's road infrastructure, as of November 2021, are provided in **Table 8.14.**

Table 8.14: Karnataka's road infrastructure(in Kms)

Road category	2020-21	Nov. 2021
National Highways	7652.0	7589.0
State Highways	28985.0	27811.0
Major District Roads	55474.0	56131.0
Municipal Roads & Other Roads	40487.6	43956.5
Rural Roads	198500.8	194438.0
All Roads	**331099.4**	**329925.6**

Source: Economic Survey of Karnataka, 2021-22

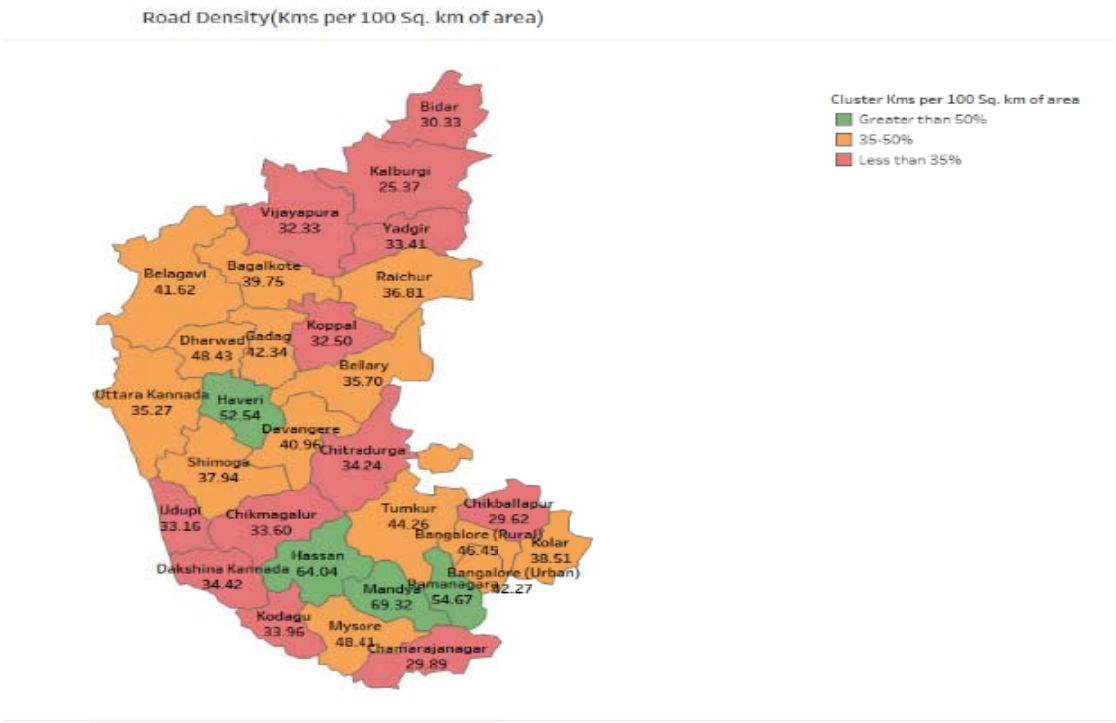
In March 2019, Karnataka had 38.2 kms of National highways per 1000 sq. km of area, and 12.0 kms of National highways per lakh population, as compared to the national averages of 40.2 kms and 11.0 kms respectively. In 2020, the average length of Karnataka's PWD roads (NH, SH &MDR) per 100 sq km area was 39.80 Kms. Across districts, Mandya district had a PWD road length of 67.95 kms while Kalburgi district had a road length of 26.84 kms per 100 sq. km(**Table 8.15 and Fig.8. 7).**

Table 8.15: Karnataka's PWD road network in selected districts (2012 and 2020) (Kms.)

District	2012				2020				Kms per 100 Sq. km of area	
	SH	NH	MDR	Total	SH	NH	MDR	Total	2012	2020
Mandya	73.0	466.9	2899.1	3439.0	427.7	214.1	2729.4	3371.2	69.32	67.95
Hassan	252.2	985.2	3126.4	4363.7	909.8	337.7	3131.4	4378.8	64.04	64.26
Ramanagara	73.0	315.5	1555.4	1943.9	387.7	123.8	1434.5	1946.0	54.67	54.72
Haveri	103.0	587.2	1843.7	2533.9	550.0	132.2	1848.3	2530.5	52.54	52.47
Mysore	79.0	720.4	2518.6	3317.9	548.6	354.6	2551.8	3455.0	48.41	50.41
Davangere	85.0	733.0	1608.8	2426.8	513.7	111.5	1285.6	1910.8	40.96	32.25
Chikballapur	148.0	263.9	928.0	1339.9	263.0	187.4	998.2	1448.6	29.62	32.02
Bidar	82.0	693.1	877.1	1652.2	505.3	330.8	880.1	1716.1	30.33	31.50
Chamarajanagar	190.0	339.3	995.2	1524.5	314.3	199.8	977.3	1491.3	29.89	29.23
Kalburgi	125.0	1251.8	1401.0	2777.8	1385.1	320.4	1234.3	2939.8	25.37	26.84
State	**4490.7**	**20774.4**	**49905.6**	**75170.6**	**19469.9**	**7458.4**	**49519.9**	**76448.2**	**39.14**	**39.80**

SH:State Highways ; NH:National Highways ; MDR:Major District roadsSource: PWD-MIS

Fig. 8.7: Karnataka's PWD Road Network (2012 and 2019) (Kms. Per 100 sq. kms)



An area of concern related to road transport is road safety with the country reporting 4.49 lakh accidents in the year 2019, of which about 1.38 fatal accidents led to the death of 1.51 lakh persons (as compared to 0.95 lakh persons killed in road accidents in 2005). In Karnataka, 42066 persons were killed in 158108 road accidents during the period 2017 to 2020 (**Table 8.16**). This translates to an average of about 29 persons killed per day during the four-year period. Further, the percentages of road accidents and deaths in road accidents increased by 6.46% and 17.59% respectively in Ballari district. Vijayapura and Koppal districts saw a decline in the percentage of accidents but an increase in the percentage of deaths during the period 2017 to 2020. However, at the state level during the same period, the percentages of road accidents and deaths in road accidents declined by 20.73% and 9.14% respectively.

Table 8.16: No. of road accidents and persons killed in road accidents in Karnataka (2017 to 2020)

Unit	No. of road accidents				No. of persons killed in road accidents				% change (2017-20)	
	2017	2018	2019	2020	2017	2018	2019	2020	No. of accidents	No. of deaths
Ballari	944	999	1009	1005	307	338	345	361	6.46	17.59
Bagalkot	780	851	848	781	331	369	358	389	0.13	17.52
Vijayapur	1033	1012	907	851	371	401	378	431	-17.62	16.17
Gadag	350	371	344	336	154	130	148	164	-4.00	6.49
Koppal	635	608	587	527	212	207	217	224	-17.01	5.66
Tumakuru	2312	2265	2337	2127	659	766	786	681	-8.00	3.34
Dharwad	458	497	414	422	175	219	189	178	-7.86	1.71
Mysuru Dist	1418	1472	1469	1365	376	443	424	382	-3.74	1.60
Bengaluru City	5064	4611	4684	3233	642	686	768	646	-36.16	0.62
Chitradurga	1565	1485	1414	1484	386	391	392	383	-5.18	-0.78
Hubballi-Dharwad City	394	370	430	342	93	90	92	91	-13.20	-2.15
Chamarajanagar	583	579	590	529	163	162	154	156	-9.26	-4.29
Chickballapura	669	703	621	585	245	286	280	234	-12.56	-4.49
Yadgir	419	431	412	405	163	157	163	153	-3.34	-6.13
Belagavi Dist.	1897	1979	1895	1600	684	664	713	639	-15.66	-6.58
Chikkamagaluru	991	902	884	765	199	190	210	185	-22.81	-7.04
Raichur	721	708	632	635	320	305	274	294	-11.93	-8.13
Haveri	786	803	739	660	238	270	213	216	-16.03	-9.24
Mysuru City	780	832	867	633	135	158	147	122	-18.85	-9.63
Bengaluru Dist.	2297	2318	2271	1850	653	669	660	567	-19.46	-13.17
Udupi	1314	1271	1214	990	231	228	264	193	-24.66	-16.45
Hassan	2149	2157	2076	1772	447	447	451	372	-17.54	-16.78
Davanagere	1154	1149	1090	929	273	321	289	227	-19.50	-16.85
Shivamogga	1741	1601	1542	1270	357	323	365	291	-27.05	-18.49
Kalaburagi	1293	1287	815	839	362	411	277	284	-35.11	-21.55
Uttara Kannada	1235	1177	1135	891	277	295	236	217	-27.85	-21.66
Bidar	1265	1264	1186	1069	301	290	281	233	-15.49	-22.59
Mandya	2179	2189	2150	1739	498	565	542	385	-20.19	-22.69
Kodagu	604	546	469	387	89	75	87	66	-35.93	-25.84

Kolar	710	691	684	551	268	237	223	198	-22.39	-26.12
Belagavi City	682	607	573	420	157	150	155	114	-38.42	-27.39
Ramanagara	1723	1702	1718	1251	420	394	389	304	-27.39	-27.62
Mangaluru City	1292	1171	1028	692	183	170	146	116	-46.44	-36.61
Dakshina Kannada	940	908	920	654	173	123	154	109	-30.43	-36.99
K.G.F	149	189	168	130	52	60	51	31	-12.75	-40.38
Karnataka Railways	16	2	14	4	15	0	7	3	-75.00	-80.00
Kalaburagi City	0	0	522	455	n.a.	n.a.	130	121	n.a.	n.a.
Total	**42542**	**41707**	**40136**	**33723**	**10609**	**10990**	**10828**	**9639**	**-20.73**	**-9.14**

Source: Road accidents in Karnataka – 2020, Police dept., Govt. of Karnataka

The need for additional steps to address road safety issues and reduce accidents has been highlighted by a recent CAG report (Performance Audit on Functioning of Karnataka State Road Safety Authority) which has also observed a shortfall in meeting the accident reduction targets specified under the Karnataka State Road Safety Policy (2015).

8.7: Way Forward

Karnataka has been performing better than other Indian states on most dimensions, intra-state disparities exist in access to and/or availability of basic infrastructure across the State's districts. In the subsequent sections, it is attempted to suggest a few strategies that could be adopted to address the identified gaps/disparities.

To obtain an overall perspective on the status of districts with respect to basic infrastructure, BASIN (Basic Infrastructure) scores have now been calculated for each of Karnataka's districts to provide an overall score for a district by including its achievement on each of the five dimensions (the BASIN scores were initially proposed in Karnataka's Human Development Report 2015). Based on the five indicators, a composite index score (termed as the Basic Infrastructure score or BASIN score) was developed (geometric mean of the five measures) for each of the districts (**Table 8.17 and Fig. 8.8**). Equal weights have been considered for each of the five measures.

Table 8.17: BASIN scores for Karnataka's selected Districts 2019-20 Top & Bottom

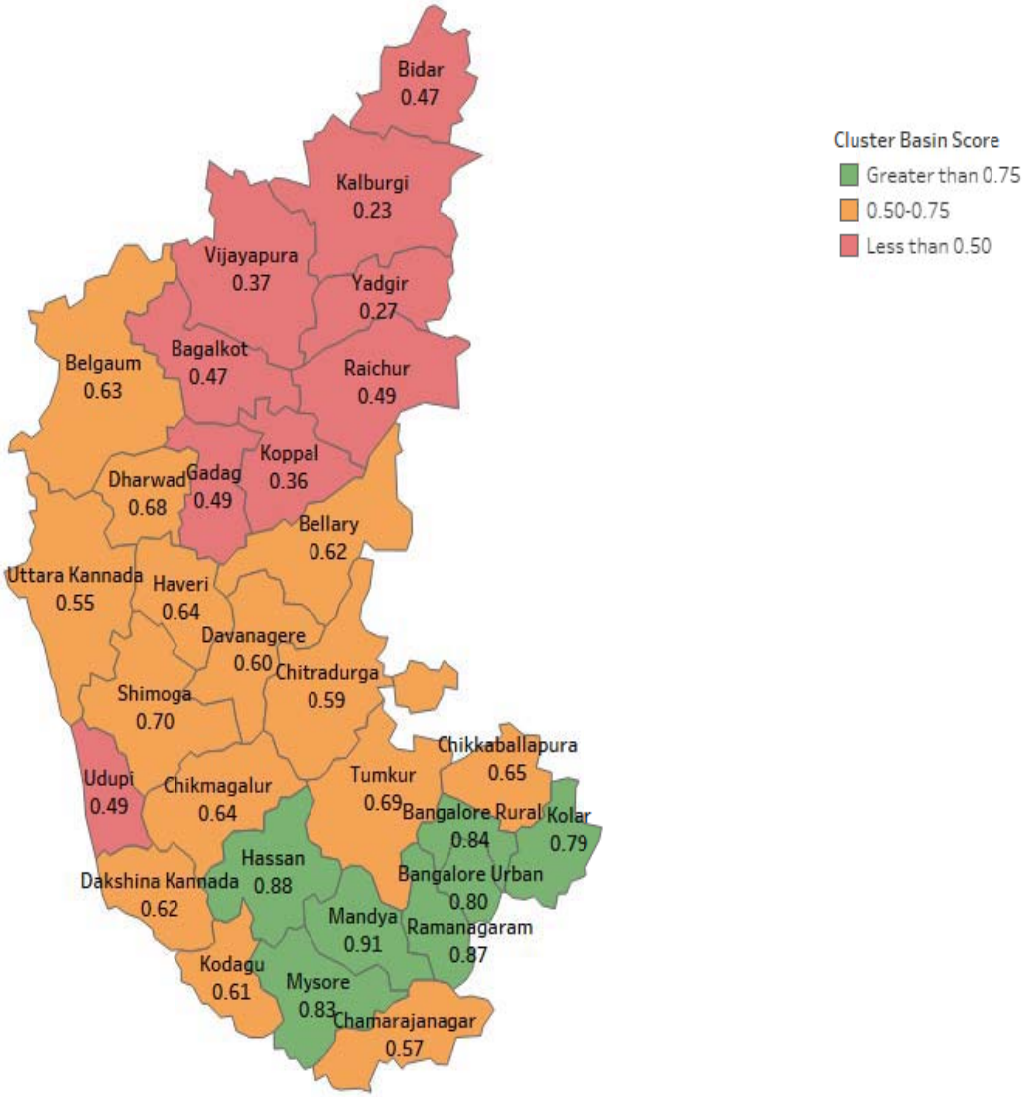
District	Percentage of				PWD Road length per 100 sq. km	BASIN score
	Households using clean fuel for cooking	Population living in households with an improved drinking water source	Population living in households with electricity	Population living in households that use an improved sanitation facility		
Mandya	0.88	0.94	0.88	0.84	1.00	0.91
Hassan	0.80	0.88	0.95	0.86	0.92	0.88
Ramanagaram	0.90	0.94	0.98	0.88	0.70	0.87
Bangalore Rural	0.93	0.92	0.94	0.87	0.58	0.84
Mysore	0.95	0.83	0.97	0.83	0.60	0.83
Bidar	0.41	0.96	0.91	0.37	0.17	0.47
Bijapur	0.33	0.72	0.81	0.19	0.20	0.37
Koppal	0.09	0.85	0.94	0.40	0.20	0.36
Yadgir	0.11	0.82	0.93	0.07	0.23	0.27
Kalburgi	0.29	0.72	0.96	0.06	0.06	0.23

Data source: NFHS-5 and PWD-MIS

Among all districts of the State, Mandya district tops the list while Kalburgi district scores lowest with the district faring poorly on the dimensions related to sanitation and PWD road density. Yadgir and Koppal districts occupy the 29th and 28thpositions with these districts obtaining low scores on the dimensions of clean fuel and sanitation. It can be seen that Kalyana Karnataka districts occupy the seven last positions among all districts while the top positions are held by South Karnataka districts. Udupi and Uttara Kannada districts' overall scores have been constrained by their lower scores on the dimension of improved source of drinking water. Although Chamarajanagar obtains a lower score on the dimension of PWD road density, this score must be considered in the light of the district having about 30% of its land area under forests. Access to improved source of drinking water is relatively lower in Tumkur district while Mandya is positioned relatively lower on the dimension of households with electricity. The overall BASIN scores show a distinct disparity that exists between the top three districts and the bottom three districts with respect to basic infrastructure. It is

evident that such disparities need to be addressed by formulating integrated programmes to address the critical dimensions that are lagging in the districts.

Fig. 8.8: BASIN scores of Karnataka's Districts (2019-20)



The basic indicators impacting standard of living and human development are, Access to sanitation, drinking water, housing and cooking fuel. The action plans have to be prepared

based on the percentage of households deprived at taluka level. The bottom 10 deprived districts and households as well as talukas in these indicators that need to be focused are given in the following tables (**Table 8.18, 8.19, 8.20 & 8.21**). Accordingly, the budget requirements can be estimated

Table 8.18: Deprivation in sanitation- focus districts, magnitude & Talukas

District	(%) without access	Target households (overall)	Focus Talukas
Yadgir	63.775	4,88,807	Gurumithakala, Hunisigi, Shahapur,Shorapur, Vadagera,Yadgir
Kalaburagi	63.414	4,32,044	Afzalpur,Aland, Chincholi, Chittapur,Gulbarga, Jevargi, Kalagi,Kamalapura, Sedam, Shahbadha,Yadrami
Vijayapura	55.161	3,75,898	Babaleshwara, BasavanBagewadi,Bijapur, Chadachana, Devara Hipparagi, Indi,Kolhara, Muddebihal, Nidagundi, Sindagi,Talikote, Tikota
Bagalkot	48.609	3,34,098	Badami,Bagalkote, Guledagudda, Mudhol
Raichur	47.109	3,60,628	Devdurga,Lingasugur,Manvi,Maski,Raichur,Sirivara
Gadag	46.64	2,87,978	Gajendragad, Naragund,Rona
Bidar	43.624	2,97,079	Aurad,BasavakalyanChittaguppa, Hulasuru, Humnabad
Koppal	40.599	2,71,782	Gangavathi, Kanakagiri,Koppal, Kukanuru, Kushtagi,yelburga
Chitradurga	37.412	2,12,706	-
Bellary	35.396	2,23,195	Ballari, Hagaribommanahalli, Hospet,Kudligi

Source: CODR Estimated from Unit Level data NFHS-5

Table 8.19: Drinking water

District	(%) without access	Target households (overall)	Focus Talukas
Udupi	18.914	1,14,451	Bynduru, Kundapur
Uttara Kannada	15.403	89,309	Ankola,Karwar
Dharwad	14.748	88,537	ANNIGERI, Kundgol, Navalgund
Bijapur	14.011	95,479	Babaleshwara, BasavanBagewadi, Bijapur, Chadachana,Indi
Kodagu	11.283	58,459	Madikeri, Somawarpet
Raichur	10.84	82,985	Devdurga, Raichur
Dakshina Kannada	10.758	64,167	Belthangady, Kadaba
Gulbarga	10.46	71,262	Jevargi, Yadrami
Bellary	8.806	55,529	Harapanahalli,Kudligi, Kurugodu
Tumkur	8.113	42,572	Pavagada

Table 8.20: Housing

District	(%) without access	Target households (overall)	Focus Talukas
Gadag	53.61	3,31,013	Gadag, Gajendragad, Laxmeshwar, Mundargi, Naragund,Rona, Shirahatti
Koppal	52.926	3,54,304	Gangavathi, Kanakagiri, Koppal, Kukanuru, Kushtagi, yelburga
Bidar	51.416	3,50,139	Aurad, Basavakalyan, Bhalki, Bidar, Kamalanagara
Gulbarga	50.894	3,46,746	Afzalpur,Aland,Chincholi, Gulbarga, Jevargi,Kalagi, Kamalapura, Sedam,Yadrami
Haveri	49.29	3,26,385	Ratteehalli
Shimoga	47.907	2,78,877	Soraba
Chitradurga	46.717	2,65,612	Challakere
Bagalkot	46.185	3,17,439	Badami, Bagalkote, Guledagudda
Davanagere	45.833	2,73,170	Davanagere, Nyamati, Jagaluru
Bellary	45.744	2,88,441	Hagaribommanahalli, Kotturu, Kudligi, Siraguppa, Sonduru

Table 8.21: Cooking Fuel

District	(%) without access)	Target households (overall)	Focus Talukas
Yadgir	54.317	4,16,311	Gurumithakala,Hunisigi, Shahapur, Shorapur, Vadagera,Yadgir
Koppal	52.028	3,48,288	Gangavathi, Kanakagiri, Karatagi,Koppal,Kukanuru, Kushtagi, yelburga
Gadag	45.691	2,82,117	Gadag, Gajendragad, Mundargi, Naragund,Rona, Shirahatti
Gulbarga	41.793	2,84,739	Aland,Chincholi,Chittapur, Gulbarga, Jevargi,Kalagi, Kamalapura, Sedam, Shahbadha, Yadrami
Bagalkot	41.427	2,84,739	Badami, Bagalkote, Guledagudda
Haveri	40.997	2,71,474	Byadagi
Bijapur	40.584	2,76,564	Babaleshwara, BasavanBagewadi, Chadachana, Devara Hipparagi, Indi,Kolhara, Muddebihal, Nidagundi, Sindagi,Talikote
Raichur	40.117	3,07,105	Devdurga, Lingasugur, Raichur,Sirivara
Bidar	33.794	2,30,136	Aurad, Basavakalyan, Bhalki
Udupi	32.577	1,97,127	Hebri, Udupi, Brahmavara

In all these basic indicators the deprivation is maximum in North Karnataka region, especially the Kalyan Karnataka Region (Gulbarga Division). The BASIN scores are also the lowest for this region. These are contributing to very low level of human development and gender imbalance not only in these regions but also impacting the overall position of the State also. There are many schemes- central & State- in these sectors. These need to be offered as a package, with additional allocations, adopting household approach. The approximate number to be covered is also estimated for budgeting the financial resources.

Annexure 8.1: Achievements in Rural Housing (2018 -19 to Nov. 2021

District	RAY/Basava			PMAY (G)			ANY (R)			DUHS ®			Total		
	Target	Comp.	Ach. (%)	Target	Comp.	Ach. (%)	Target	Comp.	Ach. (%)	Target	Comp.	Ach. (%)	Target	Comp.	Ach. (%)
Yadgiri	5465	6270	114.73	7262	8120	111.81	4133	5041	121.97	260	289	111.15	17120	19720	115.19
Dharwad	7082	8286	117.00	3253	2195	67.48	2260	1500	66.37	175	177	101.14	12770	12158	95.21
Vijayapura	16516	16588	100.44	4590	2189	47.69	10635	10842	101.95	943	875	92.79	32684	30494	93.30
Belagavi	28834	34141	118.41	14365	10222	71.16	14570	9684	66.47	3957	2706	68.39	61726	56753	91.94
UttaraKannada	9788	9878	100.92	1529	569	37.21	1635	985	60.24	239	230	96.23	13191	11662	88.41
Koppal	9884	9934	100.51	5038	2886	57.28	6631	5186	78.21	412	424	102.91	21965	18430	83.91
Tumakuru	17529	20552	117.25	6967	4405	63.23	10312	5938	57.58	3589	1297	36.14	38397	32192	83.84
Ramanagara	9606	9743	101.43	2218	1198	54.01	2749	1351	49.15	502	339	67.53	15075	12631	83.79
Dakshina Kannada	7809	7479	95.77	778	323	41.52	1672	768	45.93	19	7	36.84	10278	8577	83.45
Udupi	5557	5306	95.48	548	206	37.59	899	402	44.72	423	229	54.14	7427	6143	82.71
Mandya	13752	14297	103.96	3046	975	32.01	3960	1612	40.71	300	269	89.67	21058	17153	81.46
Kalaburagi	14957	12314	82.33	5586	3411	61.06	18310	15303	83.58	1729	1369	79.18	40582	32397	79.83
Hassan	14408	14661	101.76	3399	1332	39.19	8080	3877	47.98	747	337	45.11	26634	20207	75.87
Haveri	13555	12879	95.01	6421	3537	55.08	7634	4510	59.08	1314	908	69.10	28924	21834	75.49
Raichur	10818	8082	74.71	16108	12573	78.05	12094	8601	71.12	920	626	68.04	39940	29882	74.82
Bagalkot	12002	10560	87.99	4129	1918	46.45	5769	3191	55.31	552	432	78.26	22452	16101	71.71
Chamarajanagar	8598	7472	86.90	8112	5512	67.95	5346	2883	53.93	610	196	32.13	22666	16063	70.87
Kolar	9606	8362	87.05	3904	2212	56.66	5840	3152	53.97	164	94	57.32	19514	13820	70.82
Ballari	11281	9925	87.98	6805	3652	53.67	8433	5101	60.49	1092	470	43.04	27611	19148	69.35
Bengaluru Rural	4696	4411	93.93	1184	531	44.85	2996	1808	60.35	2192	779	35.54	11068	7529	68.02
Shivamogga	11936	9774	81.89	2520	1027	40.75	3981	1753	44.03	77	27	35.06	18514	12581	67.95
Bidar	11053	8621	78.00	3497	2205	63.05	13709	8431	61.50	1027	525	51.12	29286	19782	67.55
Kodagu	3112	2450	78.73	460	154	33.48	919	373	40.59	32	25	78.13	4523	3002	66.37

Gadag	7785	6209	79.76	4751	2577	54.24	6984	3702	53.01	238	161	67.65	19758	12649	64.02
Chikkamagaluru	6801	5424	79.75	1314	421	32.04	3224	1369	42.46	190	66	34.74	11529	7280	63.15
Mysuru	20859	15341	73.55	9778	5659	57.87	10750	5187	48.25	1021	362	35.46	42408	26549	62.60
Chitradurga	10782	8293	76.92	9920	5341	53.84	11103	5879	52.95	1801	875	48.58	33606	20388	60.67
Davanagere	11990	8991	74.99	3858	1659	43.00	9814	4899	49.92	753	311	41.30	26415	15860	60.04
Chikkaballapur	9807	6353	64.78	4786	2451	51.21	9534	3862	40.51	579	349	60.28	24706	13015	52.68
Bengaluru Urban	4132	2912	70.47	874	171	19.57	3024	1143	37.80	143	19	13.29	8173	4245	51.94
Total	**330000**	**305508**	**92.58**	**147000**	**89631**	**60.97**	**207000**	**128333**	**62.00**	**26000**	**14773**	**56.82**	**710000**	**538245**	**75.81**

Source: Economic Survey of Karnataka, various editionsA

Annexure 8.2: Achievements in Urban Housing (2018 -19 to Nov. 2021) (excl. PMAY-U)

District	Vajpayee Housing Scheme			Ambedkar NivasaYojane			Devaraj Urs Housing Scheme (U)			Total		
	Target	Comp.	Ach.%	Target	Comp.	Ach.%	Target	Comp.	Ach.%	Target	Comp.	Ach. (%)
Vijayapura	5047	3241	64.22	2773	2382	85.90	134	450	335.82	7954	6073	76.35
Bengaluru Rural	746	632	84.72	584	347	59.42	7	4	57.14	1337	983	73.52
Haveri	1719	1234	71.79	469	363	77.40	2	2	100.00	2190	1599	73.01
Bengaluru Urban	478	295	61.72	320	266	83.13	1	1	100.00	799	562	70.34
Koppal	2019	1336	66.17	1236	878	71.04	9	29	322.22	3264	2243	68.72
Belagavi	4770	3088	64.74	2160	1605	74.31	90	86	95.56	7020	4779	68.08
Dakshina Kannada	946	687	72.62	312	154	49.36	1	1	100.00	1259	842	66.88
Chamarajanagar	1002	657	65.57	846	554	65.48	1	0	0.00	1849	1211	65.49
Yadgiri	1584	949	59.91	1256	876	69.75	21	38	180.95	2861	1863	65.12
Bagalkot	3931	2247	57.16	1489	1201	80.66	29	69	237.93	5449	3517	64.54
Uttara Kannada	1205	741	61.49	366	262	71.58	0	0	-	1571	1003	63.84
Udupi	661	446	67.47	97	37	38.14	0	0	-	758	483	63.72
Kolar	802	510	63.59	408	241	59.07	1	0	0.00	1211	751	62.01
Mysuru	2141	1465	68.43	2580	1402	54.34	12	16	133.33	4733	2883	60.91
Bidar	1667	849	50.93	1419	938	66.10	12	1	8.33	3098	1788	57.71
Tumakuru	1272	656	51.57	882	583	66.10	12	11	91.67	2166	1250	57.71
Davanagere	1511	912	60.36	870	393	45.17	37	32	86.49	2418	1337	55.29
Chikkaballapur	1134	488	43.03	649	403	62.10	1	4	400.00	1784	895	50.17
Ramanagara	647	342	52.86	582	255	43.81	0	0	-	1229	597	48.58
Kalaburagi	2872	1158	40.32	1606	988	61.52	4	16	400.00	4482	2162	48.24
Ballari	4012	1817	45.29	3520	1817	51.62	46	10	21.74	7578	3644	48.09
Shivamogga	2021	966	47.80	631	297	47.07	0	0	-	2652	1263	47.62
Mandya	603	267	44.28	225	111	49.33	0	1	-	828	379	45.77

Chitradurga	1231	619	50.28	1144	459	40.12	7	4	57.14	2382	1082	45.42
Chikkamagaluru	648	226	34.88	184	114	61.96	15	37	246.67	847	377	44.51
Raichur	3942	1549	39.29	1376	687	49.93	12	12	100.00	5330	2248	42.18
Dharwad	1276	441	34.56	450	258	57.33	5	8	160.00	1731	707	40.84
Gadag	3478	1294	37.21	802	349	43.52	34	33	97.06	4314	1676	38.85
Kodagu	201	61	30.35	148	54	36.49	0	0	-	349	115	32.95
Hassan	934	296	31.69	616	211	34.25	7	1	14.29	1557	508	32.63
Total	**54500**	**29469**	**54.07**	**30000**	**18485**	**61.62**	**500**	**866**	**173.20**	**85000**	**48820**	**57.44**

Source: Economic Survey of Karnataka, various editions

Annexure 8.3: Pradhan Mantri Awas Yojana (Urban) - Housing for All (HFA) State wise Progress (since 2014) - As of 25th April 2022

States/N.E. States/UTs	Project Proposals considered	Physical progress of houses (No.)			Financial Progress (Rs. Crore)			% of houses completed/ delivered	% of funds released vis-à-vis sanctioned
		Sanctioned	Grounded	Completed/ Delivered	Investment	Sanctioned	Released		
States									
Goa	10	3097	2867	2864	657.98	72.21	67.72	92.48	93.78
Telangana	303	247079	251031	218619	30099.27	4396.03	3044.09	88.48	69.25
Gujarat	1717	1054790	899236	731616	106172.84	21060.84	15256.81	69.36	72.44
TamilNadu	4708	691236	637458	475114	48598.21	11257.92	8509.54	68.73	75.59
Kerala	699	157430	131126	106375	8270.76	2611.6	1819.41	67.57	69.67
Uttar Pradesh	4539	1763900	1529590	1086004	85530.43	27727.02	19340.62	61.57	69.75
Rajasthan	422	266692	192426	163458	21857.38	5039.92	3313.22	61.29	65.74
Himachal Pradesh	308	13053	13095	7428	863.33	235.81	172.41	56.91	73.11
Madhya Pradesh	1854	976547	809239	502239	53895.99	15986.42	11238.65	51.43	70.30
Odisha	976	212950	146562	105302	9727.56	3350.97	1885.86	49.45	56.28
Jharkhand	453	234114	201117	113890	11546.35	3682.33	2520.23	48.65	68.44
Chhattisgarh	1845	318440	248227	153469	14074.29	5005.61	2899.23	48.19	57.92
All States Avg (excl. NE states &UTs)	26114	11763814	9340761	5645597	809053.41	195275.81	113358.11	47.99	58.05
Punjab	885	124022	106083	53652	8387.28	2164.98	1294.36	43.26	59.79
West Bengal	656	693436	479407	296525	37500.52	11070.19	5582.14	42.76	50.42
Maharashtra	1556	1634553	914960	671500	190648.19	28620.19	13916.7	41.08	48.63
Uttarakhand	243	66473	35148	25924	5289.01	1209.46	636.35	39.00	52.61
Karnataka	2760	700578	572434	271144	51193.35	11493.56	5407.7	38.70	47.05
Haryana	457	165427	87893	51536	15510.32	2944.68	1349.18	31.15	45.82
Bihar	520	368221	327525	110804	20544.78	5790.73	2544.76	30.09	43.95

Andhra Pradesh	1203	2071776	1755337	498134	88685.56	31555.35	12559.13	24.04	39.80
N.E. States	843	398866	314681	128208	11,976.07	6,198.92	3,273.33	32.14	52.80
Union Territories	467	106492	146330	85,363	10,337.65	1,933.61	1,370.53	80.16	70.88
All India (incl. States, N.E. States and UTs)	**27424**	**12269172**	**9801772**	**5859168**	**831367.13**	**203408.34**	**118001.97**	**47.76**	**58.01**
Share of Karnataka in all States (excl. N.E. States and UTs) (%)	**10.57**	**5.96**	**6.13**	**4.80**	**6.33**	**5.89**	**4.77**		
Share of Karnataka in All India (incl. N.E. States and UTs) (%)	**10.06**	**5.71**	**5.84**	**4.63**	**6.16**	**5.65**	**4.58**		

Source: PMAY-Urban, Ministry of Housing and Urban Affairs, Govt. of India

Chapter - 9

Climate Change and Inequality in Karnataka

Chapter - 9

Climate Change and Inequality in Karnataka

9.1: Introduction

Sustainable Development Goal (SDG) 13 focuses on the “urgent action” required to “combat climate change and its impacts”, highlighting the need for incorporating both climate change mitigation and adaptation. SDG 13 aims at (a) strengthening resilience and adaptive capacity to climate related hazards and natural disasters in all countries, (b) integrating climate change measures into national policies, strategies, and planning, and (c) improving education, raising awareness and human institutional capacity on climate change mitigation, adaptation, impact reduction, and early warning. Crucially, Goal 13 acknowledges the role being played by the United Nations Framework Convention on Climate Change (UNFCCC), and thereby looks to minimize duplication of efforts, and ensure efficient and effective utilization of limited resources.

India is both a major greenhouse gas emitter and one of the most vulnerable countries in the world to projected climate change. The country is already experiencing changes in climate and the impacts of climate change, including water stress, heat waves and drought, severe storms and flooding, and associated negative consequences on health and livelihoods. With a 1.2 billion but growing population and dependence on agriculture, India probably will be severely impacted by continuing climate change. Recently, climate variability in the form of floods and cyclones has resulted in destruction of crops, property and infrastructure, as well as in negative impacts on human health and well-being. All of these impacts set back general socio-economic development and increasing inequality in India (India: The impact of Climate change to 2030). Inequality has become a persistent theme in the climate change discourse in social sciences. It is now recognized that 'climate change and inequality are inescapably linked both in terms of who contributes to climate change and who suffers the consequences’ (Hubacek et al., 2017). In this aspect of inequality of climate change, which is widely referred to as 'carbon inequality' (Kenner, Dario, 2019), developed countries by their level of consumption contribute more to climate change and the developing and less developed countries too often face the difficulties of the crisis (Khan et al., 2021).

9.1.1: Climate change - Inequality Nexus - Evidence from Studies

In recent decades, global economic growth has lifted millions out of extreme poverty and reduced inequalities between countries. But unmanaged climate change threatens to set back that progress by damaging poverty eradication efforts worldwide, and disproportionately affecting the poorest regions and people (Taconet et al., 2021). The evidence is mounting: a World Bank report estimated that an additional 68 to 135 million people could be pushed into poverty by 2030 because of climate change.

The within-country inequality regarding the impact of climate change has received even less attention. At the same time, actions taken to curb warming could have an unwelcome effect on inequality, if climate policies prove too burdensome for poor countries. Such actions need to be complemented by measures to offset the costs on the poor and vulnerable across and within countries. The discussion of the impact was initially focused on its physical side, i.e., on the impact of climate change on the nature. With time, the social impact received attention, and evidence was presented regarding the relationship between climate change and poverty and livelihood. However, the interlinkages between climate change and within-country inequality have not yet received necessary attention (Celine et al., 2021). The districts that have warmed the fastest have seen gross domestic product grow on average 56 per cent less than those that have warmed the slowest. Without rapid global action to reduce greenhouse gas emissions, rising average temperatures may actually reverse the development gains of recent decades," The report finds that even if the temperatures are contained to two degrees Celsius, India will lose 2.6 percent GDP annually, and in case the global temperatures were to increase to 3 degrees Celsius, this loss will magnify to 13.4 per cent annually. "These results are narrowly based on projections of temperature and precipitation changes, and the effect on labour productivity in different sectors (Celine et al., 2021)".

Inequality due to climate change is has been part of the discussion on "climate justice" issue, which in turn is a particular case of the "environmental justice" issue. However, the focus in this discussion has been mainly on inequality *across countries* and their responsibility for *mitigation (*and *adaptation) efforts* to combat the climate change. In this scenario, the Rio principle of "Common but Differentiated Responsibility (CBDR)" is attempted to resolve this "burden" issue. Although, the *inter-country* inequality issue continues to dominate the international discussion of climate change, the intra-country inequality to climate change or *social* inequality has not received much attention in the exiting literature of climate change. The discussion of the impact was initially focused on its physical side, i.e., on the impact of

climate change on the nature. With time, the social impact received little attention, and evidence was presented regarding the relationship between climate change and poverty and livelihood. However, the interlinkages between climate change and within-country inequality have not yet received necessary attention.

In the present chapter the term "social inequality" is used to refer to all the different types of inequalities that exist with in the country such as inequalities based on demographic characteristics, assets and income inequality, inequality is regarding public decision making and access to public resources and spatial inequality. Needless to say, these different types of inequalities are interrelated to each other and therefore, the concept of social inequality explained in this chapter is presented as multidimensional in nature.

Some researchers have earlier noted that climate change aggravated inequality, and they provided evidence in support of this claim. There are, however, **two weaknesses** in this discussion so far. **First,** the evidences are often indirect and not focused on inequality. Second, the evidences presented are generally of scatter-shot character and there is no connection among them. This chapter overcome these weaknesses – particularly the **second one** – by presenting a unifying conceptual framework for discussing and studying the relationship between climate change and inequality. It shows that the relationship between climate change and inequality is **vicious circle** in nature where initial inequality makes dis-advantaged groups suffer disproportionately from the adverse effects of climate change, resulting in greater subsequent inequality.

The present study identifies **three channels** through which the above process unfolds. **First,** inequality increases the exposure of the disadvantaged social groups to the "adverse effects of climate change". **Second,** given the exposure level, inequality increases the disadvantaged groups' susceptibility to damages caused by climate hazards. **Third,** inequality decreases these groups' relative ability to cope with and recover from the damages they suffer. With this background, the present chapter makes an attempt to address the impact of climate change on social inequality by taking the case of Karnataka which is reported as fourth most vulnerable state in India (Mohanty & Wadhawan, 2021).

9.2: Conceptual Framework

The **analytical framework** presented in this paper will help in several ways. **First**, it helps to collect, understand, and present the available evidence more meaningfully and systematically. **Second**, to identify the gaps in evidence, and thus point to the necessary future research. **Third**, to promote the discussion of policies necessary to break the vicious cycle between

climate change and inequality. The framework aids to collect, understand, present and discuss the evidence in a more organized, logical, and meaningful way. It helps to identify the gaps that exist in the evidence gathered so far, and thus to point out future directions of research necessary to fill these gaps. **Finally**, it also helps to discuss the policies needed to address the problems of inequality in the context of climate change. Though the analytical framework presented in it focuses on *intra-state* inequality **with special reference to Karnataka**, it can also be applied to describe and analyse the relationship between climate change and inequality across state and country in the world.

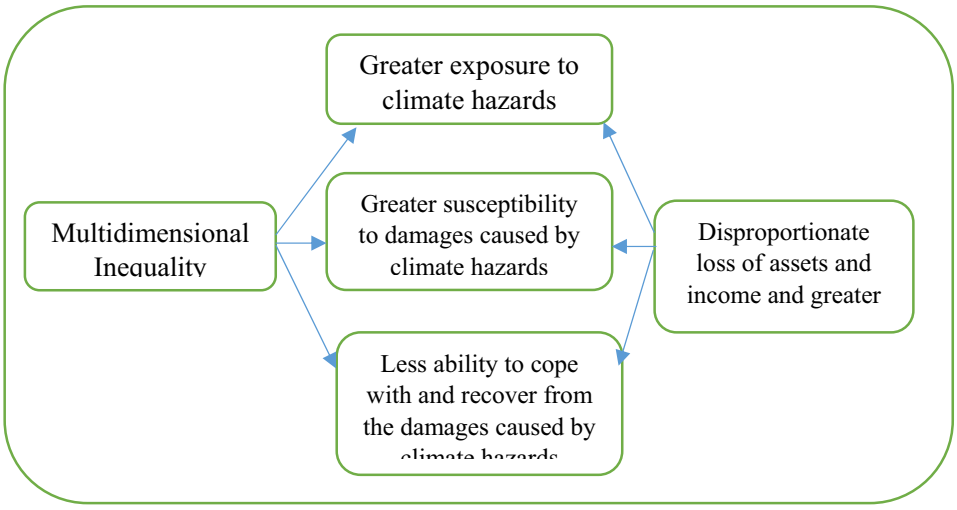
It is evident from below **Figure 9.1** that climate change aggravates the situation of disadvantages group in the following three ways:

(i) Increase in the exposure to climate hazards

(ii) Increase in the *susceptibility* to damage caused by climate hazards, and

(iii) Decrease in the *ability* to cope with and recover from the damage.

Figure: 9.1 Three Effects of Inequality on Disadvantage Group



Source: Islam and Winkel (2017)

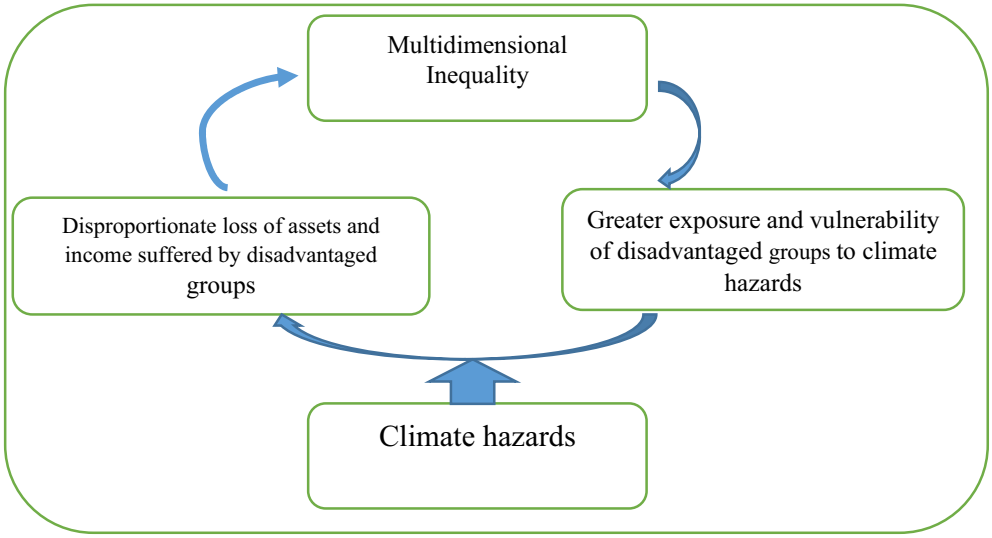
Dietz and Stern (2009) observed that the climate-related events have a high impact on the marginalised population compared to the high-income groups in the developing countries. **Bridges (2016)** found that the Scheduled Caste and indigenous communities are adversely affected due to climate change in India. The **IPCC Fifth Assessment Report** has highlighted that climate change has directly affected the poor and marginalised groups through its impacts on their livelihoods such as losses in crop yields, destroyed homes, food insecurity and indirectly through increased food prices. **Olsson et al (2014)** comprehensively

discussed the impacts of climate change on the marginalised population in developing countries. Most of the developing countries have inadequate adaptation strategies, especially for vulnerable communities. Vulnerable groups are facing two hurdles in this society. **First**, major environmental problems like pollution, water contamination, improper solid waste disposal, land degradation, forest degradation, and lack of access to natural resources on the one hand are factors that lead to loss of their livelihood because most of them depend on climate sensitive sectors as a major source of their income and employment. On the other hand, they are also hit by low literacy, unemployment, low income and lack of access to energy. In many developing countries, they have no decision-making power in society. **Fankhauser and Stern (2016)** has noted that climate change exerts uneven impacts across countries and populations at the global level. Moreover, developing countries show less adaptation to climate change and other coping mechanisms for preventing the adverse impacts of climate change. Climate change and its related hazards are having a great impact on the lives and livelihoods of vulnerable communities. A study by **Gentle et al. (2014)** shows that climate change related impacts have not been uniform among the people and communities.

This study shows that the vulnerability to climate change is determined by a number of socioeconomic characteristics such as household size, quality of farmland, education of the head of the household, access to financial resources and social status within the community. **Balasubramanian et.al (2019)** study argue that a large proportion of the scheduled caste and scheduled tribe population is socially and economically vulnerable on the one hand and to climate change and related uncertainties that pose challenges to their lives on the other. The degree of damage caused due to climate change is not uniform across various communities for instance, as vulnerability, and adaptation to climate change vary across groups. Socio-economic indicators such as income, family size, education, access to financial resources, farmland and social status of social groups are the vital determining factors of vulnerability and adaptation to climate change. Hence, the study urges for an urgent need to assess the impacts of climate change on the vulnerable groups, considering the fact that rising temperatures and scanty rainfall adversely affect the livelihood options of the poor and vulnerable communities. Further, climate change has adverse impacts such as loss and damage to property, low wages, unemployment and migration.

9.2.1: Climate Change and Inequality

Figure: 9.2 Inequality and Climate Change Vicious Cycle

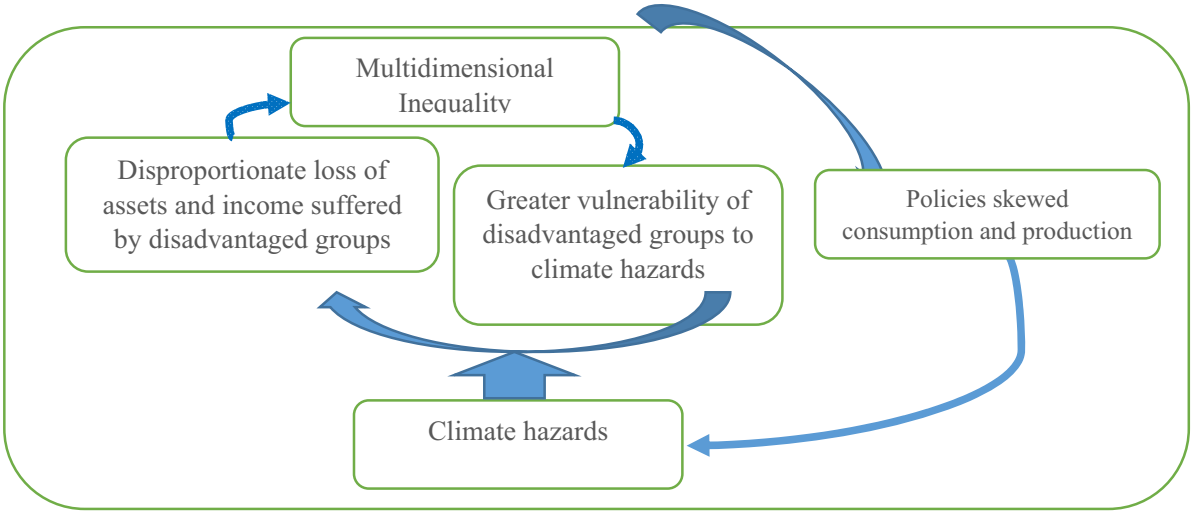


Source: Islam and Winkel (2017)

As a result of combined effect of above three mentioned channels, climate change and inequality are locked in a vicious cycle, whereby climate change hazards end up aggravating inequality. It observed from the figure 2 that, the cycle begins with multidimensional inequalities, which then cause greater exposure of the disadvantaged groups to climate hazards, increase their susceptibility to damage caused by these hazards, and decrease their ability to cope with and recover from the damage. As a result, when the climate hazards actually hit, disadvantaged groups suffer disproportionate loss of income and assets (physical, financial, human, and social). Climate change thus makes inequality worse, thus perpetuating the cycle. However, climate change effect in the **Figure 9.2** is exogenous in nature.

Figure 9.3 presents here the reinforced vicious cycle between inequality and climate change, with the feedback effect of the former on the latter taken into account. Instead of being exogenous to the causal flow, climate change is now *endogenous*, working through the outer loop of the scheme. Needless to say, this indigeneity makes the task of breaking the vicious cycle between climate change and inequality even more important and urgent.

Figure 9.3: Reinforced vicious cycle between inequality and climate change



Source: Islam and Winkel (2017)

9.2.2: Vulnerability Scenario in Indian States

India is the seventh-most vulnerable country with respect to climate extremes (German watch 2020). Climate action needs to be scaled up both at the sub-national and district levels to mitigate the impact of extreme events. An analysis by the Council on Energy, Environment and Water (CEEW) suggests that three out of four districts in India are extreme event hotspots, with 40 per cent of the districts exhibiting a swapping trend, i.e., traditionally flood-prone areas are witnessing more frequent and intense droughts and *vice-versa* (Mohanty 2020). Further, the IPCC states with high confidence that every degree rise in temperature will lead to a three per cent increase in precipitation, causing increased intensification of cyclones and floods.

Vulnerability is a multifaceted and dynamic phenomenon in, making is difficult and measure vulnerability in a clear-cut manner. IPCC (2007) defined "vulnerability as a degree to which a system is susceptible to and unable to cope with the adverse effect from climate change including climate variability and extremes. The United Nations International Strategy for Disaster Risk Reduction (UNISDR) specifies vulnerability as "characteristics and circumstances of a community, system, or asset that make it susceptible to the damaging effects of a hazard" (UNISDR 2011). Following IPCC's SREX[1] framework and the DST[2]

[1] Special Report on Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation, Prepared by the Intergovernmental Panel on Climate Change (IPCC) (SREX)

common vulnerability assessment approach (DST 2020; IPCC 2014), **Mohanty and Wadhawan (2021**) developed climate vulnerability index (CVI0 for Indian state which capture the combined risk of hydro-met disasters and their compounded impact on districts' climate vulnerability. The index was developed based on following formula,

$$\text{Vulnerability} = \text{Exposure} * \text{Sensitivity}/\text{Resilience} \quad \text{.....Eq. (1)}$$

The three components of vulnerability has been defined in the follwing way:

Exposure is "the presence of people, livelihoods, species or ecosystems, environmental functions, services, resources, infrastructure, or economic, social, or cultural assets in places and settings that could be adversely affected" **(IPCC 2014).**

Sensitivity defined as the degree to which a system is affected, either adversely or beneficially, by climate-related stimuli. The effect may be direct (e.g., a change in crop yield in response to a change in the mean, range, or variability of temperature) or indirect (e.g., damages caused by an increase in the frequency of coastal flooding due to sea-level rise)" **(IPCC 2001).**

Adaptive capacity is "the ability of a system to adjust to climate change (including climate variability and extremes), to moderate potential damages, to take advantage of opportunities, or to cope with the consequences" **(IPCC 2001).**

The overall vulnerability index score of the different States and districts has been mentioned in the **Tables: 9.1 & 9.2** Droughts in India are becoming yearly occurrences; they are characterised by increased dry spells and seasonal rainfall anomalies. The 2002 drought, one of the severest ever to hit the country, affected 56 per cent of India's geographical area and impacted the livelihoods of 300 million people (WMO, 2007).

Analysis suggests that the southern and western zones are the most vulnerable to droughts; The northern, eastern, and central zones are moderately vulnerable; an increase in the frequency of meteorological and agricultural droughts has been observed in these regions since the 2010s.From the above table it is evident that after Assam, Andhra Pradesh and Maharashtra, the state of Karnataka is the fourth most vulnerable states in India.

[2] Department of Science and Technology

Table: 9.1 State Wise Overall Vulnerability Index

Sl. No	State	Overall Vulnerability Index	Rank
1	Assam	0.616	1
2	Andhra Pradesh	0.483	2
3	Maharashtra	0.478	3
4	**Karnataka**	**0.465**	**4**
5	Bihar	0.448	5
6	Manipur	0.424	6
7	Rajasthan	0.423	7
8	Arunachal Pradesh	0.408	8
9	Sikkim	0.368	10
10	Odisha	0.365	11
11	Nagaland	0.339	12
12	Tamil Nadu	0.329	13
13	Himachal Pradesh	0.328	14
14	Jammu and Kashmir	0.328	14
15	NCT Delhi	0.29	15
16	Gujarat	0.28	16
17	Uttar Pradesh	0.269	17
18	West Bengal	0.257	18
19	Tripura	0.25	19
20	Kerala	0.226	20
21	Uttarakhand	0.19	21
22	Madhya Pradesh	0.182	22
23	Puducherry	0.175	23
24	Haryana	0.116	24
25	Goa	0.101	25
26	Chhattisgarh	0.087	26
27	Jharkhand	0.067	27
28	Andaman and Nicobar Islands	0	28
29	Dadra and Nagar Haveli	0	28
30	Daman and Diu	0	28
31	Lekh Ladakh	0	28
32	Lakshadweep	0	28
33	Meghalaya	0	28
34	Mizoram	0	28
35	Punjab	0	28

Source: Mohanty and Wadhawan, 2021

Table 9.2: District Wise Drought Vulnerability Index, India

Sl. No	District	Index
1	Rajkot	1.0
2	Anantapur	0.9
3	Aurangabad	0.9
4	Barmer	0.9
5	Churu	0.9
6	Jaisalmer	0.9
7	Jodhpur	0.9
8	Nagaur	0.9
9	Ahmadnagar	0.8
10	Ajmer	0.8
11	Bhilwara	0.8
12	**Bijapur**	**0.8**
13	Chittoor	0.8
14	Osmanabad	0.8
15	Rajsamand	0.8
16	Udaipur	0.8
17	**Bidar**	**0.7**
18	**Gulbarga**	**0.7**
19	Jalgaon	0.7
20	**Kolar**	**0.7**

Source: Mohanty and Wadhawan, 2021

The zone-wise analysis of drought hotspot districts shows that India's southern and central zones are highly exposed to extreme drought events. The states with maximum exposure to extreme drought events are Rajasthan, Andhra Pradesh, Maharashtra, Karnataka, and Tamil Nadu. Among the top 20 drought exposed districts in India, the state of Karnataka has reported three districts namely Bidar, Gulbarga and Kolar. Further Mohanty and Wadhawan (2021) reported that Chamrajnagar, Davanagere, Mysore and Bellary are the other most vulnerable to climate extreme events in Karnataka state (**Table 9.2**.)

9.3: Climate Change impacts and Inequality in Karnataka

The World Bank (2016) expressed the view that the rising temperate, unpredictability over the beginning of the monsoon season has resulted in impacts on some people and communities associated with low socioeconomic characteristics of the many developing countries.

A study by Gentle et al. (2014) showed that climate change related impacts have not been uniform among the people and communities. This study shows that the vulnerability to climate change is determined by several socioeconomic characteristics such as household size, quality of farmland, education of the head of the household, access to financial resources and social status within the community

Climate change may also affect labour productivity through additional channels, for instance by increased incidence of endemic vector-borne diseases such as malaria, dengue, chikungunya, filariasis, Japanese encephalitis and visceral leishmaniasis." (The Indian Express, 2022). Its further points to the possibility of rising inequalities. "Income and wealth levels, gender relations and caste dynamics will likely intersect with climate change to perpetuate and exacerbate inequalities." For instance, the combination of rising cereal prices, declining wages in the agricultural sector and the slower rate of economic growth attributable to climate change "could increase India's National poverty rate by 3.5 per cent in 2040 compared to a zero-warming scenario". This equates to around 50 million more poor people than there otherwise would have been in that year, and while both urban and rural populations will face the brunt of rising cereal prices, it will be the rural population that will be impacted harder." (The Indian Express, 2022).

Climate change has been the prime reason for issues like low access to drinking water, food insecurity and associated health problems. Dietz and Stern (2009) & (Olsson et al., (2014) observed that the climate-related events have a high impact on the marginalised population compared to the high-income groups in the developing countries. Fankhauser and Stern (2016) have also noted that climate change exerts uneven impacts across countries and populations at the global level. Bridges (2016) found that the Scheduled Caste and indigenous communities are adversely affected due to climate change in India. IPCCAR6 warns that climate will adversely affect poor countries in general and vulnerable groups in particular. For the vulnerable groups who live below poverty line, climate change is another burden for their lives and livelihoods (Rajashekar et al., 2021)

Karnataka is one of the most vulnerable states to climate change. Balasubramanian et al (2019) found that 65% of sample households in four Karnataka districts were highly vulnerable, 30% moderately vulnerable and 5% were less vulnerable to climate change and weather-related events. It was found that climate change affected the income and livelihood of the vulnerable groups on account of declining wage rates and rising food prices.

Climate experts have warned that Karnataka is likely to be more vulnerable to climate change in India than other states. The state has 68 per cent of its farmland without irrigation, frequent droughts, a large share of its electricity being generated by hydro projects and some regions facing severe and perennial water shortage. It is stated that in terms of areas prone to drought, Karnataka is next only to Rajasthan- 54 percent of the state's geographical area is drought prone, which is about 88 of 176 taluks and 18 of 30 districts. There is adequate evidence to show that climate change has already affected crop productivity, forest biodiversity, hydrological processes and human health adversely (Prashanth, Deccan Herald, 2014)

There is a positive relationship between electricity consumption and carbon emissions, Paul et al., (2012) report that Kalaburagi in Karnataka is the highest consumer of electricity at 957 KW hrs per household (compared with 207 KW hrs per household for all India). In vehicle congestion, another risk factor for carbon emission in cities, Paul et al., (2012) report that Hubli-Dharwad is the highest at 474 vehicles per KM of road. Naturally, they find that Hubli-Dharwad and Kalaburagi are the worst in poor air quality, measured as violation of Respiratory Suspended Particulate Matter (RSPM) over the permissible levels.

Using district level data for India, Sridhar (2016) also finds that climate change indicators such as rainfall, extreme temperature differences, and urbanisation do not affect agricultural per capita income. In some specifications, Sridhar (2016) finds that urbanisation leads to increased agricultural income, possibly due to remittances. Coastal districts experience decreased agricultural income, plausible due to their salinity. Hence based on this research, urbanisation does not appear to directly worsen climate change or unfavourably affect agricultural income.

Krishna Raj (2020) shows that Bengaluru is likely to face an acute drinking water shortage with the reduction in water availability in the Cauvery River basin, mainly due to variation in precipitation levels

Nautiyal (2021) concludes that due to the biotic and abiotic stresses, the societies in BR Hills and the MM Hills regions are deprived of the resources which are required to sustain their livelihoods. For example, the contribution from non-timber forest products sector to household income declined from 50% about couple of years back to 4-5% in recent times. Such a shift in their income source impacted the sustainability of the resource flow from the natural to man-made ecosystems. He also finds an adverse impact of climate change on crop productivity, vegetation changes, resource availability, resource flow and thermal heat changes in the Western Ghats region of Karnataka resulting in an increase in precipitation in

some of the areas of Western Ghats by 3.8 mm per year (high intensity rains in shorter time) with increase in local temperature. This has negatively impacted the production of the major crops in the region.

The exponential increase in population growth in Bengaluru region has resulted in an increasing demand for land in Bangalore Rural district, resulting in change in land use from agriculture to non-agricultural activities, leading to decrease in vegetation, waterbodies and reduction in groundwater table (Rajashekar et al., 2021). Manasi and Raju (2020) find that there is no water in most of the tanks which only collect local runoff during the rainy season and store water temporarily. Most of them are silted although a few are desilted. The numbers of borewells and defunct borewells have increased over the years. The depth of bore wells ranges from less than 500 to more than 1500 feet.

Shanabhoga et al., (2020) stated that Kalyan Karnataka (now Kalyan Karnataka) region is already under coercion from climate stresses, which proliferate vulnerability to further climate crisis and diminish the adaptive capacity

Shanabhoga et al., (2019) stated that the Overall exposure index of vulnerability to climate change composed of 7 indicators, which are related to different climatic variables like rainfall and temperature, Raichuru (0.684), Yadgir (0.591), Ballary (0.570), Kalburagi (0.562), districts emerged as highly exposed to climatic variability whereas, Bidar (0.336) and Koppal (0.322) were less exposed to climatic variability among the Hyderabad -Karnataka region. Yadagir (0.64) belonged to very high degree of vulnerability to climate change whereas Ballari (0.58) and Bidar (0.50) districts were belonged to high and medium level of vulnerability. It is also depicting that Kalburagi (0.45), Koppal (0.19) and Raichur (0.25) belonged to low vulnerability category. The average score of vulnerability index (0.435) suggests that there are huge disparities among the districts in terms of their level of vulnerability to climate change

These large differences in vulnerability among districts suggest that policy makers should develop district-specific policies and address climate change issues at the local level to reduce the vulnerability of the districts' population. It is, therefore, suggested that these districts should be considered as prioritized areas to minimize the vulnerability due to the growing risk of climate change. There is a need to put in place a holistic approach moderating exposure level, reducing sensitivity and enhancing adaptive capacity for sustaining the agricultural and livelihood in the wake of frequent climatic aberrations manifested in the form of low rainfall, moderate droughts and extreme water scarcity (Shanabhoga et at., 2019)

The specific impact they say is in terms of warming. Most parts of Karnataka could experience 1.5-2 degree Celsius warming relative to the level during the pre-industrial period (1880s) by as early as the 2030s under the likely high-emissions scenario. Water yield in the parts of the Cauvery basin in Karnataka is projected to increase by about 35 per cent, according to a hydrological model. Dependable flow in many reservoirs would be 75 per cent to 90 per cent by the middle of the present century. Also, parts of Cauvery basin (in Hassan, Mandya and Mysuru districts) will experience severe water stress by the same time. Reduced availability of surface water, higher water stress for crops, floods and drought makes the affected districts particularly vulnerable to climate change. Kalaburagi, Raichur and Yadgiri would be the worst-hit (Prashanth, Deccan Herald, 2014). Assessment of the impact of climate change on five key crops of Karnataka shows that the yield of rice, maize, sorghum, red gram and ragi is likely to decline by the 2030s, setting off a food crisis. In Karnataka, forest and bio-diversity types will experience change by the 2030s. The implication is that future climate may not be suitable for the existing forest types and biodiversity and can result in forest dieback (Prashanth, Deccan Herald, 2014)

9.4: Climate Vulnerability - Poverty Nexus in Karnataka

Karnataka state is spread over 19.1 million hectares or 5.8% of India's geographical area and is home to 5.1 % of Indians. Nearly 63% of its geographical area falls in dry zones and 66% of its population live in rural areas. Thus, it is obvious that state's overall performance in reduction of poverty, inequality and climate vulnerability depends on how the dry rural areas of Karnataka fare. Five dry zones of the 10 agro climatic zones of Karnataka receive relatively low rainfall that is erratically distributed. The transition zones in the eastern part of the hill zones to the west of the dry zones receive relatively more rainfall with less erratic distribution. In 2007, Karnataka government established Karnataka State Natural Disaster Monitoring Centre with broad mandate to monitor different disasters like, Droughts, Floods, Earthquakes, Landslides and Hailstorms in the state (KSNDMC 2020). It has installed weather monitoring stations in all the Hoblis and Gram Panchayaths. Help Desk "VARUNA MITRA" which is operational round the clock, at KSNDMC throughout the year provides weather updates to the farming community. It also provides Weather Based Crop Insurance Scheme to farmers in the State. Karnataka State Disaster Management Authority (KSDMA), the apex decision making body of the State headed by the Chief Minister reviews and monitors all disaster related activities in the State. (KSDMA, 2020). The Karnataka State Disaster Management Plan was drawn to provide a framework and guidance to the State

Government agencies and other stakeholders for managing major disaster redressal and mitigation measures, in accordance with the provisions of the DM Act 2005 (KSDMP, 2020-21).

Karnataka Government has also taken up a number of measures to address the severe drought situation prevailing in the State. Alternative short duration crops that are drought resistant or needing less water - like Bajra, Ragi, Minor Millets, Sunflower, Horse gram etc., are promoted with the help of state Universities of Agricultural Sciences. Govt has details plans for the prevention and mitigation of heat wave impacts in the State (KSAP-2021). According to the latest report by KSNDMA (2021), both coastal regions and interior i.e., south and northern regions of Karnataka face high risks due to the climate change. KSNDMA (2021) provides a comprehensive overview of the risks, approaches and measures to be taken in various sectors of the economy. Under the Disaster Management Act (2005), it translates the Sendai framework for Disaster Risk Reduction (DRR, 2015-30) into a work plan for the state at different spatial and temporal scales, while being guided by the national strategies. This chapter tries to build on the information available in the report on socio-economically inclusive DRR measures around climate change, with a closer look at specific issues regarding the persistent nexus between inequality, development and climate change. In the backdrop of the concerns about climatic changes indicated above, remaining part of this section first looks at the trends in rainfall and temperature changes in the state, before tracing the impacts of these changes on major natural resources (e.g., forests, farm lands and water bodies) highlighting the consequences for poor communities.

9.5: Trends in Temperature and Rainfall in the State of Karnataka

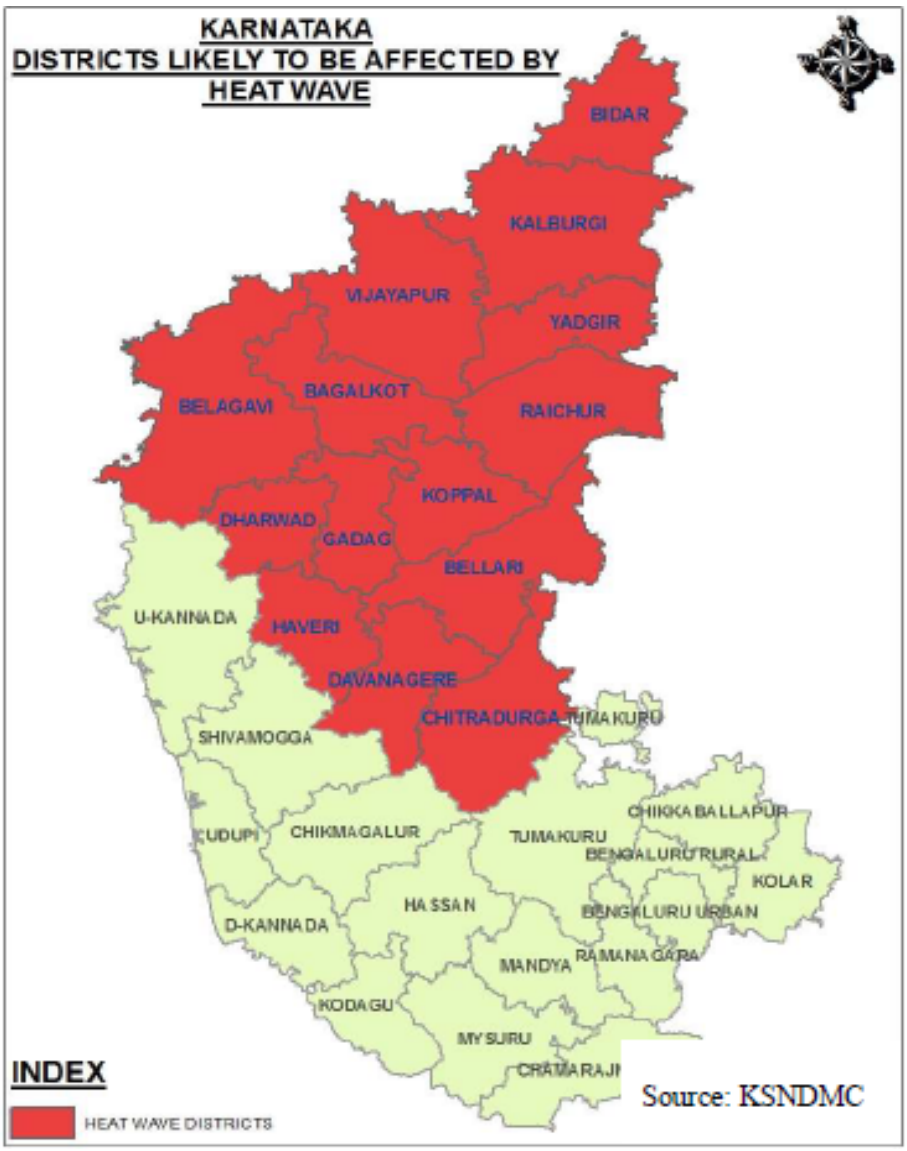
Across the state, over the last 100 years, the highest increase in the minimum and maximum temperature was only 0.6°C. In contrast, projections for 2030s indicate a rise of 1.7°C to 2.2°C. This rapid increase in atmospheric temperature is going to be more pronounced in the northern districts. This will be manifested as increased frequency of heat waves (**Table 9.3 and Figure 9.4**). In 2019, Kalaburagi witnessed temperatures of over 43 degrees Celsius, followed by Raichur (42 degrees), Vijayapura, Bagalkot and Koppal. More districts in the north interior zone are now vulnerable to heat wave like condition - Belagavi, Bidar, Dharwad, Gadag, Kalaburagi, Yadgir, Ballari and Haveri. (KSNDMC- 2021).

Table: 9.3 Projected Change in Annual Temperature in the Districts of Karnataka for 2021-50 compared to 1961-90

Sl. No	District	Projected Change tAVG in °C	Projected Change tMIN in °C	Projected Change tMAX in °C
1	Yadgir	2.21	2.34	2.10
2	Bijapur	2.20	2.32	2.11
3	Raichur	2.20	2.31	2.12
4	Gulbarga	2.19	2.33	2.04
5	Bagalkote	2.15	2.25	2.10
6	Koppal	2.14	2.21	2.09
7	Biddar	2.12	2.30	1.93
8	Bellary	2.08	2.16	2.03
9	Gadag	2.08	2.15	2.05
10	Belgaum	2.01	2.11	1.98
11	Chitradurga	2.00	2.07	1.97
12	Dharwad	2.00	2.08	1.97
13	Mandya	1.99	2.03	2.00
14	Tumkur	1.99	2.06	1.96
15	Chikkaballapur	1.98	2.06	1.91
16	Davanagere	1.98	2.05	1.98
17	Bangalore Rural	1.97	2.06	1.91
18	Haveri	1.97	2.04	1.97
19	Ramanagara	1.97	2.05	1.92
20	Bangalore Urban	1.96	2.06	1.88
21	Chamarajanagar	1.96	2.03	1.94
22	Kolar	1.96	2.06	1.87
23	Mysore	1.95	1.99	1.98
24	Hassan	1.92	1.96	1.95
25	Shimoga	1.88	1.95	1.91
26	Uttara Kannada	1.87	1.96	1.86
27	Chikkamagalur	1.86	1.93	1.89
28	Koadgu	1.79	1.86	1.81
29	Dakshina Kannada	1.72	1.81	1.71
30	Udupi	1.71	1.78	1.72

Source: Karnataka Action Plan on Climate Change 2013

Figure: 9.4 Karnataka Districts Likely to Be Affected by Heat Wave



Source: KSNDMC, 2021.

9.5.1: Rainfall pattern in Karnataka

Karnataka state receives 80% of its annual rainfall during the southwest monsoon period, 12% in the post-monsoon period, 7% in summer and 1 % in the winter months. The coastal region records 3,350 mm of rainfall during the southwest monsoon while the rainfall drops to 600-700 mm towards the leeward side. The humid Malnad region receives annual rainfall in the range of 1,000-3,800 mm.

Table: 9.4 Projected Change in Rainfall in the Districts of Karnataka for 2021-2050 compared to 1961-90

SL.No.	District	Change Projected for JF months (%)	Change Projected for MAM months (%)	Change Projected for JJAS months (%)	Change Projected for OND months (%)	Change in annual mean Projected (%)
1	Bagalkot	-35.42	43.65	-10.47	16.87	1.38
2	Bengaluru Rural	3.05	36.30	-2.31	9.61	3.56
3	Bengaluru Urban	-15.11	29.92	-2.89	10.14	3.66
4	Belgaum	-6.25	20.34	-1.32	20.00	6.15
5	Bellary	-14.47	36.16	-8.11	6.87	0.52
6	Bidar	-71.30	22.29	6.89	50.76	27.03
7	Bijapur	-50.81	39.41	-9.81	12.54	0.60
8	Chamarajanagara	-8.51	16.55	-8.40	1.56	-1.85
9	Chikkaballapura	50.17	17.40	-2.40	3.21	0.97
10	Chikkamangaluru	-44.13	2.86	0.14	11.63	3.62
11	Chitradurga	0.94	22.76	-3.98	14.46	6.50
12	Dakshina Kannada	-34.37	2.08	-0.43	8.28	0.87
13	Davanagere	0.00	24.07	-1.84	14.20	6.57
14	Dharwad	0.00	30.55	0.06	9.94	3.71
15	Gadag	0.00	37.48	-6.79	12.42	1.93
16	Gulbarga	-63.11	12.77	-1.44	9.49	4.26
17	Hassan	-53.02	-3.39	-3.72	11.94	2.45
18	Haveri	0.00	12.28	1.91	10.87	5.80
19	Kodagu	-30.65	-7.33	0.97	6.61	2.53
20	Kolar	4.80	22.75	-3.57	4.90	1.08
21	Koppal	-2.08	45.19	-12.35	8.81	-1.56
22	Mandya	-20.00	4.57	-7.00	10.40	1.40
23	Mysore	-22.93	-2.68	-4.91	2.90	-0.78
24	Raichur	-4.17	20.50	-10.99	-7.59	-6.79
25	Ramanagara	-21.75	22.77	-4.87	10.27	2.85
26	Shivamoga	-12.50	10.55	4.31	8.03	5.27
27	Tumkur	13.76	21.77	-3.95	14.26	5.22
28	Udupi	-10.71	25.93	2.43	9.51	4.07
29	Uttara Kannada	0.00	10.62	4.87	6.80	5.40
30	Yadgiri	-65.04	19.32	-7.14	-5.22	-4.07

Source: Karnataka Action Plan on Climate change, GoK (2013)

The rainfall deficit hinterlands of Karnataka, with average annual rainfall of 500–600 mm (lowest average precipitation of below 200mm in the taluks of Kollegal, Jagalur and

Chikkanayakanahalli (CGWB, 2017)) is stipulated to experience a greater number of heatwaves in future. This region lies across the regions of Kalyana Karnataka and Kittur Karnataka, covering the districts of Bijapur, East Belgaum, north-east Dharwad, west Raichur, east Bellary, Chitra durga and a small portion of Tumkur and Chamrajnagar. According to Indian Meteorology Department (IMD), over the last 100 years average annual rainfall decreased by 64 mm (from 1,204 mm during 1901-1950 to 1,140 mm during the period of 1951 to 2008). Projected decline in rainfall by 2050 is notable in five districts – Koppal, Raichur, Yadgir, Chamrajnagar and Mysore (**Table 9.4**). Such erratic monsoon can offset the progress achieved in non-primary sectors, as experience has shown (Economic Survey 1990-91).

9.5.2: Drought, Floods, Cyclone, Landslides and Forest Fires

Data for taluks for the years 2015, 16, 18 & 19 show that more than half the regions of the state are affected by drought (**Figure.9.5 and Annexure 9.1**) 2001 to 2018. In the years of severe incidence, it goes up to more than 70% of the state. Districts that are most affected by drought include Chitradurga, Kolar, Tumkur, Mandya, Chikballapura and Bangalore rural.

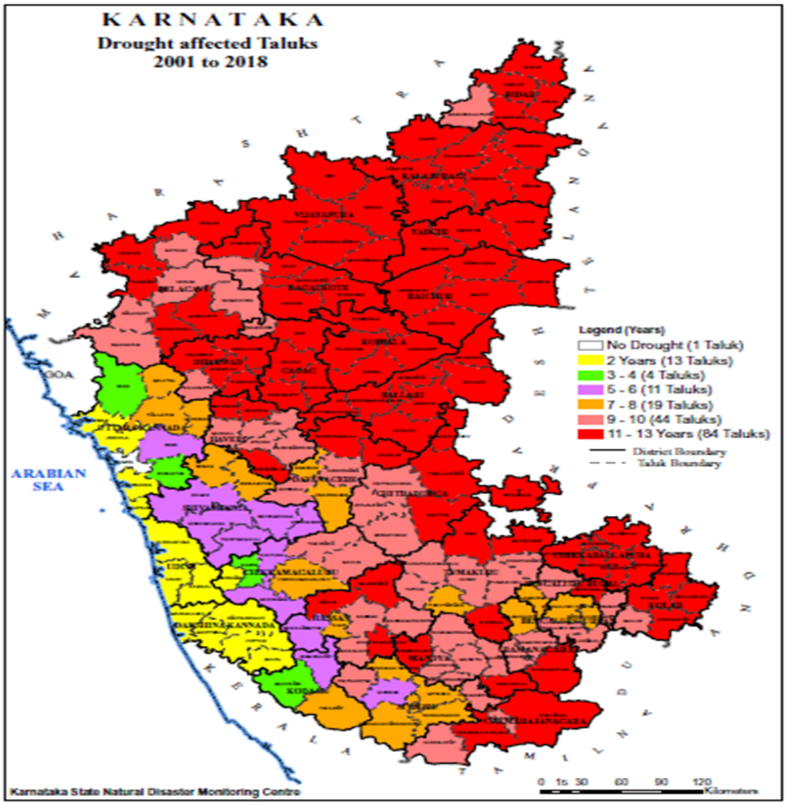
With 2/3rd of the state receiving less than 750 mm annual rain fall (between 1960-90), Karnataka is the second most drought-prone state after Rajasthan. According to Drought Vulnerability Report of Karnataka (2017), drought affected area covers nearly 80% of the taluks in the State (i.e., nearly 140 taluks out of 176) which is almost the entire area under rain fed agriculture (KSNDMC 2017. p31.) that supports nearly 70 lakh farming families[3]. In the two decades from 2001, the state experienced droughts of various severity for 15 years, with exceptions only during three years i.e., 2005, 2010 and 2017. Variation in the spatial and temporal distribution of rainfall during the south west monsoon is the main reason for the recurrence of drought in the state (KSNDMC 2020).

Districts most impacted by floods include Kodagu, Shimoga, Dakshin Kannada, Raichur, Chikmagalur and Belgaum, in decreasing order of impacts in taluks over three years of occurrence of floods(Annexure 9.2). Flood impact is seen in less than half the number of drought affected taluks. Noteworthy are the facts that the intensity of the flood impact is felt in shorter period of time than drought and that flood vulnerability is seen high in districts with high HDI, except Raichur. Karnataka experienced severe floods during 2005, 2009,

[3] It is to be noted that accurate estimates on rainfed holdings or people dependent on rainfed farming were not available for all districts, though area under rainfed agriculture was available

2018 and 2019 (KSNDMC 2020). The impact of unprecedented rainfall was such that it changed the geomorphology, course of rivers and drainage of the region. Fertile topsoil was washed away and trees were uprooted, adversely affecting ecological security in the districts of Kodagu, Hassan, Chikkamagaluru, Shivamogga, Belgaum, Dharwad and coastal districts of Dakshina Kannada (DK), Udupi and Uttara Kannada (UK). In 2019, the following year, the entire state experienced severe drought situation as a result of deficit rainfall and prolonged dry spell during pre-monsoon period (March-May) and Southwest Monsoon (June-July).

Figure: 9.5 Drought affected Taluks in Karnataka (2001-2018).



Source: KSNDMC (2020)

Heavy rainfall in the coastal region during 2009 caused loss of crops and deterioration in crop quality in the Malnad districts and major parts of north-interior Karnataka. The most affected districts in 2009 were Raichur, Koppal, Bellary and Gulbarga. Critical infrastructure such as roads, bridges/culverts, electrical infrastructure, schools, hospitals and *anganwadi*s, etc, have been ravaged due to floods. In 2018 floods in the Western Ghat (WG) region, specifically in the district of Kodagu, many village and town habitations were marooned (KSNDMC 2020). The same report highlights the fact that coastal districts of Dakshina Kannada, Udupi &

Uttara Kannada are under direct threat of cyclones in Arabian Sea and indirect attack of cyclones along the eastern coastline. About 30% of the coastal zone is subjected to moderate soil erosion and 16% to severe soil erosion. The problem is severe in Dakshina Kannada and Udupi coasts. Coastal erosion and submergence of land have been reported in Ankola, Bhatkal, Malpe, Mulur, Mangalore, Honnavar, Maravante and Gokarna taluks in Karnataka. More than 320 kilometres of coastline which supports nearly 3 lakh fisher population is currently under the threat of sea level rise and inundation.

These coastal districts have been better performers in terms of HDI, MPI and population Below Poverty Line (BPL). But the threat of global warming induced erosion makes them increasingly vulnerable to disasters. Socio-economically better performing districts of Udupi, DK and UK were the districts prone to cyclone and gales (Mandal and Mohapatra, 2010). Very similar is the case of WG districts like Kodagu, where floods and landslides threaten their relatively better performance in economic wellbeing. Landslides are increasing in frequency and resulting in significant damages in the hill districts of Udupi, Chikmagalur, DK, UK and Chamrajnagar. With interior plains increasingly affected by droughts and heatwaves, coastal areas by cyclones and incursion of sea water, and hill districts by landslides, development outcomes in both well performing and badly performing districts appear to be at the mercy of ecological factors.

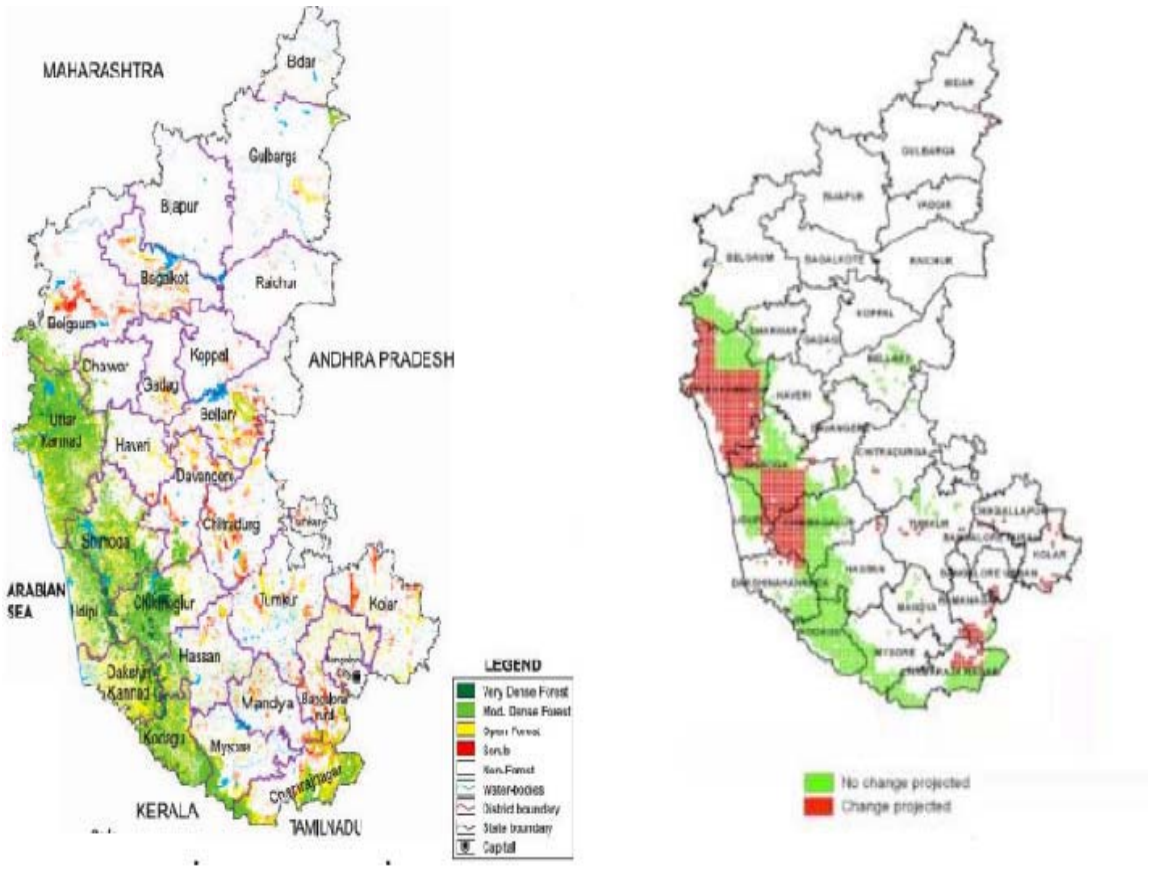
9.6: Quality of Natural Ecosystem and Nature Dependent Livelihoods

According to the Karnataka State Action Plan for Climate Change (KSAPCC) report 2013 and Karnataka State Disaster Management Plan (KSDMP) 2020-21 (KSDMA, 2021), state has been losing forests both in terms of extent and quality. For instance, during a seven-year period from 2000 to 2007, total forest area declined by 2% and dense forests by 16%, when 38% forests in the Western Ghats areas of the state experienced some shift in their typology. **Figure 9.6** shows that projected changes in forest types for 2050 indicate that these trends are likely to continue.

Declining extent and quality of forests has direct impact on the poorest population and tribal of the state whose lives and livelihoods are directly dependent on natural ecosystems. (Murthy et al., 2005; Kavitha et al., 2013; Dhanya et al., 2013; Basavarajaiah et al., 2020).

More than 3 million households, mostly belonging to different tribal communities are living close to, and dependent on the forests of the state. (Annual report, Forest Department, GoK (2020).

Figure 9.6: Projected Change in Forest types of Karnataka: 2021-2050.



Source: KSAPCC, 2013

It is a well-known fact that quality of forests determines the availability and quality of water resources for all (hydrological security), as well as the soil nutrient cycle of our production landscapes (Kassa and others, 2017; Lele, 2009). Additionally, continued provision of energy and water from hydroelectric and canal irrigation projects in Karnataka depend on the extent and quality of forests in the catchment areas. Based on an econometric cluster analysis that took into account the extent and quality of forests as well as wastelands, Kadekodi (2000) concluded that "*...there is a strong two-way positive linkage between social development and environmental conservation. Social development and environmental conservation are to be dealt simultaneously.*" The paper suggested simultaneous interventions on socio-economic and environmental fronts for six districts in the state (Raichur, Bellary, Bijapur, Gulbarga, Chitradurga and Shimoga).

Forest fires: Increasing incidence of wild fires is evident in Karnataka (see **Table 9.5**). Severity of fires in the forests (in terms of loss of vegetation, birds and animals; rise in ambient temperature, smoke pollution, damage to top soil and soil moisture) indicate CC induced risks and vulnerabilities among the people residing near the forests. Just like drought

and heatwaves in the semiarid regions, floods in the coastal regions and landslides in the Ghat regions, forest fires generate the most adverse impact on the poorest families from marginalized communities. Each of these extreme events can be super imposed on the poverty ranking of districts. Forests as mentioned in the previous paragraph contribute notable share of income and nutrition sources of the poorest.

Table: 9.5 Increasing Incidence of Wildfires in Karnataka (KSDMA 2021)

Incidents/year	2015	2016	2017	2018	2019
Number of forest fires	589	913	925	985	Bandipur National Park
Area affected by forest fires (hectares)	168.67	278.68	6976.9	-	3160

Source: Department of Forest, Govt. of Karnataka

Forest Survey of India (FSI) has cautioned that 22.78 lakh acres (9,222 sq km) or about 20% of the green cover spread across three districts in the central part of the state is fire-prone[4]. FSI data shows about three lakh acres (1,199.9 sq. km) of forest area as very highly fire prone recording 26 to 52 fire incidents in 13 years. This is followed by 7.6 lakh acres (3,067 sq. km) of highly fire prone areas recording an average of one to two fire incidents every year. Forests of Uttar Kannada, Chikkamagalur and Shimoga districts are also reported as vulnerable to climate change. Karnataka State Disaster Management Plan (2020-21, p81) finds the causes of forest fires as anthropogenic. Loss of forest is attributed to increasing human settlements, and economic activities. A rise in the temperature in the Western Ghats showed an annual mean increase between 1.7°C and 1.8°C compared to the 1970s. It is projected that minimum temperature might rise by 2°C to 4.5°C. While the number of rainy days are predicted to be declining in Western Ghats and coastal areas, intensity of rain is set to raise. With rising temperatures and decreasing frequency of rains, forest fire has become an annually recurring concern. This is triggering a shift in the vegetation and 18 out of 54 forest grids are projected to undergo typology changes by the 2030s in the Western Ghats region.

9.7: Agriculture and Climate Change

Karnataka's land mass consists of the Deccan region with a hilly terrain along the west coast of Arabian Sea and a Central Plateau. The Cauvery & Krishna, the east flowing rivers and the major west flowing rivers Sharavathi & Kali historically provided the entire terrain with a flourishing agricultural economy. But since the late 1990s, the state is known for high

[4] https://www.deccanherald.com/state/23l-acres-of-karnataka-forests-prone-to-fires-study-790663.html

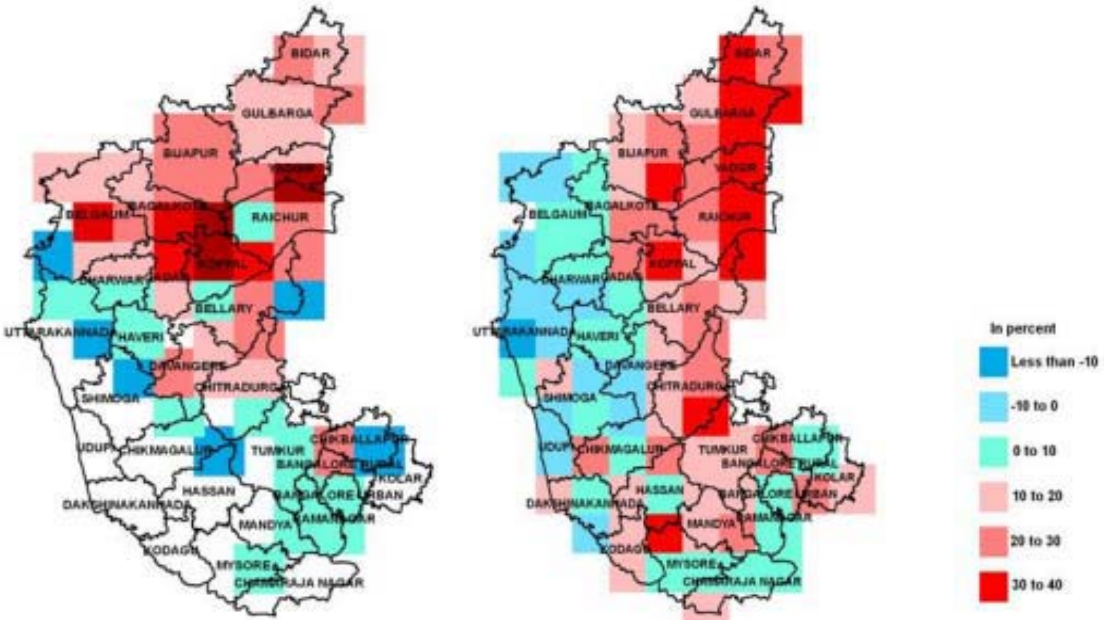
incidence of farmers' suicides in its commercial farming regions. Top five districts that recorded the highest number of farmer suicides from 1996 to 2017, were Chitradurga, Shimoga, Chikmagalur, Davanagere and Tumkur (State Crime Records Bureau, Karnataka). Nearly 57% of the workforce of the state depend on about 116 lakh hectares of land under cultivation. Approximately 60% of the farm holdings are small and marginal in size (52 lakhs out of 87 lakhs) and they operate only 43% of the total cultivated land (Agri census 2015-16 (GOK, 2019)). Thus, any decline in the quality of cultivated land falls disproportionately on the small and marginal cultivators in all agroecological regions of the state. Over and above the land dependence of the rural poor, their climate dependence is evident in the fact that nearly 70% of the agricultural land is rainfed operated by around 70 lakh farmers For sustainable human development in rain-fed agrarian belts, the following are found to be more effective and long lasting – agro ecologically suitable farming systems, reliable markets for the producers of rain-fed farming and land reforms giving access to minimum required area of land for a farming family. Rain-fed Area Network in Karnataka is trying to fill the lacunae in agricultural policies for the semi-arid areas of the state.

Since 1980s the net irrigated area has more than doubled. From 16.8 lakh ha in 1980-81, it reached 39.4 lakh ha in 2008-09, with 32% of the cultivable land irrigated. This indicates a decline in rain-fed farming and a rise in the dependence on irrigation and groundwater, when in fact rainfall and ground water levels are declining and becoming more unpredictable. Ground water provides for 45 percent of irrigation and these crops have to compete with expanding urbanisation for ground water. Increased demand from both irrigated farming and expanding urbanisation have to deal with severe reduction in ground water aquifers, beyond replenishment.

Several districts including Bangalore Rural, Kolar, Tumkur and Chitradurga draw more ground water than is naturally recharged (KSAPCC 2013. p.58). Central Ground Water Board data for 2006 mentions 50 districts of Karnataka covering 52% of state's geographical area and hosting 60% of population is in unsafe category (Shankar et al., 2011). Recent studies have found that, indiscriminate and unscientific emphasis on ground water dependence in Karnataka are more pronounced in districts like Bangalore, Belguam, Chickballapura, Chitradurga, Kolar, Ramanagaram and Tumkur. Decline in water table affected the resource-poor small and marginal farmers who lose their access to irrigation and also came under severe financial constraints (Kumar et al., 2016).

It is important to note that the list of districts maximum prone to drought from 2015 onwards are heavily irrigated by ground water (Bangalore Rural, Chikballapur, Kolar, Mandya and Tumkur; Mandya has both canal irrigated and ground water irrigated area in notable extent). Forest degradation in river catchments has been instrumental in significantly reducing the original storage capacity of many reservoir dams in the state, leading to drought situation in even canal irrigated areas.

Figure: 9.7 Projected Incidence of Drought (2021- 2050) in Karnataka during Kharif and Rabi Seasons, based on 1960-90 data



Source: Karnataka State Action Plan on Climate Change,2013.

Increased rainfall intensity, floods and wind velocity have caused degradation of fertile top soil in many parts of the state (Kumar et al., 2017). Thus, soil erosion in the agrarian districts of the state adds to the impact of drought and floods. Primary sector of Tumkur, Mandya, Hassan and Haveri are the most vulnerable in terms of fluctuating trends in annual temperature and precipitation, rain pattern, cultivated area, production and productivity trends or loss of traditional crops/spices etc. (KSAPCC 2013. p15-43) **Figure 9.7**. These are also the districts (after Chitradurga, Shimoga, Chikmagalur and Davanagere) where notable incidence of farmers' suicides has been reported. As drought, dry spells and flash floods affect the cropping pattern in the State, the three biodiversity hotspots of Cauvery basin, the Coastal region and the leeward Deccan plateau record a decline in many plant species. It is reported that, 6% of cereal crops, 85% of legume species and 13% of vegetables species are under the threat of extinction (KSAPCC 2013 p.37).

Declining scope of agriculture needs to be studied according to agro-climatic regions, identifying specific deprivations arising out of climatic pressure on land, soil, water, livestock etc. This should then lead to framing suitable policy measures to enhance the capabilities and opportunities for people such that local population can continue to bank upon their skilled livelihood base or choose other suitable and secure livelihoods. Unless existing skills find consistent market and other secure livelihood options start emerging, rural poor will be desperate to migrate or take ad hoc and drastic measures of survival amidst climate extremes.

Thus, again the same solutions emerge here too similar to the one that emerged from the previous section on poverty and inequality – rural non-farm employment to supplement farm employment and agro-ecologically appropriate farming infrastructure.

9.8: Climate Change and Inequality Across Districts

Vulnerability to climate change is a function of adaptive capacity, exposure and sensitivity. Climate vulnerability is worked out by adding the latter two and finding the difference of their sum from adaptive capacity. Climate vulnerability is projected to be high in the northern districts in comparison with other districts (**Table 9.6**).

The results of the **Table 9.6** shows that the Kalaburagi district has the highest climate vulnerability index of 0.747 followed by Kolar (0.720), Bidar (0.720), Raichur (0.712) and Yadgir (0.711) districts. The districts of Kodagu and Udupi have only 0.278 and 0.215 vulnerability index respectively, the least in Karnataka state. We can observe highest vulnerability index values in northern districts of Karnataka which is due to large variations in rainfall and temperature during the year. These are the key determinant indicators which explain high climatic fluctuations among districts. For instance, Prevalence of a high degree of anticipated change in mean precipitation and high inconsistency in minimum and maximum temperatures drove Kalaburagi district to the top of the chart.

Table: 9.6 Index of Climate Vulnerability Across the Various Districts of Karnataka

Sl. No.	Districts	Annual rainfall	S-W monsoon	Max. temp	Min. temp	Avg. temp	Index total
1	Kalaburgi	0.177	0.174	0.102	0.169	0.125	0.747
2	Kolar	0.17	0.183	0.189	0.107	0.073	0.72
3	Bidar	0.173	0.169	0.12	0.189	0.069	0.72
4	Raichur	0.183	0.183	0.082	0.127	0.138	0.712
5	Yadgir	0.181	0.177	0.088	0.13	0.135	0.711
6	Vijayapura	0.185	0.182	0.087	0.147	0.1	0.701
7	Ramanagara	0.163	0.178	0.165	0.085	0.103	0.693

Sl. No.	Districts	Annual rainfall	S-W monsoon	Max. temp	Min. temp	Avg. temp	Index total
8	Ballari	0.186	0.187	0.1	0.054	0.154	0.681
9	Koppal	0.183	0.184	0.063	0.096	0.141	0.667
10	Bagalkote	0.188	0.185	0.078	0.109	0.095	0.656
11	Dharwad	0.181	0.179	0.118	0.094	0.07	0.643
12	Devanagere	0.178	0.179	0.066	0.046	0.125	0.593
13	Gadag	0.189	0.186	0.061	0.075	0.082	0.593
14	Chitradurga	0.183	0.185	0.06	0.044	0.119	0.591
15	Chikkaballapura	0.176	0.183	0.055	0.077	0.094	0.585
16	Belgavi	0.174	0.166	0.058	0.103	0.083	0.584
17	Tumkuru	0.176	0.181	0.044	0.055	0.105	0.561
18	Haveri	0.179	0.174	0.072	0.051	0.082	0.559
19	Mandya	0.172	0.185	0.038	0.026	0.116	0.537
20	Mysuru	0.173	0.182	0.023	0.036	0.101	0.514
21	Chamarajanagara	0.172	0.189	0	0.028	0.086	0.475
22	Uttara Kannada	0.078	0.074	0.139	0.077	0.106	0.474
23	Bengaluru rural	0.164	0.175	0.023	0.052	0.056	0.47
24	Bengaluru urban	0.157	0.168	0.015	0.038	0.055	0.431
25	Hassan	0.152	0.149	0.024	0.043	0.052	0.421
26	Chikkamagaluru	0.128	0.126	0.076	0.039	0.042	0.412
27	Shivamogga	0.103	0.082	0.053	0.058	0.076	0.372
28	Dakshina Kannada	0.031	0.03	0.045	0	0.189	0.294
29	Kodagu	0.08	0.082	0.094	0.022	0	0.278
30	Udupi	0	0	0.024	0.022	0.17	0.215

Source: Shivakumara and Murthy; 2019

9.8.1 Climate Change and Inequality Across Social Groups

Niranjan and Shivakumar (2019) discussed developmental inequality between the scheduled caste (SC), scheduled tribe (ST), other backward castes (OBC) and other communities; as well as between the urban and rural communities (South and North Karnataka). the finding of the above study is corroborated with the study of Balasubramanian et.al (2019) on impacts of climate change on disadvantage group i.e., Scheduled Caste and Scheduled Tribe villages in Karnataka found that Kalyan Karnataka region largely under rain-fed condition the Yarjanthi village (Raichur district) and the canal irrigated village Boovanahalli (Mandya district) were highly vulnerable followed by ground water irrigated village Gowdathatagadde (Kolar) and heavy rainfall region village Shiriyara (Udupi) which were less vulnerable due to climate change. Overall, the respondents in the four study villages faced unpredictable weather

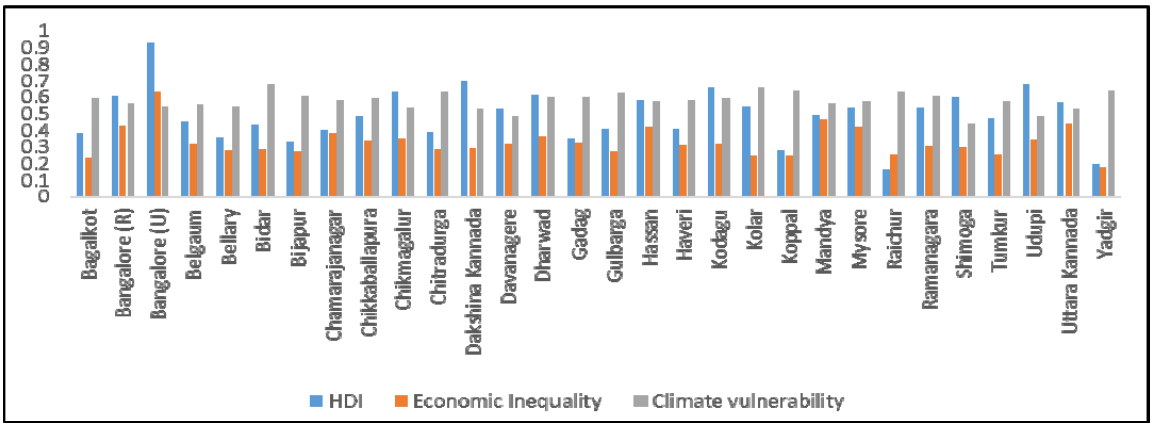
events, water scarcity, and decline in agricultural productivity; farmers in all the study villages were highly dependent on climate sensitive agriculture, forests and fisheries. Rural livelihood projects and program inputs can improve the livelihoods of scheduled caste and scheduled tribes in highly drought prone areas. Though women's role in adaptation and mitigation aspects of climate change has been acknowledged (Xenarios and others 2012) and sub national climate policies in India explicitly mention gender as an effective mediator in adaptation and mitigation, climate action very inadequately involves gender responsiveness (Singh et al 2021). A 2015 report by ICRISAT researchers based on house hold level analysis in Bijapur district says - "As female households are comparatively less vulnerable, even though their transition from vulnerable to less vulnerable is much less, efforts to move them from the vulnerable category are important Improving livestock breeds and technologies, providing supplemental irrigation and farm mechanization are found to be particularly important" (Palanisami et al 2015).

Economic backwardness and lack of productive assets and human capital, unemployment, limited occupational mobility, and high degree of under-employment in the region etc., increases vulnerabilities in the northern Karnataka region (Naik and others (2015)). These regions are inhabited by large population of marginalised communities such as Scheduled Castes (SCs) and Scheduled Tribes (STs). This intertwined regional and socio-economic disadvantages in NEK have a historical angleEven the modern agricultural infrastructure put in place in independent India for this semi-arid belt were not suitable to farming structures that evidently did not solve the lingering issues of multidimensional poverty, disparities and inequalities in these semi-arid districts. Another historical failure apart from the exploitative rulers and mismatch of agricultural strategy was the incomplete land reforms in NEK (Aziz and Krishna, 1997). These failures in pre and post independent India together resulted in long term deprivation and inequalities in the region currently known as Kalyana Karnataka, where climate change seems to reinforce the historically prevalent socio-economic disadvantages and disparities.

9.8.2: Economic Inequality and Climate Change

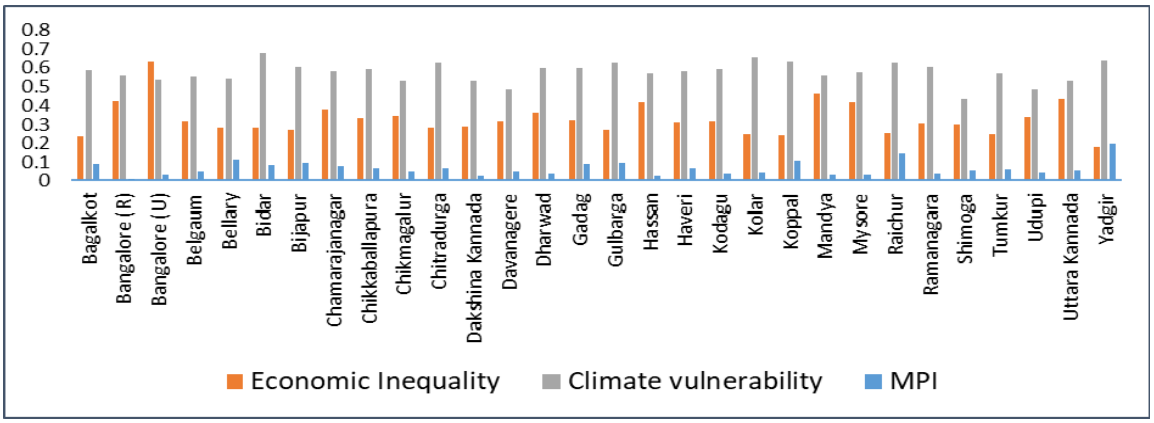
The following figure shows the economic inequality and Climate change among the districts in the state of Karnataka.

Figure: 9.8 Economic Inequality Among the Districts in Karnataka State



Source: HDI – GoK. (2015); Economic Inequality - Niranjan and Shivakumar (2019); Climate Vulnerability- Shivakumara, C., & Murthy, P. S. (2019);

Figure 9.9: Economic Inequality, Climate Vulnerability and MPI among the Districts, Karnataka State



Source: Economic Inequality - Niranjan and Shivakumar (2019); Climate Vulnerability- Shivakumara, C., & Murthy, P. S. (2019); MPI - NITI Aayog (2021).

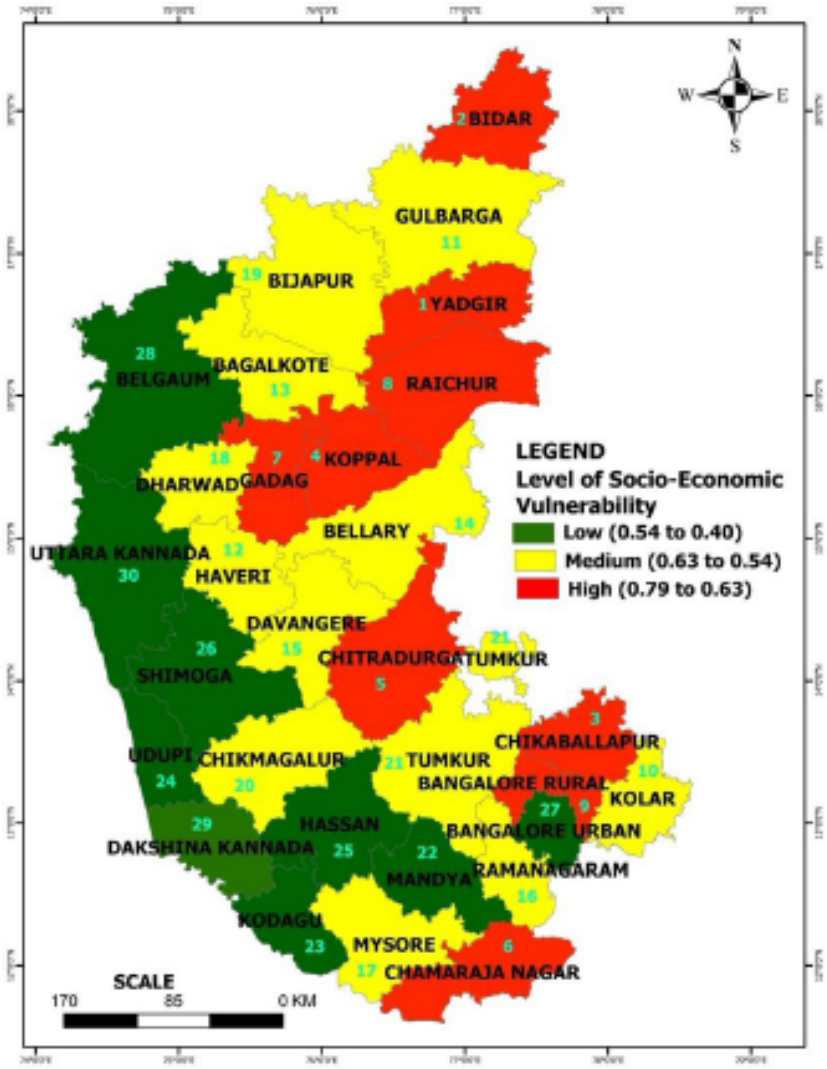
Figures 9.8 and 9.9 show Bidar, Kolar and Yadgir topping in the climate vulnerability index, while Shimoga, Davanagere and Udupi emerging as the least threatened districts. Economic inequality appears highest in Bangalore, Mandya and Uttar Kannada; least in Yadgir, Bagalkot and Koppal. Available measures of inequalities in the districts of Karnataka exclude land inequality, as available data on the number of small and marginal holders does not come with respective land area owned by the size categories in each district.

9.8.3: Socio-Economic Vulnerability to Climate Change

Socio-Economic Vulnerability is estimated using 12 variables such as population density, schedule caste and scheduled tribe population, literacy rate, percentage of forest cover in the geographical area, employment provided under MGNREGA, net irrigated area, marginal workers, primary health centres, district level per capita income, access to banking services

and disabled population. District wise Socio-Economic Vulnerability to climate change is depicted in the **Figure 9.10** below (Draft KSAPCC 2021-EMPRI-GoK):

Figure: 9.10 District wise Socio-Economic Vulnerability to climate change



9.9: Environment and Human Development: Role of Public Finance

Discussions on policies or public spending on economic growth and HD often ignore environmental protection. Integration of the concept of sustainable development in policies and programmes of the government is one of the objectives of the National Environmental Policy 2006. In this section we will discuss the needs for public financing of environmental protection and provide some insights on how environmental degradation impacts HD achievements. Given the public goods nature of environment, the likelihood of market failure cannot be ignored and need for government interventions for internalisation of environmental costs plays a key role. Public financing of environmental protection (e.g.,

improve air and water quality, develop sustainable food systems, preserve biodiversity, reduce greenhouse gas emissions, encourage carbon sinks) is important for protection of public health and livelihoods of a large section of the population.

The available literature indicates the impacts of environment on HD and economic growth and ask policymakers to internalise the cost of environmental degradation in various policies and programmes of the government. Ideal revenue sources for environmental programmes of the government could be eco-taxes on polluting inputs and outputs (Chelliah et al., 2007), pollution charges, pollution permits, non-compliance pollution charges and payments for ecosystem services, etc. Expenditures for policies from preservation to conservation and sustainable use of natural resources include strengthening indigenous people's rights, creating jobs for them as guardians of wild life, and strengthening institutions for values creation and addition.

The study by Pollin and Chakraborty (2015) indicates that India needs to increase annual investment (public and private) in energy efficiency and clean renewable energy sources by 1.5% of GDP to reduce CO2 emissions drastically. Kaur and Chakraborty (2020) find that targeted expenditures on climate change programmes are 5% to 6% of total expenditure of the Union budgets. However, there is much deviation in the budget estimates and the actual expenditure by the government on these heads. Hence, there is need for macroeconomic policy framework on climate financing in India and state, as this highly fragmented at sectoral levels. Lo et al. (2019) analyses the rationale for public investing in environmental common goods for public health. The study indicates that government spending on environmental goods does not crowd out other expenditures (particularly public spending on health). The study also finds strong linage between political/governance regime and environmental performance, therefore, there is a clear role for government action to preserve environment. Furthermore, financing HD without taking care of environmental degradation may not help in achieving sustainable development. Available literature suggests that environmental degradation could lead to more poverty and inequality as poor people are more vulnerable to environmental degradation. Hence, government budgeting should also consider controlling pollution and conservation of natural resources to protect the environment

9.10: Conclusion and Way forward

Climate change is having catastrophic impacts on communities and geographies around the world & India. In its Sixth Assessment Report, the IPCC confirms that breaching the 1.5°C mark is inevitable and that it will likely happen by 2030 (IPCC 2021). Given that India, the

seventh most vulnerable country in the world, has aspirations of becoming a five-trillion economy, it needs a climate approach that focuses on realising a just transition and on climate proofing. While Indian districts become ever more vulnerable, the country's leadership has been globally acknowledged for its climate vision. Though India is a signatory to and an active member of many regional and international disaster risk reduction treaties like the Delhi Declaration, Emergency Preparedness in South-east Asia Region (EPSEAR), the Sendai Framework for Disaster Risk Reduction (SFDRR), and the South Asian Annual Disaster Management Exercise (SAADMEX), there is a need for comprehensive study on climate change and inequality at the national and regional level to address the future climate change impact.

Limiting the global temperature increase to 1.5°C requires reaching net zero CO2 emissions by 2050 and reducing global emissions by approximately 50 percent in 2030, compared with 2010 levels.

The need is urgent for policies to transform rapidly and profoundly the way we use energy and transportation, produce and consume food as well as other goods, and shelter ourselves. The question is how to design these policies.

Reducing emissions will ultimately limit climate change impacts and their unequal effects; however, mitigation policies must not neglect their own impacts on inequalities. As they affect energy or food prices, mitigation policies may also slow down progress in energy access and affect the poorest, who spend a higher share of income on these goods. Thus, mitigation efforts should be shared fairly to ensure they serve the broader objectives of development, poverty and inequality reduction, improvement of air quality, health, and so forth. Within regions and countries, policy design is key to making sure climate policies do not hurt the poorest (Taconet at al., 2020)

In parallel to reducing emissions, adaptation policies must be put in place to decrease the exposure of the most vulnerable populations to climate change impacts. This means devising rules regulating construction in risky areas, such as flood zoning, land entitlement, and building standards. The poorest communities must be provided with better health services and new insurance mechanisms. Another idea of interest is the creation of adaptation funds that would ensure technological transfers from rich countries, which produce most patents, to poorer ones.

Jointly tackling climate change and inequality reductions requires paying attention to the intricate links between these issues. Limiting climate change is essential to reduce the risks it

would impose, notably on the poorest. However, to design climate policies, the recognition that individuals and countries differ in their ability to mitigate emissions and to cope with climate change impacts is essential. Poorly designed policies risk amplifying existing inequalities, but just transitions to low carbon and more resilient economies can foster more equal societies. (Taconet at al., 2020)

It is necessary for every individual to be aware of and concerned about the consequences of climate change and to contribute his or her mite towards the adaptation and mitigation measures. The state Government has formulated number of policy measures in this direction, and various Departments and Organizations of the Government have taken up programs in pursuance of these policy measures.

With the slew of policy measures and action plans, the State of Karnataka is poised to achieve its share of intended Nationally Determined Contributions (NDCs) in mitigation and adaptation measures of climate change in the State leading to its sustainable development. Action points for achieving the targets by 2030 are given below (SDG Vision 2030: Strategies and Action Plan for Karnataka), which will have significant positive impact on the reducing all kinds of inequalities arising from Climate Change:

- **Agriculture and allied sectors:** Increase area under watershed treatment; Construction of rain water harvesting (RWH) structures; Increase area under protective irrigation; Integrated farming systems (IFS) and sustainable agriculture; Dry land farming and micro-irrigation: (A) Sprinkler; (B) Micro-irrigation; Reduce annual consumption of chemical fertilizer; Promotion of organic farming and endemic drought/flood resistant varieties.

    - **Agro-forestry:** Tree planting in all vacant private and farm lands that are unfit for productive agriculture; Trees should satisfy various needs of farmers such as fodder, fuel, fruit, timber, medicine and other non-timber forest products; Promote dry land horticulture; Promote tree mulberry; Soil and water conservation; Biodiversity conservation. Promote afforestation in 9150 Sq Kms available in forest and 7.69 lakh ha of barren and uncultivable land through integration of plantation schemes of Forest Department and MNREGA.

- **Health sector:** Increase in health care facilities, including mental health care; Identification of areas vulnerable to climate change effects; Enhance disease monitoring and surveillance in vulnerable areas.

- **Livestock sector:** Greater emphasis on fodder production; conservation and genetic improvement of indigenous cattle and sheep breeds; Selective breeding for increasing productivity; Conservation by rearing elite animals in Government farms; Genetic selection for low methane emission.
- **Forest sector:** Restoration of disturbed forests and plantations; increasing focus on farm forestry and agro forestry in order to reduce pressure on natural forests; Policy changes to encourage people to plant trees in their own lands.
- **Combat Disaster Situations:** Reduce urban flooding (UF) by proper maintenance of drainage system. Proper solid waste management system and proper implementation of the plastic ban; Cleaning storm water drains (SWD) before rains; Improving strategies to rescue people stuck in flood situations by establishing rescue teams, equipping the rescue teams with communication systems, vehicles, training, etc.; Using ICT in developing advance warning systems, dissemination of information through SMS, web portal, radio, wireless communication, etc.; Educating all sections about disaster management; River gauges to be installed across all rivers; Proper maintenance of all the rain gauges in the state.
- **Efficient generation and utilization of energy (green growth strategies) in the Power Sector:** Increasing generation efficiency of new and existing power plants; Leveraging cleaner energy supply resources and installing more efficient pollution control devices in the power plants; Cogeneration or combined heat and power (CHP); Reduction in transmission and distribution (T&D) losses; Increasing the share of solar and wind energy in electricity generation; Agricultural demand-side management (AgDSM) ; Use of energy efficient appliances and energy efficient lighting by end-users; etc.
- **Green Growth:** Industries (General energy efficiency (EE) measures; New industrial processes (NIP); Waste heat recovery (WHR) measures; etc.); Transport Sector (Demand reduction and non-motorized transport; Electric vehicles (EV); Fuel efficiency; Fuel switch to CNG; Intensification of public transport; Further extension of metro network and introduction of other mass transit systems like urban rail, BRTS, monorail, etc.); Waste Management Sector (Advanced waste water treatment (AWWT); Integrated solid waste management (IWSM); etc.)

- As countries move toward rebuilding their economies after COVID-19, recovery plans can shape the 21st century economy in ways that are clean, green, healthy, safe and more resilient. The current crisis is an opportunity for a profound, systemic shift to a more sustainable economy that works for both people and the planet. The UN Secretary-General has proposed six climate-positive actions for governments to take once they go about building back their economies and societies:
    - Green transition: Investments must accelerate the decarbonization of all aspects of our economy.
    - Green jobs and sustainable and inclusive growth
    - Green economy: making societies and people more resilient through a transition that is fair to all and leaves no one behind.
    - Invest in sustainable solutions: fossil fuel subsidies must end, and polluters must pay for their pollution.
    - Confront all climate risks
    - Cooperation – no country can succeed alone.
    - To address the climate emergency, post-pandemic recovery plans need to trigger long-term systemic shifts that will change the trajectory of CO2 levels in the atmosphere (United Nations, 2022).
- **Resource mobilisation through green bonds** in the permitted areas like e-mobility - PPP mode of operation (FAME 1 & 2), waste management (Public Private Partnership), Micro irrigation for sugarcane areas (4.42 lakh hectares) through government (IoT based), Solar Irrigation
- **Global Warming:** Energy intensity per increase of GDP to be decreased by 20-25%; Increase the renewable energy (RE) in proportion from 11.5% to 20% of the electricity production; Promote cleaner fuel for vehicles, such as solar powered vehicles; All new buildings constructed should be green buildings; Promoting solar pumps and micro-irrigation; Enhancing energy efficiency of all machineries; Solarization of all petrol pumps, ultra-mega solar power projects; New missions on wind energy (WE) and waste to energy (WTE)Desilting and deepening of tanks along with renovation / servicing of embankments and afforestation for conserving water bodies and avoiding flooding
- Under National Infrastructure Pipeline, proposed the diversion of west flowing rivers through river linking to conserve 500 TMC, draining down to the Arabian Sea, by

creating water harvesting structures, lift irrigation schemes, filling tanks with recycled wastewater.

- Develop Bengaluru as e-waste management hub and generate an income by recovering precious metals, like bronze, gold.
- Increase the use of LED bulbs to 120.07 from 37.54 per 1000 population to reduce CO2 emission.
- Prepared an Integrated Water Resource Policy for both urban and rural areas, to balance supply and demand gaps, on a sustainable basis.
- Develop water security plans in 41 overexploited taluks, covering 1199 Gram Panchayats, under Atal Bhujal Yojana.
- Achieving potential micro irrigation area of 2 million hectares focussing over exploited areas on priority.
- Promote Water Use Efficiency through micro irrigation projects and Piped Conveyance system with Supervisory Control and Data Acquisition.
- Modernization of old canal systems under support for irrigation Modernization Program.
- Promoting climate adoption and mitigation interventions and resource management through information, education, and communication activities
- Promoting e-mobility through incentives, creation of infrastructure and R&D (retrofitting petrol and diesel vehicles) through public-private partnerships
- Aligning policies, programs and budgets to SDGs considering resource depletion and degradation as it is positively associated in increasing inequalities.
- Develop a high-resolution **Climate Risk Atlas** (CRA) to map critical vulnerabilities at the district level and better identify, assess, and project chronic and acute risks such as extreme climate events, heat and water stress, crop loss, vector-borne diseases and biodiversity collapse. A CRA can also support coastal monitoring and forecasting, which are indispensable given the rapid intensification of cyclones and other extreme events.
- Establish a state **climate-risk commission** to coordinate the environmental derisking Mission. The CRC should be empowered to analyse and identify the changing climate risk landscape through consultations beyond climate scientists and academics and provide a robust directive to pave state climate risk strategy. This should be a biennial exercise that is tabled and debated in state legislative. The CRC should also have

regional chapters. CRC can bridge this gap by integrating research-based empirical evidence, plans, and recommended action.

- Undertake **climate-sensitivity-led landscape restoration** focused on rehabilitating, restoring, and reintegrating natural ecosystems as part of the developmental process. A climate-sensitivity index will help in identifying and analysing losses and gaps in an ecosystem impacted by one or more hydro-met disasters. It can recommend restoring, rehabilitating, and reintegrating a certain attribute in a particular region. it also helps to identify the exact regions that need restoration and rehabilitation to facilitate better rebuilding following an extreme event. Natural ecosystems and landscapes act as shock absorbers, so empirical evidence–led planning will enable us to take advantage of them.
- Provide for **climate risk-interlinked adaptation financing** by creating innovative CVI-based financing instruments that integrate climate risks for an effective risk transfer mechanism. High vulnerability calls for climate action, which necessitates investment in climate adaptation strategies. One of the missing links that can be addressed in developing CVI based risk financing instruments is effective risk transfer mechanisms to climate-proof investments. Current options are limited to catastrophe bonds and sectoral insurance, which do not focus on risk transfer and retention for high frequency/high intensity events. These bonds are expensive, sometimes costing twice the pay-outs, and do not cater to low frequency/low intensity events, which need affordable, accessible, and localised financing based on a region's vulnerability profile (Mohanty and Raha 2021). Risk financing instruments should integrate physical climate risks into investment decision-making to reduce the cost of financing and increase the deployment of such instruments. Indeed, a CVI-based risk financing instrument could offer an effective risk transfer mechanism through sovereign guarantees while providing access to global investment pools.
- Finally, integrating gender and backwardness dimension across space in the climate change adaptation and mitigation policies and focussing on socioeconomic vulnerability and disaster vulnerability is crucial for reducing inequalities arising from climate change..
- According to the UNDP (2019), environmental degradation (particularly climate change) could impact food security, the ability to pay for schooling and healthcare which can impede Human Development. Lack of access to safe drinking water and sanitation often increases burden on women and children in collecting water from

distant sources and also expose them to various water borne diseases. Therefore, progress in HD is only possible when the negative consequences of the environment on poverty, inequality, health, education, and so on are taken care of. There is dire need to increase budgetary allocations adequate enough to support environmental protection, along with effective participation of civil society institutions and general public in 'Save Environment' mission.

Chapter - 10

Governance and Human Development- Future Pathways for Karnataka Abstract

Chapter-10

Governance and Human Development-Future Pathways for Karnataka

Abstract

Governance is the process that helps governments function effectively and enable economic and social progress for its people. In essence, it is the combination of transparent and accountable institutions, strong skills and competence, and a commitment and willingness to do the right thing. An effective civil service, an independent judiciary, a free press, and a vibrant civil society are important components of good governance. They balance the power of governments, and they hold them accountable for delivering better services, creating jobs, and improving living standards.

This chapter aims to provide an exploration of the symbiotic relationship between governance and human development. It charts the shift in the government sector in Karnataka since early 2000, from concerns largely with excellence in public service delivery to a concern for good governance. It examines what might in development praxis constitute the dimensions of 'good public governance'; from the perspective of measuring not just the quality of services but also improvements in the quality of life, and improvements in governance processes. Finally, it considers how the measurement of good governance can be encouraged to enhance development outcomes; and provides an implementation framework to measure, evaluate and enhance the impact of governance interventions to improve human development outcomes.

10.1: Introduction and Background

10.1.1: Introduction

Unquestionably, governance and human development share a symbiotic relationship that determines the pace and direction of the progress that a state makes. The two are mutually reinforcing in the sense that the quality of governance has a significant impact on human development and vice versa.

Yet, the realm that matters to us most, the human development challenges across the state, and the data-based measurement of the quality and adequacy of the governance response of the states to them; appear not to have captured the mind space of policy makers, development practitioners and academics to the same degree. This appears to be ironic because the states in India constitute the theatres of development praxis; and what

the states do and how, or what they fail to do and why; are concerns that can scarcely be exaggerated. Though, the awareness about evidence-based policy is increasing among the policy makers and development administrators, it is paradoxical that only at a time of unprecedented disruption in the wake of COVID-19, there is an upsurge of interest in the application of data science in public governance. However, a clear trend is now observed in which governance matters very much in realising the outcomes of programmes and policies that impact human development.

Governance can be defined simply as the process by which power is exercised in the management of the economic and social resources for development. In exploring this symbiotic relationship two caveats, at the outset, would be in order. First, it is important to recognise that literature on governance often points to how society is governed in isolation from how it is organized. To apply an old-fashioned distinction, most attention is devoted to the superstructure of society, very little to the base of the economy. Governance, however, is not only about those who govern, but also about those who are governed. The attitudes and practices of those who are governed influences the quality and adequacy of public governance. Second, to understand governance and why its influence on human development varies across geographies, one must keep in mind the political economy of development. Governance-Good or Poor-is not exogenously assigned; it is the outcome of political decisions, it reflects political institutions and sources of power in society which, in turn, mould the development process. Simply put, poor governance results because it distributes income and or political power in particular ways (Bardhan 1998, 2000). Recognising these two factors helps to answer the question: what are the confounding factors that might represent the underlying causes for why a rate of growth that brings rapid poverty reduction in one State, can place another State at the risk of leaving vast numbers of the poor behind. Simply put, why is growth advancing equity in some states than others?

Regardless of the methodology applied, one must recognise that the governance and human development relationship, seen independently or in tandem represents a process that at its heart, is a political process, and therefore, what the states do and how they do matters.

10.1.2: Karnataka's Growth and Human Development Trajectory

In the past two decades, Karnataka has achieved impressive economic growth and is among the better performing state economies in India. While the state's GSDP growth rate has outperformed the national growth rates for much of the past decade, this has not always been the case. There have been relatively short periods in the past when the state's economy grew at rates that were lower than the national average. At current prices, Karnataka's revised gross state domestic product (GSDP) stood at ~Rs. 18.03 trillion (US$ 247.38 billion) in 2020-21. The state's GSDP increased at a CAGR of 8.47% between 2015-16 and 2021-22. Merchandise exports from the state reached US$ 16.64 billion in 2019-20 and US$ 15.14 billion in 2020-21.

Considering the following, the future growth prospects for the state appear to be sound and stable.

- Karnataka has vibrant automobile, agro, aerospace, textile and garment, biotech, and heavy engineering industries. The state has sector specific special economic zone (SEZs) for key industries such as IT, biotechnology, and engineering, food processing and aerospace.
- The state is the IT hub of India & home to the fourth largest technology cluster in the world. It has 34 operational SEZs as of October 2020.
- It boasts of a diverse flora and fauna and a 320 km natural coastline, which makes it a nature tourist's paradise. Tourist arrivals in the state increased from 214.85 million in 2018 to 228.54 million in 2019.
- Karnataka offers a wide range of fiscal and policy incentives for businesses under the Karnataka Industrial Policy, 2020-25. Through the ESDM Policy 2017-22, the Government of Karnataka plans to facilitate, promote and develop the ESDM sector in Karnataka and make the state a preferred destination for investment in this sector.
- In September 2017, the Government of Karnataka passed the 'Karnataka Electric Vehicle and Energy Storage Policy 2017'. In June 2021, the Karnataka government amended the policy to offer more impetus to the electric mobility sector. As per the amendment, a 15% subsidy was announced on capital expenditure on land value (fixed value assets up to a maximum limit of 50 acres land).

- According to the Department for Promotion of Industry and Internal Trade (DPIIT), the state's cumulative FDI inflow stood at US$ 11.95 billion between October 2019 and March 2021, the third highest in India after Gujarat and Maharashtra, and accounted for 14% of India's cumulative FDI inflow
- In December 2019, the New South Parallel Runway (NSPR) at KempeGowda International Airport became operational. This will enable the airport to handle around 35 million passengers per year. The airport became the first in country to operate independent parallel runways, enabling aircraft to land and take off simultaneously on both runways
- As of April 2021, the state had an installed power-generation capacity of 30,105.02 MW. Of this, central utilities contributed 4,047.70 MW, private utilities (17,256.84 MW) and state utilities (8,800.49 MW
- Karnataka has emerged as the information technology (IT) hub of India. Export of electronics and computer software from the state reached US$ 81.4 billion in FY20 and US$ 38.8 billion in FY21, respectively (until November 2020). Export of electronics and computer software accounted for 85% share in Karnataka's overall exports
- Karnataka is the first state which came out with an aerospace policy in the country. Karnataka Aerospace Policy has identified an investment potential of US$ 12.5 billion in this sector during 2013-23 and plans to develop aerospace clusters in different regions of the state. (IBEF 2021).

10.1.3: The Human Development Paradox

The performance of the State in human development is not as per the expectations. As observed from the estimates of HDI for the States in this report (p.), the State is placed at 11th place. Though India as a whole belonged to medium human development category, Delhi (0.723) and Kerala (0.719) are in High human development category. The HDI value of Karnataka is 0.644 which is above the national average but far away from Delhi & Kerala. Delhi, Kerala, Himachal Pradesh, Punjab and Tamil Nadu are the top five states in terms of Human Development.

The chronic agrarian distress, widespread malnutrition, poor school education outcomes, and growing inequality are indicators that the foundations of progress remain fragile, especially in Northern Karnataka and in particular in Kalyana Karnataka. The interventions necessary to provide opportunities for social and economic development for

these disadvantaged and vulnerable populations will be predicated on evidence-based insights and interventions that are context-specific and revenue sensitive. Analysis of major data sets and results of surveys including the SECC, NFHS-4 & 5and from the Special Development Plan (SDP) throw up three important facts that deserve attention:

- First, poverty, hunger, and inequality are disturbingly persistent for certain populations in certain talukas of Karnataka.
- Second, it is imperative to recognise and understand the patterns of exclusion in our governance and development strategy to reach out to those at risk of being left behind.
- Third, deep rooted patriarchy and gender inequality coalesce, resulting in women bearing a disproportionate burden of its adverse impact. There is need to understand better the gender dimensions of development, if our ability to overcome poverty and inequality is not to be constrained.

The Rural Urban Divide

The state of development in rural Karnataka raises uncomfortable questions: why, despite the economic growth and apparent all-round progress, for a significant population in the state the sum of freedom has not increased. The minimum freedom that they need today - from the poverty of health and education - and the greater freedom they need tomorrow - of economic and social opportunities. The State faces the hard end of the development challenge - enormous and complex - of addressing the problem of exclusion. A snap shot of the current state of development in Karnataka highlights progress in some talukas on the most urgent goals of development - education and health for all - and in attaining some of our most cherished values - a humane, just, and equitable society –is unconscionably poor; and the deprivation and vulnerability of women, children and the socially marginalised, much more than might first be supposed. This is true of rural Karnataka as well as the urban agglomerations in the state, though for different reasons. It would therefore be useful to briefly consider the governance and development challenges the state encounters and needs to address.

The governance and human development challenges in urban Karnataka are different but no less important. There is an impending crisis emerging at the intersection of three grand processes – migration, climate change, and urbanisation – manifesting in unplanned and

chaotic growth in the cities and towns across Karnataka. This is exacerbated by the political economy of urbanisation - the appropriation of the exchange value of urban space by capital and business, driving out the use value so necessary to make the city liveable for its ordinary citizens. This process is also shifting the locus of control in strategic governance decisions away from the local government to other intermediaries of the state – not least the dominant interests of industry and big business. The saga of the diminishing lakes and water bodies of the once garden city – Bangalore - subordinated to the interests of realtors and builders is but one aspect. Another problem that characterizes India's development trajectory is the uneven pattern of urbanisation - the spatial fragmentation - with few cities emerging as growth centres.

10.1.4: Performance of Karnataka in Governance

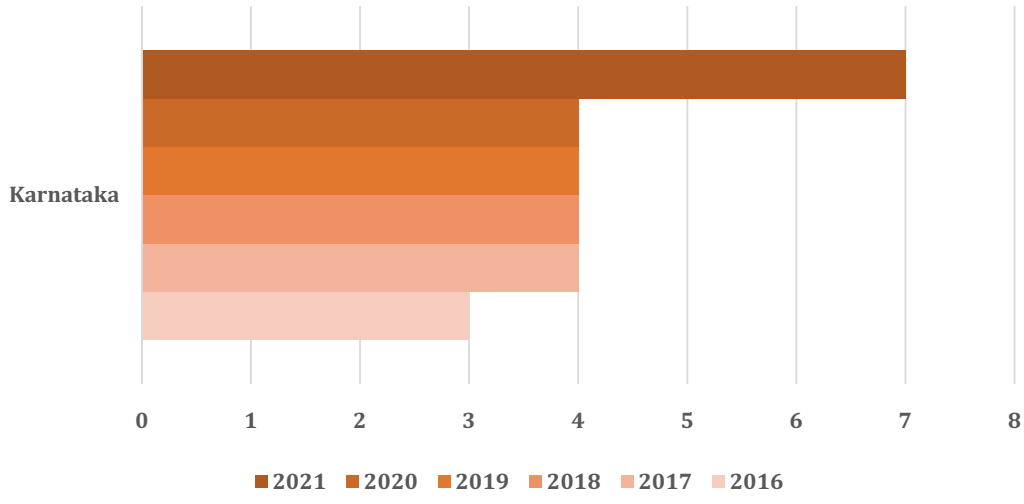
The 2018 rendition of the Public Affairs Index (PAI), launched by the Public Affairs Centre (PAC), ascertained that while the state would perform fairly across fiscal indicators, it would continue its downturn in other 'people-centric' parameters. PAI 2018 alerted stakeholders towards languishing support in health and education, in the development of women and children and in extending the social safety net for the vulnerable. It sounded an alarm, calling attention to the insufficient coverage of Integrated Child Development Service (ICDS) in the state and atrocities against women, as recorded by the National Crime Records Bureau (NCRB). The latter resonated in the findings of NFHS-5, with the state recording a manifold increase in incidence of spousal violence, from 20.6% in NFHS-4 (2015-16) to 44.4% in NFHS-5 (2019-21).

By 2019, PAI had sounded consecutive alarms that drew attention to enervating attainments in key human development indicators. PAI 2019 red-flagged two indicators- average annual drop-out rate at the secondary school level and expenditure on essential infrastructure related to health and education among others. PAI 2020 posited the state at 12th among 18 large states, in the 'Equity' pillar, highlighting exclusionary performance especially at the cost of nutrition amongst children and workforce participation of women. Finally, in its most recent rendition, PAI 2021 found the state to be conclusively floundering in inclusive, human development, finishing at a disheartening 16th rank, among 18 large states.

10.1.5: Good Governance Index, 2020-21 (GGI).

Such insights as those mentioned above, additionally find resonance in the rankings curated by the Department of Administrative Reforms & Public Grievances, Government of India in its Good Governance Index, 2020-21 (GGI).Karnataka ranked 7th among 10 states in the latest rendition of the GGI, faltering behind Gujarat, Maharashtra, Goa, Haryana and Kerala **Fig 10.1**. Karnataka ranked 7th -among 10 states-in GGI's 'Human Resource Development' sector ranking, bearing penalty for indicators relating to the quality of education and to the enrolment ratio of SCs/STs. This rank mirrored in the 'Public Health' sector ranking as well. The state paled in comparison to others such as Andhra Pradesh in the availability of doctors at Primary Health Centres (PHCs) and to Maharashtra in terms of immunisation, despite a positively dwindling Infant and Maternal

Figure 10.1 Karnataka's Ranks in the Public Affairs Index (2016-21) amongst 18 Large States



Source: Public Affairs Centre

Mortality Rate (IMR and MMR). In the 'Social Welfare Development' sector -closest to conceptually and operationally capturing 'inclusive' development in the GGI- Karnataka languished at 6th place amongst 10 states, echoing the censure highlighted in other indices mentioned earlier **Table 10.1**.

Table 10.1: Top 10 States in Good Governance

Sl No	State	Composite Score (Total 10)
1	Gujarat	5.662
2	Maharashtra	5.45
3	Goa	5.348
4	Haryana	5.327
5	Kerala	5.216
6	Karnataka	5.109
7	Tamil nadu	5.052
8	Punjab	4.971
9	Telangana	4.842
10	Andhra Pradesh	4.47

Source: DARPG 2021

Such revelations are compelling grounds for rumination, remediation and course-correction by policymakers and other stakeholders in the state apparatus. In the scheme of competitive federalism espoused by NITI Aayog, such ranks feature prominently in policy circles. To this effect, the following sections introspect the state's strides in facilitating better human development outcomes.

10.1.6: Exploring the impacts of Governance on Human Development

Public Service Delivery

Improving public service delivery was one of the key themes of Karnataka's governance reforms in the 1990s and a wide array of approaches to help government improve service delivery was adopted. This remained the focus of the first decade of the 21st century - 2000-2010 - and was reflected in the parametric recommendations of the first state Administrative Reforms Commission (ARC) on good governance: accountability of the civil service through citizens' charters; redefining functional goals shifting focus from being regulators to becoming facilitators; improving systems and work methods through the use of information technology; and promoting transparency to reduce corruption. These parametric reforms were contained in the first ARC interim report in January 2001 (ARC 2001). A decade later in 2011, the Karnataka Sakala Services Act, 2011 and (Amendment) Act, 2014 to provide for guarantee of services to citizens in the State of

Karnataka within stipulated time limits was enacted by the legislature. This was followed by Seva Sindhu in 2018, an effort to provide digitised services.

The results of the major thrust given in Karnataka, especially in the last decade, to the digital delivery of public services have been mixed. This has taken the form of services delivered under Sakala, Seva Sindhu, and individual departmental initiatives being eminently successful in those offices where the head of the office took personal interest; and less than optimal where this was not the case. From a governance perspective, the approach was not demand-side driven and hence not consistent and uniform as envisaged. While Sakala focused on timely delivery of services, Seva Sindhu aimed to deliver public services at the doorsteps of the citizens. Seva Sindhu was intended to be integrated with various service delivery channels of Govt of Karnataka, citizen service centres such as Bangalore One, CSC Centres, and Karnataka One. The objective was to bring all departmental services on one platform, and provide government services in a cashless, faceless and paperless manner. It was without doubt an important step towards provision of accessible, cost-effective, accountable and transparent government services to citizens. In practice however it must be recognised that in all supply-side initiatives, there is a gap between design and delivery or intent and practice. What is significant is that, whether legislative or administrative interventions to improve service delivery, the emphasis was on the supply side: conformance to specifications, aligning inputs and processes of departments, and grievance redress.

Karnataka has made progress in delegating funds, functions and functionaries to the third tier of governance, in substantial measure, though much more needs to be done. The recent 'Grama-One' initiative is noteworthy. Grama One is envisaged to be single point assistance center for all citizen centric activities at village level which include G2C services, Banking services, and RTI. The envisioned benefits of Grama One centres include:

- Citizens do not need to visit the district, taluk and hobli offices to get government services
- Citizens can save on time and money by availing the services through Grama One centres
- Eliminates middlemen
- Grama-One centres will be operational from 8 a..m-8 p.m. Citizens can avail the services at their convenient time.

Measurability of service delivery has justifiably and swiftly gained traction in policy discourse and governance paradigm. The Central Public Grievance Redress and Monitoring System (CPGRAMS), for example, maintained by the Department of Administrative Reforms & Public Grievances (DAPRG) indicates administrative department-wise pendency or disposal of grievances, with the Departments of Cooperation, Health & Family Welfare and Social Justice and Empowerment having the lowest disposal rates. DARPG's National e-Governance Service Delivery Assessment (NeSDA) similarly measures the transformational impact of e-Governance service delivery mechanisms.

Applying the NeSDA framework, an assessment was undertaken by PAC-CODR on behalf of the Second Administrative Reforms Commission in 2021. The results from an assessment of ten human development departments provide interesting insights and are summarised below:

List of Departments for which evaluation of services was carried out:

1. Department of Animal Husbandry, Veterinary Services, and Fisheries
2. Health & Family Welfare
3. Rural Development & Panchayath Raj
4. Skill Development, Entrepreneurship & Livelihood
5. Department of Horticulture
6. Department of Labour
7. Department of Primary Education
8. Food, Civil Supplies & Consumer Affairs
9. Higher Education
10. Women and Child Development

What works well in these services:

- All citizen services are linked to Digital locker thus enabling digitization of documents
- All services have the facility to make Online payments
- Website ensures single payment gateway for all channels viz. debit card, credit card, UPI etc.
- The OTP facility available for user authentication during final service delivery to ensure the data security

Areas for Improvement

- Option to use the services in Kannada language pose issues in most of these web sites. In some cases, the application form closes automatically upon selection of the Kannada option
- Kannada Virtual keyboard is not available in any of the web pages
- Auto-populate of user details in Kannada does not work
- Certain services listed by the departments are not available either in Seva Sindhu or in their respective department websites
- For some of the services, the format of the application forms for the same service is different when it is used through Seva Sindhu as against when it is used directly from the department web sites
- Contact information of the department is not available for many of the webpages
- "Help" menu option is not available
- The web sites are not compatible with all major browsers
- User guide not available
- FAQ not available
- Features like text to voice to help the visually challenged citizens are not available
- Introduction of complaint no. and status tracking is required
- Need to provide help line number to those who are having difficulty making on-line payment

In essence, what this means is that while efficient service delivery is important, of greater importance is to measure whether this action meets the felt-needs of the citizens; and whether it has contributed to improving the quality of their lives.

Government soon realised that, while efficient service delivery was important and serves as a necessary condition, it does not constitute a sufficient condition for good governance; in the absence of demand side imperatives –measurable outcomes, voice and representation, and social accountability.

10.2: Development Governance – A Policy Perspective

At the heart of development governance is social accountability as a process at the intersection of the imperatives of a live democracy, the demands of a plural society, and the commitment to a liberal and progressive world view. In the real world and in its

practical use, two fundamental principles drive social accountability: the equality of the individual before the law - the rule of law; and the citizen or the people as the creative source of authority. Social Accountability is important because in a modern democracy, the fundamental political relationship that affects social, economic, and cultural development, is that between the citizen and the state. Its relevance resides in a universal and abiding process by which, who constitutes 'the people' is the direct outcome of individual citizens fighting to give direction to their lives, and communities mobilising to gain voice; rather than something determined by the state. When the state is engaged in making laws, allocating scarce resources, enforcing contracts, assigning rights to public goods or common property resources, or engaging in development praxis, it still acts through individuals – the politician, bureaucrat, contractor – who act as the officers of the state or the representatives of the public or of shared interest. The absence of the mobilization of citizens and the low degree of the organisation of the public, represent conditions under which the social accountability process is unable to exert pressure to ensure they act in public interest.

10.2.1: The Chronicity of Regional Imbalance:

A pivotal development in Karnataka, from a governance and development perspective, was the High-Power Committee on Redressal of Regional Imbalances (HPCRRI) chaired by Dr D M Nanjundappa that submitted its report in 2002 on remedying regional imbalance in the state. This report constituted a significant departure in examining the links between governance and human development: the Taluka was identified as the basic unit of governance; measurable indicators of human development were applied to assess the level of backwardness of taluks; and based on the performance of each taluka on a composite index, it was classified as relatively developed, backward, more backward, and most backward. While several methods can be used to develop a composite index, the HPCRRI adopted an indexing method: using 35 indicators across five different sectors, basis which the HPCRRI constructed 5 indices. Integrating all these indices a composite index called the Comprehensive Composite Development Index (CCDI) was developed (HPCRRI Report, 2002).

This was a significant development because it was a paradigm shift to an outcome-based assessment of governance and development. It shifted the emphasis to the measurement of the quality of life and why and how governance processes impact human development outcomes. For the first time, it provided a data-based framework for measurement of

human development through objective outcome indicators; and through process and institutional indicators measuring by inference, the quality of governance. From a data-science perspective, one weakness in the CCDI was the subjective assignments of weights, inter-se, between the sectors; and together with the decision to assign an additional weight of 20 percent to the social sector the methodology created a sedentary bias. By the end of the horizon year of the Millennial Development Goals (MDG) programme in 2015, it was increasingly clear that government also needs to make significant improvements in the way the state exercises its economic, social and environmental responsibilities; if the human development indicators of health, education, and livelihoods were to improve significantly for the disadvantaged and vulnerable populations especially in the chronically backward geographies

The objective conditions in several parts of the state, notably Kalyana Karnataka, and some of the districts of erstwhile Bombay Karnataka, now renamed as Kittur Karnataka present precisely this situation. The experience of governance and development in these two backward regions of the state point to two key challenges: the first is conflict resolution. We must recognise that in the real world, there is no single homogenous group that you might describe as 'the public', or 'the community'. Instead, there are communities within communities with conflicting interests and competing demands. Their ability and willingness to participate in a social accountability process or to partner in public governance is a function of the power relations in that community - who gets what, and why is a political economy question at all three tiers of governance. How we resolve these conflicts and give voice to those who are seldom heard is the key. The second is to strengthen community-based organisations in a manner that the principle of subsidiarity is enforced, especially in the human development sectors such as health and education. Few states have empowered the local governments following the 73rd and the 74th constitutional amendments. This failure has meant that governance is weakest, on both the supply and the demand sides, where it matters most for the citizen - at the last mile. Communities respond well when there is sustained and substantive engagement that raises awareness, supports informed advocacy, and the enables coordinated action.

The region comprising the six districts of Bidar, Kalburgi, Raichur, Koppal, Yadgir, and Bellary already enjoys special status under Article 371 J of the Constitution. And since2013, the Hyderabad Karnataka Regional Development Board has served as the

special purpose vehicle to lead the region's development efforts in addition to those of the state. Will these well-meaning initiatives make a difference to the lives of the people in the erstwhile Hyderabad-Karnataka region? Or will these changes serve as the mere chronicle of underdevelopment foretold? Transforming the lives of the people of the region presupposes two necessary conditions:

First, understanding the enormity of the challenge that the development of Kalyana Karnataka poses. The underdevelopment of the region is endemic, endogenous, and chronic; and the response therefore has to be context-specific, resource-sensitive, and multi-stakeholder driven. Consider the following facts: The only two aspirational districts, a euphemism for chronic backwardness, in Karnataka - Raichur and Yadgir - are located in the region. Of the 39 'most backward' districts identified by the High-Power Committee on Redress of Regional Imbalances, 21 are located in Hyderabad Karnataka.

Analysis of government data helps understand better the spatial and temporal pattern of underdevelopment in the region. The state government measures progress on the basis of the Comprehensive Composite Development Index (CCDI), comprising 35 indicators grouped into Agriculture, Industry, Social Infrastructure, Economic and Human Development sectors. Data analysis of the performance of the region shows the ten worst performing talukas by the maximum number of indicators, are located in the region, with as many as 7 in Kalburgi district alone. What is worse, these ten talukas were categorised as 'most backward' in 2001, and 15 years after in 2015, remain in the same category. Simply put, there has been no progress at all or for an entire generation, a lost opportunity. On human development indicators, a few representative data points from NFHS-4 suffice: Malnutrition in Kalburgi district is unconscionable, with over 56 percent children wasted, 52 percent stunted, and 57 percent underweight; In Yadgir district, only 32 percent of the women are literate; of the rural households surveyed, a mere 10 percent in Yadgir, 11 percent in Gulbarga, and 12 percent in Raichur respectively were using improved sanitation facilities, despite the Swachh Bharat mission. The direct consequence has been that time has stood still for the people of the region, and the improvements in human development indicators less than commensurate with the humungous amounts of money spent for decades.

Second, the government must build on the Kalyana Karnataka announcements, break from the past, and demonstrate the political resolve to make a bold departure from conventional

development praxis. The development administration has to recognise that the community is important, more than the contractors, in the development process; and hence the need to focus on and prioritise human development - health, education, and livelihoods. The challenge of ushering in Kalyana Karnataka and meeting the aspirations of the people is not the problem of government alone. There is need for the three major stakeholders - government, the private sector, and the community - to partner in sustained engagement in the region

The governance strategy for the future must therefore recognise that development is a process of 'people-engagement'. The first principle for the human development process to succeed is to adopt a participatory approach that meets two necessary conditions: co-generation of knowledge - that is based on a 'felt-needs' bottom - up approach, and is community led; and fostering community agency - its ability to participate not as mere beneficiaries, but as partners in governance. But this alone will not do. The sufficient condition is met only when the process generates actionable knowledge on which 'the public' can act and for this the State has to invest in sustained capacity building in the community.

10.2.2: Urban Governance

Urban governance presents a different challenge in the state; one that is centred more on financial sustainability. Despite constitutional and legislative provisions, decentralization of funds, functions and functionaries has proved a major challenge in development praxis. Fiscal decentralization has been particularly disappointing given how much consensus there has been on specific reform measures, with own source revenue generation arguably being the most problematic of fiscal concerns. The core paradox of decentralization is that it entails a voluntary relinquishing of political power and resources by the state actors – political parties, the legislature and the executive – that manifest as the commitment of a benevolent and monolithic state to empower locally elected governments for the common good. On the other hand, measures undertaken by local governments to improve tax administration and enforcement in the absence of tangible citizen willingness to pay are counter-productive. Community engagement especially in relation to tax compliance and fiscally responsible behaviour and strengthening ULB-Civil Society interaction to build in transparency and develop citizen participation based safe guards against rent seeking and prevention of revenue leakages is as important. Fiscal reforms in ULB must therefore be

strategic, calibrated and context-specific, driven primarily by evidence and data. The foundational two steps for a paradigm shift in urban governance are to:

- Understand the nature and extent of the local revenue deficiency
- Focus on key functions and services to respond to the felt needs of citizens.

The principal policy question that needs to be addressed is what may be described as the 'tax assignment' problem in public finance: what is the level of fiscal autonomy that ULB need to be effective; and therefore, what tax instruments could provide that degree of autonomy. Two tax bases should cohabit all three tiers of government – the GST and Income Tax. A potential resource stream that will be both sustained and buoyant is for the ULB to be given a share in the GST. In essence, this will mean that the GST tax base will cohabit all three tiers of government. Another productive source of augmenting the tax base of the ULB is for the central government to mount an urban development surcharge on income tax that is exclusively earmarked for the Municipal governments. These two taxes, if assigned to the ULB, would provide them a dedicated own revenue stream that will grow with the growth in the economic base and establish a strong foundation for financial sustainability and effective service delivery.

10.2.3: Urban Local Bodies - The Fragility of Financial Sustainability

The parlous state of Karnataka's urban local bodies and the urban decline should constitute a matter of serious public policy concern. Not just Bangalore city but many other cities and towns in Karnataka face a myriad of urban governance challenges. At the root of the urban governance challenge is the financial sustainability of Urban Local Bodies (ULB) – the Urban Local Body's ability to provide quality services to its citizens in a financially stable manner.

In principle, the 74th Amendment has accorded constitutional status recognition to the municipal bodies. However, in reality, it has only added functional responsibilities without bestowing additional fiscal powers to the ULG. Indian Municipal Bodies are amongst the weakest in the world in terms of access to resources, revenue-raising ability and financial autonomy. The ratio of municipal revenues to gross domestic product (GDP) at factor cost in India is estimated at 1.03 per cent, compared to South Africa (6.0 per cent) and Brazil (7.4 per cent). Not only is the country's municipal sector small compared to international benchmarks, but ULG in India have been subject to significant erosion in their fiscal

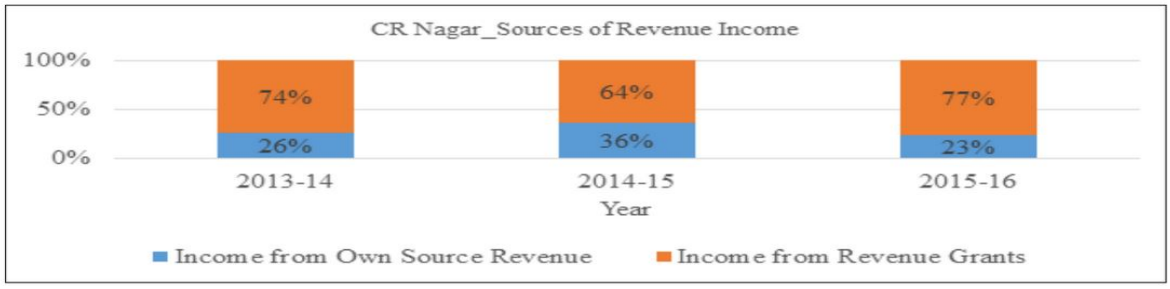
autonomy over time. The municipal tax-GDP ratio stood at 0.33 per cent as against the combined ratio (central plus state) tax-GDP ratio of 17 per cent.

Thus, the fiscal autonomy of the ULB is limited both in law and in practice, despite the 74th constitutional amendment. The fundamental problem most urban local bodies face is the widening fiscal gap - between the availability of financial resources and municipal expenditure needs - as a result of the rapid growth of the urban population, which creates an ever-increasing demand for public services and new public infrastructure and its maintenance. This is compounded by the time-inconsistency problem in public policy - politics pursues short-term gains, while development needs to focus on sustainable long-term benefits. From a political economy perspective, time inconsistency arises when there is an incentive for the political government to deviate from a policy commitment made, say on decentralization of 'funds, functions and functionaries' to local governments, and conduct policy by discretion, though a commitment to rule-based governance may better serve ULG finances. Most cities depend almost entirely on Central/State government transfers. The ability and willingness to raise own revenues from property taxation and the other avenues for resource mobilization – rent, rates, and service charges - are sub-optimal.

Analysis of the own revenue mobilisation effort of the ULB versus the dependence on grants from the central and state governments is a good measure of the constraints that emerge in urban governance. Though the data is somewhat dated, the results serve as good examples to measure the governance autonomy and the financial constraints of ULB as set out in the four examples given below:

In CR Nagara, for the time period 2013-2016, income from own source revenue has ranged from 23%-36%. Between the years 2013-2014 and 2014-2015, the share of income from own source revenue increased from 26% to 36% because the amount received in revenue grants approximately halved. Between the years 2014-2015 and 2015-2016, own source revenue share sharply declined from 36% to 23% because revenue grants approximately doubled in the same period **Fig 10.2.**

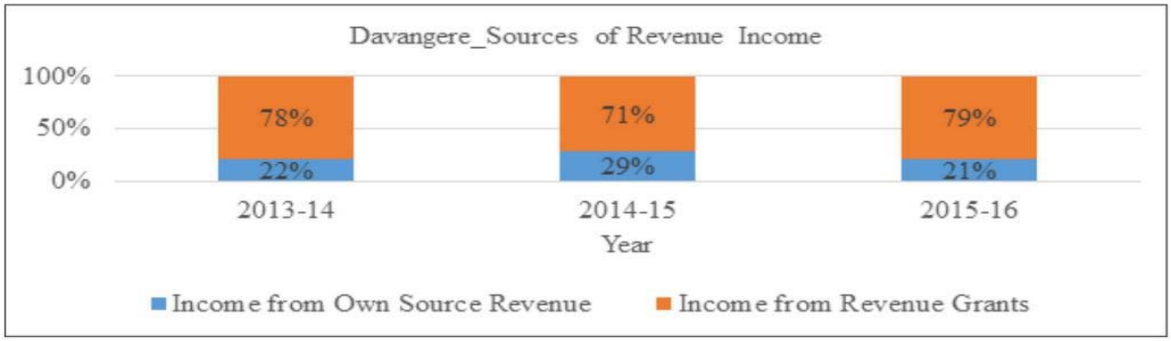
Figure 10.2:Chamarajanagar_Source of Revenue Income



(Source: Public Affairs Centre's Report on 'Sustainable Financing for Urban Karnataka' for the Directorate of Municipal Administration, GoK, 2018)

In Davangere own source revenue as a percentage of total income has remained relatively steady with a range of 21%-29%. The revenue grants hovered around Rs. 60 crores between 2013-2014 and 2014-2015, and almost touched the Rs. 100 crore mark in 2015-2016. However, during the same time period, regulation/licensing fees, advertisement taxes and fees from certificates and extracts increased, allowing own source revenue to retain a 21% share of income in 2015-2016 **Fig 10.3**.

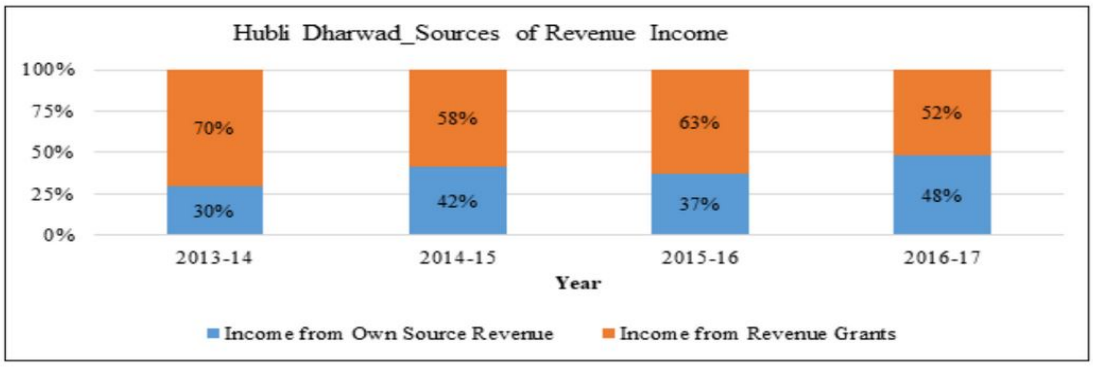
Figure 10.3: Davanagere_Source of Revenue Income



(Source: Public Affairs Centre's Report on 'Sustainable Financing for Urban Karnataka' for the Directorate of Municipal Administration, GoK, 2018)

In Hubli-Dharwad income from own source revenue shows a 12% increase from 2013- 14 to 2014-15. From 2014-2015 onward the share of income from own sources of revenue and income from revenue grants shows some fluctuations. The contribution of income from own sources in 2016-2017 is observed to have increase from 37% in 2015-2016 to 48% in the next year **Fig 10.4**.

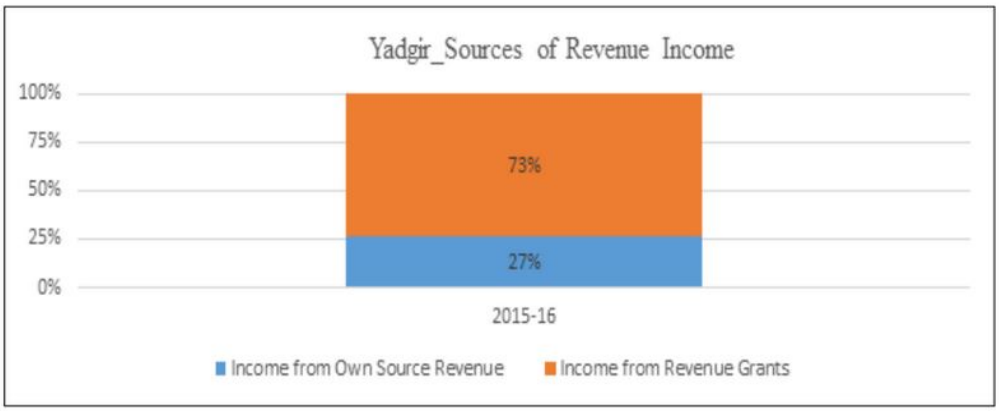
Figure 10.4: Hubli Dharwad_Source of Revenue Income



(Source: Public Affairs Centre's Report on 'Sustainable Financing for Urban Karnataka' for the Directorate of Municipal Administration, GoK, 2018)

For the year 2015-16, Yadgir's share of income from own source revenue was 36% while revenue grants contributed to 64% of the city's total income. The income from non-tax sources is higher than tax sources in the year 2015-2016. A large portion of non-tax income can be attributed to fees for certificates and extracts, accounting for almost 33% of non-tax income **Fig 10.5**.

Figure 10.5: Yadgir_Source of Revenue Income



(Source: Public Affairs Centre's Report on 'Sustainable Financing for Urban Karnataka' for the Directorate of Municipal Administration, GoK, 2018)

The ULB will therefore need to implement new financing structures that will help in setting up infrastructure but financing structured in ways that enable staggering the payments for the assets created. The traditional paradigm for financing urban infrastructure consisted of internal accruals of local bodies and loans and grants from the State Government. This was augmented by directed credit from institutions such as HUDCO and LIC linked to State Government guarantees. A small component of bilateral

and multilateral assistance was also available.Some of the innovative financing options that can be implemented by the ULG include: move from Construction Contracts to Performance Based Maintenance Contracts; monetization of land and land-based revenues; and use the Annuity Framework.

10.2.4: Developing a Theory of Change

Recognising the seeming intractability of the chronic backwardness in some parts rural Karnataka and the impending urban decline, the state's governance practices in the past few years, coinciding as a matter of fact with the advent of the United Nations Sustainable Development Goals Agenda 2030, have begun to delve deeper into an analytical tradition that underlines the importance of evidence to understand what happens to communities within communities, why and how. Towards this end, the state is deploying data analytics in innovative ways, in so far as the human development SDGs are concerned.

Future governance practices must therefore serve as an elaboration of the conceptual framework designed to provide methodological orientation to field-level officers in the human development sectors to examine and implement development interventions, demonstrate proof of concept, and thus enable impact to scale. This can be summarised in four stages: the first consists of empirical studies on specific community engagement experiences, a particular form of community awareness campaign for instance, or a certain pattern of community participation; a second stage consists of the construction of middle-range theories of development linking specific community-based institutions (for instance the School Development and Management Committee and the AnganwadiSamiti) in the human development sectors, within the context of fostering community agency and wider ownership of development action for social transformation; the third stage consists of drawing out the key lessons of the middle-range theories to build a broader conceptual framework, to provide theoretical and empirical orientation for future directions of development praxis, to influence policy formulation and programme design; and the fourth stage then would be to use the conceptual framework as a basis for developing resource allocation and optimisation solutions driven by data analytics. Such a virtuous cycle alone can demonstrate the embeddedness of the economy in society and help achieve social goals, raise voice and accountability in the community, enhance government effectiveness, enable scalability and replication, and produce a step-change in society.

The great transformation that Karnataka seeks must be seen in the backdrop of the intensification of the crisis in agriculture, diminishing rural livelihoods, erosion of local social orders, rural-urban migration and formation of vast peri-urban agglomerations on the peripheries of our cities.

The symbiosis between governance and development rests on triggering hope and aspiration in the citizen at both the household and community levels to restore the locus of control to her to overcome deprivation and poverty. The virtuous cycle can best be depicted as: The vulnerability of individuals, households and communities is based on everyday issues like resource constraints or marginal status, compounded by inadequate access to the institutions of the state or the market alike. The governance response should combine the power of data analysis, innovation, and leveraging technology for social good. Development is organic in nature, and people are at the heart of the process. Social mobilisation entails three key conditions: first, creating incentives in the community for collective action by kindling hope and aspiration; second, restoring to it the locus of control by enhancing community agency to act not as mere beneficiaries but as agents of change; and third, to enable community based institutions in segueing the impact of external interventions to forge the collective will against a common enemy - education poverty, health poverty and livelihood poverty - and not individuals or a community to fight against. The value of identification of this common enemy cannot be stressed more.

The state must recognise that this requires fostering evidence led, community owned, context specific, and resource sensitive action. As a governance strategy, social mobilisation will be central to transformational change. It must explore how people-science can be mobilized to forge a collective will. It helps build community capacity to mediate the incentives for individual and collective action. A key effort in our approach is to enable community-based institutions in segueing the impact of external interventions into adaptive and sustainable community practices as integral to the long-term sustainability of socio-economic change.

10.3: Measuring Governance

Measuring the quality and adequacy of governance is more complex than might first be supposed. The availability and quality of data present several limitations, including weak comparability of the primary data used for measuring the progress on the Sustainable Development Goals, and the indicators used for measurement. Government data is predominantly supply side driven, as a result, several of the tracking indicators adopted by the State governments are quantitative input-based, and often do not reflect outcome-based qualitative assessment. The excessive emphasis on quantitative targets means that most departments are concerned more with compliance than with performance, more with inputs than with outcomes. Typically, the different composite indexes that governments use, proceed on the basis of one of two heuristics: classification of data on the basis of the representations of aggregate statistics; or on the basis of the divisions from which the data was extracted, usually department-based silos. The methodological issues that follow include the problem of subjectivity in the former, of when to determine that a quantitative change actually reflects something qualitatively interesting; and the risk of missing important higher-level generalisations, in the latter. Yet, the importance and the impact of sub national governance on India's development trajectory has received considerably less academic attention than what the central government does; or the changing state-market relations.

Two features characterise public governance: first, the focus of analysis shifts from single entities, departments or sectors to include inter organisational networks. Second, emphasis is placed on collaboration rather than competition. This implies an interaction between departments and sectors, government and society - public, private, and voluntary actors - and attention to a wider range of outcomes. It requires improved skills in negotiation, conflict resolution, coherence in policy and coordinated action. Simply put, public governance represents the ways in which stakeholders interact with each other in order to influence the outcomes of public policies and programmes. There are several difficulties marring the process of producing quality governance indicators. Measuring governance is a complex exercise, since it is hard to tie input data to outputs. Public sectors are increasingly heterogeneous, and the importance of regional and local levels have also grown over time. Several characteristics of the data have to be in place to enhance the probability of producing good governance indicators. The quality of the indicators is

dependent on the underlying data. Objective data based on quantifiable inputs or outputs are typically of poor quality and often not available.

Dataset quality is not so much about mere accuracy as it is increasingly about the appropriateness of using that particular data for the research question at hand (fitness of use). The evaluation of this fitness is done along several dimensions: overall relevancy and accuracy, credibility (bias free to a reasonable degree), timeliness and punctuality (availability compatible to the events under scrutiny), interpretability (precision of variables' definitions), coherence (logically consistent over time and across countries) and accessibility. A key distinction, and one with significant methodological complexities, is between single and aggregated governance indicators. A single (or individual) indicator usually covers a particular aspect of governance. For example, governance facets such as corruption, gender equality or human rights enforcement are each measured by an individual indicator. Prominent single indicators include the World Bank's Doing Business Survey and the Investment Climate Survey. The processes by which governance is implemented can be evaluated at the input or output levels, with outputs holding an edge over inputs, since they comprise the effectiveness with which budgetary resources (inputs) are used. Evaluation of institutional processes is notoriously difficult, not least because of the attribution problem.

Aggregate governance indicators combine various sources of information contained in a set of single indicators to produce composite indicators that hold several advantages over their individual counterparts. They may cover more districts than the included individual indicators; they may improve governance measurement in terms of precision; and may allow for testing for inter-district differences. There are, at the same time, several risks associated with aggregating individual indicators. First, the specificity of the original indicators is submerged. Second, merging several facets of governance may lead to a less meaningful governance measure in the absence of a clear underlying model. A prime example of an aggregate governance index is the World Governance Indicators (WGI) that reduce hundreds of governance indicators into six dimensions of governance: voice and accountability; political instability and violence; government effectiveness; regulatory burden; rule of law; and, corruption. Developed by the World Bank, the WGI might serve a useful purpose when used as thematic categories or as analytical tools, but fail to capture the output-based changes in the quality of life. Chief among the problems besetting governance indicators, including the carefully constructed ones, are the lack of

transparency and comparability over time, the presence of selection bias and the fact that they fail to identify clear paths that the States can use to improve governance quality.
Using state-level data to assess governance performance is empirically more meaningful and will likely yield insights that can feed into evidence-based praxis for the future. Measuring the quality and adequacy of governance helps understand better some of the broad trends that account for the variance in the performance across districts, and include:

- The sectoral composition of the state's economy influences the rate of urbanisation, and therefore, both growth and equity
- The objective conditions of rural development influence capital accumulation or the flight of capital, slowing the growth drivers, resulting in fewer growth centres
- The differences in these two 'initial conditions' impacts human capital development, and this accounts for a significant part of the long-run differences between districts.

Despite over 70 years of independence, for some geographies, it remains axiomatic that the more the number of landless people, and the less the quality of human capital, the poorer are the economic prospects and graver the risk of vast numbers of people being left behind. There should be little doubt, what separates the better performing districts from the laggards is the synergy between good governance practices and human development. Another clear marker for the state's performance on equity, but less for growth, is the rural-urban divide extant in Karnataka. The results for states with a greater divide typically present a dual economy in which the surplus labour from the farm sector is absorbed in the non-farm sector. While this enables intra-state migration as a livelihood adaptation strategy, the migrant workers often face unemployment, or end up in low-paid informal sector employment.

Another factor accounting for the quality of governance, arises most directly from the governance the nature and extent of the devolution revolution – the transfer of autonomy and financial powers from the state government to the local governments. Despite the 73rd and 74th Amendments to the Constitution, the practice of decentralised governance demonstrates that India's Local Government Compass is of colonial vintage. We are navigating the local self-government landscape using old maps drawn at a different time and for a different purpose. Meanwhile, the rural areas and urban agglomerations that we traverse have changed, but our normative map has not. In principle, the constitutional

amendments accorded constitutional status recognition to the third tier of governance by the rural and urban local bodies (RLB and ULB). In reality, it has only added functional responsibilities without bestowing additional financial powers to them. In fact, Karnataka has lost the initial momentum that placed it in a pre-eminent position. There is need to reignite the devolution revolution in Karnataka.

10.3.1: From output to outcome measurement

Fundamentally then, from the foregoing sections it becomes clear that the future governance imperatives will require moving the needle from a supply-side, input approach to a demand-side outcome approach. The underlying necessary condition for this paradigm shift is to foreground data analytics so that an evidence-based decision support system drives policy formulation and programme design. A key requirement will be to develop appropriate indicators for measuring governance, establish a scientific methodology to eliminate subjectivity, and implement governance measurement models that organise and help visualize various sets of data to allow policy makers, the departments concerned, and the field formations including the districts to better understand the gaps in the human development pathway.

Therefore, existing performance measurement approaches are entirely inadequate for this task. It requires a new conceptual framework, different assessment models and methodologies, and a new set of indicators. A good starting point is to explore the components of good governance. As a working hypothesis, two areas in which measurement is required and, if done well, can have a significant impact on development include:

- improvements in public policy outcomes; and
- implementation of well-designed programmes by means of which public policy is put into practice

Though measurement of governance outcomes has been spoken about since the 1990s, little has been done in that direction. This measurement gap has been largely due to the fact that outcomes are often contingent on factors outside the direct control of the agency responsible for delivering particular outputs. Rare attempts to tackle this measurement gap, such as the Oregon benchmark exercise - a strategic planning approach to public health, using a comprehensive, state-wide process and societal-level indicators of well-

being - showed that the measurement of outcomes requires an inter-agency effort and inevitably involves data-sharing platforms.

The enormous and complex development challenges that public governance is now compelled to grapple witch has meant there is now an interest in measuring the success of public interventions in terms of the quality-of-life changes which they bring about for those affected by them, rather than the quality of the activities themselves. This means, for example, that we need to assess the level of:

- community safety perceived by citizens, rather than the quality of police and crime prevention services;
- income and livelihood opportunities, rather than the performance of economic development programmes;
- health and social well-being experienced by citizens, rather than the quality of health care given;
- knowledge and skills that citizens gain, in relation to the livelihood opportunities that open up as a result, rather than the quality of the education services that they experience.

This does not mean that there is no longer an interest in or a need for measuring the quality and adequacy of the services provided by the public sector. However, these must be seen as purely instrumental, rather than as ends in themselves. As a consequence of this change in orientation, there is now a major challenge to find ways in which quality of life improvements such as those listed above can be assessed.

10.4: Human Development Index - Impact Assessment

Probably the best known ‘quality of life’ measurement project is the Human Development Index (HDI). The Human Development Report was first launched in 1990 with the simple but ambitious goal of putting people back at the centre of the development process. In its explicit purpose, ‘to shift the focus of development economics from national income accounting to people-centred policies’, the HDI has been eminently successful. The HDI helped rediscover the obvious: that people are both the means and the end of development. This goal had far-ranging implications - going beyond measuring income to assessing the level of people’s long-term well-being.

It is equally important to measure the quality and adequacy of Urban governance in the state. This can be best done by measuring the financial sustainability of ULB. Innovative

project financing structures, and the access to and the extent of external funding that can be leveraged will be predicated upon the fiscal health and sustainability of the ULB. It would therefore be useful to adopt a fiscal responsibility framework - through the mechanism of the medium-term fiscal plans (MTFP) - that will help measure the progress on the path of fiscal discipline and sustainability over the medium term. It will perhaps be necessary for the states to extend the coverage of the Fiscal Responsibility and Budget Management legislation to include ULB in a calibrated manner, thus establishing a regulatory framework of incentives and disincentives, directing the process of advancing fiscal responsibility and financial sustainability.

10.5: Monitoring & Evaluation

The state has established a robust data base and Monitoring and Evaluation system. The Directorate of Economics and Statistics is continuously involved in broadening and deepening the data base and provide all the relevant data for effective planning of schemes and activities and devise Key Performance Indicators (KPIs) for designing effective monitoring tools.

The **Karnataka At A glance** contains information about 2000 parameters both static information (Population Census, Agricultural Census and Animal Husbandry Census) and dynamic information related to the programmes of various development departments in addition to socio-economic and geographical information of the districts / taluks with data visualization for major KPIs. **e-JanMa** captures all the information about births and deaths.*Avalokana* which symbolizes transparency in governance, it assimilates and integrates data from the GP level to the State. About 30,000 Government officers are on boarded in the system. *Avalokana* provides real time information on nearly 1700 schemes for effective monitoring. SDG barometer is a visualization of all the indicators with data organically flowing from taluk level for 49 KPIs under 5 broad socio-economic themes - Health and Nutrition, Education, Agriculture and Water Resources, Financial Inclusion and Skill Development, and Infrastructure.

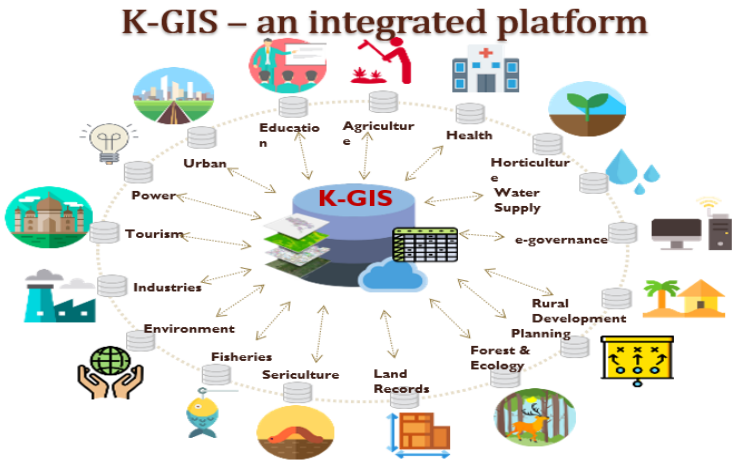
Avalokana

Avalokana, symbolizing transparency in governance, was launched on 20 Jan 2021.It serves as an example of responsible, accountable, transparent and sustainable governance. The citizens at a click can view the Government spend by sector, geography,

department, view SDG barometer etc. The platform assimilates and integrated data from the GP level to the State. More than 30,000 Government officers are on boarded in the system. Avalokana provides real time information on more than 1700 schemes (Central Sector and District Sector). The State Treasury system Khajane II is integrated with Avalokana to provide seamless real time information on the dashboards. The boards and corporations of the Government can also update their financial information on Avalokana.

For managing and analysing data more smartly- data integration through **Data lakes** and its utilisation to create a data-driven, process-oriented, and semi-automated budgeting system that will help in most optimum allocation of resources, people centred and help in monitoring the progress on a regular basis. Use of data science applications such as data layering, data visualization, machine learning and AI tools for localisation of SDGs, identification of focus areas for specific interventions, to better capture evidence of achievement of more complex outcomes, e.g., **school dropouts, vs. learning outcomes, estimation of GDP at GP level** for demand and resource-based planning etc. for inclusion & equity.

A project Management system to monitor the implementation of mega projects to avoid cost escalation and ensure timely benefits to the masses.



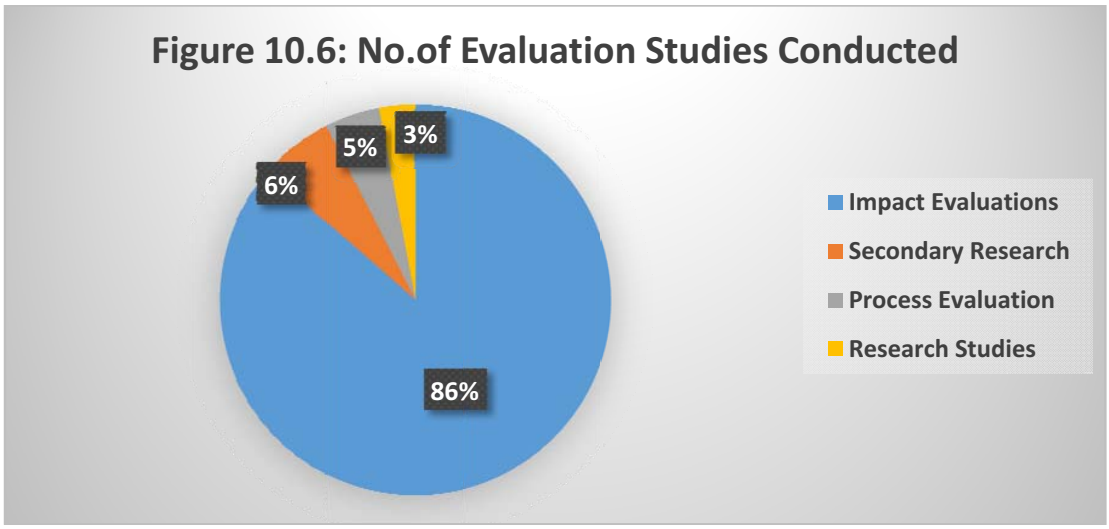
- More than 600 layers of data are available for purposes of correlations in query mode.
- Wealth data correlates and geospatially analyse for scientific development decisions with respect to resource potential of the schemes.

Evaluation of Schemes and Programmes

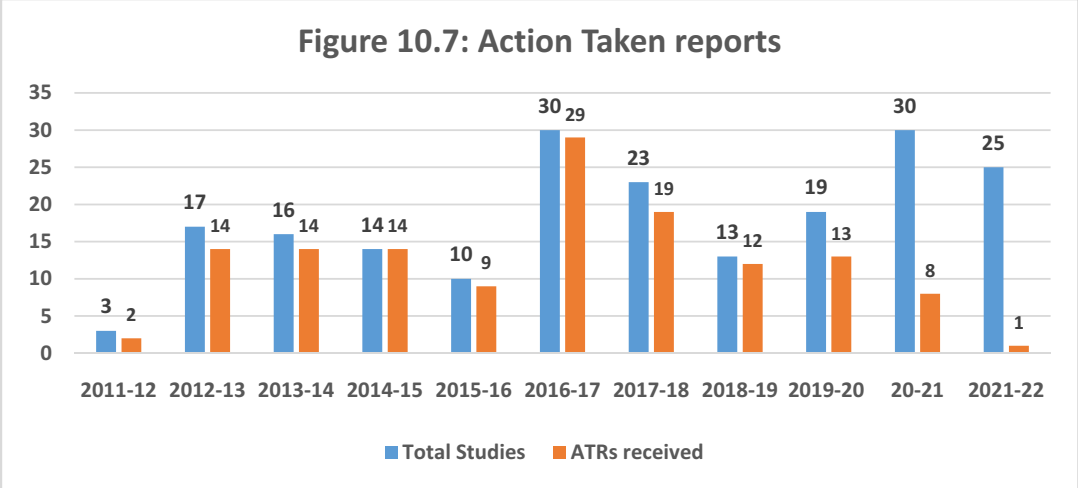
Impact evaluations of social programmes have emerged as an important tool to guide social policy in developing polities as they allow for accurate measurement and attribution of impact can help policymakers identify programmes that work and those that do not work, so that effective and performing programmes can be promoted, others may require modifications in design & structures to produce better results and a few may be ineffective which need to be discontinued for resource optimization.

Karnataka was one of the first States in the Country to evolve an Evaluation Policy in 2000. The policy envisaged evaluation of every scheme/ programme with outlay of Rs. 1 core and above during the plan period and 1% of scheme outlay to be set aside for evaluation. Later, for facilitating independent evaluation of Schemes/ programmes, Karnataka Evaluation Authority (KEA) was set upon 19th September 2011 under the Karnataka Societies Registration Act, 1960. It functions under Planning, Programme Monitoring and Statistics Department (PPMS).

KEA was established to supervise, facilitate, build capacity and handhold all departments for effective Planning, Monitoring and fine tuning of the policies, programmes, and schemes for result oriented and outcome-based implementation. The changeover from financial allocations and expenditures to output and outcomes was to ensure a transparent, accountable and outcome-oriented mechanism to bring out the impact of every rupee spent by the Govt. on welfare of the masses.



For effective utilization of evaluation output, the evaluation reports are shared with the Department, and the action reports are reviewed in Karnataka Development Programme (KDP) meeting every month



KEA model was presented on international platform as Evaluation model at a State/ sub regional level in G-local evaluation week (31st May to June 4th) by DMEO NITI Aayog.

10.6: Way Forward

Karnataka has steadily outmatched India's performance in all the above-mentioned indices. In fact, the 2005 State Human Development Report ranks the state's attainment in human development significantly above the experiences of Pakistan, Bhutan and Nepal and asserts a comfortable position for the state in the mise-en-scène of development in South Asia. It would be delusory, however, to be mollified by such fairly rosy impressions of the reality. An introspection is in order, to place the state's differential attainments in perspective and to appreciate the gains and losses of those who fare better vis-à-vis those who lead 'reduced' lives.

An introspective enquiry is necessitated, especially, by way of recent forewarnings issued by various analytical reports ranking governance across states. In December 2021, in the 'State of the States' report patronised by India Today, Karnataka ranked behind 9 large states, finishing at 10th, owing largely to an alarmingly poor performance in inclusive development.

Insights recorded in the Public Affairs Index (PAI) also attest to the need for Karnataka to take stock of critical yardsticks of governance. PAC's flagship report -PAI- is a non-

partisan, temporal barometer of states' performance along indicators relating to governance and its outcomes. PAI 2021 ranked Karnataka at a modest 7th among 18 large states. In fact, akin to India Today's 'State of the States' Report, PAI too identified 'inclusiveness' as a bone of contention, ranking the state 16th among 18 large states in the 'Equity' pillar (Ravindra, 2021). This has strong implications for the human development outcomes of vulnerable groups requiring social safety such as women, children and the elderly.

This trend had begun to emerge as early on as 2016, as noted in PAI. PAI, 2016 had ranked the state 10th in reinforcing support for human development-related parameters of health and education and 13th in providing an enabling scaffolding for women and children, among 29 states. In the subsequent year, not only had the state slipped from its aggregate rank of 3rd in 2016 to 4th in 2017 among 29 states, its performance in human development indicators of health and education further deteriorated, humbling its ranks.

10.6.1: Public Expenditure for enhancing Human Development Outcomes

Karnataka's performance along key indicators of human development offers considerable latitude in interrogating the decline in Human Expenditure Ratio and in testing the veracity behind the claim of attaining satisfactory levels of human development. The state's performance, regardless of whether a dismal failure or a roaring success, is demonstrative of the state's capacity to deliver public services. In 'good governance' parlance, States must be understood as a transparent, accountable arrangement of actors delivering high-quality services with efficiency and responsiveness. 'Good governance' in the capacity of efficiency of service delivery, is an elusive, underdeveloped and contentious subject. However, oft-used indicators to measure it as such relate to access to and coverage of services.

The society and economy in Karnataka are fragmented along various identities, all of which bear heavily on public service delivery and consequently development outcomes. A unique dichotomy exists in outcomes experienced in the historically deprived North Karnataka vis-à-vis South Karnataka. This dichotomy has of late received financial and policy attention from governmental and non-governmental actors alike. A more insidious albeit fundamental dichotomy which has suffered dereliction is the 'rural-urban' one.

Attainments in human development and improvement in public service delivery must be read against the weighted distribution of population in rural and urban geographies. A

little more than 61.3% of Karnataka is rural, constituting a substantial majority of the population. Against this light, it is imperative to look at rural and urban transformations heralded by governments over the years.

An analysis of returns in education, nutrition and unemployment - observed in the form of utilisation of measurable, intended out-turns – suggest an urban bias. Examination of public expenditure in Education in Karnataka reveals that, between NFHS-4 (2015-16) and NFHS-5 (2019-21), when regressed upon the Financial Years 2014-15 to 2021-22, a collective financial outlay of 161350.2 Crores was made. Expressed in terms of returns, the average increase in number of literate persons was higher in urban areas in contrast to rural areas. The numbers – computed improvement in absolute terms, using Census population projections for the corresponding years- indicated that for every education-related public investment worth about 1 crore made between 2015 and 2021, Karnataka observed an increase in the number of literate persons by 11 in urban areas and 7 in rural areas. In the same scheme of analysis, returns expressed in terms of increase in the number of schools – as obtained from UDISE+ between 2013-14 and 2019-20- conveyed an increase of 1 school in rural areas per crore of public investment on education and 8 schools, in contrast, in urban areas. These findings betray the differential reality of improvement in education-related indicators.

A similar exercise for nutrition-related parameters, on the other hand, revealed a less profound bias, interestingly, in the opposite direction. NFHS-5 alludes to marginal improvement in the incidence of stunting, wasting and underweight in Karnataka. For every 1 crore invested in Health and Nutrition in Karnataka between 2015 and 2021, there was an average reduction of 18 and 38 persons in terms of wasting in urban and rural areas respectively. Results for the incidence of Stunting and Underweight revealed greater decline in such incidence in rural Karnataka and a marginal increase in urban Karnataka. It is worthy to note, however, that the incidence of stunting, wasting and underweight has been consistently higher in rural Karnataka vis-à-vis urban Karnataka despite greater returns in terms of improvement.

On the subject of unemployment, as a proportion of public expenditure on rural development- that includes expenditure on agriculture and rural development, area development and community development programmes and rural self-employment and wage employment programmes – for every 1 crore public investment made between the Financial Years of 2011 and 2019, for which the data on unemployment is available, there

was an average addition of 18 persons. In urban areas, this addition was more acute, with an average addition of 39 persons per crore of public expenditure on urban development. This is only to be expected given the in-migration into cities in search of ever-evasive job opportunities, at the cost of emptying villages.

While the 'returns' are reflective of responsiveness to budgetary stimuli, they do not necessarily capture the divergent somatic experience of public services across rural and urban Karnataka (Golait & Lokare, 2008). There were 180 schools per 1000 population in rural Karnataka in 2019-20, considerably lower than the 192 schools per 1000 population in urban Karnataka. There were 6 beds per 10,000 population in rural Karnataka as of 2019, in contrast to 17 beds in urban Karnataka. The uptake of clean fuel for cooking was merely 69.3% in rural Karnataka as opposed to the near universal 95% in the state's urban counterpart, as of 2021. Access to improved sanitation services in the same year were recorded to be appallingly low in rural areas, at 68.5%, substantially lower than 85% in urban areas **Table 10.2** provides a simple return analysis across basic indicators.

Table 10.2: Returns per Crore of Sectoral Public Expenditure

Indicator	**Urban**	**Rural**
Average increase in number of literate persons	11	7
Average increase in number of schools	8	1
Average increase/decrease in the incidence of stunting (in persons)	11	-7
Average increase/decrease in the incidence of wasting (in persons)	-18	-38
Average increase/decrease in the incidence of underweight persons	3	-15
Average increase/decrease in number of unemployed persons	39	18

Source: Handbook of Statistics on Indian States, RBI; NFHS-4 (2015-16); NFHS-5 (2019-21), UDISE+ (2013-14 and 2019-20)

It is perhaps because of such differentials that 19% of rural Karnataka- as opposed to 5% of urban Karnataka – was found to be multi dimensionally poor, symptomatic of poor health, insufficient education and poor standards of living. Such outcomes seem to have crystallised from a skewed policy orientation. The Budget is a signalling tool of the Government. Therefore, per capita public expenditure of 8870 for rural Karnataka as opposed to 14068 in urban Karnataka, between 2011-21, palliates any misgivings about the state's predilection towards the latter.

10.6.2: The Role of Local Governments

The Eleventh Schedule of the Constitution of India, constitutive of the 73rd Constitutional Amendment Act, vouchsafes 29 items to the jurisdiction of the Rural Local Body (RLB). Article 243G entrusts poverty alleviation, rural housing, rural electrification, assurance of drinking water, health, sanitation and education -among other responsibilities- to the RLB. Incidentally, these items are constitutive of the most prominent features of 'development' as 'freedom' in Amartya Sen's seminal work. Development, in Sen's discourse, should necessarily elicit a removal of poverty, poor economic opportunities, systematic social deprivation and neglect of public facilities (Sen, 1999). Provided the proximity of the local government, RLBs would be best placed to address public service delivery concerns at the last mile while being accommodative of local, cultural heterogeneity. This is in consonance with the oft-cited 'principle of subsidiarity'.

However, the role of local government is thwarted by vertical fiscal imbalance that places elastic and progressive sources of tax revenue with the Central Government. The local body's finances comprise routine and scheme-related grants devolved from Central and State Finance Commissions and Own Source Revenues; while grants are sectorally and scheme-wise 'tied', the latter, although 'untied', are inefficiently mobilised, leaving little room for customised development expenditure. Therefore, to rely exclusively on the limited financial resources of the RLB would be a fallacy that may not ultimately assuage under-provision of services.

It would be expedient to subsume existing institutions that deliver basic services – like the School Development Monitoring Committee (SDMC), Anganwadis, Primary Health Centres, Fair Price Shops- under the jurisdiction of the RLB. While the upper-tier government may have the economies of scale in designing the programme and prescribing minimum standards, the local government would be best posed to ensure day-to-day service delivery.

A novel concept worth exploring would be 'rural proofing' of development planning where revenues and expenditures undergo a systematic application of a rural lens that accounts for rural needs while ensuring pan-sectoral complementarity and synergy. This is akin to the concept of 'Gender Budgeting' that Karnataka has successfully adopted.

Finally, to improve efficiency, transparency and responsiveness in public service delivery, digitisation opportunities may be leveraged. Georeferenced, digital solutions that identify

the ones deprived of their entitlements, allow for complaint registration as well as grievance redress, must be developed. Karnataka has spearheaded efforts in this direction through the Karnataka Guarantee of Services to Citizens Act, 2011, pioneering a Management Information System (MIS) – 'Sakala' dedicated to this guarantee.

e-Governance initiatives

The State is moving faster on digitization of services. The Department has developed and implemented a 6 – 'I' strategy for e- Governance in Karnataka. The elements of these are

- Creating appropriate Institutional framework
- Creating necessary core e-infrastructure to enable agencies/ departments to plan and implement initiatives
- Enabling Internal Business Process Reengineering
- Designing appropriate Investment (Business) Model
- Internal Capacity Building
- Innovations in use of technology for delivering better outcomes for the citizens

Two novel projects of the State are KUTUMBA – a family data base of all the households in Karnataka and FRUITS a registration system for farmers to derive a range of benefits.

10.6.3: Subsidiarity as the Governing Principle

Karnataka embodies a unique development challenge and contradiction unlike many other states: spectacular technology- led growth in Bangalore making it the primary driver of growth in the state; tempered with the absence of any other significant growth centres in the state, enduring gender inequity and regional disparities, and a visibly widening gap between the urban and the rural areas. From a macroeconomic perspective, Karnataka faces two fundamental problems: in the last couple of decades, Bangalore has emerged as the only growth centre in the state, often devouring the resources and the potential of other potential alternative centres; and significant number of people are migrating out of agriculture to the non-farm sector as a livelihood adaptation strategy but not finding sustainable alternative livelihood opportunities. Karnataka's pioneering experiment with Panchayath Raj reforms under the Ramakrishna Hegde government in the 1980s sparked the 73rd amendment and the consequent and continuing wave of devolutions in finance and power to panchayats. This emphasis on technology-led growth coupled with local government reform is, at least in theory, a singularly innovative strategy to address the

challenge of generating growth with equity and can be described as the "Karnataka model" of development.

Based on the current human development status of the population, from a rights-based entitlements perspective, a focus on the human development based sustainable development goals (in particular SDGs 1 to 5), especially in the context of the six Kalyana Karnataka districts would constitute a good starting point for an effective human development strategy. The districts that came from old Hyderabad have historically tended to have lower living standards and infrastructure than the rest of Karnataka, and this lag persists to this day, causing a high degree of regional imbalance in the state. This regional imbalance has as much to do with geography and climate as it does with policy, but the fact that it has prevailed for two centuries indicates important path dependencies in government and social action.

In setting out to 'achieving sustainable development in its three dimensions—economic, social and environmental—in a balanced and integrated manner' the 2030 Agenda recognizes the need to take into account local realities. Against unparalleled urbanisation rates, the onward march of the city has relegated the development challenges that rural Karnataka faces to the background. The COVID-19 crisis, followed by the lockdowns and movement restrictions set off a wave of reverse migration, notably the second largest mass migration in Indian history after the Partition of 1947. In a matter of days, the 'village' saw an unprecedented, unforeseen resurrection, as it became a receptor of millions of distraught migrants returning to their rural homes. Therefore, 'what' these migrants returned 'to' engenders a crucial investigative juncture. Insights from NFHS-5 and MPI seem to be discouraging. The strength of this approach is to emphasise local action that is context-specific and resource sensitive as a response to what might be a global challenge.

From a governance perspective, the time has come to go beyond the social accountability approach to public governance and consider important political economy aspects of development: the political weakness of the intended beneficiaries – the poor and the excluded – as an organized interest group. Organised community action by the economically and socially marginalized - agricultural labourers, small and marginal farmers, artisans, the self-employed in household enterprises, and casual non-agricultural labourers - who constitute the bulk of the poor, is fragmented, and infrequent. Understanding what makes government responsive to the needs of the poor is a key issue in political economy. The challenge facing public policy and governance in India is how to

break low-accountability traps by triggering community action that can mobilise community agency. Inclusive growth and development remain elusive in the absence of a development praxis framework that can guide this process on ground. In this backdrop, the state must advance subsidiarity as a governing principle for public policy in India, and argue that enforcing the subsidiarity principle can foster a virtuous circle of empowerment needed to make the transition to inclusive development.

Subsidiarity is often mistaken to merely represent the principle of devolution or decentralization of governance, for the allocation of functions from higher to the lower levels of government. This interpretation denudes subsidiarity of its dialectics, thus reducing a potentially transformative process that can resolve social contradictions, into a mechanical process. Rarely, if ever, is subsidiarity seen as a governance strategy requiring a greater role for the government in combating a given social problem. Subsidiarity is in fact, in its philosophic as well its dynamic operational sense, a powerful social mobilization principle for fostering community agency – the ability of the community to participate in governance not as mere beneficiaries, but as self-determining agents. Subsidiarity holds that where households, communities, or community groups can effectively address a given problem, they should. It is our view that the subsidiarity principle as a community mobilization principle holds great practical use in public policy and governance to address deep-rooted inequality and the process of exclusion occurring in the development process.

In essence, the evidence from Karnataka's governance experience concludes definitively that there is no better human development system than through community-based institutions through which the communities themselves take ownership of the last mile institutions – schools, PHCs, Anganwadis, - through the third tier of governance, the Gram Panchayat (GP) and engage in the decision-making process. If they do not have the ability and willingness to do that, the solution is not to dilute the community-based institutions and the GP or render them ineffective, but to help build community agency - the ability to participate in the development process - through training and capacity-building. This chapter has attempted to advance this concept. The evidence-base for the enormous benefits of the participatory approach to human development; and the rationale to the imperative for community ownership of the development process simply means we need to democratise the governance processes by implementing the principle of subsidiarity;

and democratise the processes of development by strengthening community-based institutions.

10.6.4: Encouraging the measurement of the quality of Decentralised public governance - District Good Governance Index

It is one thing to argue that improvements in the quality of life, conformity to public governance principles and high-quality achievement of public governance processes are important. It is quite another to suggest that they could indeed be put into practice. What incentives would there be for any stakeholders to become involved in such an assessment process? After all, just because possible indicators of achievement exist does not mean that a measurement process would be universally welcomed or conducted with integrity - and even if it were to take place, and to be done well, it would not necessarily be used to improve decision-making in public policies. In this section, we examine some of the options open to different stakeholders in taking forward the assessment of the quality of public governance.

The first issue is about incentives: How might an interest in the assessment of public governance be initiated? By analogy with assessment of service quality, it is possible to envisage a spectrum of triggers which might give stakeholders an incentive to initiate the assessment of quality of public governance, which would include the following:

- Developing a District Good Governance Index (DGGI) and establishing awards for the Best Performing Districts. The focus should be on progress achieved in human development and improvement in the quality of life of the citizens. Typically, the award can be in the form of release of additional grants to the district besides awarding the key governance leaders.
- Independent periodic assessment of the quality and adequacy of public governance by an independent impartial third party. Traditionally, there is a here, between self-assessment and external (independent) assessment. Ideally, a combination would best serve the purpose. Self-assessment is usually more knowledgeable and allows people to learn necessary lessons and can help in the improvement process.
- Finally, it is important to introduce the 360° appraisal by relevant stakeholders. This is best done through a structured process through a district-level representative institution like the District Development Council or a similar body.

The objectives of all the three must be to focus on priority issues that impact human development issues and to ensure coherence in understanding both the context and the core issues (although this may vary between stakeholders) and ensure coordinated action. Clearly, the triggers listed here are not necessarily likely to produce enough pressure to fire enthusiasm for public governance assessment. However, there is reason to be optimistic that these triggers might work on occasion, particularly where powerful stakeholders are discontented with the judgements made about performance on the narrow front of service delivery. It is then possible that the natural process of competitive claiming might make it attractive for the revenue division or district to join in the spirit of competitive comparisons. This can if handled well snowball into an annual contest to measure the quality and the adequacy of governance from the perspective of the human development outcomes.

For this to succeed however, the state and the district officers engaged in the human development sectors must first embrace data science as the creed of modern good governance; and to gain a nuanced understanding and better measurement of progress in human development. One of the foremost challenges in this task will be to prioritise exactly what features would be best to focus on for use by those in government at the level of policy and government at the level of programme implementation. The primary consideration should be to balance the accuracy of analysis with its complexity - so that the results are both insightful and understandable by those with varying degrees of data literacy. The thrust of the effort to measure governance and thence the quality of life should be to generate 'actionable knowledge'. This will provide avenues for the relevant departments and district officers to use those insights to inspire decisive changes in their activities and direct targeted evidence-based interventions. The Geospatial representation of performance metrics should serve to 'gamify' the information.

- Showing how a district/taluka compares with other districts/talukas (using shaded regions to indicate better or worse performance in any given category), should serve as motivation just for the sake of being the best and/or not being the worst in any given indicator.
- The more granular the spatial comparison for any given metric, the more the ownership of the data by the districts/departments, and likely the more impetus they would have to alter their performance.

An important decision will be the choice of the indicators, specifying data sources, and ensuring auto-updating of operational data. A sustained programme to train key department officers and district officials in improving the quality, consistency and regularity of data collection will be a necessary condition. The earlier we train people to understand the value of good data and the power of data analytics-based insights to transform the lives of people, the faster will be Karnataka's progress towards becoming an equitable and just society. This is a commitment that the state under the constitution is mandated to deliver. Moving forward, it will be good to remember that brick and mortar or technology do not solve problems, human beings do. Consolidated efforts from different stakeholders are required to build a good governance system. Now NITI Aayog is promoting District as a fulcrum of development, sustained efforts in this direction are sure to yield the expected outcomes.

Chapter -11
Financing for Human Development

Chapter 11

Financing for Human Development

11.1: Introduction

Human development is a broad concept encompassing the multi-dimensional components and indicators for construction of Human Development Index (HDI) at international, national and sub-national levels. As per the global UNDP-HDR 2020 (UNDP, 2020), HDI is broadly defined by dimensions of health, education and income. Financing human development was first focused in global UNDP-HDR 1991 (UNDP 1991). It suggested four monitoring public spending ratios on human development which are familiar by now. (a) Public Expenditure Ratio (PER) – percentage of national income that goes into public expenditure. (b) Social Allocation Ratio (SAR) - percentage of public expenditure earmarked for social services. (c) Social Priority Ratio (SPR) - percentage of social expenditure devoted to human priority concern. (d) Human Development Ratio (HDR) - percentage of national income devoted to human priority concerns. Technically, HDR is the product of PER, SAR and SPR. These ratios are operational tools to understand the nature and magnitude of past trends and current status of the budget allocations for human development as well as to plan and prioritize the future budget allocation and spending for human development. These ratios show the policy emphasis of public spending or expenditure on human development. However, overall human development of a state or country also depends on the contribution ofprivate sector financing of human development and complementarity between public and private financing of human development.[1]

In general, the measurement of Human Development in India at national and sub-national levels is guided by the UNDP-HDR frameworks. This is evident, for instance, in the preparation of Government of India's first National Human Development Report in 2001 (Planning Commission, 2002), first HDR of 18 states between 1995 to 2007, Government of Karnataka's (GoK) State level HDR in 1999, 2005, 2015, and Karnataka State's district levels HDRs (especially, for all 30 districts simultaneously in 2014).

In the first Karnataka Human Development Report 1999 (Government of Karnataka, 1999), scope of financing of human development was limited to analysis of expenditure in health

[1] A comprehensive and latest review of studies on public financing of human development in India is available in Mukherjee and Badola (2021).

[2] These 18 State level HDRs are available at: https://hdr.undp.org/en/reports/national?name_list=IN

and education sector and highlighting the funds for needy districts to address the issue of inter- district disparities. Most importantly, the need-based fund allocation (especially, then under plan expenditure) was emphasized instead of parceling out resources on a pro rata basis or percapita approach.

The second Karnataka Human Development Report 2005 (Government of Karnataka, 2005) was India's first thematic HDR and focused on investing in human development. A separate chapter on Financing Human Development presented a review of fiscal performance, and sectoral priorities in expenditure on human development of Karnataka State.

The second Karnataka Human Development Report 2005 also included a case study of financing education sector that provided additional insights into the issues of financing human development. For instance, the case study showed that a large share of education expenditure was revenue expenditure or not enough investment was directed towards capital expenditure. Thus, non-salary components of expenditure that contribute to quality of education was foundto be inadequate in term of low expenditure on infrastructure, teaching aids, curriculum development, instructional material, laboratories, libraries, and in-service teachers' training. At the district level, resource-requirements for the educationally backward regions based on need and equity called for a change in the pattern of devolution and sanctioning more resources to needy districts.

The third Karnataka Human Development Report 2015 (Government of Karnataka, 2018) hada focused chapter on financing human development. It included a description of fiscal trends, description of sectoral allocations and inter-district disparities in allocations of grants. As a future strategy for sustained human development, the following were suggested for financing policies: insulate the changes in allocation due to fluctuations in resource mobilization, earmarking a prescribed share of GSDP for human development sectors, mobilization and utilization of resources from the private sector sources for human development, move towards need-based planning for district sector allocations for human development and strengthening performance-based budgeting in human development sectors.

Subsequent to the third Karnataka Human Development Report 2015, UN-SDG 2030 has emerged as a major global, national and sub-national policy framework including for financing human development (especially, focusing allocation to Aspirational districts). In addition, newer issues and challenges for human development are evident in the first Child Budget of GoK in 2020-21; Government of India's National Education Policy 2020; reforms in health and nutrition sectors; labour, employment and skill development sectors; growth promotional investment policies and effects of First Wave of Covid-19 pandemic on economic growth and public finance. Given the fact that major human development sectors (e.g. education and health) are in the Concurrent and State List of subjectsin Indian Constitution, the role of Centrally Sponsored Schemes and Central Sector Schemes for human development sectors

assumes special significance for shared responsibility of financing human development between Government of India (GoI) and GoK. Newer technology-enabled Central fund flow systems (e.g. GoI's Public Financial Management System or PFMS) have innovative ways of monitoring the release and utilization of funds on real time basis. All these and other newer policy frameworks, programmes and schemes, issues and challenges have important implications for financing human development and accelerated human development. Thus, the analysis in this chapter provides a way forward or road map for developing a forward-looking human development financing and investment policy of GoK in India's federal economy.

This Chapter aims at analysis of the trends and priorities of financing human development in the framework of fiscal policy of GoK with focus on public expenditure (or budgetary allocations and expenditures). Analysis of public expenditure on human development, as a form of public investment is aimed to create human capital for socio-economic development, is approached to attain the main objectives of (a) higher economic growth through maximisation of long run demographic dividend for the State and (b) reduction in spatial disparities, economic (or income and consumption) inequalities and poverty. Thus, all analysesof financing human development are related to public expenditure in terms of budgetary allocation and expenditure. Public expenditure is focused on sectors which promote (in terms of impacts and outcomes) human development in the State, especially education, health and nutrition, social welfare and other relevant sectors for attainment of human development goalsand target in SDGs 2030 in Karnataka. Public expenditure on human development shall be distinguished by recent trends in UNDP expenditure ratios, allocation and expenditure by major human development sectors, children (through Child Budget), gender (Gender Budget), and special social groups (through SCP and TSP Budget). In addition, available estimates of Planning Department of GoK on budgetary requirements for human development from the perspectives of attainment of goals and target of SDG 2030 in Karnataka State are highlighted.Throughout, the methodology of analysis is descriptive and positive.

The State Budget 2020-21 was presented on 5th March 2020 before the start of Covid-19 pandemic. However, implementation of this Budget during FY 2020-21 had faced with the challenges of managing the socio-economic impacts of First Wave of the Pandemic including effects of national lockdown on slowdown of output, employment and growth, shortfall in revenue mobilization, reprioritization of budget allocations etc. Thus, analysis of implementation of State Budget allocation for human development sectors in FY 2020-21 may show the added strengths of Karnataka's fiscal policy in managing the Pandemic.

All data for analyses in this Chapter are drawn from the Government of Karnataka sources in Finance and non-Finance departments as they are available in published forms, both digitally and in print. The

period of analysis is over the past 5 years after the third Karnataka Human Development Report 2015. As of now, Census of India 2021 is not yet started and no updates of census data is available. Hence, the reference period of analysis is from 2015-16 to 2020-21. Apparently, this period does not capture the Covid-19 pandemic periods and effects from FY 2021-22.

Rest of this chapter is organized as follows. Section 2 describes the major objectives and trends in composition of fiscal policy of Karnataka at State level. Section 3 highlights the innovative fiscal policy frameworks for allocation by programmes and schemes for child development through Child Budget, women and girls through Gender Budget, socially disadvantaged groups of Scheduled Castes and Tribes through Karnataka Scheduled Caste Sub-Plan and Tribal Sub-Plan, and trends in spatial allocation and expenditure on human development sectors at district level. Section 4 analyses the UN-SDG framework for linking public expenditure to human development outcomes and assessment of budgetary requirements for attainment of human development related goals and targets. Section 5 highlights the policy options for adequacy and effectiveness of public expenditure on financing human development, need for dynamic assessment of budget requirements for SDG-related human development goals and targets, financing challenges under National Education Policy 2020, need for construction of a Human Capital Index for Karnataka, and need for database on private sector financing for human development. These options constitute the way forward or elements of forward-looking financing policy for human development over the medium-term.

11.2: Fiscal Policy framework for financing Human Development in Karnataka

Fiscal policy is a deliberate use of government budget to accomplish the macroeconomic objectives, such as, allocation of resources, economic growth, stabilization, income distribution and fiscal sustainability.

Karnataka Fiscal Responsibility Rules, 2003 framed under Karnataka Fiscal Responsibility Act 2002 (in brief, KFRA 2002) is the basis for fixing the statutory norms for fiscal performance indicators and targets.

11.2.1: Analysis of Expenditure Performance

Given the general expenditure performance above, two further analyses are given below. First, public expenditure ratios for human development. Second, committed expenditure and its implications for human development in the State.

11.2.2: Public Expenditure ratios for Human Development

Aggregate spending on human development is analysed by four UNDP ratios: These are (i) Public Expenditure Ratio, (ii) Social Allocation Ratio, (iii) Social Priority Ratio (SPR), and (iv) Human Expenditure Ratio. PER refers to total budgetary expenditure (sum of revenue and capital expenditure and loans and advances) as a proportion of GSDP. SAR refers to expenditure under Social Sector including the social Services and Rural Development as a proportion of total budget expenditure. Social Priority Ratio (SPR) refers to expenditure under human priority areas (Elementary Education, Health (excluding Medical Education), Rural Development and Nutrition) as a proportion of social sector expenditure. HER is the product of above three ratios or the ratio of expenditure on human priority areas as a percentage of GSDP. As per UNDP HDR 1991, the suggested human development expenditure norms are 25 percent for PER, 40 percent for SAR, 50 percent for SPR (Social Priority Ratio) and 5 percent for HER (Human Expenditure Ratio) Karnataka's performance in human development expenditure by these ratios are given in **Table 11.1**.

Table 11.1: Karnataka's public expenditure ratios for human development: 2015-16 to 2021

Year	Public Expenditure Ratio (%)	Social Allocation Ratio (%)	Social Priority Ratio (%)	Human Expenditure Ratio (%)	Social Sector expenditure as a percentage of GSDP
2015-16	12.66	39.66	41.61	2.27	5.02
2016-17	12.94	43.96	39.94	2.11	5.69
2017-18	12.88	42.99	40.95	2.28	5.54
2018-19	13.41	44.05	42.30	2.45	5.91
2019-20	12.84	40.48	41.76	2.16	5.20
2020-21	12.62	38.41	46.50	2.20	4.85

Note: (a) GSDP in 2019-20 refers to Second Revised Estimate and in 2020-21 refers to First Revised Estimate. (b) All expenditure figures refer to Accounts and are at current prices.

Source: Calculated by using basic data in Budget Volumes (Expenditure)-various years – and GSDP data from Directorate of Economics and Statistics. Government of Karnataka, Bengaluru.

In general, the expenditure norms suggested by UNDP are not attained over the period 2015- 16 to 2020-21. This performance is unsurprising because similar performance was evident from 1990-91 to 2002-03 in the Karnataka's Second Human Development 2005 (Government of Karnataka, 2005) except for SER, and from 2004-05 to 2013-14 in Karnataka's Third Human Development2015 (Government of Karnataka, 2018). However, non-attainment of expenditure ratios of human development in Karnataka raises the relevance and applicability of the ratios for the present and future because the ratios were

recommended long back. For instance, the relevance of SPR is debatable because of its exclusion of higher education, medical education and economic infrastructure. These investments are essential for long run maximization of demographic dividend from the perspective of investing on human development and enhancement of labour productivity. In addition, changing nature and priorities of investing on human development is a policy imperative due to remarkable age structure transition of Karnataka's population, especially projected decline in child population. Most importantly, innovative fiscal policy of Karnataka, such as, Child Budget, Gender Budget, and allocation to Karnataka Scheduled Caste Sub-Plan and Tribal Sub-plan shows the challenging tasks for budget spending beyond SAR and SER. The innovative fiscal policy of Karnataka is analysed in Section 3 of this Chapter.

11.3: Innovative Fiscal Policy Frameworks for financing Human Development in Karnataka

Karnataka's innovative fiscal policy frameworks are evident in budget allocation for programmes and schemes for children (Child Budget), women and girls (Gender Budget), socially disadvantaged groups (Scheduled Caste Sub Plan and Tribal Sub Plan) and spatial approach to financing human development at district level. Human development aspects of these innovative fiscal policy approaches are analysed in the following sections.

11.3.1: Financing Human Development of Children

The nature and magnitude of financing human development for children are evident in the Child Budget of Government of Karnataka. Child Budget (CB) is a policy tool to assess the budgetary needs and priorities for child (0-18 years) development in the State. It is also useful to monitor and evaluate child budget allocation and expenditure, especially in regard to attainment of the goals and targets of the United Nations Sustainable Development Goals 2030 (in brief, UN-SDGs 2030) as they are related to children. GoK has been preparing the Child Budget from FY 2020-21. CB is not a separate budget for children because it is a consolidation of child centric allocation and expenditure for children in the State Budget. The details of the child budget objectives, methodology, statements, process of preparation, and programmes' descriptions are given in the budget volume on Child Budget 2020-21(Government of Karnataka, 2020).

A unique approach to methodology for preparation of Child Budget of GoK is comprehensive identification of child centric programmes/schemes in the entire State Budget and classification of the identified programmes and non-programmes into (i) 100% Child Centric Programmes and Non-

programmes which are exclusively designed, targeted or intended for children and (ii) less than 100% Child Centric Programmes and Non-Programmes/schemes which include children and other beneficiaries by design, targeting or intention. Non-programmes include allocation and expenditure on institutional set ups, establishments, infrastructure facilities and administrative support that benefit children. Programmes which are intended for children include those for pregnant or expectant mothers and lactating mothers. In the absence of child beneficiary data, allocation and expenditure for less than 100% child centric programmes and non-programmes are approximated by share of child population in Karnataka State (33.93%) as per Census of India 2011.

Table 11.10 shows the Child Budget 2020-21 allocation (Budget and Revised Estimates) and expenditure (Accounts).[1] Column 2 refers to the Budget Estimate. Size of child budget allocation is Rs.36340.45 crore or 15.28 percent of total disbursements on Consolidated Fund of Karnataka. Highest allocation is given to 100% non-programmes (51.55 percent) and 100% child centric programmes (32.08 percent). Or, about 84 percent of child budget allocation is given to programmes and non-programmes that completely benefit children. Allocation for less than 100% programmes is relatively higher (11.99 percent) than 100% non-programmes (4.38 percent). Highest share of child budget allocation is on revenue account (92.20 percent).

Table 11.10: Child Budget 2020-21: Comparison of Budget Allocation and Expenditure

(Rs. In Lakhs)

Classification of Child Centric Programmes and Non-programmes	2020-21 (Budget Estimate)	2020-21 (Revised Estimate)	2020-21 (Accounts)
1. 100% Child Centric Programmes	1165844.95 (32.08)	1028285.99 (28.05)	1011683.90 (28.99)
2. 100% Child Centric Non -Programmes	1873323.62 (51.55)	1884103.77 (51.39)	1694377.57 (48.56)
3. Less than 100% Child Centric Programmes	435558.47 (11.99)	425017.23 (11.59)	463285.31 (13.28)
4. Less than 100% Child Centric Non-Programmes	159317.70 (4.38)	328623.95 (8.96)	319934.80 (9.17)
Total child budget allocation and expenditure	3634044.74 (100.00)	3666030.94 (100.00)	3489281.57 (100.00)
Total child budget allocation and expenditure as a percentage of total disbursement on Consolidated Fund of Karnataka	15.28	15.94	14.84

Note: Figures in parentheses are percent total, **Source**: Calculated by using Child Budget of Government of Karnataka – Various years

[1] Child Budget 2020-21 estimates are available in different years. For instance, Budget Estimate in Child Budget 2020-21 (Government of Karnataka, 2020), Revised Estimate in Child Budget 2021-22 (Government of Karnataka, 2021a) and Accounts in Child Budget 2022-23 (Government of Karnataka, 2022a).

For FY 2020-21, Revised Estimate and expenditure (Accounts) are also available as shown in column 3 and column 4 respectively in Table 11.10. Due to Covid-19 pandemic effects, child budget allocation (Revised Estimate) shows a marginal rise by 0.88 percent from Budget Estimate; and expenditure declined by 4.82 percent from the Revised Estimate. However, Child Budget size has remained about 15 percent of total disbursements on the Consolidated Fund of Karnataka. Or, GoK has spent about 15 percent of its total expenditure on programmes and schemes related to child development in the State.

Child centric allocation and expenditure in Table 11.10 are focused on programmes and schemes in various department under 12 Demand Numbers (in brief, Demands) in State Budget 2020-21. These Demands are: (i) Home and Transport (Demand No.05), (ii) Forest, Ecology and Environment (Demand No.08), (iii) Social Welfare (Demand No.10), (iv) Women and Child Development (Demand No.11), (v) Information, Tourism and Youth Services (Demand No.12), (vi) Food and Civil Supplies (Demand No.13), (vii) Information Technology (Demand No.15),(viii) Education (Demand No.17), (ix) Health and Family Welfare (Demand No.22), (x) Labour and Skill Development (Demand No.23), (xi) Kannada and Culture (Demand No.25) and (xii) Law (Demand No.27). Allocation and expenditure under these 12 Demands are given in **Table 11.3**.

Table 11.3: Share of Child Budget 2020-21 by Major Demands

Demand No	Demand description	2020-21 (Budget Estimate)	2020-21 (Revised Estimate)	2020-21 (Accounts)
5	Home & Transport	1.36	1.88	2.37
8	Forest, Ecology and Environment	0.27	0.34	0.22
10	Social Welfare	8.42	6.71	6.82
11	Women and Child Development	11.44	11.64	12.08
12	Information, Tourism and Youth Services	0.28	0.33	0.33
13	Food & Civil Supplies	2.38	3.02	3.02
15	Information Technology	0.04	0.05	0.05
17	Education	68.46	65.20	63.21
22	Health & Family Welfare	7.00	10.49	11.16
23	Labour & Skill Development	0.25	0.25	0.69
25	Kannada & Culture	0.04	0.03	0.04
27	Law	0.06	0.06	0.00
	Total	100.00	100.00	100.00
	Total (Rs. In Lakh)	3634044.70	3666030.94	3489281.57

Note: Figures in parentheses are percent total, **Source:** Calculated by using Child Budget of Government of Karnataka – Various years

As per the budget allocation for 12 Demands (Budget Estimate) in **Table 11.11**, Education has the highest share in total child centric allocations (68.46 percent). This is followed by allocation to Health and Family Welfare (7 percent), Women and Child Development (11.44 percent) and Social Welfare (8.42%). The combined share of these 4 Demands is 94.76%. Allocation for the remaining Demands shows that the share of allocation to Food and Civil Supplies is 2.38 percent and Home and Transport is 1.36 percent. Other Demands have less than 1 percent share in total child centric budget allocation.

Allocation in terms of Revised Estimate and expenditure in terms of Accounts show that the combined share 4 major Demands has declined to about 93 percent due to decline in allocation and expenditure to Education and Social Welfare. Both Education and Social Welfare received less allocation and spent much lesser (especially, on in-kind transfers) due to closure of regular schools, residential schools and hostels during the nation-wide lockdown and continued closures months after the lockdown as a precautionary measure to protect children from Covid- 19 pandemic. A remarkable rise in share of allocation and expenditure for Health and Family Welfare Demand is noteworthy. That is, from 7 percent budget allocation to 10.49 percent revised allocation and to 11.16 percent of expenditure. These allocation included spending for children to prevent and manage the Covid-19 pandemic during 2020-21.

11.3.2: Implications of Child Budget Allocation and Expenditure for Human Development

Child Budget 2020-21 allocation and expenditure are contributory for foundations and growth for human development in areas of child education and skill development, health, nutrition, protection and participation. These multi- dimensional human development needs of children are reflected in Child Budget 2020-21 by allocation and expenditure on child centric programmes and schemes under 279 Head of Accounts. Thus, the size and nature of public expenditure on children in Table 11.10 and Table 11.11 are broadly responsive for multi-dimensional human development needs of children and contributory for improvements in Child Development Index for Karnataka State.

Allocation and expenditure in Child Budget 2020-21 also reflect the socio-economic and demographic diversities of child population in Karnataka and multi-dimensional policy interventions for the child development in Karnataka State. For instance, total child population (0-18 years) in Karnataka (20729561 persons, or 33.93 percent of total population of Karnataka State, as per Census of India 2011) comprises 51.64 percent males; 63.39 percent rural; 19.06

percent Scheduled Castes; 7.80 percent Scheduled Tribes; and 1.88 percent differently abled. Age composition of child population shows that 29.59 percent belong to age group 0-5 years, 47.71 percent to 6-14 years, 10.97 percent to 15-16 years and 5.06 to 17-18 years. The largest share in Karnataka's child population is school going ages or belongs to the age group 6-18 years. This need is reflected in Child Budget 2020-21 by highest share of allocation and expenditure for child centric programmes and schemes under Education Demand. Thus, the entire allocation and expenditure in Child Budget is considerable for human development for the age group 0-18 years in the State.

11.3.3: Changing Child Population, Child Budget and Human Development

Though Census of India 2011 is the latest Census data on population in India, available official population projections are useful to know the changing child population of Karnataka up to 2036 and to draw their implications for Child Budget and investment on human development as they are related to children in Karnataka.

To begin with, **Table 11.4** gives a summary of child population in Karnataka from Census 2011 to projected child population from 2021 through 2036. Total population size of Karnataka shows an increase although growth rate declines through the projection period. For instance, decadal growth rate of total population is 15.60 percent in 2011 but declines to 9.41 percent in 2021 and to 5.70 percent in 2031. At the same time, child population size shows a decline with negative growth rates at every age. The decadal growth rate of child population is -3.39 percent in 2011, -8.30 percent in 2021 and -9.83 percent in 2031. As a percentage of total population, the share of child population declines from 33.93 percent in 2011 to 28.44 percent in 2021 and to 24.26 percent in 2031 and further declines to 22.40 percent in 2036.

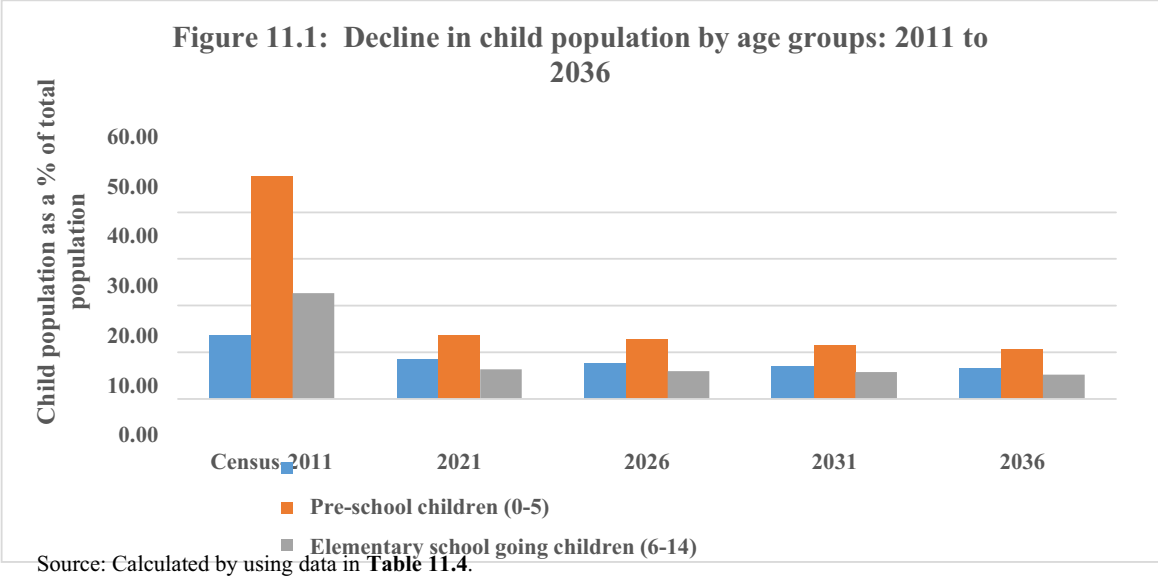
Table 11.4: Child population of Karnataka: 2011 to 2036

Age	Share of child population in total population (%): Census of 2011	Share of child population in total projected population (%)			
		2021	2026	2031	2036
0-4	8.26	6.97	6.28	5.80	5.46
5	5.25	1.47	1.31	1.20	1.12
6	4.95	1.50	1.33	1.21	1.13
7	4.92	1.51	1.35	1.22	1.14
8	5.09	1.52	1.37	1.24	1.15

9	5.08	1.52	1.39	1.26	1.17
10	5.90	1.50	1.42	1.28	1.18
11	5.43	1.50	1.45	1.30	1.19
12	5.60	1.51	1.47	1.32	1.20
13	5.26	1.52	1.48	1.34	1.22
14	5.48	1.55	1.48	1.37	1.25
15	5.52	1.57	1.47	1.40	1.27
16	5.45	1.58	1.46	1.43	1.29
17	5.06	1.60	1.47	1.45	1.31
18	6.66	1.62	1.49	1.46	1.33
Child population (000)	20730	19010	18082	17141	16115
Total population (000)	61095	66845	68962	70652	71948
Growth rate of child population (%)	-3.39	-8.30	-4.88	-5.20	-5.99
Growth rate of total population (%)	15.60	9.41	3.17	2.45	1.83
Share of child population in total population	33.93	28.44	26.22	24.26	22.40

Source: Calculated by author using basic data from (a) Census of India 2011 and (b) Report of the Technical Group on Population Projections (July 2020), Census of India 2011, National Commission on Population, Ministry of Health and Family Welfare, Government of India, New Delhi.

Based on data in Table 11.4, **Figure 11.1** summarizes the declining child population by three major age groups: 0-5 years, 6-14 years, and 15-18 years. In general, these age groups are representing the pre-school, elementary school and high schools and higher secondary school going children.



Source: Calculated by using data in **Table 11.4**.

In general, demand for grants for the child beneficiary-oriented programmes depends on three parameters: (a) beneficiary cost norms, (b) number of beneficiaries and (c) duration of benefits (number of days in a financial/academic year). Total cost of a programme is the product of these three parameters. Given (a) and (c), and other things being the same, demand for grants must be reduced if child beneficiary population declines. Alternatively, in order to keep the child budget allocations stable in the presence of declining child population, beneficiary cost norms must be increased and/or duration of benefits must be extended. However, if Child Budget allocation for a programme is constant, a decline in child population will increase the per child budget allocation in a programme or scheme. For instance, per child budget allocation as per Child Budget 2020-21 is Rs.17530.37 if total child population as per Census of India 2011 is used or Rs. 19116.49 if projected total child population of 2021 is used **Table 11.12**. In the long run interest of child development, budgetary resources freed up due to decline in child population must be reinvestment on children to further improve the quality of child development in the State. This can be one of the financing strategies of human development in the State, now and in future.

11.3.4: Financing Gender-based Human Development

Financing gender-based human development for women and girls is focused in the Gender Budget, prepared by GoK since 2007-08. Karnataka's Gender Budget identifies the gender-related programmes and schemes under specified Demand Numbers and Heads of Account and classifies them under Category A (100% beneficiaries are women and girl children) and Category B (less than 100% beneficiaries are women and girl children).[6] In the absence of beneficiary level data, 30 percent of allocation for the Category B programmes and schemes in the State Budget is apportioned for the Gender Budget. **Table 11.5** presents the trends in size and growth of expenditure (or actual expenditure) and number of gender-oriented programmes and schemes from 2015-16 to 2020-21.

Since 2015-16, the programmes and schemes within A and B categories are sub-categorised by the way the benefits reach to women and girls. If the benefits reach directly and individually, they are called beneficiary-oriented programmes and schemes (AY and BY). Or, if the benefits reach indirectly and collectively, they are called non-beneficiary-oriented programmes and schemes (AN and BN). Gender Budget volumes show the nature, number and amount of allocation and expenditure for programmes and schemes by AN, AY, BY and BY.

Table 11.5: Trends in gender-based public expenditure in Karnataka: 2015-16 to 2020-21

Category	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Category A programmes and schemes						
Expenditure (Rs.In Lakh)	513504	466380	619136	493475	546882	470370
Growth (%)	46.14	-9.18	32.75	-20.30	10.82	-13.99
Total number of programmes and schemes	58	60	59	63	58	71
Share in total Gender Budget (%)	22.75	17.45	20.35	12.69	14.54	12.69
Category B programmes and schemes						
Expenditure (Rs.In Lakh)	1743580	2206378	2423042	3394974	3214323	3237467
Growth (%)	14.16	26.54	9.82	40.11	-5.32	0.72
Total number of programmes and schemes	664	666	701	890	818	781
Share in total Gender Budget (%)	77.25	82.55	79.65	87.31	85.46	87.31
Total Gender Budget programmes and schemes						
Expenditure (Rs.In Lakh)	2257084	2672758	3042178	3888449	3761205	3707838
Growth (%)	20.14	18.42	13.82	27.82	-3.27	-1.42
Total number of programmes and schemes	714	724	761	784	953	876
Share in total Gender Budget (%)	100.00	100.00	100.00	100.00	100.00	100.00
Share in Consolidate Fund of Karnataka	15.84	15.78	16.31	18.13	16.79	15.77

Note: All figures refer to Accounts (or actual expenditure).
Source: Calculated by using data from Gender Budget of Government of Karnataka – various years.

Gender Budget expenditure has varied over the years on programmes and schemes under Category A as well as Category B. For instance, over the period 2015-16 to 2020-21, the highest expenditure under Category A was Rs.619136 lakh in FY 2017-18 and Rs.3394974 lakh in FY 2018-19 under Category B. The number of gender-oriented programmes and schemes was highest in FY 2020-21 (71) under Category A and in FY 2018-19 (890) under Category B. This implies no direct correspondence between total gender-based expenditure and the number of gender-oriented programmes and schemes. Over these years, share of expenditure and number of the programmes and schemes under Category B have been higher than under Category A. This implies that the size and growth of Gender Budget expenditure is mainly driven by the size and growth of allocation or

expenditure on programmes and schemes under Category B. Over all, the size of Gender Budget has remained around 16 percent of Consolidated Fund of Karnataka except for FY 2018-19 (about18 percent).

Table 11.6 highlights the share of Gender Budget by Demand Numbers. For completeness of analysis, all the 29 Demands are listed in this table. The highest expenditure on gender-oriented programmes and schemes is in Education Demand (about 20 percent). The combined share of Education, Social Welfare, Women and Child Development and Health and Family Welfare has varied from 40 percent to 47 percent. Other key gender-oriented demands include Agriculture and Horticulture, Home and Transport, Rural Development and Panchayat Raj, Revenue, Housing, and Energy. The combined share of these 6 demands has varied from 36 percent to 45 percent.

It is important to note that demand for grants for gender-oriented programmes and schemes is (a) negligible for Department of Personnel and Administrative Reforms (Demand 4), Information Technology (Demand 15), Water Resources (Demand 21), Law (Demand 27) and Debt Servicing (Demand 29) and (b) zero for Infrastructure (Demand 6) and Parliamentary Affairs and Legislations (Demand 28).

Table 11.6: Share of Gender Budget by Demands: 2015-16 to 2020-21

Demand Number andDescription	Share of expenditure (%)					
	2015-15	2016-17	2017-18	2018-19	2019-20	2020-21
Demand 1. Agriculture and Horticulture	4.62	4.62	5.45	4.44	5.49	5.97
Demand 2. Animal Husbandry and Fisheries	1.70	1.60	1.73	1.64	1.50	1.50
Demand 3. Finance	3.70	2.84	2.40	7.99	2.96	0.14
Demand 4. Department of Personnel and Administrative Reforms	0.14	0.13	0.13	0.06	0.08	0.00
Demand 5. Home and Transport	4.02	5.25	5.99	5.37	6.23	2.11
Demand 6. Infrastructure Development	0.00	0.00	0.00	0.00	0.00	0.00
Demand 7. Rural Development and Panchayat Raj	10.37	11.54	8.84	6.54	7.47	7.26
Demand 8. Forest, Ecology and Environment	0.19	0.17	0.24	0.18	0.06	0.16

Demand 9. Co-operation	0.29	1.76	2.06	5.26	0.23	1.26
Demand 10. Social Welfare	7.71	10.17	11.60	9.28	8.13	5.82
Demand 11. Women and Child Development	7.62	6.40	6.14	4.87	4.92	4.56
Demand 12. Information, Tourism and Youth Service	0.60	0.62	0.88	0.49	0.33	0.32
Demand 13. Food and Civil Supplies	2.92	2.04	2.61	2.82	3.10	2.53
Demand 14. Revenue	8.23	7.32	5.48	5.64	8.49	9.03
Demand 15. Information Technology	0.07	0.11	0.19	0.15	0.07	0.04
Demand 16. Housing	14.72	11.01	12.76	7.12	7.97	5.94
Demand 17. Education	21.07	22.79	21.51	19.12	22.38	21.36
Demand 18. Commerce and Industries	1.09	1.22	0.50	0.37	0.33	0.67
Demand 19. Urban Development	1.32	1.29	1.42	1.64	1.49	4.37
Demand 20. public Works	0.19	0.15	0.10	0.11	0.09	4.80
Demand 21. Water Resources	0.16	0.00	0.08	0.03	0.02	0.00
Demand 22. Health and Family Welfare	6.43	7.43	8.08	7.44	7.37	9.68
Demand 23. Labour and Skill Development	1.10	0.93	1.22	0.94	0.98	1.82
Demand 24. Energy	0.00	0.00	0.00	7.14	8.98	9.12
Demand 25. Kannada and Culture	0.29	0.25	0.27	0.14	0.14	0.04
Demand 26. Planning, Statistics, Science and Technology	1.00	0.00	0.00	1.18	1.18	1.46
Demand 27. Law	0.05	0.06	0.04	0.04	0.02	0.02
Demand 28. Parliamentary Affairs and Legislations	0.00	0.00	0.00	0.00	0.00	0.00
Demand 29. Debt Servicing	0.37	0.30	0.28	0.00	0.00	0.00
Total Allocation on Gender	100.00	100.00	100.00	100.00	100.00	100.00

Source: Calculated by using data from Gender Budget of Government of Karnataka – variousyears.

The Gender Budget volume explains the objectives of gender-based budgeting in terms of gender development through budget allocation and expenditures on the programmes and schemes. The Gender Budget Statements gives information on allocation (Budget Estimate and

Revised Estimate) and expenditure (Accounts) by Demand Numbers and Heads of Account in **Table 11.6**. In general, the gender-oriented programmes and schemes are spread in both socialand economic services and are expected to have implications on (a) improving gender empowerment in social and economic aspects, (b) reduction in gender gaps, inequalities and inequities in the process of economic development, and (c) strengthen work participation and contribution of women to state economic growth. These implications are of utmost relevance and applicability for human development because they contribute either directly or indirectly to improvements in Human Development Index in general, and Gender Development Index, Gender Inequality Index in particular. Thus, Gender Budget of Government of Karnataka is a powerful policy instrument for gender related human development in the State.

11.3.5: Financing Human Development for Socially Disadvantaged Groups

Karnataka State Budget has a dedicated volume on budget allocation for Scheduled Castes and Scheduled Tribes in the State. This budget volume is called Karnataka Scheduled Caste Sub-Plan (SCSP) and Tribal Sub-Plan (TSP) Allocation for the respective financial year. It gives the budget allocation by Demand Numbers, Departments and Schemes (or under specified Head of Account). As per the Census of India 2011, the share of Scheduled Caste population to total population of Karnataka was 17.15 percent and that of Scheduled Tribe population was 6.95.7 A key objective of the budgetary allocations under the SCSP and TSP has been to reduce or eliminate the gaps in development in terms of human and economic development indicators for the SC and ST population when compared to State averages. Thus, the objective of human development is in-built in allocation for schemes in SCSP and TSP.

In general, the allocation to SCSP and TSP are guided by two frameworks. (a) The Karnataka Scheduled Castes Sub Plan and Tribal Sub-Plan (Planning, Allocation and Utilization of Financial Resources) Act, 2013. (b) The Karnataka Scheduled Castes Sub-Allocation and Tribal Sub-Allocation (Planning, Allocation and Utilization of Financial Resources) Rules, 2017. As per Chapter III and section 13 of the Act, “the State Government, shall, in every financial year, earmark in such manner as may be prescribed, a portion of the total plan outlays of the State which shall be proportionate to the Scheduled Castes/Scheduled Tribes population of the State, to be called as the Scheduled Castes Sub-Plan and Tribal Sub-Plan” (pp.56-57).

Up to 2017-18, allocation to SCSP and TSP was considered for earmarking by excluding non- plan expenditure in the State Budget. For instance, SCSP and TSP allocation (Budget

Estimate) in 2015-16 was 26.85 percent of total Plan Expenditure in State Budget 2015-16 and 27.26 percent in 2016-17. Since 2017-18, distinction between Plan and Non-Plan expenditure is removed and a new base for allocation to SCSP and TSP is developed. This new base is calculated by deducting the exempted expenditure from the total Consolidated Fund of Karnataka. The exempted expenditure includes salary, salary GIA, pension, administrative expenditure, principal repayment and interest payment on account of the State Government's borrowing and off-budget borrowing by the State Public Sector Undertaking or any such expenditure of administrative nature notified by the State Government. The new base is called Allocable Budget (total Consolidated Fund of Karnataka less exempted expenditure) and 24.1 percent of Allocable Budget is earmarked for the SCSP and TSP. 8 Since 2017-18, this mandatory allocation (i.e. 24.10 percent of Allocable Budget) is provided to the SCSP and TSP.9

[7] As per Statement 11 of Census of India 2011 and accessed at : https://censusindia.gov.in/2011census/PCA/PCA_Highlights/pca_highlights_file/karnataka/Chapter-II.pdf

[8] The above policy changes for allocation to SCSP and TSP are noted from the Budget Speech 2017-18 on 15th March 2017 (pp.5-6) and available at: https://finance.karnataka.gov.in/storage/pdf-files/2-BUDGETSPEECH-2017-18-ENG.pdf

[9] Data on Allocable Budget is not in public domain and, hence, exact earmarking for SCSP and STP since 2017-18 is not calculable.

11.3.6: Financing Scheduled Caste Sub-Plan

Table 11.7 shows the budget allocation for SCSP by 37 departments over the period 2015-16 to 2020-21.

Table 11.7: Department-wise Budget Allocation under Karnataka Scheduled Caste Sub-Plan: 2015-16 to 2020-21

Department	Share of allocation in State's total (%)					
	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
1. Agriculture	2.43	3.21	3.54	2.68	2.86	4.05
2. Animal Husbandry	1.01	1.05	0.97	1.14	0.58	0.55
3. Backward Classes Welfare	0.33	0.00	0.31	0.44	0.71	0.41
4. Co-operation	0.68	0.65	4.87	0.36	2.85	0.46
5. Energy	0.34	1.02	4.59	5.93	8.18	8.71
6. Fisheries	0.15	0.17	0.09	0.01	0.02	0.06
7. Food and Civil Supplies	0.00	0.00	4.09	3.54	4.18	3.16
8. Forest, Ecology and Environment	0.23	0.35	0.21	0.10	0.03	0.09
9. Health	3.23	4.06	4.54	3.01	2.79	4.03
10. Heavy and Medium Industries	0.49	0.55	1.03	0.15	0.01	0.00
11. Higher Education	0.88	1.79	1.02	0.40	0.41	0.26
12. Horticulture	0.73	0.67	0.97	0.89	0.60	0.60
13. Housing	13.56	11.27	12.12	7.64	5.95	5.63
14. Information and Publicity	0.02	0.03	0.08	0.04	0.03	0.04
15. Kannada and Culture	0.26	0.33	0.28	0.07	0.08	0.08
16. Labour	0.52	0.78	0.19	0.05	0.02	0.01
17. Medical Education	0.24	0.21	0.45	0.22	0.18	0.44
18. Planning, Programme and Statistics, Science and Technology	2.34	2.02	2.06	5.09	2.19	2.57
19. Primary and Secondary Education	5.86	5.90	4.90	3.07	3.66	3.94
20. Public Works	4.93	5.03	6.14	4.68	5.41	5.32
21. Revenue	2.92	3.20	5.34	9.12	10.40	11.55
22. Rural Development and Panchayat Raj	12.90	14.18	15.35	5.46	8.39	11.15
23. Skill Development and Training	0.00	0.00	0.99	0.29	0.52	0.56

24. Small Industries	0.08	0.16	0.06	0.16	0.86	0.79
25. Social Welfare	24.83	24.17	33.76	24.95	21.69	18.47
26. Tourism	0.19	0.14	0.14	0.07	0.03	0.02
27. Transport	0.00	0.04	1.56	0.96	0.84	0.14
28. Urban Development	1.43	3.78	5.59	4.33	4.06	4.58
29. Welfare of Scheduled Castes	0.00	0.00	0.00	0.00	0.00	0.00
30. Women and Child Development	2.59	2.21	5.33	5.40	4.27	3.30
31. Youth Empowerment and Sports	0.14	0.12	0.23	0.09	0.07	0.08
32. Handloom and Textiles	0.30	0.40	0.27	0.06	0.26	0.33
33. Heavy Irrigation	14.47	10.61	13.25	7.93	6.48	7.13
34. Information Technology and Bio-Technology	0.05	0.04	0.06	0.03	0.02	0.01
35. Law	0.01	0.01	0.01	0.01	0.00	0.00
36. Sericulture	0.25	0.19	0.17	0.08	0.09	0.09
37. Small Irrigation	1.61	1.67	1.83	1.54	1.30	1.39
Total allocation	100.00	100.00	100.00	100.00	100.00	100.00
Total allocation (Rs. In crore)	11819.16	14408.1	19647.58	21044.14	19511.86	18131.12
Growth rate of total allocation (%)	2.04	21.90	36.36	7.11	-7.28	-7.08
Share of social services allocation in total allocation to SCSP (%)	56.87	58.13	72.58	55.42	46.94	44.59

Source: Calculated using basic data from (a) SCSP TSP Progress Dashboard - Social Welfare Department, Government of Karnataka and (b) Annual Financial Statement for the year – various years.

Table 11.7 shows that total allocation has increased from 2015-16 to 2019-20 (e.g. from Rs.11819.16 crore in 2015-16 to Rs.21044.14 crore in 2019-20), although the growth rates have fluctuated widely (e.g. 2.04 percent in 2015-16 and 36.36 percent in 2017-18). In contrast, size of allocation and its annual growth rate have decline in 2019-10 and decline further in 2020-21 (pandemic year).

Further, of the 37 departments, 15 departments are under Social Services. The combined share of allocation of these 15 departments in Table 11.15 has varied from 56.87 percent in 2015-16 to 75.58 percent in 2017-18 and to 44.59 percent in 2020-21. In contrast, the combined share of allocation for 4 major Economic Services, viz., Agriculture, Revenue, Rural Development and Panchayat Raj, and Heavy Irrigation have fluctuated from 32.71 percent in 2015-16 to 31.19 percent in 2016-17, 37.49 percent in 2017-18, 25.20 percent in 2018-19,

28.13 percent in 2019-20 and 33.89 percent in 2020-21. Overall, the budgetary allocation to SCSP are contributory to both human and economic development of Scheduled Caste population in the State.

11.3.7: Financing Tribal Sub-Plan

As in case of the SCSP, the State Budget of Karnataka gives financial allocation to human and economic development of Scheduled Tribe population in the State. **Table 11.8** shows the department-wise budget allocation under Karnataka Tribal Sub-Plan from 2015-16 to 2020-21.

Table 11.8: Department-wise budget allocation under Karnataka Tribal Sub-Plan: 2015-16 to 2020-21

Department	Share of allocation in State's total (%)					
	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
1. Agriculture	2.63	3.87	2.88	2.79	3.10	4.85
2. Animal Husbandry	1.06	1.05	0.80	1.34	0.77	0.75
3. Backward Classes Welfare	0.00	0.00	0.96	0.79	1.01	0.52
4. Co-operation	1.15	1.19	4.36	0.78	4.94	0.94
5. Energy	0.30	0.92	3.25	5.13	7.44	7.44
6. Fisheries	0.14	0.15	0.10	0.02	0.01	0.08
7. Food and Civil Supplies	0.00	0.00	3.19	4.90	3.80	2.91
8. Forest, Ecology and Environment	0.62	0.71	0.44	0.38	0.03	0.18
9. Health	3.45	3.49	3.18	3.18	2.86	3.70
10. Heavy and medium Industries	0.51	0.52	0.52	0.15	0.00	0.00
11. Higher Education	0.83	1.76	0.61	0.35	0.36	0.19
12. Horticulture	0.84	0.74	0.73	0.91	0.61	0.71
13. Housing	15.39	7.53	7.06	7.04	5.06	4.79
14. Information and Publicity	0.01	0.01	0.03	0.03	0.03	0.02
15. Kannada and Culture	0.27	0.38	0.19	0.16	0.08	0.08
16. Labour	0.55	0.85	0.25	0.06	0.02	0.01
17. Medical Education	0.21	0.18	0.15	0.14	0.17	0.48
18. Planning, Programme and Statistics, Science and Technology	2.88	2.28	1.69	5.21	2.21	2.43

19. Primary and Secondary Education	6.17	6.05	3.25	3.01	3.56	3.85
20. Public Works	5.12	7.36	5.05	5.35	5.89	5.71
21. Revenue	1.85	2.02	4.97	10.55	10.07	10.52
22. Rural Development and Panchayat Raj	13.01	17.38	14.84	5.63	8.87	12.13
23. Skill Development and Training	0.00	0.00	1.16	0.38	0.50	0.76
24. Small Industries	0.08	0.17	0.05	0.13	0.88	0.55
25. Social Welfare	0.00	0.00	0.00	0.00	0.00	0.00
26. Tourism	0.23	0.12	0.10	0.07	0.04	0.03
27. Transport	0.00	0.04	1.30	1.17	1.03	0.09
28. Urban Development	1.56	3.41	4.19	4.21	3.78	4.22
29. Welfare of Scheduled Castes	22.96	19.34	19.10	18.86	16.01	17.86
30. Women and Child Development	2.55	2.23	4.03	5.56	4.03	3.22
31. Youth Empowerment and Sports	0.15	0.13	0.17	0.09	0.15	0.09
32. Handloom and Textiles	0.30	0.42	0.19	0.05	0.32	0.26
33. Heavy Irrigation	12.87	13.61	9.65	9.90	10.79	9.08
34. Information Technology and Bio-Technology	0.05	0.04	0.04	0.03	0.01	0.01
35. Law	0.01	0.01	0.01	0.01	0.00	0.00
36. Sericulture	0.24	0.23	0.13	0.12	0.11	0.10
37. Small Irrigation	2.03	1.81	1.40	1.54	1.46	1.44
Total allocation	100.00	100.00	100.00	100.00	100.00	100.00
Total allocation (Rs. In crore)	4585.95	5632.19	8314.76	8650.36	7879.96	7814.79
Growth rate of total allocation (%)	6.35	22.81	47.63	4.04	-8.91	-0.83
Share of allocation to SCSP as a % of total expenditure inState Budget (Budget Estimate)	3.37	3.61	4.70	4.29	3.55	3.51
Share of social services allocation in total allocation to SCSP (%)	56.71	47.26	45.84	48.92	39.74	42.15

Source: Calculated using basic data from (a) SCSP TSP Progress Dashboard - Social Welfare Department, Government of Karnataka and (b) Annual Financial Statement for the year – various years.

Size of budget allocation to TSP is relatively smaller than SCSP but qualitatively the trends in the allocation are comparable between SCSP and TSP. Further, the combined share of allocation of 15 departments under Social Services varies from 56.71 percent in 2015-16 to 48.92 percent in 2017-18 and to 42.15 percent in 2020-21. On the other hand, the combined share of allocation for 4 major Economic Services (Agriculture, Revenue, Rural Development and Panchyat Raj, and Heavy Irrigation) fluctuated from 30.36 percent in 2015-16 to 28.86 in 2018-19 and to 36.57 percent in 2020-21. Thus, the budgetary allocation to TSP are contributory to both human and economic development of Scheduled Tribe population in the State.

11.3.8: Comparability of financing of human development between Child Budget, Gender Budget, and SCSP and TSP

Allocation in the Child Budget, Gender Budget and SCSP and TSP show the importance given to specified or targeted groups of beneficiaries in the State. Comparison of allocation under these frameworks needs to be cautious for the following two reasons.

(a) Allocation in the Child Budget, Gender Budget, and SCSP and TSP represents the consolidation of allocation to programmes and schemes in the State Budget by the targeted groups in the population, viz., children, women and girls, Scheduled Castes and Tribes. These allocation are not mutually exclusive because each framework has both common and unique allocation due to commonality of beneficiaries covered. For instance, allocation to programmes and schemes related to pre-school children, school education, welfare of SC and ST have commonalities across Child Budget, Gender Budget, SCSP and TSP. These commonalities imply that allocation under Child Budget, Gender Budget, SCSP and TSP cannot be aggregated due to overlapping or duplicating allocation, especially for the social services.

(b) In terms of coverage of departments, SCSP and TSP is more comprehensive than Gender Budget and Child Budget. Size of total allocation to Gender Budget is bigger than Child Budget, SCSP and TSP. These differences are due to varying criteria for identification and classification and size of allocation for the programmes and schemes in Child Budget and Gender Budget. For instance, Child Budget allocation for less than 100% child centric programmes and schemes is 33.93 percent of State Budget allocation on those programmes and schemes. Gender Budget allocation for Category B programmes and schemes is 30 percent of State Budget allocation on those programmes and schemes. In contrast, allocation for all programmes and schemes in SCSP and STP is entirely as per the State Budget allocation.

11.4: Frameworks for spatial allocation for human development in Karnataka

Presentation of budget allocation and expenditure by financial codes (Demand Numbers and Heads of Account) is useful to identify the sectors and their composition in terms of programmes and schemes. This sectoral approach is distinguishable by State Sector, Central Sector (e.g. Centrally Sponsored Schemes), and District Sector. The District Sector includes the allocation to Rural Local Bodies [Zilla Panchayat (ZP), Taluk Panchayat (TP) and Village Panchayat (VP)].[2]

Allocation to District Sector in State budget is shown by district-wise under the Block Grants. The allocation details (Budget Estimate) by programmes and schemes under specified Heads of Account are given in the State Budget volumes, viz., Budget Allotment for Zilla Panchayat for the financial year (Volume-I to Volume IV) and are popularly called *Link Documents*. Although the Link Documents do not report the programmatic allocation by Revised Estimate and Accounts or Actual expenditure, they do provide information on the spatial allocation through decentralization of programmatic allocation to the District Sector (comprising ZP, TP and VP level programmes and schemes). Thus, District Sector analysis is insightful into (a) nature, magnitude and disparities in inter-district allocation as they are related to human development sectors and (b) prioritize budgetary allocation to those Aspirational-Districts (e.g. Raichur and Yadgir) in the State which are relatively slower and less performing in attainment of human development goals and targets.

11.4.1: District Sector Allocation to Human Development

Allocation to District Sector is distinguishable by programmatic and lump sum. Programmatic allocation includes social and economic services. Social services exclude higher education under general education and medical education under medical and public health. Social sector allocation includes social services and rural development. The major Demand Numbers of the Social Sector allocation (i.e. sum of ZP, TP and GP schemes) are General Education (2202), Sports and Youth Services (2204), Art and Culture (2205), Medical and Public Health (2210),

[2] District-wise allocation of grants to Urban Local Bodies (ULBs), comprising City Corporations, City Municipal Corporations, Town Municipal Corporations, Town Panchayat and Notified Area Committees, is given in the budget volume on Budget Allocation for Urban Local Bodies For the Year. These grants include State Finance Commission's general and other devolution grants and Central Finance Commission's grants to ULBs. Importance of these grants to ULBs for human development are included in the Gender Budget, SCSP and TSP and, hence, no separate analysis of financing of human development by ULBs is given in this Chapter.

Family Welfare (2211), Water Supply and Sanitation (2215), Housing (2216), Welfare of SC, ST, OBCs and Minorities (2225), Labour, Employment and Skill Development (2230), Social Security and Welfare (2235), Nutrition (2236), Special Programmes for Rural Development (2501) and Rural Employment (2505).

Magnitude and composition of District Sector allocation over the period 2015-16 to 2020-21 are given in **Table 11.17**. Except for the pandemic year (2020-21), total allocation has increased over the years and a big jump evident in 2018-19 due to introduction of 6th Pay Commission benefits to government employees, revision of beneficiary cost norms for programmes in Social Welfare Department etc. However, size of District Sector allocation as a percentage of total State Budget allocation has remained around 18 percent. Within the District Sector, allocation to economic and social services has been higher than lump sum transfers in the form of grants.

Most importantly, social sector allocation in **Table 11.9** represents the investment on human development through district sector programmes and schemes. Since 2017-18, about 94 percent of District Sector allocation is for programmes and schemes in social sector. Further, social sector allocation is about 95 percent within the allocation for social and economic services as well as within lump sum transfers. Thus, in general, District Sector allocation is essentially targeted for human development within each district.

Table 11.9: District sector allocation to human development in Karnataka State Budget: 2015-16 to 2020-21

Year	Total allocation in State Budget (Rs. Lakh)	Total allocation to District Sector (Budget Estimate)			Share of social sector's allocation in District Sector allocation (%)			Share of district sector allocation in State's Budget Allocation (Budget Estimate)
		Total (Rs. Lakh)	Share of economic and social services	Lump sum grants	Total District sector allocation	Allocation to social and economic services (%)	Lump sum grants (%)	
2015-16	13601330	2657581	80.12	19.88	82.00	87.07	61.60	19.54
2016-17	15595197	2955831	77.35	22.65	80.53	87.20	57.73	18.95
2017-18	17678804	3279434	73.00	27.00	94.41	93.97	95.59	18.55
2018-19	20153552	3767597	75.01	24.99	94.37	95.99	93.83	18.69
2019-20	22168513	3913520	75.43	24.57	93.85	95.86	94.35	17.65
2020-21	22283558	3223205	76.10	23.90	94.46	95.71	94.76	14.46

Note: All figures refer to Budget Estimate.
Source: Calculated using data in Annual Financial Statement and Link Documents – various years.

11.4.2: Patterns of Inter-District Allocation to Human Development

The size and patterns of allocation by districts may offer insights into the inter-district variations in social sector allocation. Further, it is well known that by 98th Constitutional Amendment in 2012, Article 371-J was created and Hyderabad Karnataka Region Development Board was established on 6th November 2013 and renamed as Kalyana Karnataka Region Development Board on 7th September 2019. The jurisdiction of this Board comprises 6 districts, viz., Bidar, Bellary, Kalaburagi, Koppal, Raichur and Yadgir districts. Action-Plan for development of each district is prepared from 2013-14. District–wise analysis is useful to determine the share of human development allocation in each district of Kalyana Karnataka region. Further, Raichur and Yadgir in Kalayana Karnataka are identified as Aspirational Districts by NITI Aayog's baseline survey (2018). Of the 112 Aspirational Districts identified in the country, the relative ranking of Raichur was 12th and Yadgir was 40th.

Table 11.10 shows the patterns of social sector allocation by 30 districts in terms of (a) share of each district in total allocation to social sector in the State and (b) share of allocation to social sector within each district's total allocation. Over the period 2015 -16 to 2020-21, the highest share of allocation in the State is given to Belgaum district (about 6 percent). Districts with this share being 3 percent and above are Bangalore Urban, Tumkur, Bijapur (Vijayapura), Gulbarga (Kalaburagi) and Bellary. Hence, the relative share of remaining 24 districts is less than 3 percent in total allocation to social sector in the State. Within each district, share of social sector allocation ranges between 90 - 95 percent. Thus, District Sector allocation is predominantly oriented towards social sectors and, hence, contributory for human development in each district.

It is important to note that the combined share of 6 districts in Kalyana Karnataka ranges from 15 to 17 percent of social sector allocation in the State. In particular, the region's share has increased from 14.89 percent in 2017-18 to 15.42 percent in 2018-19, 15.74 percent in 2019-20 and to 16.16 percent in 2020-21. However, within each of these districts, share of social sector allocation ranges from 89 to 95 percent. In this regard, the patterns of intra-district allocation to social sector are generally comparable across districts as well as between districts within Kalyana Karnataka region.

Within social sector allocation, districts prioritize allocation to General Education, Medical and Public Health, Family Welfare, Welfare of SC, ST, OBCs and Minorities and Nutrition. Schemes for welfare of SC, ST, OBCs and Minorities are generally meant for student support

systems, such as, scholarships, fee reimbursements, hostels facilities, encouragement and reward for excellent through prize money, residential schools, and assistance to admission to prestigious schools for students belonging to SC, ST, OBCs and Minorities. Hence, these schemes are essentially education oriented. We club the allocation under 2202 and 2225 and call it education related. In the same way, we club allocation to Medical and Public Health (2210), Family Welfare (2211) and Nutrition (2236) and call it health and nutrition related.

Table 11.10: District Sector Allocation to Human Development Sector: 2017-18 to 2020-21

District	2015-16		2016-17		2017-18		2018-19		2019-20		2020-21	
	Share in State's total allocation (%)	Share of Social Sector allocation within District's total allocation (%)	Share in State's total allocation (%)	Share of Social Sector allocation within District's total allocation (%)	Share in State's total Social Sector allocation (%)	Share of Social Sector allocation within District's total allocation (%)	Share in State's total allocation (%)	Share of Social Sector allocation within District' total allocation (%)	Share in State's total allocation (%)	Share of Social Sector allocation within District's total allocation (%)	Share in State's total allocation (%)	Share of Social Sector allocation within District's total allocation (%)
1. Bangalore (Urban)	4.51	92.41	4.55	92.93	3.76	96.55	3.79	96.29	3.72	96.16	3.75	96.52
2. Bangalore Rural	1.49	82.95	1.40	83.95	1.26	90.31	1.31	89.67	1.36	90.09	1.29	90.86
3. Chitradurga	3.14	87.51	3.02	87.33	2.60	93.80	2.62	93.55	2.68	93.77	2.75	94.45
4. Kolar	2.40	87.47	2.27	86.94	1.97	93.55	2.04	93.45	2.07	93.36	2.04	93.88
5. Shimoga	2.98	85.81	2.93	85.78	2.61	93.72	2.67	93.46	2.68	93.45	2.74	94.04
6. Tumkur	4.62	86.49	4.42	86.59	3.88	93.68	3.91	93.58	3.97	93.62	4.02	94.24
7. Mysore	3.89	87.35	3.83	87.54	3.33	94.00	3.32	93.51	3.30	93.57	3.32	93.97
8. Chikmagalur	2.30	83.67	2.18	83.78	1.94	92.63	1.95	92.46	1.94	92.46	1.94	93.42
9. Dakshina Kannada	2.50	87.56	2.43	86.91	2.12	94.98	2.12	94.79	2.15	94.79	2.14	96.16
10. Hassan	3.22	85.68	3.17	85.65	2.70	93.28	2.85	93.30	2.81	93.18	2.83	93.53
11. Kodagu	0.91	80.93	0.85	78.18	0.79	90.89	0.76	90.22	0.77	89.88	0.77	91.89
12. Mandya	2.67	82.78	2.60	82.90	2.26	91.26	2.28	90.88	2.23	90.81	2.28	91.74

13. Belgaum	7.07	88.18	6.86	88.50	5.89	95.01	6.07	94.87	6.13	94.91	6.31	95.35
14. Bijapur	3.68	88.40	3.80	88.94	3.23	94.20	3.48	94.48	3.49	94.61	3.62	95.32
15. Dharwad	2.45	87.87	2.38	87.86	2.07	94.12	2.20	94.08	2.21	94.05	2.22	94.53
16. Uttara Kannada	2.86	85.94	2.71	85.67	2.37	93.81	2.43	93.75	2.42	93.59	2.50	94.91
17. Gulbarga	4.32	88.98	4.37	89.09	3.69	94.41	3.78	94.17	3.75	94.18	3.71	94.44
18. Bellary	3.31	88.85	3.37	89.13	2.84	95.13	3.00	95.17	3.09	95.28	3.45	95.30
19. Bidar	3.08	88.49	3.00	88.51	2.59	94.03	2.62	93.72	2.70	94.04	2.73	94.27
20. Raichur	2.86	88.91	2.87	89.00	2.46	94.95	2.54	94.89	2.65	94.95	2.66	95.07
21. Davanagere	3.17	86.94	3.15	87.45	2.79	93.93	2.83	93.85	2.83	93.97	2.50	94.32
22. Chamarajanagar	1.48	83.78	1.45	84.45	1.29	92.76	1.29	92.21	1.32	92.38	1.31	92.92
23. Udupi	1.54	85.46	1.51	85.15	1.31	93.66	1.33	93.60	1.32	93.28	1.34	95.38
24. Bagalkot	3.04	87.53	3.14	88.10	2.74	94.13	2.84	94.04	2.82	94.14	2.89	94.64
25. Gadag	1.77	86.61	1.77	86.76	1.57	93.26	1.62	93.65	1.64	93.52	1.68	94.47
26. Haveri	2.51	85.90	2.56	86.32	2.27	94.35	2.32	94.31	2.37	94.35	2.45	95.36
27. Koppal	2.11	87.86	2.10	87.42	1.86	94.70	1.96	94.75	1.99	94.86	2.05	95.41
28. Ramanagara	1.60	83.73	1.56	83.99	1.36	91.82	1.40	91.47	1.40	91.50	1.42	91.96
29. Chikkaballapura	1.92	84.69	1.86	84.74	1.66	92.46	1.70	92.27	1.69	92.14	1.69	92.71
30. Yadgir	1.66	87.39	1.64	87.48	1.45	94.66	1.53	94.30	1.55	94.28	1.56	94.61
Total-Social sectors	85.06	87.07	83.76	87.20	72.66	93.96	74.58	93.81	75.03	93.84	75.95	94.45
Lump sum	14.94	61.60	16.24	57.73	27.34	95.59	25.42	95.99	24.97	95.86	24.05	95.23
Aggregate	100.00	82.00	100.00	80.53	100.00	94.40	100.00	94.36	100.00	94.34	100.00	94.63

Source: Calculated using data in Link Documents – Various years.

Table 11.11 shows the inter-district variations in allocation to these priority social sectors from 2015-16 to 2020-21. In all the districts, education related allocation dominates over health and nutrition related allocation. Education related allocation ranges from 60 to 79 percent and that of health and nutrition allocation ranged from 9 to 15 percent. In general, all districts except Bidar allocate less than the State's average for education related expenditure, and all districts except Bidar allocate more than State's average for health and nutrition related allocation. Thus, allocation to education related and health and nutrition related allocation dominate the intra-district allocation to social sector allocation.

Table 11.11: District Sector Allocation to major Human Development Sectors: 2015-16 to 2020-21

District	2015-16		2016-17		2017-18		2018-19		2019-20		2020-21	
	Share of education related allocation in District Sector's total allocation (%)	Share of health and nutrition allocation in District sector's total allocation (%)	Share of education related allocation in District Sector's total allocation (%)	Share of health and nutrition allocation in District sector's total allocation (%)	Share of education related allocation in District Sector's total allocation (%)	Share of health and nutrition allocation in District sector's total allocation (%)	Share of education related allocation in District Sector's total allocation (%)	Share of health and nutrition allocation in District sector's total allocation (%)	Share of education related allocation in District Sector's total allocation (%)	Share of health and nutrition allocation in District sector's total allocation (%)	Share of education related allocation in District Sector's total allocation (%)	Share of health and nutrition allocation in District sector's total allocation (%)
1. Bangalore (Urban)	79.45	8.94	80.13	8.97	79.28	10.16	78.36	12.85	78.90	10.72	78.63	11.50
2. Bangalore Rural	61.96	14.26	64.22	13.57	63.57	13.52	65.38	14.90	64.24	16.04	67.75	13.32
3. Chitradurga	68.28	13.21	69.98	11.50	71.07	11.43	71.83	14.29	71.90	13.46	72.47	13.77
4. Kolar	68.37	13.13	69.22	12.43	69.83	12.07	71.23	14.87	70.65	13.72	73.21	11.90
5. Shimoga	69.31	11.27	70.12	10.51	70.81	10.46	73.17	12.73	72.52	12.02	73.67	11.72
6. Tumkur	70.28	9.75	70.90	9.45	71.73	9.20	74.32	11.23	74.08	10.56	75.22	9.99
7. Mysore	68.90	13.68	69.25	13.05	70.30	12.27	71.66	14.39	71.57	13.77	72.33	13.28
8. Chikmagalur	64.85	13.85	67.06	11.53	67.63	11.27	70.11	13.86	69.62	13.24	71.32	12.54
9. D.Kannada	68.17	12.82	68.64	12.37	68.77	12.49	71.12	15.01	70.08	14.20	71.80	14.33
10. Hassan	67.84	12.62	68.86	11.80	71.01	11.48	72.58	13.35	71.75	12.90	72.22	12.85
11. Kodagu	56.85	16.95	56.17	14.70	57.50	13.89	61.95	17.01	61.29	16.55	63.70	16.35
12. Mandya	63.76	13.41	64.68	12.74	66.25	11.64	68.48	14.02	67.20	13.56	68.54	13.19

13. Belgaum	67.88	15.04	69.44	13.79	70.78	12.83	72.16	15.77	71.41	15.09	73.04	14.00
14. Bijapur	71.39	12.25	72.26	11.23	72.99	10.98	74.30	13.69	74.03	13.34	76.05	12.30
15. Dharwad	69.09	13.60	71.34	12.04	71.47	11.93	73.07	14.02	72.77	13.53	75.41	11.66
16. Uttara Kannada	66.69	13.38	67.20	12.41	68.42	11.67	72.15	13.42	70.95	12.84	73.32	11.98
17. Gulbarga	65.87	16.02	68.65	15.11	69.54	14.44	71.12	16.63	69.98	16.33	71.67	14.83
18. Bellary	64.87	18.17	67.36	16.32	68.89	14.81	69.49	18.48	69.72	17.73	71.76	15.84
19. Bidar	70.71	13.55	72.20	12.15	72.63	11.69	72.98	14.68	73.08	13.92	73.11	14.28
20. Raichur	66.41	17.03	67.76	15.32	68.43	14.82	69.91	17.58	68.47	17.32	69.88	16.20
21. Davanagere	67.55	14.69	71.38	11.58	71.84	11.30	73.14	13.82	73.07	13.33	74.25	12.77
22. Chamarajanagar	62.33	15.37	64.70	13.32	67.20	11.77	68.77	14.59	68.56	13.61	70.06	12.76
23. Udupi	65.37	14.45	65.94	13.44	66.70	13.07	68.96	15.81	68.06	15.22	70.76	14.86
24. Bagalkot	68.89	11.68	70.27	11.55	70.70	11.31	72.13	13.99	72.34	13.64	73.72	13.20
25. Gadag	68.21	13.26	70.28	11.96	71.13	11.10	72.24	14.34	71.55	13.94	73.15	13.60
26. Haveri	68.18	12.38	69.53	11.75	70.51	11.41	72.99	13.84	72.77	12.99	74.48	12.51
27. Koppal	64.97	16.36	66.16	15.37	67.07	14.85	68.67	17.89	68.29	17.19	69.63	16.61
28. Ramanagara	64.63	13.22	66.38	12.03	67.44	10.77	69.12	13.63	68.43	13.15	69.62	12.81
29. Chikkaballapura	65.56	12.43	67.54	10.96	69.36	9.84	71.38	12.67	70.65	11.98	72.03	10.98
30. Yadgir	65.41	16.23	66.64	15.99	67.82	15.45	68.38	18.65	67.86	17.81	68.52	17.32
Total-Social sectors	67.90	13.56	69.34	12.49	70.20	12.02	71.76	14.61	71.28	13.98	72.70	13.31
Lump sum	3.86	0.16	3.24	0.24	1.62	2.61	0.36	0.56	4.97	0.55	2.36	0.11
Aggregate	55.17	10.90	54.37	9.71	51.69	9.48	53.92	11.10	54.98	10.68	55.89	10.16

Source: Calculated using data in Link Documents – Various years.

11.5: Linking Public Expenditure to Human Development Outcomes and Assessment of Financial Requirements

Programmatic demand for grants is expected to link the performance and outcomes of programmes and schemes to demands and, subsequently, demands to allocation. This requires a strong linkage between the budgetary allocation to human development programmes and schemes and their expected outcomes. This calls for specifying the outcomes and integrate them with indicators in the construction of Human Development Index (HDI) and other indices related to human development (such as, Inequality-adjusted HDI, Gender Inequality Index, Child Rights Index, Malnutrition Index) at the State and District level and for special population groups, such as, Schedules Castes and Tribes.

Using the UN-SDGs 2030, a framework for linking the human development outcomes to budget allocation and its financing in Karnataka is presented below.

11.5.1: Human Development Outcomes

The basic approach of UN-SDGs 2030 is that "ending poverty and other deprivations must go hand-in-hand with strategies that improve health and education, reduce inequality, and spur economic growth – all while tackling climate change and working to preserve our oceans and forests". The broad-based approach is reflected in diversified but inter-dependent 17 goals (listed in column 1 of **Table 11-20** below). These goals are aimed to be achieved through 169 targets. For monitoring the progress towards the achievement of targets and attainment of the goals, 244 indicators are developed at global level. These goals are contributory for human development, both directly and indirectly, in terms of improvements in education, health and nutrition, reduction in poverty and inequality, and income generation through productive employment generation and economic growth.

Government of India's Ministry of Statistics and Programme Implementation (MOSPI) has developed a National Indicator Framework 2020 for India (Version 2.1) with 302 indicators for measurement of progress of targets under 17 Goals. NITI Aayog's SDG India Index and Dashboard 2020-21, constructed for 15 out of 17 SDGs (leaving out Goals 14 and 17) for all the States and Union Territories (UTs) uses 109 National Indicators (NITI Aayog, 2021). By defined methodology for calculation of indicators' scores by normalization of raw data, setting national targets, and construction of composite SDG scores by each goal by each State and Union Territory (UT), the SDG India Index ranks the States/UTs in terms of current level of achievement and determines the distance of each State and UT from national targets (maximum normalized score for each indicator is 100). Karnataka's performance vis-à-vis all

India and other states in Southern India (Andhra Pradesh, Kerala, Tamil Nadu and Telangana) presented in **Table 11.12**.

Table 11.12: Karnataka's performance in achievement of UN-SDG goals: 2020-21

SDG Goal	Composite Score of all indicators					
	Karnataka	**Kerala**	**Tamil Nadu**	**Andhra Pradesh**	**Telangana**	**India**
1. No poverty	68	83	86	81	68	60
2. Zero hunger	53	80	66	52	50	47
3. Good health and wellbeing	78	72	81	77	67	74
4. Quality education	64	80	69	50	63	57
5. Gender equality	57	63	59	58	41	48
6. Clean water and sanitation	85	89	87	92	96	83
7. Affordable and Clean Energy	100	100	100	100	100	100
8. Decent Work and Economic Growth	66	62	71	67	73	61
9. Industry, Innovation and Infrastructure	64	60	71	52	59	55
10. Reduced Inequality	67	69	74	74	67	67
11. Sustainable Cities and Communities	78	75	79	78	76	79
12.Responsible Consumption and Production	89	65	78	84	73	74
13. Climate Action	78	72	81	77	67	54
14. Life Below Water	Not included					
15. Life on Land	67	77	63	69	81	66
16. Peace, Justice and Strong Institutions	76	80	71	77	71	74
17. Partnerships for the Goals	Not included					
Composite SDG Index score	72	75	74	72	69	66

Source: Author's compilation from NITI Aayog (2021).

In terms of composite SDG Index score, Karnataka ranks 6th in India and is a Front Runner. Its composite SDG Index score (72) is equal to Andhra Pradesh and higher than Telangana and at all India but lower than Kerala and Tamil Nadu. Also, Karnataka is a performer in Goals 2, 4, and 5, and Front Runner in all other goals. If Goals 1 to 6 can be singled out as most relevant for human development, Karnataka's performance needs much improvement not only in comparison with the best performing state (Kerala) but to attain the targets in each goal by 2030. Karnataka's lowest performance is evident for Goal 3 (score is 53).

11.5.2: Assessment of Budget Requirements for Human Development

Given the importance of SDGs for human development with well-defined goals, targets, indicators and time frame, it can be used as a policy framework for assessing the budgetary resource requirements for human development. Government of Karnataka's attempt for this assessment is evident in the document on Sustainable Development Goals 2030: Strategies and Action Plan of Karnataka (Government of Karnataka, 2021b). It provides the quantitative estimates of budget allocation needed from 2020-21 through 2029-30 for each goal with 2019-20 (Budget Estimate) as the baseline year. The budgetary requirements from 2020-21 to 2025-26 for Goal 1 to Goal 5, which are most important for human development, are summarized in **Table 11.13**. This is a medium-term horizon for which projected revenue mobilization (revenue receipts and non-debt capital receipts) are available from the latest Medium Term Fiscal Plan 2022-26 is available (Government of Karnataka, 2022b).

Table 11.13: Estimated budgetary resources for financing human development in SDG framework; 2020-21 to 2025-26

Year	Total budgetary resources required (Rs. In crore)					
	Goal 1: No poverty	Goal 2: Zero Hunger	Goal 3: Good Health & Well Being	Goal 4: Quality Education	Goal 5: Gender Equality	Total
2019-20 (BE)	35233	10134	830	4265	45	50507
2020-21	36878	10944	975	4847	56	53700
2021-22	38673	12115	1072	5773	58	57691
2022-23	40632	13030	1178	6104	62	61006
2023-24	42771	14197	1295	6474	65	64802
2024-25	45107	15484	1424	6938	69	69022
2025-26	47660	15503	1565	7370	71	72169
Annual growth of budgetary requirements (%)						

2020-21	4.67	7.99	17.47	13.65	24.81	6.32
2021-22	4.87	10.71	9.92	19.11	3.57	7.43
2022-23	5.07	7.55	9.93	5.73	6.88	5.75
2023-24	5.26	8.96	9.94	6.07	4.67	6.22
2024-25	5.46	9.07	9.91	7.17	6.15	6.51
2025-26	5.66	0.12	9.92	6.23	2.90	4.56
Share of budget requirements by goals (%)						
2020-21	68.67	20.38	1.82	9.03	0.10	100.00
2021-22	67.03	21.00	1.86	10.01	0.10	100.00
2022-23	66.60	21.36	1.93	10.00	0.10	100.00
2023-24	66.00	21.91	2.00	9.99	0.10	100.00
2024-25	65.35	22.43	2.06	10.05	0.10	100.00
2025-26	66.04	21.48	2.17	10.21	0.10	100.00

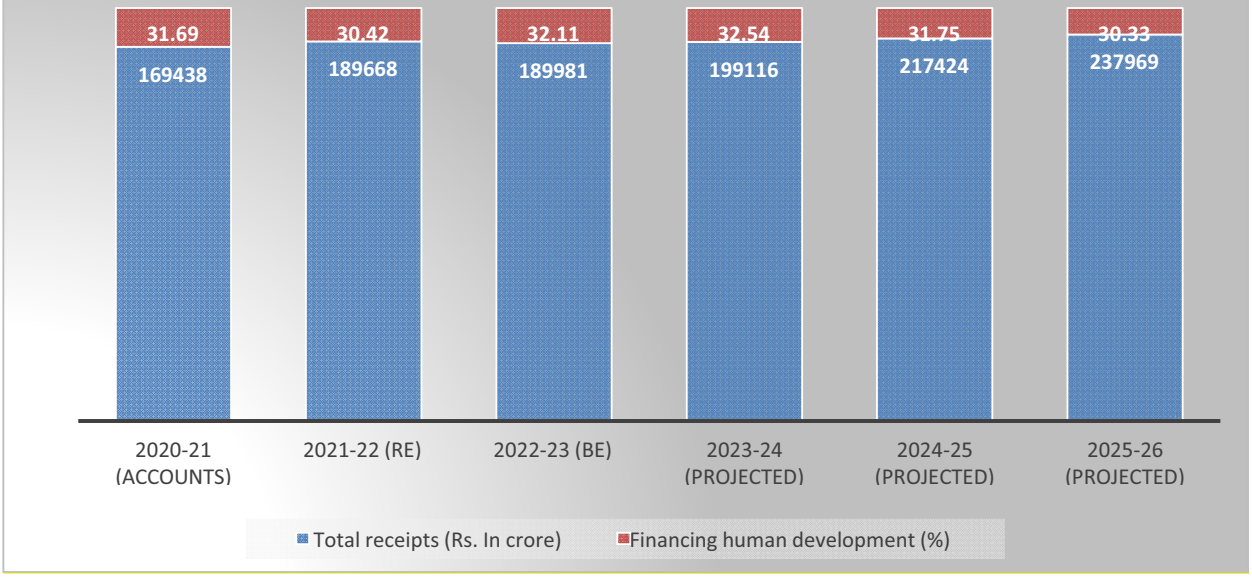
Note: BE refers to budget estimate.
Source: Calculated by using data in Government of Karnataka (2021b).

The benchmark year for projected expenditure in **Table 11.13** is 2019-20 (Budget Estimate). Total SDG based human development allocation under 5 goals is Rs. 50507 crore. This allocation constituted 22.67 percent of total expenditure (revenue and capital expenditure) and 28.07 percent of total receipts of Government of Karnataka.

Table 11.13 shows that estimated (or projected) total budgetary resources for 5 goals increased over the years. That is, from Rs.50507 crore in 2020-21 to Rs.61006 crore in 2022-23 and to Rs.72169 crore in 2025-26. Of the 5 goals, the biggest financial requirement is needed for Goal 1 and is followed by Goal 2 and Goal 3. These three goals require about 97 percent of total budgetary resources required for 5 goals. Over the period 2020-21 to 2025-26, the annual need for budgetary resources is higher for every goal as shown by the positive annual growth rates. However, the annual growth rates vary not only between goals but over years for each goal.

As per the latest Medium Term Fiscal Plan 2022-26 (Government of Karnataka, 2022b), the estimate of receipts (revenue receipts and non-debt capital receipts) is available from 2020-21 to 2025-26. The size of these receipts is shown in **Figure 11.4**. These budgetary requirements for financing human development (in Table 11.21) is about 32 percent of these receipts. Thus,

Figure 11.4: Financing estimated requirements for SDG-based human development by projected revenues: 2020-21 to 2025-26



Source: Author's calculation.

other things being the same, the financing of human development is implementable over the medium term up to 2025-26.

Thus, Government of Karnataka (2021a) has already developed a framework for assessment of budgetary resources to attain the goals of UN-SDGs 2030 in Karnataka. Each of these goals includes outcomes in terms of specific targets and indicators. These indicators are also linkable to human development, especially under Goal 1 through Goal 5. UNDP-HDR 2020 (UNDP, 2020) has already shown the linkage between HDI indicators and SDG's goals and targets.[3] Thus, attainment of remaining target of the SDG goals (e.g., as shown in **Table 11.12**) are concomitantly contributory for attainment of human development in the State.

[3] For instance, health dimension is measured by Life Expectancy at Birth in years (SDG 3). Education dimension is measured by (a) Expected Years of Schooling (SDG 4.3) and (b) Mean Years of Schooling (SDG 4.4). Income dimension is measured by Gross National Income (GNI) per capita (SDG 8.5).

11.6: Way forward: Key areas of Desired Policy Interventions

Analysis of Karnataka's financing human development in the previous sections showed the nature, magnitude, sectional allocations, priority sector and regional allocations at the State level of aggregation and district level of disaggregation. In addition, Karnataka's approach and performance in financing human development by focused population and age groups through Child Budget, Gender Budget and SCSP and TSP is remarkable. It is important to recognize that Karnataka's performance in financing human development has been designed and implemented within the framework of State's fiscal policy and accompanied by accomplishment of goals and targets of good fiscal management.

Within the available resources now, and medium-term projected resources, it is policy important and urgent to assess the public expenditure needs and prioritize them to enhance the human development and human capital formation for long term economic growth and welfare. This section aims at analysis of such policy interventions as a way forward to financing human development in Karnataka.

11.6.1: Adequacy of Allocation

In general, budget allocation to programmes and schemes in departments under Demand Numbers is determined by (a) demand for grants submitted by departments, (b) additional component recommended by Planning Department, and (c) availability of budgetary resources and (d) allocation as per the fiscal policy objectives and targets.

11.6.2: Beneficiary Cost Norms and Adequacy of Allocation

As noted in section 11.3.1.3, demand for grants for the child beneficiary-oriented programmes depends on three parameters: (a) beneficiary cost norms, (b) number of beneficiaries and (c) duration of benefits (number of days in a financial/academic year). Total cost of a programme is the product of these three parameters. Given (b) and (c), and other things being the same, demand for grants must be increased if beneficiary cost norms are revised upward. Otherwise, allocation to a programme or scheme shall be inadequate and affect the prescribed quality, coverage and benefits.

A plausible approach to revise cost norms is to use the annual inflation (April – March) based on the CSO's Consumer Food Price Index (Base: 2012; Combined for Rural and Urban at all India). This is the official retail inflation measure. National level inflation rate is used for this

revised cost norms because the beneficiary cost norms is uniformly applied by Government of India for all States. Results of inflation-adjusted cost norms are given in **Table 11.14**.

Table 11.14: Inflation-adjusted beneficiary cost norms for National Nutrition Mission

Beneficiary group for National Nutrition Mission	Beneficiary cost norms in 2017 (Rs)	Inflation-adjusted cost norms (Rs.)		
		2018-19	2019-20	2020-21
1. Children (6-72 months)	8.00	8.01	8.54	9.20
2. Pregnant/nursing mothers	9.50	9.51	10.15	10.93
3. Severely malnourished children	12.00	12.01	12.82	13.80
4. Pregnant/nursing mothers (including One Full Meal)	21.00	21.02	22.43	24.16
5. Adolescent girls (out of school in age group 11-14 years)	9.50	9.51	10.15	10.93

Source: Calculated by using inflation data in Economic Survey, Government of India –various years.

11.6.3: Effectiveness of Human Development Expenditure

A perfect match between budget allocation (in terms of budget and revised estimates) and actual expenditure is an indicator of budget accuracy and credibility in terms of good fiscal marksmanship. At the same time, it can be an indicator of effectiveness of public expenditure in terms of a perfect match between budget allocation and expenditure (or utilization). Karnataka has well-established constitutional and non-constitutional arrangement to ensure effectiveness of public expenditure. These arrangements include the following. First, auditing (financial, compliance and performance) by Comptroller and Auditor General in GoI, Local Body Audit by Karnataka State Audit and Accounts Department in GoK, and functioning of Public Accounts Committee of Karnataka Legislature to ensure economy, efficiency and effectiveness of public spending. Second, Karnataka Evaluation Authority in GoK is an institutional arrangement for scientific evaluation of public expenditure programmes and schemes to recommend for corrective policy interventions. Third, periodic monitoring of progress and performance of beneficiary-oriented programmes and schemes at the state,

district and taluk level Karnataka Development Programmes meetings, as reported and supported by Avalokana – New Decision Support Software of GoK

Administratively, effectiveness can be strengthened by public expenditure tracking systems to ensure that budget allocation is utilized through scheduled timing and size of releases. Technology-enabled monitoring systems for financial management of fund flow like Public Financial Management System of GoI and Integrated Financial Management System (Khajane 2) of GoK are policy useful to track all programmatic and non-programmatic allocation, release and expenditure on real time basis.

In addition, programme-specific or scheme-specific monitoring system are also developed. For instance, Poshan Tracker is a centralized data architecture and technology-enabled tracking system of all Anganwadi Centres (AWCs) and beneficiaries of National Nutrition Mission scheme on defined indicators, such as, registered number of beneficiaries, details of workers at AWCs, hot cooked meal given, take home ration given, and growth monitoring assessments related to stunting, underweight and wasting parameters. The basic data and values of parameters for performance assessment are continuously (on monthly basis) updated by the AWCs in all districts and taluks in the country. The scheme-specific monitoring system for Universalization of Primary Education- Aksharadasoha Scheme includes the following. (a) GoI's Monitoring of Mid-Day Meal Scheme (MDMS) by desk and field monitoring. (b) GoI's Automated Monitoring System (AMS) of MDMS – to upload the number of beneficiaries of the Scheme by Head Maser of every school through mobile-based SMS. (c) GoK's school-wise Student Assessment Tracking System (SATS) of GoK that includes data on enrolment, attendance and examination results.

11.6.4: Need for Further Improving the Effectiveness of Expenditure

Notwithstanding the above public financial management systems and scheme-specific monitoring systems, the mismatch between allocation and expenditure continues for human development expenditure. These mismatches are evident by a comparison between budget estimate and expenditure (Accounts/actuals), revised estimate and expenditure, budget allocation and release, and release and expenditure. Examples of these mismatches are analysed below to suggest corrective policy measures.

11.6.5: Budget Allocation and Expenditure in Child Budget

Karnataka's first child budget was prepared before the start of Covid-19 pandemic but implemented during first wave of the pandemic in FY 2020-21. Thus, analysis of effectiveness of expenditure of Child Budget 2020-21 is a special of case for a pandemic year.

Table 11.15 presents the ratio of Budget Estimate to expenditure (Accounts) and Revised Estimate to expenditure (Accounts) in Child Budget 2020-21. Overall, the ratio of Budget Estimate to expenditure (1.04) and ratio of Revised Estimate to expenditure (1.05) are closer to unity or perfect matching. At the same, remarkable mismatches are evident by Demands. Budget Estimate exceeded the expenditure for 7 demands. In contrast, Revised Estimate exceeded the expenditure for 8 demands. The biggest mismatch is for Demand 27 (Law) for lack of spending on the CSS: Fast Track Special Courts for disposal of cases pending under Rape and POCSO Act. Lack of spending is also evident for Demand Number 10 (Social Welfare) and 17 (Education) where budget allocation could not be spent completely due to lockdown effects and imposition of Covid-19 appropriate behaviour which restricted the regular education. The mismatch for Demand 8 is due to school closure effect on the Chinnara Vana Darshana programme to create awareness among high school students (VI to IX standard). In contrast, closer match between budget allocation and expenditure is evident for Demand 11 (Women and Child Development) and Demand 22 (Health and Family Welfare).

[10] Data on actual or original demand for grants submitted by the departments are not in public domain. Hence, mismatch between actual demand for grants and observed demand for grants is not ascertainable.

Table 11.15: Covid-19 pandemic effects on effectiveness of Child Budget 2020-21

Demand Number	Demand description	Ratio of Budget Estimate to Expenditure (Accounts)	Ratio of Revised Estimate to Expenditure (Accounts)
5	Home & Transport	0.60	0.83
8	Forest, Ecology and Environment	1.28	1.68
10	Social Welfare	1.29	1.03
11	Women and Child Development	0.99	1.01
12	Information, Tourism and Youth Services	0.87	1.04
13	Food & Civil Supplies	0.82	1.05
15	Information Technology	0.82	1.00
17	Education	1.13	1.08
22	Health & Family Welfare	0.65	0.99
23	Labour & Skill Development	0.38	0.38
25	Kannada & Culture	1.03	0.83
27	Law	21.78	21.89
	Total	1.04	1.05

Source: Author's calculation.

11.6.6: Budget Allocation and Expenditure in Gender Budget

Table 11.16 summarises the trends in the effectiveness of expenditure in Gender Budget by Category A and Category B schemes in terms of ratio of Budget Estimate to actual expenditure (Accounts) and ratio of Revised Estimate to actual expenditure (Accounts). **Table 11.17** shows these ratios for select Demand Numbers in the Social Priority Sector from 2015-16 to 2020-21. These ratios are calculated forthe total Gender Budget by each Demand Number without distinguishing between Category A and Category B allocation and expenditure. Overall, the ratios are closer to or higher than unity, except for RDPR, WCD and Health and Family Welfare.

Table 11.16: Effectiveness of Expenditure in Gender Budget: 2015-16 to 2020-21

Category	Category A		Category B		Total GB	
	BE/A	RE/A	BE/A	RE/A	BE/A	RE/A
2015-16	1.07	1.09	1.11	0.97	1.10	1.00
2016-17	1.09	1.08	0.84	0.83	0.88	0.87
2017-18	0.95	0.97	0.86	1.03	0.88	1.02
2018-19	1.04	1.10	0.83	0.86	0.86	0.89
2019-20	0.95	1.07	0.99	1.06	0.98	1.06
2020-21	1.01	0.99	1.02	1.01	1.02	1.01

Note: BE/A refers to ratio of Budget Estimate to Expenditure (Accounts), and RE/A refers to ratio of Revised Estimate to Account.
Source: Calculated by using Gender Budget of Government of Karnataka – Various years

Table 11.17: Effectiveness of expenditure in Gender Budget by Select Demand Numbers in Social Services: 2015-16 to 2020-21

Demand for Grants	2015-16		2016-17		2017-18		2018-19		2019-20		2020-21	
	BE/A	RE/A	BE/A	RE/A	BE/A	RE/A	BE/A	RE/A	BE/A	RE/A	BE/A	RE/A
Demand 7. Rural Development and Panchayth Raj (RDPR)	1.09	0.95	0.82	0.85	0.98	1.13	0.90	0.82	0.67	0.91	0.74	0.95
Demand 10. Social Welfare	1.26	1.03	0.79	0.79	0.77	1.02	0.95	0.97	1.12	1.01	1.28	1.01
Demand 11. Women and Child Development (WCD)	1.03	1.04	1.04	1.05	1.08	1.10	1.27	1.25	1.23	1.15	0.98	0.98
Demand 12. Information, Tourism and Youth Service	0.89	0.90	1.07	0.94	0.86	0.76	1.16	1.03	1.74	1.58	1.21	1.00
Demand 16. Housing	1.09	1.08	1.05	1.08	0.97	0.97	0.93	0.96	0.76	1.09	1.17	1.17
Demand 17. Education	1.23	1.05	0.84	0.82	0.79	0.98	0.97	1.02	0.96	0.97	1.13	1.08
Demand 22. Health and Family Welfare	1.23	1.13	0.87	0.84	0.65	0.94	0.97	1.01	1.06	1.00	0.88	0.99
Demand 23. Labour and Skill Development	0.90	1.08	1.04	0.91	1.38	1.41	0.92	1.08	1.14	1.18	0.55	0.54
Total Gender Budget	1.10	1.00	0.88	0.87	0.88	1.02	0.86	0.89	0.98	1.06	1.02	1.01

Note: BE/A refers to ratio of Budget Estimate to Accounts, and RE/A refers to ratio of RevisedEstimate to Account.
Source: Calculated by using Gender Budget of Government of Karnataka – Various years

As in case of Child Budget, the comparisons in **Table 11.16 and Table 11.17** are merely indicative and must be qualified due to variations in the nature and number of programmes and schemes (or Heads of Account) used for BE, RE and Accounts. All ratios less than unity are a case for expenditure being bigger than allocation. As in case of Child Budget, the relationship between allocation, release and expenditure is not ascertainable for lack of data in public domain on all releases of Gender Budget allocation.

11.6.7: Budget Allocation and Expenditure in SCSP and TSP

Availability of data on the budget allocation, release and expenditure by departments in the SCSP and TSP show a different case of effective expenditure than Child Budget and Gender Budget. Effectiveness of expenditure is measured by two indicators: (a) ratio of release to allocation (R/A) and (b) ratio of expenditure to release (R/E) by departments from 2015-16 to 2020-21.

Table 11.18 shows the effectiveness of expenditure of SCSP in terms of ratio of release to allocation (R/A) and ratio of expenditure to release (R/E) by departments from 2015-16 to 2020-21. In general, the results show that the ratio of release to allocation (%) is lower than the ratio of expenditure to release (%). However, both R/A and E/R ratios are relatively higher for departments in the social sector which are of importance for human development.

Table 11.19 shows the effectiveness of expenditure of TSP in terms of ratio of release to allocation (R/A) and ratio of expenditure to release (R/E) by departments from 2015-16 to 2020-21. As in case of SCSP in Table 11.18, the results in Table 11.19 shows that the ratio of release to allocation (%) is lesser than the ratio of expenditure to release (%). Further, both R/A and E/R ratios are relatively higher for departments which are importance for human development expenditure.

The results in **Table 11.18** and **Table 11.19** signal the importance of release of budget allocation in ensuring effectiveness of expenditure. At the same time, timely release of allocation is equally important. This data is internal to the public financial management systems in the Central and State governments and, hence, neither available nor accessible in public domain. However, for effective expenditure management for human development, both R/A and E/R should be aimed at 100 percent in time for all programmes and schemes in all the departments.

Table 11.18: Allocation, Release and Expenditure by Departments under Karnataka Scheduled Caste Sub-Plan: 2015-16 to 2020-21

Department	2015-16		2016-17		2017-18		2018-19		2019-20		2020-21	
	R/A	E/R	R/A	E/R	R/A	E/R	R/A	E/R	R/A	E/R	R/A	E/R
Agriculture	100.00	96.59	98.68	99.60	94.49	95.89	99.24	99.26	99.74	96.59	98.56	95.37
Animal Husbandry	97.50	98.37	96.72	95.17	92.72	94.76	98.96	99.58	100.00	98.31	92.58	99.59
Backward Classes Welfare	100.00	100.00	N.A	N.A	100.00	99.02	100.00	99.51	100.00	99.86	100.00	99.99
Co-operation	83.80	100.00	100.00	99.21	98.47	100.00	79.59	97.63	100.00	99.99	100.00	99.95
Energy	100.00	100.00	100.00	100.00	100.00	99.34	100.00	100.00	100.00	100.00	99.95	100.00
Fisheries	100.00	92.85	98.76	99.67	100.00	99.76	100.00	97.86	100.00	85.44	100.00	86.83
Food and Civil Supplies	N.A	N.A	N.A	N.A	77.48	94.70	100.00	99.87	100.00	99.72	100.00	96.64
Forest, Ecology and Environment	100.00	99.40	100.00	100.00	100.00	99.80	66.03	99.71	64.02	99.49	100.00	98.46
Health	74.20	100.00	89.23	99.28	100.00	88.00	92.60	98.60	100.00	97.09	99.32	94.50
Heavy and Medium Industries	100.00	100.00	100.00	100.00	100.00	98.90	100.00	100.00	100.00	100.00	N.A	N.A
Higher Education	100.00	77.09	94.89	97.56	100.00	74.95	100.00	93.96	100.00	99.80	100.00	78.79
Horticulture	98.78	91.83	96.33	97.22	100.00	89.37	72.57	96.46	100.00	98.88	99.98	99.06
Housing	99.99	99.86	100.00	97.09	100.00	93.94	75.01	100.00	90.34	100.00	72.41	100.00
Information and Publicity	100.00	100.00	100.00	90.20	100.00	99.65	100.00	69.43	100.00	56.06	100.00	99.25
Kannada and Culture	98.43	100.00	100.00	94.76	100.00	93.69	100.00	100.00	100.00	92.05	98.94	98.67

Labour	95.97	100.00	99.28	88.55	100.00	100.00	93.98	100.00	100.00	100.00	100.00	100.00
Medical Education	100.00	100.00	100.00	99.60	100.00	100.00	98.22	99.98	100.00	94.07	82.22	100.00
Planning, Programme and Statistics, Science and Technology	100.00	100.00	98.67	99.28	100.00	99.76	100.00	99.46	74.11	99.63	99.84	100.00
Primary and Secondary Education	93.42	99.02	95.71	98.57	100.00	92.59	100.00	93.44	100.00	99.43	89.44	99.87
Public Works	100.00	99.83	91.67	80.79	93.97	95.11	81.91	86.84	100.00	96.50	100.00	98.07
Revenue	100.00	100.00	100.00	99.67	100.00	98.93	93.58	96.89	99.84	100.00	99.82	98.83
Rural Development and Panchayat Raj	100.00	100.00	92.70	96.81	99.98	100.00	99.63	89.58	100.00	91.15	98.25	99.81
Skill Development and Training	N.A	N.A	N.A	N.A	100.00	56.17	100.00	62.11	100.00	56.10	99.94	99.78
Small Industries	81.49	100.00	100.00	99.20	100.00	90.37	100.00	98.54	100.00	99.40	100.00	99.99
Social Welfare	101.73	97.76	97.82	96.27	99.02	96.22	98.52	99.78	98.99	98.82	97.81	97.70
Tourism	100.00	100.00	100.00	97.53	100.00	99.95	100.00	100.00	100.00	100.00	100.00	100.00
Transport	100.00	100.00	100.00	100.00	100.00	98.52	100.00	100.00	100.00	100.00	85.04	70.73
Urban Development	87.54	100.00	99.04	97.94	99.13	89.49	100.00	99.95	100.00	92.23	97.83	99.17
Women and Child Development	96.01	97.79	99.96	94.39	93.58	93.48	94.39	99.04	100.00	89.25	99.98	99.64
Youth Empowerment and Sports	65.38	98.75	94.99	99.94	100.00	28.56	95.46	69.68	100.00	96.66	100.00	100.00
Handloom and Textiles	100.00	100.00	100.00	100.00	100.00	100.00	100.00	96.62	96.38	99.74	96.09	98.35

Heavy Irrigation	100.00	99.87	100.00	99.61	100.00	100.00	98.26	100.00	100.00	89.57	100.00	100.00
Information Technology and Bio-Technology	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Law	54.55	100.00	100.00	0.00	100.00	100.00	100.00	82.46	100.00	100.00	100.00	100.00
Sericulture	95.55	93.66	100.00	99.61	100.00	98.13	100.00	99.37	100.00	99.47	100.00	99.61
Small Irrigation	97.47	100.00	92.13	10.64	99.81	99.08	99.69	98.37	100.00	99.53	100.00	100.00
Total allocation	98.64	98.88	96.93	95.34	134.01	95.83	95.21	97.92	98.59	96.81	97.06	98.60

Note: NA refers to not applicable due to zero allocation. R/A refers to ratio of release to allocation (%) and E/R refers to ratio of expenditure to release (%).

Source: Calculated by using basic data from the SCSP TSP Progress Dashboard - Social Welfare Department, Government of Karnataka.

Table 11.19: Allocation, Release and Expenditure by Departments under Karnataka Tribal Sub-Plan: 2015-16 to 2020-21

Department	2015-16		2016-17		2017-18		2018-19		2019-20		2020-21	
	R/A	E/R	R/A	E/R	R/A	E/R	R/A	E/R	R/A	E/R	R/A	E/R
Agriculture	96.52	97.63	87.24	99.32	95.91	104.26	98.17	99.19	99.63	89.52	99.15	98.88
Animal Husbandry	96.16	100.00	96.46	94.61	95.18	105.06	99.80	99.75	100.00	97.90	95.16	98.36
Backward Classes Welfare	NA	NA	NA	NA	100.00	100.00	99.97	99.41	100.00	99.94	100.00	99.85
Co-operation	92.63	100.00	105.11	77.52	97.44	102.63	100.00	67.61	100.00	100.00	100.00	99.99
Energy	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.94	100.00
Fisheries	94.37	100.00	98.26	99.41	100.00	100.00	100.00	98.73	100.00	99.07	100.00	85.33
Food and Civil Supplies	NA	NA	NA	NA	76.70	130.39	100.00	99.76	100.00	99.02	100.00	99.94
Forest, Ecology and Environment	100.00	101.80	100.00	100.00	99.95	100.05	52.67	99.54	68.87	85.88	100.00	98.36
Health	78.40	100.00	84.10	95.96	100.00	100.00	89.40	98.77	100.00	92.91	98.49	95.91
Heavy and Medium Industries	99.96	100.00	100.00	100.00	100.00	100.00	99.92	100.08	100.00	100.00	NA	NA
Higher Education	100.00	88.24	97.27	97.91	100.00	100.00	100.00	91.75	82.59	99.58	100.00	98.31
Horticulture	81.53	97.09	95.61	96.76	100.00	100.00	83.08	96.76	100.00	99.07	98.05	99.54
Housing	99.99	100.00	100.47	99.53	100.00	100.00	73.26	100.00	76.72	100.00	41.09	100.00
Information and Publicity	96.67	100.00	83.33	61.82	100.00	100.00	100.00	58.74	100.00	73.23	100.00	52.00
Kannada and Culture	98.87	100.00	99.58	89.18	100.00	100.00	51.83	88.97	100.00	93.39	98.89	96.32

Labour	82.19	100.00	99.18	89.98	100.00	100.00	91.29	100.00	100.00	100.00	100.00	100.00
Medical Education	100.00	100.00	100.00	97.61	100.00	100.00	99.92	99.92	100.00	92.57	82.50	100.00
Planning, Programme and Statistics, Science and Technology	100.00	100.00	98.73	98.76	100.00	100.00	100.00	99.22	74.41	99.64	99.78	100.00
Primary and Secondary Education	94.69	98.54	97.12	96.78	100.00	100.00	100.00	93.07	100.00	99.84	90.96	99.78
Public Works	100.00	98.37	91.58	90.11	98.51	101.51	84.44	88.79	100.00	98.11	100.00	99.61
Revenue	100.00	98.82	100.00	99.17	100.00	100.00	88.09	97.78	100.00	87.60	99.88	94.57
Rural Development and Panchayat Raj	100.00	100.00	98.44	90.33	95.59	104.61	100.00	89.60	100.00	85.68	95.92	99.61
Skill Development and Training	NA	NA	NA	NA	78.72	127.03	93.03	65.52	100.00	70.76	100.02	99.28
Small Industries	80.11	100.00	100.42	98.31	100.00	100.00	100.00	96.80	100.00	99.94	100.00	99.95
Social Welfare	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tourism	100.00	100.00	100.00	96.76	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Transport	85.71	100.00	100.00	100.00	100.00	100.00	99.99	100.01	100.00	100.00	80.03	83.02
Urban Development	87.48	100.00	99.34	98.27	99.56	100.44	100.00	99.18	100.00	92.33	97.29	99.22
Welfare of Scheduled Castes	91.84	100.00	99.90	93.96	100.00	100.00	99.69	97.62	100.00	98.06	100.07	90.96
Women and Child Development	97.67	98.68	100.00	93.54	93.16	107.35	93.92	91.38	100.00	89.72	99.98	98.68
Youth Empowerment and Sports	58.87	100.00	93.52	100.00	100.00	100.00	94.01	60.61	100.00	98.18	100.00	100.00

Handloom and Textiles	100.00	100.00	100.00	100.00	100.00	100.00	100.00	95.97	96.99	88.83	95.34	99.95
Heavy Irrigation	100.00	99.92	100.00	100.00	100.00	100.00	97.96	100.00	100.00	81.98	100.00	100.00
Information Technology and Bio-Technology	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Law	62.50	100.00	100.00	0.00	100.00	100.00	100.00	78.85	100.00	100.00	100.00	100.00
Sericulture	100.00	96.88	100.00	84.15	100.00	100.00	100.00	98.60	100.00	99.64	99.87	99.87
Small Irrigation	90.14	100.00	18.81	47.50	99.22	100.78	99.62	85.19	100.00	97.14	99.96	100.03
Total allocation	96.04	99.58	96.30	94.95	97.71	102.34	94.58	96.53	98.16	93.44	95.95	97.28

Note: NA refers to not applicable due to zero allocation. R/A refers to ratio of release to allocation (%) and E/R refers to ratio of expenditure to release (%).

Source: Calculated by using basic data from the SCSP TSP Progress Dashboard - Social Welfare Department, Government of Karnataka.

11.6.8: Need for Self-Monitoring and Tracking of Allocation and Expenditure

Access to data in the expenditure tracking systems, such as, PFMS, IFMS, Poshan Tracker and SATS are restricted for internal policy uses by the departments and are not available in the public domain. Due to this data limitation, a comparison of expenditure tracking of human development programmes and schemes is not possible. However, these restricted data, as they are accessible to internal use by the departments, can used for self-tracking of expenditure of their own programmes. In this regard, the following policy suggestions are given as recommendations.

a) PFMS is most important expenditure tracking system for all CSS. Adequate training in the use of this software for expenditure tracking is essential for all planning/programme/finance officers in departments related to human development programmes and schemes. At present, officers are trained to upload the required information in specified formats. Capacity building through training is needed to use this information for expenditure tracking purposes. In this case, department-specific capacity-building training/workshop is a policy imperative for effective tracking of fund allocation, release and utilization for all human development programmes and schemes in all the departments.
b) Data on progress of programmes is available in programme-specific portals. Continuous data update on these portals is a strong basis for monitoring the progress towards attainment of targets for the UN-SDGs in Karnataka. This needs training for the officers to self-monitoring the SDGs goals and targets through specific indicators, as they are related to their departmental human development programmes and schemes,
c) At present, Avalokana – New DSS software – of GoK is the basis for monthly monitoring of the budget allocation, release and utilization by schemes and programmes at State, District and Taluk levels. For all beneficiary-oriented schemes, the number of beneficiaries, and age and gender of beneficiaries are important for monitoring the progress of the schemes from the perspectives of Child Budget and Gender Budget. Expanding the scope of Avalokana to include these new data on beneficiaries is also useful for expenditure tracking at the beneficiary level in non-DBT human development programmes and schemes.

11.6.9: New Policy Initiatives and Financing of Human Development

National Education Policy 2020 is the most important policy initiative whose implementation may remarkably affect the financing requirements for human development under Child Budget, Gender Budget, SCSP and TSP, and SDGs. The policy aims at restructuring both school education as well as

higher education. For instance, recommended restructuring of school education comprises 5+3+3+4 covering ages 3-18 years. That is, 5 years of Foundational learning including 3 years (age 3-6 years) at Anganwadi/pre-school/Balavatika) and 2 years (ages 6-8) at Class 1 & 2; 3 years of Preparatory (ages 8-11) at Class 3 to 5; 3 years of Middle (ages 11-14) at Class 6 to 8; and 4 years of Secondary (ages 14-18) at Class 9 to 12. In fact, inclusion of age groups 3-6 years is new in school education in terms of Early Childhood Careand Education (ECCE). This is to develop children to be school ready for Grade I. Further, the NEP 2020 aims at ensuring universal access and at all levels and to all students with special reference to socio-economically disadvantaged groups and Divyang students. Universal participation by curtailing dropouts by carefully tracking of students and their learning levels and bringing back children to schools who have dropped out and to prevent further children from dropped out are highlighted. If implemented, the above policy initiatives are resource- intensive and have considerable impact on public funding of education and, hence, human development.

11.6.10: Need for Construction of Human Capital Index for Karnataka

Financing of human development within the framework of UN-SDGs 2030 is contributory to human capital in terms of accumulation of knowledge, skills and good health which in turn are contributory to labour productivity and economic growth. World Bank's Human Capital Index (HCI) was first constructed in 2018 to measure the amount of human capital that a child born today can expect to attain by age 18. As per the Human Capital Index 2020 (World Bank, 2021), a child born in India today will be 49 percent as productive when she grows up as she could be if she enjoyed complete education and full health. An economy in which a child born today can expect to achieve complete education and full health will score a value of 1 on the index (World Bank, 2020-21: p.41). India's HCI Index value at 0.49 is ranked at 115th out of 174 countries. A policy attempt to construct HCI for Karnataka State will be useful to monitor the aggregate and disaggregate outcomes of innovative fiscal policy in terms of human development allocation and expenditure in Child Budget, Gender Budget, SCSP and TSP.

11.6.11: Private Financing of Human Development

It is important to recognize that human development financing is contributed in the State by the public and private sectors. Private financing includes households and institutional funding, such as, household spending on accessing and utilization of services, Public-Private Partnership (PPP) projects, corporate financing and capital formation, and CSR funds in sectors like health and education.

In view of growing importance of private sector, models of financing of human development may have to be changed from tax-financed model in government (including subsidization, cross-subsidization and cost-recovery sub-models) to cost-sharing model of public-private partnership for financing human

development. A sound database on private sector financing is essential foundation for development of cost-sharing model for both production and consumption of goods and services for human development. Under Atmanirbhar Bharat the avenues for PPP models are identified in different sectors – from hard infrastructure to soft infrastructure covering health, education and core economic sectors. The State has recognized the need for CSR funding to fill up the resource crunch. Akanksha - An integrated online platform has been developed with the support of UNDP to create a seamless interface between Private Sector, Public Sector, Government officials and Civil Society Organizations for effective and efficient utilization of CSR funds.

Overall, the way forward analyses above are helpful for design and implementation of forward-looking policies for financing human development which ultimately have implications for (a) minimization of poverty and inequality through welfare programmes and (b) maximization of long-term economic growth through demographic dividends. In essence, Karnataka's approach to financing human development is growth-cum-redistributive through the instrument of fiscal policy, now and in future.

Chapter -12

Achievements, Challenges and Way Forward

Chapter 12

Achievements, Challenges and Way Forward

12.1: Achieving Sustainable Development Goals Agenda through Human Development

The paradigm shift in development agenda from economic development to human development in 1990s initiated a major shift in programmes and policies from growth and output to human development outcomes. This was later further strengthened through more focused Millennium Development eight Goals in 2000. The incomplete agenda was further taken up through a broad based approach involving Planet, Peace and Prosperity in the form of 17 Sustainable development goals.

There is a close link between human development approach and the 2030 Agenda. But it is worth noting that SDG is a broad based Agenda when compared to human development encompassing people Planet, Peace Prosperity & partnerships. The Sustainable Development Goals (SDGs) are now a globally agreed tool for assessing development. In other words, the SDGs provide a development destination and human development designs the route to get there (UNDP). The Human Development Index (HDI) provides a single-number measure, capturing progress in three basic dimensions of human development: health, education and living standards. It enables cross-country comparisons similar to – but broader than – those provided by GDP (UNDP). Both Human development and SDGs have a common goal- No one is left behind.

Karnataka is a progressive and dynamic state in India. The State is experiencing vibrant growth in recent years leading to one of the highest per-capita incomes, and is aiming at 1 trillion $ economy. It leads in many Sustainable Development Goals Human Development indicators, it is a leading state in technology and innovation, and enjoys a robust financial position. The state is geared up to set a more ambitious vision now and aim for a USD 1 trillion GSDP by 2032 along with a strong distributive agenda leading to Human Development and SDG outcomes. This calls for a fresh perspective in planning, goal setting, strategic initiatives, and a very focused development agenda to ensure more job creation, increased incomes for its citizens, and a decent quality of life for all. The decade presents a generational opportunity for our state, and beacons all of us to work together to reap demographic dividend and achieve the inclusive human development agenda and SDG 2030.

The State has emerged as front runner in various development sectors and has the potential of emerging as a model for other States in actualization of the People's Agenda 2030. The SDGs impacting directly on human development can be broadly clustered and categorized into a group SDG- 1 (End Poverty), 2(Zero Hunger), 3(Good Health and Well Being),4(Quality Education),5(Gender Equality),6 (Clean Water and Sanitation) and 7 (Clean and Affordable Energy) SDG 16 Peace, Justice and Strong institutions.

12.2: Way Forward- Integrating Human Development with SDGs

Karnataka Human Development Reports 1999, 2005 and 2015, and Karnataka District Human Development reports 2014 have already provided stimulus in boosting human development indicators within the State and Karnataka Human Development Report 2022, provides further help to realize and SDG vision by 2030. Achieving the SDGs would clearly require efforts in meaningful partnerships and collaborative action for transformations across distinct dimensions of SDGs viz. basic human development needs and services, environment, cross-cutting issues and peaceful and inclusive societies. However, it's also evident that each one SDGs are cross-cutting, inter-sectoral and complement one another on being localized and integrated with national, sub-national, and native plans.

At the global level, the achievements in SDGs are measured through the Global SDG index and at National level, NITI Aayog prepares the SDG India Index to measure the relative performance of 16 goals across the states and at the national level. This provides the base for monitoring the targets.

Table 12.1: Performance of Karnataka in SDGs - 2020-21

Category (Score)	SDG Goal	2020-21		Difference
		Score out of 100	Best Performing State	
Achiever (100)	SDG 7: Affordable and Clean Energy	100	Karnataka (100)	0
Front Runner (65-99)	SDG 1: No Poverty	68	TN (86)	-18
	SDG 3: Good Health and Well-being	78	Gujarat (86)	-8
	SDG 6: Clean Water and Sanitation	85	Goa (100)	-15

	SDG 8: Decent Work and Economic Growth	66	HP(78)	-12
	SDG 12: Responsible consumption and production	89	Tripura (99)	-10
	SDG 10: Reduced Inequalities	67	Meghalaya (88)	-21
	SDG 11: Sustainable Cities and Communities	78	Punjab(91)	-13
	SDG 15: Life on Land	67	Arunachal Pradesh (93)	-26
	SDG 16: Peace, Justice and Strong Institutions	76	Uttarakhand (86)	-10
Performer (50-64)	**SDG 2: Zero Hunger**	**53**	**Kerala (80)**	**-27**
	SDG 4: Quality Education	**64**	**Kerala (80)**	**-16**
	SDG 5: Gender Equality	**57**	**Chhattisgarh (64)**	**-7**
	SDG 9: Industry, Innovation and Infrastructure	**64**	**Gujarat (72)**	**-8**
	SDG 13: Climate action	**62**	**Orissa (70)**	**-8**
	SDG 14: Life below water	**60**	**Orissa (82)**	**-22**
All Goals- Karnataka		**72**	**Kerala (75)**	**-3**

Source: NITI Aayog 2020-21.

Karnataka is not in Aspirant category (<50) in any of these goals. It is achiever in SDG-7 affordable and clean energy. But it is in the performer category for some critical goals like SDG-2, 4, 5, 9, 13 and 14 and these are more or less directly related to human development. In the SDGs-8 and 10, though, we are in front runner category, the score is only 66 & 67 indicating the progress on the margin of the category.

For focused interventions, the poor performing indicators are identified and presented below.

Table 12.2: Poor Performing Indicators

No.	SDG	Indicator	Raw Value	Score
1.	SDG 1	Percentage of households with any usual member covered by any health scheme or health insurance	28.1	26
2.	SDG 1	Persons provided employment as a percentage of persons who demanded employment under MGNREGA	86.34	42
3.	SDG 2	Percentage of children under five years who are underweight	32	27
4.	SDG 2	Percentage of children under five years who are stunted	32.5	26
5.	SDG 2	Rice and wheat produced annually per unit area (Kg/Ha)	2788.37	37
6.	SDG 2	Gross Value Added (constant prices) in agricuture per worker (in Lakhs/worker)	0.64	38
7.	SDG 3	Death rate due to road traffic accidents (per 1,00,000 population)	16.6	20
8.	SDG 4	Average annual dropout rate at secondary level (class 9-10)	23.43	46
9.	SDG 4	Gross Enrolment Ratio (GER) in higher secondary (class 11-12)	44.4	24
10.	SDG 4	% of persons with disability (15 yrs and above) who have completed at least sec edn.	20.9	12
11.	SDG 4	Percentage of persons (15 years and above) who are literate	75.7	31
12.	SDG 5	Ratio of female to male average wage/salary earnings received among regular wage/salaried employees	0.75	47
13.	SDG 5	Percentage of elected women over total seats in the state legislative assembly	3.14	6
14.	SDG 5	Ratio of female to male Labour Force Participation Rate (LFPR) (15-59 years)	0.32	28
15.	SDG5	Operational land holding gender wise (% of female operated operational holdings)	20.07	38
16.	SDG 6	Percentage of rural population getting safe and adequate drinking water within premises through Pipe Water Supply (PWS)	59.47	49
17.	SDG 8	Ease of Doing Business (EODB) Score (feedback score)	7.82	16
18.	SDG 8	Percentage of regular wage/ salaried employees in non-agriculture sector without any social security benefit	38.5	45
19.	SDG 8	Number of functioning branches of commercial banks per 1,00,000 population	16.69	41

20.	SDG 9	Score as per Logistics Ease Across Different States (LEADS) report	3.37	40
21.	SDG9	Innovation score as per - the India Innovation Index	42.5	35
22.	SDG 10	Percentage of elected women over total seats in the State/UT (Lok Sabha elections)	7.14	14
23.	SDG 11	Installed sew age treatment capacity as a % of sewage generated in urban areas	31.92	32
24.	SDG 13	Disaster preparedness score as per Disaster Resilience Index	18	25
25.	SDG 13	CO2 saved from LED - bulbs per 1,000 population (Tonnes)	37.54	32
26.	SDG 14	Percentage of available potential area developed under aquaculture	13.40	19.00
27.	SDG 15	Percentage of area covered under afforestation schemes to the total geographical area	0.32	12
28.	SDG 16	Cases under Prevention of Corruption Act and related sections of IPC per 10 lakh population	5.75	34

Source: NITI Aayog 2020-21

These 28 poor performing indicators that are closely associated with human development where Karnataka is in aspirational category. Therefore, achievement in these human development indicators is essential to bring the transformation. This report brings out the strategies and actions required to take Karnataka in lead position in human development and reach the SDG 2030 targets at the earlier stage.

This report has analysed the human development status in the broad framework of SDGs with focused attention to these poor performing indicators. The factors contributing to it are identified at the taluka/ GP and household level. The State is well ahead in localization of SDGs and evidence-based strategies and action plans are now being initiated at the sub-regional/ taluka / gram Panchayat level. **It is the first state to adopt aspirational taluk approach to reach the people at local level for SDG targets, analysis and preparing action plans**. Based on this, in recent budget for 2022-23, the state has reoriented the implementation of existing **Special Development Plan,** to improve quality of education in 93 talukas, strengthen the health infrastructure and services in 100 talukas and alleviate child malnutrition in 102 talukas at a total cost of Rs.3000 crores per year. Many such recent notable initiatives of the State have significant implications for the Human Development and Sustainable Development Goals. Yet, the State continues to be positioned in medium human development range. The impact is either not significant or sustained over long period. A deep

dive in human development sectors has helped to identify the root causes and basic challenges that need to be taken up on priority basis.

12.3: Addressing Challenges in Improving Human Development Outcomes

12.3.1 Regional Imbalances & Inequalities Across Social Groups

Karnataka State has overall 60 percent achievement in human development. But the inequality in spread of human development is very high. The range of variation in HDI is 0.738 (Bengaluru urban) to 0.538 (Yadgir). The incidence of deprivations is high in North Karnataka and very high in Kalyan Karnataka region. In Yadgir, the incidence of MPI is 28.6 percent. The two districts of this region- Raichur and Yadgir are at the bottom of human development in the State and are in the category of 115 aspirational districts in the country. The proportion of SC/ST population in KK region is 35.04 percent against the State average of 24.1 percent during 2011 indicating more deprivation across these social groups. The long run stagnant position of this region indicates a trap like situation. This also has contributed to low human development achievements in the State placing it in the middle order in human development index in the country. There is need for an integrated human development plan for the region converging the schemes in human development sector. The region is brought under Article 371 J and the Kalyan Karnataka Regional Development Board (KKRDB) is established. A more committed effort by the Board with Civil Society organizations and a big push in terms of resource transfer may help to bring about sustainable transformation. Unless this region is focused in future, the state will not move ahead at faster pace on human development path to attain the SDG 2030 agenda.

The other major challenge is Gender inequality. The loss due to inequality is lowest among the districts Udupi, Uttara Kannada, Dakshina Kannada, Kodagu and Gadag. Dharwad district had highest gender inequality (44 percent). Bengaluru Rural, Belgaum and Tumkur are the next three districts with high gender inequality index. Bengaluru urban stands at 7th position with GII being 0.322 indicating 32% loss in achievement across three dimensions due to gender inequality. This indicates that the gains from development are disproportionately shared across men and women in the state especially in a fast-growing district like Bangalore Urban. The basic solution is increasing the female labour force participation rate through better jobs, education and skills and asset ownership and entrepreneurship. This is to be supported by eradicating discriminatory practices and stereotypes.

12.3.2: Optimising Human Resources -

Addressing dropouts and improving learning outcomes in education

Education & Skilling

a. 16.8% of secondary school children do not complete their course. Such children should be provided with vocational skill training and career guidance with adequate financial support for their smooth transition.

b. Reducing dropouts and quality education-Extension of RTE to 12th Std. for smooh transition into higher education.

c. Provision of School Infrastructure – computer labs, Teaching, Learning materials and learning environment in schools.

d. Quality Improvement of Teachers - Use of portals such as NISTA, DIKSHA, SWAYAM with blended training on inclusive education. Provision of subject teachers in Maths, Science subjects.

e. Scholarship, Transport and security for girls in secondary education-ICC committee & SDMC to play active role for safe environment in schools. STEM labs for girls to promote more Girls in science education.

f. Focus on 93 aspirational talukas and establish Special Education Zones for provision of adequate infrastructure, human resources, Scholarships, and other incentives.

g. Use of the UDISE school report cards and SATS data by GPs to monitor the dropouts, performance of students, school infrastructure, vacancy of teachers &teaching quality.

h. Integrated policy to address high dropouts, low educational outcomes and high pupil Teacher Ratio through strengthening accountability in the system.

Higher Education

a. All Higher Education Institutions across all current streams shall merge into one coherent ecosystem of higher education.

b. For quality education Facilitate accreditation process. Accreditation should be based on output of the academic education to the industry (currently academia and

industry work in isolation). & Public funding shall be increased to support public HEIs with highest quality and to be incentivized to expand their capacity.

c. Setting up a dedicated skill university might help and it needs to be linked with industry for implementing need-based courses, apprenticeship & hands-on training.

a. There is incremental demand for the skilled workforce in Karnataka (2012 to 2022) Additional requirement is 7.12 lakh skilled and 3.88 lakh highly skilled people in the state by end of 2022. Link the students with MSDE's National Apprenticeship Promotion Scheme

b. Skill deficiency mapping in the State at all levels; Identification of institutions and resources for skill development; Recognition of Prior Learning (RPL) programmes to be reinvigorated for local youth. YES Kendras to mobilize youth for skill training programmes and coordinate with district-level industries for assessing demand requirements and matchmaking process

c. 20% of the PF amount of the employer to go into a Re-skilling fund for training & skilling and on retrenchment, for transitions and market failure in skill financing; Re-skilling fund to be linked to Aadhar; Employment exchange registration and Apprenticeship schemes to increase its effectiveness

d. Online labour exchange and Match making platform for demand and supply of labour & Establishment of Digital training centers where subject-matter experts can train youth to make them industry-ready by leveraging advanced technology platforms and solutions; All schools and colleges, ITIs, KVKs to be utilized for skilling at suitable times.

- Construct Human Capital Index (HCI), based on achievements in HDI in terms of accumulation of knowledge, skills and good health which in turn are contributory to labour productivity and economic growth. HCI helps to measure the amount of human capital that a child born today can expect to attain by age 18 if he/she enjoyed complete education and full health (World Bank 2021). The HCI for Karnataka will help to identify sectoral and spatial gaps for appropriate interventions for accumulation of more human capital.

12.3.3: Health & Nutrition

Health

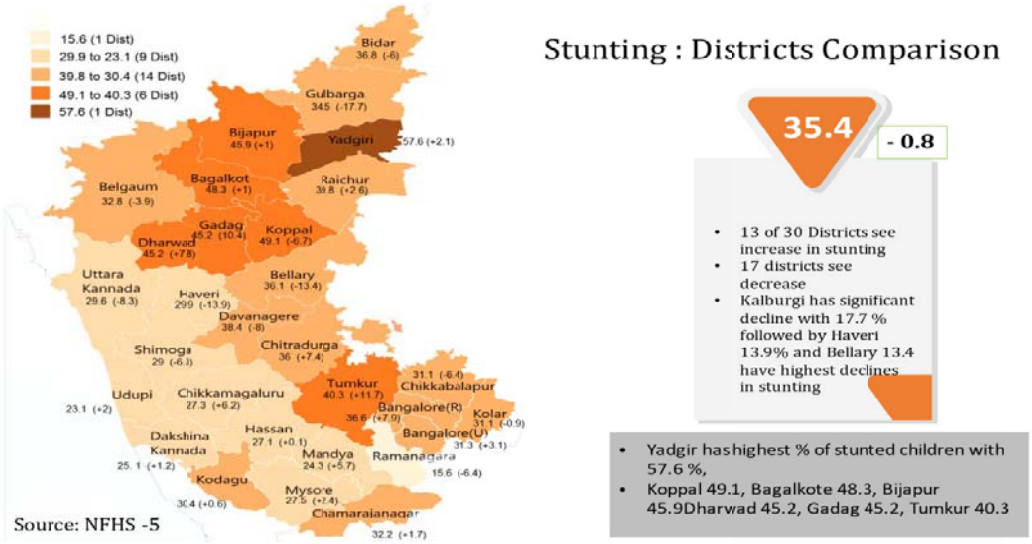
- **77 Talukas** are identified as aspirant Talukas (above state average) concerning Maternal Mortality Rate. Focus needed on four ANC Checkups, addressing anemia and Health Infrastructure. (Planning Dept.)
- Antenatal, intra-natal and postnatal care including Iron and Folic Acid supplementation to pregnant & lactating women for prevention and treatment of anaemia.Janani Shishu Suraksha Karyakaram (JSSK) –timely release of financial assistance & Provision of transport facilities.
- Operationalization of sub-centres, Primary Health Centres, Community Health Centres and District Hospitals for providing 24x7 basic and comprehensive obstetric care services, including labs and medicines.
- Locate the pregnant women in her area and register her for Antenatal Care (ANC). Help the pregnant women to acquiring mandatory certificates.
- Under NCDs Out of **226 Talukas**, **94 Talukas** (heart disease), **71 Talukas** (Renal Disease), **70 Talukas** (Asthma), and **67 Talukas** (Cancer) are identified as aspirant Talukas. Prioritize the aspirational Talukas to conduct the screening and identify the diseases at the early stage to reduce deaths due to Non Communicable diseases.
- Target Population (for screening) to control NCDs. All men and women- 30 years of age and above for Oral Cancer, Hypertension and all women- 30 years of age and above for Cervical and Breast Cancer.

Nutrition

Karnataka has a high burden of undernutrition, with 35.4 percent (NFHS -5) of its children stunted, or too short for their age, indicating that they have been undernourished for a long time. 19.5 percent of the state's children are wasted or too thin for their height, which is a sign of recent food insecurity or illness, 32.5 percent children are underweight, which on account of both chronic and acute undernutrition. About 50 percent of women in Karnataka and 65.5 percent of children suffer from Anaemia. The incidence is high in North Karnataka and in the

Kalyan Karnataka Region.

Incidence of stunting among children in Karnataka



The districts/ talukas with high incidence of malnutrition are – Kalaburagi, Raichur, Yadgir, Koppal, Bellari, Bidar and Gadag, that require urgent attention. There are 102 talukas with high incidence of malnutrition that need an integrated multisectoral approach to address malnutrition. The multi sectoral and intergenerational approach as adopted in the World Bank Project in Chincholi and Devadurga needs to be adopted as a holistic approach. Targetting adolescent girls with anaemia will help to reach to the root cause of women & child malnutrition. Adopt 6x6x6 strategy (6 beneficiary groups, 6 interventions & 6 Institutional mechanisms) as proposed by NITI Aayog.

There is an urgent need to formulate **A State Nutrition Policy** with appropriate institutional framework to implement it.

12.3.4: Leveraging Technology

a. Internet of Everything will be in vogue in next few years- Virtual presence, holographic meetings, e-wall projections etc – hence a strong law for security specifications, encryption is mandated for manufacturers (including automobile), service providers and for import of any electronic device with connectivity.

b. Space mobility would have commenced in many cities (either for logistics or human transport) – ensuring building codes, space regulations and satellite-based security will be one of the challenges that needs to be addressed effectively.

c. Technology based farming is to be encouraged and incentivized – To do this – Gram panchayats and farmers have to be technology enabled, empowered and engaged in the decision-making process.

12.4: Reforms in Finance & Governance

12.4.1: Financial Reforms

- Increase **allocations and expenditure on human development sectors** in coming budgets to reach the UNDP stipulated norms for human development goals. These norms are- for Public Expenditure Ratio 25 Percent Social Allocation Ratio 40 percent, Social Priority Ratio 50 percent and 5 percent for Human Expenditure Ratio. At present the State PER is 12 percent SPR is 46.5 percent, and HER is 2,2 percent, which are well below the stipulated norms.
- Restructure the gender budget with adequate and more allocations for income generating activities under Category A as per CAG 2019-20 report as schemes for training and skill development, provision for credit, infrastructure, marketing etc., which are critical to women's independence and autonomy (but) did not receive adequate focus. Under Category B schemes, it should be ensured that women get at least 50 percent of the share.
- Reducing the size of the Government to control growing public expenditure. The expenditure on salaries and pensions is close to 40 percent of the Revenue expenditure & Maximum utilization of grants under Central Sector Schemes. Picking up all our entitlements from the Govt. of India without fail.
- Procurement of Social Bonds and Green Bonds can be included as CSR with the purchased bonds being in the name of the issuing Government entity and CSR credit to the donors. This will ensure CSR integration with ESG and serve as a tool for resource mobilization.
- For optimum mobilization and utilization of resources to enhance the outcomes, Planning department has initiated a drive on rationalization of schemes. There are about 40 departments covering 1830 schemes. Out of this, around 1000 schemes have an allocation up to 10 crores, which constitute 55% of the total number of schemes and the allocation provided for these schemes is around 1.38% of the total budget and hence rationalization of schemes is essential. The following types of schemes can be

taken up for rationalization; (i) schemes which have similar objectives; (ii) redundant schemes could be dropped; iii) Merging of schemes with lesser allocation could be merged with bigger schemes.

- Mobilizing CSR funds for development of backward areas and sectors using ***Akanksha*****,** an integrated online facilitation platform involving key stakeholders like government, private and NGOs.
- Asset Monetization for getting better returns from the properties owned by Govt. Listing of assets owned by each department, update them annually and explore opportunities for leasing out to Co-operatives, FPOs/ Self-Help groups or even to private sector establishments/ / disinvestment or sale of assets not in effective use or some other methods like Co-development Operate Maintain Transfer, Toll – operate – Transfer, Upfront Premium, Sustainable Asset Productivity, Operations, Management, Development Agreement etc. to generate revenue and optimum utilization of resources. Generate a heat map for identification of such assets in different sectors. Roads, transport and power sector have a potential. The process has to be transparent and should fetch better returns for the Govt.
- **Mapping the budget with Sustainable Development Goals. A**ll the heads of accounts of the budget have to be mapped with 16 SDGs. There is need to prepare SDG budget in output outcome framework focusing on poor performing indicators. With localization of SDGs in the state the SDG plans to be prepared at Taluka and GP levels.
- Increase Civil service productivity, particularly in the human development sectors, where the responsibility of the state predominates, and recommend a coherent incentive structure that rewards good performances and helps to improve employee productivity. **The focus must be on building capacity to manage with a smaller bureaucracy.**

12.4.2: Institutional Reforms in Governance

Strengthening and empowering local governance- Subsidiarity principle

- Karnataka has a well-established system of local governance. Community-based institutions to take ownership of the last mile institutions – schools, PHCs, Anganwadis, - through the third tier of governance, the Gram Panchayat (GP) and

engage in the decision-making process. The subsidiarity principle will help to address deep-rooted inequality and the process of exclusion occurring in the development process and promote sustainable development process.

- Initiate and strengthen the process of preparation and implementation of Gram Panchayat Development Plan with focus on the nine themes -for localized panchayat planning for SDGs. **i)Poverty Free and Enhanced Livelihoods in Village, ii) Healthy Village, iii) Child-Friendly Village, iv) Water Sufficient Village, v) Clean and Green Village, vi) Self- Sufficient Infrastructure in Village, vii) Socially Just and Socially Secured Village, viii) Village with Good Governance and ix) Women Friendly Village.**
- Use of data science applications such as data layering, data visualization, machine learning and AI tools for localization of SDGs, identification of focus areas for specific interventions and to better capture evidence of achievement of more complex outcomes, e.g., school dropouts, vs. learning outcomes, estimation of GDP at GP level for demand and resource-based planning etc. for inclusion & equity.
- Ensuring that the youth of are associated with the planning of their Gram Panchayats (& Villages). Leveraging NSS and NYK Clubs to engage youth from respective locality and provide outcome-based targets for overall development.
- Promoting region specific Integrated Farming Systems through incentive/disincentive approach and setting productivity targets by village/ GP (based on the soil health, government support and related infra).
- Ensure active participation of FPOs and SHGs in rural economy for Strengthening the agricultural food value chain in marketing and post-harvest infrastructure.

12.5: Policy Framework for accelerating Human development

Employment Policy

The objective of employment policy is to address basic issues in employment are related to growing size of informal labour market, lack of decent work and employment security, and the need for adequate employment growth to combat unemployment and productive utilization of demographic dividend.

There is significant increase in jobs in informal sector and also within the formal sector in informal segment. This is evidence of growing insecurity of employment and income and the phenomenon of rising gig jobs in the state. There is an urgent need to implement an employment policy to regulate these trends in job market and to provide decent work.

The manufacturing sector has to be expanded particularly in Tier2 and Tier3 cities. The state has to focus on creating decent work conditions in informal sector with scaling up the social security measures. The focus should be on labour intensive technologies in decentralised production structures to generate employment. The poorest districts in North Karnataka, to be rapidly developed with adequate high-wage employment opportunities in scalable industrial enterprises to increase the per-capita output and low GDDP growth rates.

The new employment policy 2022-25 has linked jobs to investment and ensures creation of 7.5 lakhs new jobs in next three years. There is a need to create appropriate institutional mechanism to implement it. The policy guidelines should also focus **on future work and future skills**

12.5.1: Karnataka State Policy for Empowerment of Women - 2018

The State is proactive in promoting Gender equality. The **vision of the empowerment policy is '**Establishment of a just and humane society in which all women of Karnataka are empowered to realize their full potential and to live a life of dignity and choice, and are able to participate in the process of decision-making as equal partners to influence the process of social change'.

The mission is to create more effective and gender-responsive frameworks through the formation and strengthening of the relevant institutional mechanisms to enable the process of gender mainstreaming in all policies, programmes and practices which shall ensure equal rights and opportunities for women in all spheres: private and public.

The state is pioneer in gender budgeting which needs to be properly designed to ensure more allocations to economic empowerment of women. The policy has to be implemented effectively through a decentralised institutional set up.

12.5.2: Karnataka State Transgender Policy, 2017.

Karnataka State is also promoting the welfare of the Transgender in the State. The State has been implementing Karnataka State Transgender Policy, 2017. The Karnataka State Policy for Transgenders, 2017 aims to integrate the TG communities into mainstream society and guarantee a secure future for them. The policy is a significant step towards ensuring a stigma-free, inclusive and equitable environment for the transgender. It addresses their vulnerabilities holistically and proposes initiatives for their social, psychological, financial welfare.

12.5.3: Girl Child Policy

The State has formulated and implemented the Girl Child Policy to provide healthy environment for the growth and safety and security of girl child. The main objective is to eradicate discriminatory practices and improve the sex ratio. Protect girl children from all forms of violence, abuse and discriminatory practices through effective enforcement of legislation and policies; promote change in attitudes and behaviors within families, communities and society at large, regarding girls and women by elimination of customs, beliefs, practices, and conduct that perpetuate discrimination and gender stereotypes.

12.5.4: Youth Policy

The State has formulated new **Youth Policy -2022.** This focuses on the holistic development of youth. The policy focus is on the girls, as 82% of females in the age group of 21-30 years are not participating in the labour force as in 2018 against 14% males in the same age group. The policy focus is on education, training, employment and entrepreneurship of the female labour force and their facilitation to join the labour market & build the '**woman capital'. The policy is being designed in participatory mode, after consultation with youth leaders at the district level, and professionals in various fields. Over 14,000 youths have provided opinions on various issues ranging from education to leadership,** which are being incorporated in the policy.

The policy has recommended restructuring of the Department of Youth Empowerment and Sports, the creation of a Yuva Budget, and the formation of a youth advisory group.

The policy identifies six focus areas — education and training, employment and entrepreneurship, health and well-being, sports and fitness, arts and culture — and has recommended an action framework for each of them. The new policy also recommended establishment of separate ministries or directorates for youth empowerment and sports.

Youth budget

Investment in youth is paramount to generate more demographic dividend. Therefore, for provisioning and allocation of adequate resources, a **youth budget** is essential as recommended in youth policy.

Government of Karnataka has prepared a compendium of 540 Government schemes (given in Annexure-) which can be availed by the youth through different departments. A Mobile app is being developed for connecting the youth directly to the department officials/website. The total budget under the various schemes was Rs.11456.46 crores during 2021-22. The road map is very clear – Entitlement, Education, Employment, Empowerment and Engagement-that will enable the State to emerge as Global Youth Leader.

12.6: Conclusion

The evidence from analysis in the report indicates that human centric approach needs to be made more sustainable in the long run through required policy support. The road to Sustainable Development goals is led by human development. This is reinforced by the sufferings during the pandemic that has made the human life more vulnerable. Putting human freedoms at the core not only provides for a broader ethical and right based framework for sustainability but also, instrumentally, points the way towards changing the behaviours that are leading to unprecedented pressures on the planet. The final outcomes can be attained only through a favourable development environment, providing adequate space and voices for all the people to participate and share the gains from development. This report has enabled this framework by reaching down to the Taluka and Gram Panchayat level to understand more about the people and their communities to redesign and/or reorient the programmes and policies towards promoting inclusive human development with '**Sab Ka Saath, Sab Ka Vikas'** to ensure that **'No One is Left Behind'**

Appendix Tables

ANNEXURE 2.1

HDI for Talukas in the State 2019-20

Sl No	District	Taluka	Health index	Education Index	Standard of living Index	HDI	Rank
1	Bagalkot	Badami	0.7693	0.4593	0.5073	0.5639	108
2	Bagalkot	Bagalkote	0.8512	0.5177	0.5085	0.6074	63
3	Bagalkot	Bilagi	0.6696	0.4971	0.5027	0.5511	112
4	Bagalkot	Hungund	0.7149	0.5040	0.5287	0.5754	99
5	Bagalkot	Jamakhandi	0.7997	0.5414	0.4547	0.5817	90
6	Bagalkot	Mudhol	0.8585	0.5693	0.4803	0.6169	49
7	Ballari	Ballari	0.3947	0.4196	0.5241	0.4428	161
8	Ballari	Siraguppa	0.6205	0.3989	0.5075	0.5009	138
9	Ballari	Sonduru	0.7242	0.4474	0.5400	0.5593	110
10	Belagavi	Athani	0.5232	0.5424	0.5553	0.5401	118
11	Belagavi	Bailahongala	0.7809	0.3096	0.5384	0.5068	135
12	Belagavi	Belagavi	0.8225	0.5502	0.6733	0.6729	27
13	Belagavi	Chikkodi	0.7128	0.6068	0.6177	0.6441	38
14	Belagavi	Gokak	0.7183	0.5554	0.5768	0.6128	56
15	Belagavi	Hukkeri	0.7111	0.5180	0.5940	0.6026	68
16	Belagavi	Khanapur	0.6954	0.4481	0.6219	0.5787	94
17	Belagavi	Raibag	0.7556	0.5317	0.5353	0.5991	70
18	Belagavi	Ramadurg	0.7611	0.4762	0.5099	0.5696	105
19	Belagavi	Savadatti	0.5369	0.5060	0.5077	0.5167	131
20	Bengaluru_Rural	Devanahalli	0.7880	0.5893	0.6462	0.6695	30
21	Bengaluru_Rural	Doddaballapura	0.9286	0.5599	0.6729	0.7046	12
22	Bengaluru_Rural	Hoskote	0.8773	0.6260	0.6511	0.7098	10
23	Bengaluru_Rural	Nelamangala	0.9103	0.6759	0.7160	0.7609	3
24	Bengaluru_Urban	Anekal	0.6509	0.6160	0.8054	0.6861	22
25	Bengaluru_Urban	Bangalore (North	0.7375	0.4810	0.9113	0.6863	21
26	Bengaluru_Urban	Bangalore-East	0.7105	0.5018	0.9472	0.6964	17
27	Bengaluru_Urban	Bangalore-South	0.7526	0.6819	0.9415	0.7847	2

Sl No	District	Taluka	Health index	Education Index	Standard of living Index	HDI	Rank
28	Bidar	Aurad	0.5820	0.3928	0.4844	0.4802	147
29	Bidar	Basavakalyan	0.6530	0.5036	0.4694	0.5364	122
30	Bidar	Bhalki	0.4902	0.4381	0.3925	0.4385	162
31	Bidar	Bidar	0.4568	0.4960	0.5036	0.4850	144
32	Bidar	Humnabad	0.3620	0.5239	0.5015	0.4565	154
33	Chamarajanagara	Chamarajanagara	0.8276	0.3764	0.5938	0.5698	104
34	Chamarajanagara	Gundlupet	0.8283	0.2617	0.5658	0.4969	142
35	Chamarajanagara	Kollegala	0.6072	0.4835	0.6152	0.5653	107
36	Chamarajanagara	Yalandur	0.8359	0.3923	0.5946	0.5799	91
37	Chikkaballapura	Bagepalli	0.8541	0.3764	0.6386	0.5899	80
38	Chikkaballapura	chikballapur	0.8520	0.4352	0.7080	0.6403	39
39	Chikkaballapura	Chinthamani	0.9140	0.4473	0.5966	0.6248	44
40	Chikkaballapura	gauribidanur	0.7553	0.3983	0.6329	0.5753	100
41	Chikkaballapura	gudibande	0.7926	0.3306	0.6221	0.5463	115
42	Chikkaballapura	Shidlagatta	0.9150	0.3655	0.6651	0.6059	65
43	Chikkamagaluru	Chikmagalur	0.8134	0.5810	0.7222	0.6989	13
44	Chikkamagaluru	Kadur	0.8181	0.4534	0.5833	0.6003	69
45	Chikkamagaluru	KOPPA	0.7833	0.5802	0.7197	0.6890	20
46	Chikkamagaluru	Mudigere	0.8295	0.5250	0.6639	0.6612	34
47	Chikkamagaluru	Narasimharajapura	0.5812	0.5592	0.5652	0.5685	106
48	Chikkamagaluru	Sringeri	0.8468	0.5600	0.6946	0.6906	18
49	Chikkamagaluru	Tarikere	0.8832	0.4850	0.6592	0.6560	35
50	Chitradurga	Challakere	0.8421	0.4223	0.5581	0.5833	88
51	Chitradurga	chitradurga	0.6878	0.5242	0.6439	0.6146	54
52	Chitradurga	hiriyur	0.8314	0.4805	0.5272	0.5950	76
53	Chitradurga	holalkere	0.7576	0.5004	0.5568	0.5954	73
54	Chitradurga	hosadurga	0.4709	0.5023	0.5739	0.5139	132
55	Chitradurga	Molakalmuru	0.7920	0.4834	0.5504	0.5951	75
56	Dakshina_Kannada	Bantwal	0.8652	0.6249	0.7495	0.7400	5
57	Dakshina_Kannada	Belthangady	0.8141	0.6435	0.6741	0.7068	11

Sl No	District	Taluka	Health index	Education Index	Standard of living Index	HDI	Rank
58	Dakshina_Kannada	Mangalore	0.8955	0.7369	0.7377	0.7867	1
59	Dakshina_Kannada	Puttur	0.7489	0.6812	0.6652	0.6975	16
60	Dakshina_Kannada	Sulya	0.8771	0.6333	0.7476	0.7461	4
61	Davanagere	Channagiri	0.7323	0.4055	0.5545	0.5481	113
62	Davanagere	Davanagere	0.5645	0.4476	0.5784	0.5268	124
63	Davanagere	Harihar	0.4973	0.4212	0.5974	0.5001	140
64	Davanagere	Honnali	0.7235	0.4842	0.5347	0.5722	102
65	Davanagere	Jagaluru	0.7856	0.4605	0.5524	0.5847	87
66	Dharwad	Dharwad	0.8973	0.5992	0.3765	0.5872	84
67	Dharwad	Hubli	0.7756	0.6085	0.4330	0.5890	81
68	Dharwad	Kalgatgi	0.5680	0.4973	0.3946	0.4813	146
69	Dharwad	Kundgol	0.7771	0.4589	0.4086	0.5262	125
70	Dharwad	Navalgund	0.4795	0.4929	0.4446	0.4719	148
71	Gadag	Gadag	0.6872	0.4662	0.4842	0.5373	120
72	Gadag	Mundargi	0.7246	0.3612	0.3848	0.4653	151
73	Gadag	Naragund	0.6172	0.4640	0.4245	0.4954	143
74	Gadag	Rona	0.6346	0.4084	0.3578	0.4526	157
75	Gadag	Shirahatti	0.6236	0.3684	0.4217	0.4593	152
76	Hassan	Alur	0.7669	0.4452	0.5938	0.5875	83
77	Hassan	Arkalgud	0.8388	0.4658	0.5907	0.6134	55
78	Hassan	Arsikere	0.6601	0.4470	0.6346	0.5721	103
79	Hassan	Belur	0.7190	0.4151	0.5493	0.5473	114
80	Hassan	Channarayapatna	0.8076	0.4535	0.6138	0.6081	62
81	Hassan	Hassan	0.8588	0.5553	0.6581	0.6796	25
82	Hassan	Holenarasipura	0.6162	0.4448	0.5276	0.5249	127
83	Hassan	Sakleshpura	0.8446	0.4259	0.6465	0.6149	53
84	Haveri	Byadagi	0.9147	0.4254	0.5356	0.5929	78
85	Haveri	Hangal	0.6229	0.3851	0.5197	0.4996	141
86	Haveri	Haveri	0.5469	0.4672	0.5469	0.5189	130
87	Haveri	Hirekerur	0.7508	0.4091	0.4569	0.5197	128

Sl No	District	Taluka	Health index	Education Index	Standard of living Index	HDI	Rank
88	Haveri	Ranebennur	0.6836	0.4491	0.6316	0.5788	93
89	Haveri	Savanur	0.4315	0.4007	0.4217	0.4178	171
90	Haveri	Shiggaon	0.4857	0.4453	0.4685	0.4662	150
91	Kalburgi	Afzalpur	0.7317	0.4639	0.4118	0.5190	129
92	Kalburgi	Aland	0.6123	0.3861	0.3960	0.4541	156
93	Kalburgi	Chincholi	0.6736	0.2972	0.3749	0.4218	168
94	Kalburgi	Chittapur	0.6964	0.3583	0.3323	0.4360	163
95	Kalburgi	Gulbarga	0.7628	0.5792	0.4358	0.5775	95
96	Kalburgi	Jevargi	0.6216	0.3216	0.1785	0.3292	175
97	Kalburgi	Sedam	0.6730	0.2994	0.3977	0.4312	166
98	Kodagu	Madikeri	0.7058	0.4994	0.6782	0.6206	48
99	Kodagu	somawarpet	0.8006	0.5263	0.7147	0.6703	29
100	Kodagu	Virajpet	0.5720	0.5013	0.7112	0.5886	82
101	Kolara	BANGARPET	0.8804	0.5657	0.6844	0.6986	14
102	Kolara	Kolar	0.8545	0.4963	0.6934	0.6650	32
103	Kolara	Malur	0.8181	0.5151	0.6452	0.6478	37
104	Kolara	Mulabagilu	0.8193	0.4453	0.6114	0.6065	64
105	Kolara	Srinivaspura	0.8455	0.4687	0.6388	0.6326	41
106	Koppal	Gangavathi	0.6243	0.3458	0.4718	0.4670	149
107	Koppal	Koppal	0.5534	0.5409	0.4184	0.5003	139
108	Koppal	Kushtagi	0.5760	0.3390	0.4703	0.4512	158
109	Koppal	yelburga	0.4801	0.3637	0.4042	0.4133	172
110	Mandya	Krishnarajpet	0.8106	0.4292	0.6032	0.5942	77
111	Mandya	Maddur	0.8273	0.5241	0.5996	0.6382	40
112	Mandya	Malavalli	0.8304	0.4391	0.6166	0.6081	61
113	Mandya	Mandya	0.8896	0.5447	0.7014	0.6979	15
114	Mandya	Nagamangala	0.8564	0.4142	0.5973	0.5961	72
115	Mandya	Pandavpura	0.8209	0.4832	0.6279	0.6292	43
116	Mandya	Srirangapatna	0.8275	0.4668	0.6064	0.6164	51
117	Mysuru	Heggadadevanakote	0.6628	0.3656	0.6056	0.5275	123

Sl No	District	Taluka	Health index	Education Index	Standard of living Index	HDI	Rank
118	Mysuru	Hunsur	0.7601	0.4315	0.6472	0.5965	71
119	Mysuru	K.R.Nagar	0.7561	0.2649	0.6386	0.5039	136
120	Mysuru	Mysuru	0.8179	0.5425	0.7156	0.6822	23
121	Mysuru	Nanjangud	0.7976	0.3573	0.6820	0.5792	92
122	Mysuru	Piriyapatna	0.6519	0.3919	0.6313	0.5443	116
123	Mysuru	T.Narasipura	0.8054	0.4167	0.6736	0.6092	60
124	Raichur	Devdurga	0.5994	0.3921	0.3759	0.4454	160
125	Raichur	Lingasugur	0.7032	0.4259	0.4842	0.5254	126
126	Raichur	Manvi	0.7446	0.2937	0.4344	0.4563	155
127	Raichur	Raichur	0.7342	0.3178	0.5406	0.5015	137
128	Raichur	Sindhanur	0.4881	0.3326	0.4518	0.4186	170
129	Ramanagara	Channapatna	0.8884	0.5311	0.6955	0.6898	19
130	Ramanagara	Kanakpura	0.7412	0.4708	0.6539	0.6111	59
131	Ramanagara	Magadi	0.9188	0.4754	0.6906	0.6707	28
132	Ramanagara	Ramanagar	0.8939	0.5836	0.7253	0.7233	8
133	Shivamogga	Bhadravathi	0.7543	0.4092	0.6487	0.5850	86
134	Shivamogga	Hosanagar	0.6582	0.4209	0.4831	0.5115	133
135	Shivamogga	Sagara	0.8628	0.5278	0.5120	0.6155	52
136	Shivamogga	shikaripura	0.8488	0.4349	0.5105	0.5733	101
137	Shivamogga	shimoga	0.7061	0.5578	0.6161	0.6237	46
138	Shivamogga	Soraba	0.8109	0.5071	0.5342	0.6034	66
139	Shivamogga	Thirthahalli	0.8830	0.3369	0.6404	0.5754	97
140	Tumakuru	Chiknayakanahalli	0.7665	0.5289	0.6232	0.6322	42
141	Tumakuru	Gubbi	0.9171	0.5549	0.6194	0.6805	24
142	Tumakuru	Koratagere	0.6321	0.5197	0.6009	0.5822	89
143	Tumakuru	Kunigal	0.7190	0.4967	0.5909	0.5954	74
144	Tumakuru	Madhugiri	0.8038	0.4867	0.5996	0.6167	50
145	Tumakuru	Pavagada	0.8503	0.4590	0.5621	0.6031	67
146	Tumakuru	Sira	0.8806	0.5582	0.6224	0.6738	26
147	Tumakuru	Tiptur	0.7584	0.5523	0.6626	0.6523	36

Sl No	District	Taluka	Health index	Education Index	Standard of living Index	HDI	Rank
148	Tumakuru	Tumkur	0.8593	0.6431	0.6855	0.7235	7
149	Tumakuru	Turuvekere	0.8844	0.5353	0.6243	0.6661	31
150	Udupi	Karkala	0.6122	0.6999	0.5668	0.6239	45
151	Udupi	Kundapur	0.5880	0.6273	0.6229	0.6125	57
152	Udupi	Udupi	0.8395	0.6634	0.6458	0.7111	9
153	Uttara_Kannada	Ankola	0.7674	0.4569	0.5438	0.5756	96
154	Uttara_Kannada	Bhatkal	0.7376	0.8154	0.6610	0.7353	6
155	Uttara_Kannada	Haliyal	0.8423	0.5295	0.4633	0.5912	79
156	Uttara_Kannada	Honnavar	0.4144	0.6062	0.6339	0.5420	117
157	Uttara_Kannada	Joida	0.6183	0.3809	0.4745	0.4817	145
158	Uttara_Kannada	Karwar	0.6693	0.6486	0.5563	0.6227	47
159	Uttara_Kannada	Kumta	0.6365	0.5540	0.5694	0.5856	85
160	Uttara_Kannada	Mundgod	0.6357	0.6273	0.5757	0.6123	58
161	Uttara_Kannada	Siddapur	0.7076	0.4577	0.5884	0.5754	98
162	Uttara_Kannada	Sirsi	0.6713	0.6321	0.6889	0.6637	33
163	Uttara_Kannada	Yellapur	0.5947	0.4666	0.6355	0.5608	109
164	Vijayanagara	Hadagali	0.4573	0.4274	0.4893	0.4573	153
165	Vijayanagara	Hagaribommanahalli	0.6829	0.4741	0.4846	0.5394	119
166	Vijayanagara	Harapanahalli	0.5723	0.4560	0.5098	0.5105	134
167	Vijayanagara	Hospet	0.8007	0.4313	0.5019	0.5576	111
168	Vijayanagara	Kudligi	0.6083	0.2195	0.3148	0.3477	174
169	Vijayapura	Basavan Bagewadi	0.4107	0.4454	0.4050	0.4200	169
170	Vijayapura	Bijapur	0.7284	0.5490	0.3872	0.5370	121
171	Vijayapura	Indi	0.5392	0.4686	0.3623	0.4507	159
172	Vijayapura	Muddebihal	0.5589	0.4355	0.3347	0.4335	164
173	Vijayapura	Sindagi	0.4677	0.4694	0.3662	0.4316	165
174	Yadgir	Shahapur	0.7655	0.2609	0.3975	0.4298	167
175	Yadgir	Shorapur	0.7097	0.1980	0.3541	0.3678	173
176	Yadgir	Yadgir	0.5967	0.1495	0.3847	0.3250	176

Source: SDGCC Planning Dept. GoK

ANNEXURE 2.2(RAW DATA)

Karnataka Human Development Index-2021

Sl No	District	Taluka	Under5_ mortality (per 1000)	MMR (%) (per 1 lakh)	No of Mothers who had at least 4 antenatal care visits	GER (Elementary)	GER (Secondary)	Male Literacy	Female Literacy	Percentage of Households having access to modern cooking fuel	Percentage of households having access to toilet	Percentage of households having access to safe drinking water	Percentage of house holds having access to electricity	Percentage of house holds having access to pucca house	Percentage of workers in non-agricultural sector	Per Capita Income (at constant prices)
1	Bagalkot	Badami	14.61	15.24	78.29	91.70	88.40	80.89	69.34	69.32	65.23	98.45	99.44	53.27	39.55	104060
2	Bagalkot	Bagalkote	17.89	11.10	88.25	97.80	105.44	88.13	62.64	66.40	60.42	97.63	99.49	54.01	51.41	128496
3	Bagalkot	Bilagi	2.16	65.12	71.80	97.25	99.91	87.15	61.89	66.14	66.49	98.52	99.47	66.98	22.36	106962
4	Bagalkot	Hungund	13.82	112.91	89.21	93.75	91.27	89.59	66.80	60.51	69.86	96.50	99.86	61.40	48.37	122503
5	Bagalkot	Jamakhandi	10.40	74.13	91.30	103.83	101.92	85.66	69.56	65.79	69.99	93.74	98.48	55.71	40.36	109235.75
6	Bagalkot	Mudhol	8.54	11.96	86.55	106.78	106.97	88.69	68.36	70.05	62.90	97.01	99.34	57.18	26.98	122372
7	Ballari	Ballari	106.08	82.47	72.47	101.64	88.58	78.20	59.84	78.62	80.24	90.34	99.30	63.32	36.01	122080.833
8	Ballari	Siraguppa	19.77	87.13	75.05	97.16	94.00	81.49	48.05	80.63	78.69	92.93	99.38	56.17	22.45	132510
9	Ballari	Sonduru	11.41	48.33	77.96	108.49	98.43	73.25	61.10	72.98	75.20	94.59	99.23	57.84	53.09	164354
10	Belagavi	Athani	4.56	184.20	76.56	97.66	100.26	89.53	69.49	81.50	86.21	91.19	99.75	72.32	20.88	67997
11	Belagavi	Bailahongala	31.05	10.54	83.61	62.99	53.07	84.06	63.39	73.71	93.19	95.23	98.98	63.68	25.77	76043.9231
12	Belagavi	Belagavi	3.37	34.38	84.80	104.19	97.38	87.18	71.81	87.04	89.91	95.41	99.32	71.93	74.18	84894
13	Belagavi	Chikkodi	3.12	82.00	80.27	103.20	99.29	95.14	75.34	88.17	93.24	92.60	99.69	74.77	33.21	77937
14	Belagavi	Gokak	0.96	46.07	73.80	109.66	104.32	87.51	66.05	83.40	83.02	93.23	99.83	70.58	28.12	75441
15	Belagavi	Hukkeri	0.78	55.83	74.66	96.49	94.06	87.94	69.24	86.43	89.20	91.75	99.80	75.00	27.07	68303
16	Belagavi	Khanapur	27.44	42.71	78.18	88.47	83.24	86.10	64.62	80.30	100.00	96.19	99.15	80.39	30.97	75910
17	Belagavi	Raibag	2.28	28.18	75.40	100.42	102.42	86.73	67.66	81.35	84.29	90.24	99.76	69.29	18.12	69568
18	Belagavi	Ramadurg	2.87	60.12	81.99	104.54	91.65	83.08	61.57	73.85	80.50	96.36	98.55	62.26	30.23	96931
19	Belagavi	Savadatti	40.78	140.98	80.94	110.53	100.39	83.47	60.48	74.09	84.84	95.46	98.57	64.33	23.81	65070

Sl No	District	Taluka	Under5_ mortality (per 1000)	MMR (%) (per 1 lakh)	No of Mothers who had at least 4 antenatal care visits	GER (Elementary)	GER (Secondary)	Male Literacy	Female Literacy	Percentage of Households having access to modern cooking fuel	Percentage of households having access to toilet	Percentage of households having access to safe drinking water	Percentage of house holds having access to electricity	Percentage of house holds having access to pucca house	Percentage of workers in non-agricultural sector	Per Capita Income (at constant prices)
20	Bengaluru_Rural	Devanahalli	13.99	99.85	95.60	101.79	95.93	87.00	83.62	95.28	99.77	89.55	99.60	72.78	47.21	44419
21	Bengaluru_Rural	Doddaballapura	13.99	27.71	99.32	91.52	84.54	93.98	79.49	94.97	95.40	94.90	99.08	79.57	53.61	11722
22	Bengaluru_Rural	Hoskote	4.86	31.65	91.27	108.53	91.86	93.42	82.56	97.32	100.00	89.95	99.64	64.88	54.70	11919
23	Bengaluru_Rural	Nelamangala	13.99	40.45	99.44	108.84	103.04	94.16	88.09	97.55	100.00	93.37	99.12	91.11	60.69	14800
24	Bengaluru_Urban	Anekal	73.43	93.45	95.44	140.97	108.59	69.41	82.47	99.10	100.00	97.43	99.83	85.40	81.80	571670
25	Bengaluru_Urban	Bangalore (North	73.43	45.90	97.17	114.84	104.37	60.55	78.24	98.31	100.00	98.81	100.00	93.13	94.04	2729421
26	Bengaluru_Urban	Bangalore-East	73.43	76.24	99.43	115.13	103.87	62.66	80.73	99.38	100.00	94.14	100.00	97.14	95.82	4549989
27	Bengaluru_Urban	Bangalore-South	73.43	17.74	93.89	165.30	130.90	62.94	81.15	98.91	100.00	96.66	99.35	88.65	95.88	5274815
28	Bidar	Aurad	67.31	37.53	75.36	89.03	63.57	74.68	74.60	64.00	73.18	95.99	99.48	44.02	43.60	60387
29	Bidar	Basavakalyan	67.31	28.99	82.27	100.27	77.99	89.62	69.29	65.60	65.95	97.31	98.12	58.70	46.32	79150
30	Bidar	Bhalki	67.31	32.56	63.53	86.72	73.82	84.79	69.45	46.65	70.39	87.45	99.81	41.66	43.81	62233
31	Bidar	Bidar	67.31	90.98	70.11	112.53	89.78	77.75	69.12	78.02	72.52	97.56	98.39	55.10	37.72	89605
32	Bidar	Humnabad	134.62	90.82	78.39	111.38	95.18	86.08	63.63	77.36	66.89	95.93	98.82	56.19	40.39	67259
33	Chamarajanagara	Chamarajanagara	13.99	66.19	94.25	85.20	79.16	72.09	68.50	94.33	75.62	99.16	99.54	55.76	34.05	87468
34	Chamarajanagara	Gundlupet	13.99	47.83	91.01	79.87	76.40	59.26	61.10	94.48	87.15	97.35	99.25	47.41	24.20	126591

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35	Chamarajanagara	Kollegala	13.99	178.56	88.30	84.46	74.48	91.94	72.60	94.61	94.00	97.12	99.04	60.88	35.09	82436
36	Chamarajanagara	Yalandur	13.99	11.91	85.43	80.07	69.40	78.56	72.14	94.54	83.78	97.58	98.87	60.96	36.57	121696
37	Chikkaballapura	Bagepalli	13.99	68.79	97.87	89.90	86.94	67.02	68.19	95.41	93.73	97.24	99.58	70.90	24.67	81430
38	Chikkaballapura	chikballapur	13.99	66.93	97.28	95.44	85.97	68.36	77.95	94.11	100.00	96.64	100.00	81.58	40.86	140117
39	Chikkaballapura	Chinthamani	13.99	21.18	96.41	85.83	73.97	83.36	73.89	92.03	81.14	96.57	100.00	50.33	38.26	104456
40	Chikkaballapura	gauribidanur	13.99	71.43	86.58	82.04	75.04	73.11	76.40	96.57	100.00	93.26	98.75	81.16	30.74	66293
41	Chikkaballapura	gudibande	13.99	107.73	97.58	69.17	71.93	66.96	76.75	95.27	94.73	95.29	99.58	71.57	19.86	67522
42	Chikkaballapura	Shidlagatta	13.99	28.65	97.87	86.32	72.92	74.44	65.33	97.23	100.00	92.08	100.00	69.73	41.42	80823
43	Chikkamagaluru	Chikmagalur	13.99	61.30	91.68	95.32	77.56	95.94	83.34	87.11	99.51	97.21	99.93	71.73	71.56	176957
44	Chikkamagaluru	Kadur	13.99	41.68	88.70	88.54	72.98	80.29	78.03	82.90	100.00	95.79	98.77	70.20	24.62	107967
45	Chikkamagaluru	KOPPA	13.99	37.29	83.76	92.67	82.47	97.10	80.89	91.49	100.00	94.67	99.73	78.70	62.55	469683
46	Chikkamagaluru	Mudigere	13.99	69.86	95.14	81.07	64.48	94.45	86.42	81.75	100.00	83.56	99.62	85.96	82.90	63641
47	Chikkamagaluru	Narasimharajapura	13.99	174.83	84.52	84.24	79.64	95.93	83.62	79.60	100.00	91.55	98.31	67.15	43.07	333919

Sl No	District	Taluka	Under5_ mortality (per 1000)	MMR (%) (per 1 lakh)	No of Mothers who had at least 4 antenatal care visits	GER (Elementary)	GER (Secondary)	Male Literacy	Female Literacy	Percentage of Households having access to modern cooking fuel	Percentage of households having access to toilet	Percentage of households having access to safe drinking water	Percentage of house holds having access to electricity	Percentage of house holds having access to pucca house	Percentage of workers in non-agricultural sector	Per Capita Income (at constant prices)
48	Chikkamagaluru	Sringeri	13.99	24.51	89.01	75.04	81.62	96.51	87.56	89.86	100.00	97.62	99.34	84.92	42.93	285745
49	Chikkamagaluru	Tarikere	13.99	4.36	89.70	87.70	69.48	88.25	78.05	91.63	100.00	95.56	99.37	71.01	43.88	174324
50	Chitradurga	Challakere	8.67	17.38	85.61	86.06	78.23	80.10	69.66	90.37	82.35	94.35	99.92	47.76	29.11	67493
51	Chitradurga	chitradurga	15.68	83.45	81.21	98.31	91.32	82.15	78.15	92.94	88.14	96.91	99.94	61.51	43.98	80180
52	Chitradurga	hiriyur	2.96	33.75	85.63	87.64	80.49	83.34	77.70	87.58	84.88	86.89	99.90	51.72	33.08	77575
53	Chitradurga	holalkere	13.15	45.02	81.84	95.44	90.44	84.69	71.41	87.64	91.01	93.57	99.95	50.68	20.34	65340
54	Chitradurga	hosadurga	45.75	130.20	72.58	93.32	87.21	84.67	74.71	87.75	82.35	97.52	99.97	48.56	29.25	86926
55	Chitradurga	Molakalmuru	30.28	82.00	97.60	98.39	82.60	82.70	71.80	89.65	75.83	92.64	99.89	55.26	30.85	83536
56	Dakshina_Kannada	Bantwal	13.99	37.48	93.54	98.69	93.18	94.79	85.77	82.98	100.00	92.43	99.87	88.06	91.22	244465
57	Dakshina_Kannada	Belthangady	13.99	49.30	89.59	95.28	100.97	94.88	88.38	77.16	100.00	85.62	99.74	87.12	85.58	22973
58	Dakshina_Kannada	Mangalore	13.99	28.83	95.58	118.60	114.40	99.31	85.19	87.67	94.69	93.49	99.81	78.94	91.25	296972
59	Dakshina_Kannada	Puttur	13.99	71.76	85.88	103.01	105.15	93.31	92.84	71.15	100.00	81.61	100.00	84.84	97.58	233222
60	Dakshina_Kannada	Sulya	13.99	17.65	91.38	93.00	95.44	92.86	92.46	84.57	100.00	88.70	99.74	93.39	98.28	169329
61	Davanagere	Channagiri	6.71	97.29	86.40	89.40	80.79	72.69	71.51	87.75	93.60	95.45	99.12	51.57	25.00	62748
62	Davanagere	Davanagere	19.89	184.69	86.04	106.23	93.29	74.73	63.15	82.78	94.63	96.63	98.02	51.77	64.00	74945
63	Davanagere	Harihar	0.96	142.19	64.84	99.68	87.44	69.24	70.26	74.31	94.42	93.52	99.78	66.04	46.00	72834

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64	Davanagere	Honnali	44.63	44.03	86.77	88.05	87.31	86.97	70.89	80.84	95.62	93.12	98.89	52.22	33.00	71831
65	Davanagere	Jagaluru	2.94	49.08	82.94	93.07	79.49	84.25	69.01	84.17	90.36	96.51	99.56	54.26	17.00	63020
66	Dharwad	Dharwad	2.12	8.83	88.72	123.66	105.48	82.50	73.99	59.15	83.69	74.53	99.29	44.97	51.03	47919
67	Dharwad	Hubli	11.22	83.18	90.31	123.66	105.48	84.39	73.91	73.54	82.71	79.60	99.30	59.90	25.84	209072
68	Dharwad	Kalgatgi	37.56	159.54	87.06	95.49	88.83	84.60	71.51	56.77	83.34	92.02	99.56	25.32	21.59	106163
69	Dharwad	Kundgol	50.26	35.13	93.19	86.96	76.38	86.55	70.91	69.61	84.02	84.63	99.82	35.69	18.13	85468
70	Dharwad	Navalgund	96.93	151.31	92.33	97.69	77.72	82.37	77.30	67.36	92.36	89.34	99.01	47.96	17.84	111857
71	Gadag	Gadag	50.48	65.65	88.06	98.12	92.81	77.70	69.01	64.34	70.76	89.52	99.95	50.49	50.76	100330
72	Gadag	Mundargi	14.42	53.35	79.79	119.55	112.36	50.32	55.21	64.29	66.31	96.16	97.65	46.96	24.23	85740
73	Gadag	Naragund	10.82	122.74	78.48	97.78	84.50	84.19	64.71	54.94	76.12	97.10	97.75	63.59	24.86	83183
74	Gadag	Rona	7.21	75.62	71.00	91.82	83.62	78.45	62.30	50.55	55.76	96.17	98.04	51.64	28.09	83498
75	Gadag	Shirahatti	10.82	149.56	84.09	102.41	90.41	70.97	52.29	70.12	64.92	96.95	98.41	42.87	26.11	76716
76	Hassan	Alur	13.99	77.51	89.06	75.56	66.78	84.66	81.35	89.22	99.44	97.66	98.85	58.90	27.79	87570
77	Hassan	Arkalgud	13.99	32.34	89.47	79.51	79.81	84.06	78.38	91.47	100.00	97.81	98.52	64.41	20.57	128981
78	Hassan	Arsikere	13.99	112.53	82.67	87.52	83.45	74.98	78.54	93.21	100.00	97.25	99.80	58.40	28.15	102481
79	Hassan	Belur	13.99	110.35	89.29	79.27	67.52	79.51	77.87	82.28	97.24	97.22	99.14	42.98	28.36	112823
80	Hassan	Channarayapatna	13.99	72.54	93.02	83.16	77.02	81.79	77.43	89.48	100.00	98.82	99.82	50.80	24.72	74195
81	Hassan	Hassan	13.99	31.67	91.72	111.31	89.40	83.30	77.51	90.05	95.40	95.04	99.88	65.00	50.10	171725
82	Hassan	Holenarasipura	13.99	110.28	77.03	83.06	74.86	80.84	77.60	88.70	97.25	99.12	95.78	77.99	25.70	103996

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83	Hassan	Sakleshpura	13.99	10.66	86.24	73.09	62.55	83.61	81.48	90.59	100.00	94.92	98.53	69.50	60.66	85918
84	Haveri	Byadagi	13.99	5.20	93.61	95.98	91.88	76.57	62.26	66.83	87.59	96.23	99.96	55.21	27.82	87429
85	Haveri	Hangal	4.86	104.08	74.06	93.77	82.52	70.06	66.41	72.08	88.59	95.71	99.30	57.86	21.44	72596
86	Haveri	Haveri	1.15	125.98	67.88	107.44	92.16	75.34	66.97	72.75	86.28	96.71	99.30	60.06	33.22	92592
87	Haveri	Hirekerur	7.89	73.56	84.66	92.92	87.78	77.84	60.55	58.36	76.87	95.59	99.99	46.44	18.45	81612
88	Haveri	Ranebennur	9.11	132.72	87.69	103.79	92.40	80.11	58.75	74.84	90.09	98.26	99.96	72.04	43.34	90329
89	Haveri	Savanur	29.97	138.88	64.87	100.08	83.11	65.50	71.78	64.26	83.71	88.30	98.23	57.66	28.04	79168
90	Haveri	Shiggaon	47.98	107.73	70.93	95.80	92.73	73.53	70.52	72.13	83.31	96.87	98.50	42.18	27.96	82605
91	Kalburgi	Afzalpur	14.34	49.91	80.00	106.00	85.57	85.26	58.00	69.69	47.04	93.13	99.50	50.61	24.80	62812
92	Kalburgi	Aland	37.44	47.49	72.07	83.40	71.17	87.45	56.85	61.50	46.05	97.93	99.15	49.43	20.62	62701
93	Kalburgi	Chincholi	1.47	109.06	80.00	84.03	60.20	71.44	60.08	62.27	42.62	97.61	99.26	49.12	10.86	18164
94	Kalburgi	Chittapur	19.82	76.14	82.12	89.10	74.69	93.38	55.79	53.63	30.28	97.13	97.69	46.96	48.97	94844
95	Kalburgi	Gulbarga	3.74	3.50	72.23	111.54	90.64	86.50	66.28	59.27	50.85	94.46	98.93	49.81	56.59	197656.833
96	Kalburgi	Jevargi	3.32	109.06	74.35	98.18	77.79	107.49	54.32	42.20	30.03	79.50	98.24	49.70	21.27	43683
97	Kalburgi	Sedam	11.82	94.41	80.30	85.21	69.34	69.90	57.36	62.28	39.72	97.00	98.94	50.73	34.20	70633
98	Kodagu	Madikeri	0.86	113.79	84.51	84.15	74.65	86.15	83.71	88.26	100.00	90.37	98.82	71.37	91.45	95187
99	Kodagu	somawarpet	35.98	17.21	88.59	89.88	80.82	86.00	84.01	89.59	99.63	92.34	99.56	82.05	77.14	82376
100	Kodagu	Virajpet	114.67	52.86	90.73	86.38	71.19	85.40	85.46	87.11	99.21	91.48	99.34	76.25	93.75	90087
101	Kolara	BANGARPET	1.20	40.40	92.15	90.66	83.52	99.74	76.13	94.39	96.38	97.90	99.22	73.05	54.31	35228
102	Kolara	Kolar	13.99	74.32	98.92	87.87	76.81	90.63	74.18	93.30	100.00	98.06	99.93	61.71	54.61	93785
103	Kolara	Malur	13.99	72.26	94.21	87.34	74.57	96.12	73.34	96.39	94.20	95.47	99.07	68.56	45.23	152922
104	Kolara	Mulabagilu	13.99	77.79	95.35	82.78	70.59	89.01	69.89	92.18	97.81	91.81	98.90	76.64	33.97	97681

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105	Kolara	Srinivaspura	13.99	64.91	96.15	79.71	80.68	90.81	70.23	94.36	98.83	94.79	99.31	74.19	30.25	84578
106	Koppal	Gangavathi	2.24	106.20	73.85	96.36	87.79	68.26	55.03	58.68	73.68	94.95	99.56	55.53	30.92	95453
107	Koppal	Koppal	30.46	87.83	70.31	98.43	89.15	92.93	69.87	59.55	73.64	88.83	99.06	40.63	43.90	290302.5
108	Koppal	Kushtagi	45.57	18.37	64.86	103.93	88.87	73.78	41.58	54.99	76.08	95.06	99.55	58.36	29.45	63091
109	Koppal	yelburga	13.99	124.25	63.36	102.92	87.98	71.19	51.78	51.41	66.42	96.81	98.79	52.15	23.87	54304
110	Mandya	Krishnarajpet	13.99	100.22	98.36	73.93	64.01	88.29	75.29	94.38	97.62	88.85	98.95	88.17	20.17	165708
111	Mandya	Maddur	13.99	68.50	94.63	89.99	79.83	93.16	75.06	93.27	100.00	95.17	98.16	73.47	30.35	56349
112	Mandya	Malavalli	13.99	69.55	95.19	76.63	71.56	92.17	67.65	95.34	94.53	94.49	99.03	73.62	28.79	47613
113	Mandya	Mandya	13.99	15.33	92.45	88.96	83.79	90.06	82.53	95.99	100.00	98.92	99.22	82.04	42.41	84160
114	Mandya	Nagamangala	13.99	50.67	94.87	67.66	62.40	91.71	71.93	92.36	94.65	94.60	98.89	73.84	21.96	146379
115	Mandya	Pandavpura	13.99	76.08	95.24	84.81	83.55	87.10	73.88	96.21	99.48	94.98	98.65	78.78	24.35	271574
116	Mandya	Srirangapatna	13.99	31.29	87.93	81.65	74.58	86.93	76.37	96.20	98.33	97.43	97.48	70.06	40.36	170209
117	Mysuru	Heggadadevanakote	13.99	107.61	82.11	79.88	70.17	76.36	68.15	95.59	94.60	97.54	99.14	64.53	19.16	73054
118	Mysuru	Hunsur	13.99	79.06	88.53	88.56	80.11	83.24	65.63	96.28	96.21	97.57	99.24	75.60	25.65	86349
119	Mysuru	K.R.Nagar	13.99	78.37	87.93	74.84	72.44	58.86	67.26	94.59	93.05	97.47	99.57	71.12	25.87	91457
120	Mysuru	Mysuru	13.99	62.80	92.48	114.47	114.90	72.60	73.35	96.99	96.49	92.14	98.93	79.07	87.13	115131
121	Mysuru	Nanjangud	13.99	93.97	95.68	77.56	66.05	78.13	67.33	94.96	96.27	99.07	99.72	73.46	35.86	109379
122	Mysuru	Piriyapatna	13.99	159.16	90.11	80.77	79.10	80.39	64.66	95.67	95.59	97.26	99.41	72.00	19.89	71480
123	Mysuru	T.Narasipura	13.99	30.04	85.07	82.41	78.82	77.69	73.14	96.71	93.39	98.73	99.53	78.20	31.81	68422
124	Raichur	Devdurga	104.81	28.18	86.67	118.25	93.79	69.59	48.73	57.41	39.60	89.67	99.91	65.47	16.87	49021
125	Raichur	Lingasugur	40.78	69.23	87.79	100.00	75.74	87.61	54.23	66.21	70.00	95.53	99.81	49.45	31.69	94051

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126	Raichur	Manvi	16.52	78.40	87.31	92.88	77.46	112.93	47.07	66.95	64.55	92.90	99.73	53.24	13.72	71203.5
127	Raichur	Raichur	6.44	96.69	86.44	99.69	82.98	68.33	48.54	67.60	73.46	92.79	99.95	62.70	50.91	71643
128	Raichur	Sindhanur	69.40	158.85	86.69	88.60	73.88	77.57	51.70	73.30	68.67	92.90	99.29	46.22	27.15	79675.75
129	Ramanagara	Channapatna	13.99	33.25	95.54	86.06	78.63	91.44	81.79	93.36	98.51	96.52	99.65	81.67	44.20	107179
130	Ramanagara	Kanakpura	13.99	137.27	96.79	80.03	77.77	83.21	81.34	95.53	97.84	93.45	99.74	75.80	32.48	108635
131	Ramanagara	Magadi	13.99	22.63	97.24	80.02	76.65	84.65	81.22	96.26	100.00	97.34	99.90	74.14	36.04	107123
132	Ramanagara	Ramanagar	13.99	20.60	93.91	103.38	89.09	87.02	84.60	94.68	100.00	96.30	99.83	80.14	56.36	180648
133	Shivamogga	Bhadravathi	13.99	83.16	88.58	85.57	73.68	82.89	65.55	95.27	95.22	97.69	99.14	58.18	51.53	130860
134	Shivamogga	Hosanagar	13.99	170.38	92.89	90.27	86.43	75.59	68.41	65.53	92.15	93.18	99.81	35.85	29.11	112070
135	Shivamogga	Sagara	13.99	12.57	88.76	94.81	89.78	85.45	77.77	85.38	97.51	83.34	98.59	57.75	42.82	142658
136	Shivamogga	shikaripura	13.99	35.21	91.18	100.01	90.38	104.67	65.03	78.44	93.76	96.05	98.43	51.67	23.07	113088
137	Shivamogga	shimoga	34.17	107.61	93.13	107.57	91.61	87.99	73.46	84.58	98.15	95.16	99.15	47.23	65.78	159771
138	Shivamogga	Soraba	13.99	41.83	87.86	99.29	90.50	89.39	64.90	84.18	95.57	94.89	99.13	52.40	15.88	88622
139	Shivamogga	Thirthahalli	1.77	20.98	89.13	81.26	78.98	63.02	72.56	92.66	98.08	98.15	99.73	57.94	33.22	130430

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140	Tumakuru	Chiknayakanahalli	34.08	61.03	91.89	88.04	81.38	88.99	81.76	79.52	96.56	95.44	99.91	71.36	34.32	130808
141	Tumakuru	Gubbi	3.42	11.84	92.01	89.41	80.73	92.89	82.74	84.81	100.00	95.61	99.89	67.41	24.58	102700
142	Tumakuru	Koratagere	2.18	193.92	90.59	85.92	88.94	91.44	74.08	84.44	100.00	93.39	99.74	67.87	24.38	101602
143	Tumakuru	Kunigal	1.42	105.20	84.70	77.57	82.05	87.40	81.80	84.77	100.00	95.72	99.68	51.93	30.14	98369
144	Tumakuru	Madhugiri	3.43	94.15	93.38	81.70	68.92	91.54	78.21	89.96	100.00	92.29	99.72	63.34	25.02	90473
145	Tumakuru	Pavagada	0.61	74.19	94.50	81.19	71.50	87.95	75.00	94.40	100.00	85.50	99.52	59.36	27.74	133766
146	Tumakuru	Sira	11.28	25.66	92.44	97.25	91.45	87.79	79.98	90.70	97.71	96.38	99.64	57.38	34.51	130541
147	Tumakuru	Tiptur	1.73	62.80	81.82	91.29	84.04	93.22	78.98	85.86	100.00	95.43	99.87	69.24	48.01	124894
148	Tumakuru	Tumkur	0.55	65.83	94.03	105.23	104.22	92.91	83.26	83.00	100.00	94.63	99.69	77.44	62.86	129472
149	Tumakuru	Turuvekere	2.24	30.31	91.11	80.82	81.42	92.32	83.46	84.77	100.00	95.57	99.89	67.55	27.29	127656
150	Udupi	Karkala	13.99	129.71	80.07	108.04	111.39	93.24	91.43	70.73	100.00	77.75	99.67	75.92	70.09	191865.167
151	Udupi	Kundapur	13.99	101.28	72.05	101.28	93.72	88.37	92.48	73.60	100.00	84.62	99.91	79.66	64.31	299230
152	Udupi	Udupi	13.99	23.18	87.89	112.01	106.19	92.85	83.29	73.16	100.00	79.43	99.95	87.34	88.57	222462
153	Uttara_Kannada	Ankola	2.60	31.78	77.55	70.18	49.45	94.17	84.06	77.06	100.00	78.09	99.12	77.80	55.83	89016
154	Uttara_Kannada	Bhatkal	19.35	28.45	78.28	124.95	173.62	100.00	84.33	79.33	100.00	85.52	99.40	85.83	82.06	97187
155	Uttara_Kannada	Haliyal	2.31	19.96	84.25	109.54	103.75	72.54	78.62	57.79	91.85	97.56	97.78	58.17	29.02	82687
156	Uttara_Kannada	Honnavar	19.35	198.79	70.56	93.87	94.34	99.82	82.26	79.26	100.00	83.23	99.43	82.38	77.01	119823
157	Uttara_Kannada	Joida	44.87	94.52	83.44	84.50	73.80	71.56	73.25	45.18	92.45	95.23	97.97	52.53	65.75	65982.25

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158	Uttara_ Kannada	Karwar	1.22	55.08	69.68	105.79	139.72	83.25	78.91	69.54	90.07	81.33	99.17	67.62	87.13	98634
159	Uttara_ Kannada	Kumta	19.35	55.34	71.10	85.53	73.11	94.29	86.80	74.38	100.00	74.58	99.67	79.51	74.15	119244
160	Uttara_ Kannada	Mundgod	19.35	3.28	61.60	104.08	96.84	95.27	80.81	81.76	98.09	89.91	99.82	68.52	25.45	96543
161	Uttara_ Kannada	Siddapur	0.70	16.89	67.18	71.86	57.30	90.03	84.54	80.68	97.99	87.30	98.96	72.88	55.91	145253
162	Uttara_ Kannada	Sirsi	30.29	91.29	84.92	105.80	126.65	85.27	78.76	93.60	100.00	96.22	99.68	61.31	62.96	123486
163	Uttara_ Kannada	Yellapur	5.47	42.52	59.76	85.81	69.73	79.21	85.75	81.69	100.00	91.85	99.52	75.62	50.41	89655
164	Vijayana gara	Hadagali	9.77	223.10	77.25	94.95	90.77	87.52	50.38	80.62	78.65	94.87	98.70	52.71	23.66	79501
165	Vijayana gara	Hagaribom manahalli	2.24	62.29	72.90	105.04	89.69	87.81	55.87	84.41	75.59	93.92	98.38	56.66	23.55	101245
166	Vijayana gara	Harapanahalli	15.05	112.87	72.59	106.10	91.60	82.56	56.43	76.31	81.77	94.33	98.72	63.35	27.69	64807
167	Vijayana gara	Hospet	0.36	22.28	79.14	99.04	86.99	83.23	56.05	76.02	76.43	94.46	98.46	52.48	47.64	95521.25
168	Vijayana gara	Kudligi	2.02	84.48	67.95	84.48	63.88	63.84	48.59	61.27	56.40	88.70	97.71	50.35	19.02	101848
169	Vijayapura	Basavan Bagewadi	31.66	190.55	72.21	109.89	91.03	85.75	47.96	65.93	64.52	89.61	98.36	60.20	28.95	71952.6667
170	Vijayapura	Bijapur	41.86	9.64	80.34	123.71	105.84	86.20	57.07	65.36	58.38	86.60	98.34	61.42	36.08	72914

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171	Vijayapura	Indi	94.92	41.64	79.05	113.96	91.99	81.13	56.39	65.17	62.14	90.54	97.53	58.51	22.89	67079.75
172	Vijayapura	Muddebihal	53.84	44.65	69.97	97.56	88.09	85.62	53.34	58.98	57.15	93.45	96.49	53.57	38.81	74389.5
173	Vijayapura	Sindagi	95.06	90.60	79.42	113.71	91.61	81.74	56.17	64.87	62.78	91.48	97.52	59.28	20.96	65431
174	Yadgir	Shahapur	18.00	50.71	85.22	92.84	70.06	72.10	40.48	45.45	55.69	95.74	99.24	61.96	24.20	91631
175	Yadgir	Shorapur	4.67	65.51	77.37	95.76	60.67	59.46	43.70	52.21	48.01	89.61	99.43	54.29	24.34	70181
176	Yadgir	Yadgir	18.00	87.73	71.81	93.82	75.86	54.43	31.93	51.59	51.02	89.13	98.83	74.24	30.24	69114

ANNEXURE-2.3

Human Development Index-2019-20

Sl No	District	Taluka	Health index	Education Index	Standard of living Index	HDI	Rank
1	Bagalkot	Badami	0.7693	0.4593	0.5073	0.5639	108
2	Bagalkot	Bagalkote	0.8512	0.5177	0.5085	0.6074	63
3	Bagalkot	Bilagi	0.6696	0.4971	0.5027	0.5511	112
4	Bagalkot	Hungund	0.7149	0.5040	0.5287	0.5754	99
5	Bagalkot	Jamakhandi	0.7997	0.5414	0.4547	0.5817	90
6	Bagalkot	Mudhol	0.8585	0.5693	0.4803	0.6169	49
7	Ballari	Ballari	0.3947	0.4196	0.5241	0.4428	161
8	Ballari	Siraguppa	0.6205	0.3989	0.5075	0.5009	138
9	Ballari	Sonduru	0.7242	0.4474	0.5400	0.5593	110
10	Belagavi	Athani	0.5232	0.5424	0.5553	0.5401	118
11	Belagavi	Bailahongala	0.7809	0.3096	0.5384	0.5068	135
12	Belagavi	Belagavi	0.8225	0.5502	0.6733	0.6729	27
13	Belagavi	Chikkodi	0.7128	0.6068	0.6177	0.6441	38
14	Belagavi	Gokak	0.7183	0.5554	0.5768	0.6128	56
15	Belagavi	Hukkeri	0.7111	0.5180	0.5940	0.6026	68
16	Belagavi	Khanapur	0.6954	0.4481	0.6219	0.5787	94
17	Belagavi	Raibag	0.7556	0.5317	0.5353	0.5991	70
18	Belagavi	Ramadurg	0.7611	0.4762	0.5099	0.5696	105
19	Belagavi	Savadatti	0.5369	0.5060	0.5077	0.5167	131
20	Bengaluru_Rural	Devanahalli	0.7880	0.5893	0.6462	0.6695	30
21	Bengaluru_Rural	Doddaballapura	0.9286	0.5599	0.6729	0.7046	12
22	Bengaluru_Rural	Hoskote	0.8773	0.6260	0.6511	0.7098	10
23	Bengaluru_Rural	Nelamangala	0.9103	0.6759	0.7160	0.7609	3
24	Bengaluru_Urban	Anekal	0.6509	0.6160	0.8054	0.6861	22
25	Bengaluru_Urban	Bangalore (North	0.7375	0.4810	0.9113	0.6863	21
26	Bengaluru_Urban	Bangalore-East	0.7105	0.5018	0.9472	0.6964	17
27	Bengaluru_Urban	Bangalore-South	0.7526	0.6819	0.9415	0.7847	2
28	Bidar	Aurad	0.5820	0.3928	0.4844	0.4802	147
29	Bidar	Basavakalyan	0.6530	0.5036	0.4694	0.5364	122
30	Bidar	Bhalki	0.4902	0.4381	0.3925	0.4385	162
31	Bidar	Bidar	0.4568	0.4960	0.5036	0.4850	144
32	Bidar	Humnabad	0.3620	0.5239	0.5015	0.4565	154
33	Chamarajanagara	Chamarajanagara	0.8276	0.3764	0.5938	0.5698	104
34	Chamarajanagara	Gundlupet	0.8283	0.2617	0.5658	0.4969	142
35	Chamarajanagara	Kollegala	0.6072	0.4835	0.6152	0.5653	107
36	Chamarajanagara	Yalandur	0.8359	0.3923	0.5946	0.5799	91
37	Chikkaballapura	Bagepalli	0.8541	0.3764	0.6386	0.5899	80
38	Chikkaballapura	chikballapur	0.8520	0.4352	0.7080	0.6403	39
39	Chikkaballapura	Chinthamani	0.9140	0.4473	0.5966	0.6248	44
40	Chikkaballapura	gauribidanur	0.7553	0.3983	0.6329	0.5753	100
41	Chikkaballapura	gudibande	0.7926	0.3306	0.6221	0.5463	115

Sl No	District	Taluka	Health index	Education Index	Standard of living Index	HDI	Rank
42	Chikkaballapura	Shidlagatta	0.9150	0.3655	0.6651	0.6059	65
43	Chikkamagaluru	Chikmagalur	0.8134	0.5810	0.7222	0.6989	13
44	Chikkamagaluru	Kadur	0.8181	0.4534	0.5833	0.6003	69
45	Chikkamagaluru	KOPPA	0.7833	0.5802	0.7197	0.6890	20
46	Chikkamagaluru	Mudigere	0.8295	0.5250	0.6639	0.6612	34
47	Chikkamagaluru	Narasimharajapura	0.5812	0.5592	0.5652	0.5685	106
48	Chikkamagaluru	Sringeri	0.8468	0.5600	0.6946	0.6906	18
49	Chikkamagaluru	Tarikere	0.8832	0.4850	0.6592	0.6560	35
50	Chitradurga	Challakere	0.8421	0.4223	0.5581	0.5833	88
51	Chitradurga	chitradurga	0.6878	0.5242	0.6439	0.6146	54
52	Chitradurga	hiriyur	0.8314	0.4805	0.5272	0.5950	76
53	Chitradurga	holalkere	0.7576	0.5004	0.5568	0.5954	73
54	Chitradurga	hosadurga	0.4709	0.5023	0.5739	0.5139	132
55	Chitradurga	Molakalmuru	0.7920	0.4834	0.5504	0.5951	75
56	Dakshina_Kannada	Bantwal	0.8652	0.6249	0.7495	0.7400	5
57	Dakshina_Kannada	Belthangady	0.8141	0.6435	0.6741	0.7068	11
58	Dakshina_Kannada	Mangalore	0.8955	0.7369	0.7377	0.7867	1
59	Dakshina_Kannada	Puttur	0.7489	0.6812	0.6652	0.6975	16
60	Dakshina_Kannada	Sulya	0.8771	0.6333	0.7476	0.7461	4
61	Davanagere	Channagiri	0.7323	0.4055	0.5545	0.5481	113
62	Davanagere	Davanagere	0.5645	0.4476	0.5784	0.5268	124
63	Davanagere	Harihar	0.4973	0.4212	0.5974	0.5001	140
64	Davanagere	Honnali	0.7235	0.4842	0.5347	0.5722	102
65	Davanagere	Jagaluru	0.7856	0.4605	0.5524	0.5847	87
66	Dharwad	Dharwad	0.8973	0.5992	0.3765	0.5872	84
67	Dharwad	Hubli	0.7756	0.6085	0.4330	0.5890	81
68	Dharwad	Kalgatgi	0.5680	0.4973	0.3946	0.4813	146
69	Dharwad	Kundgol	0.7771	0.4589	0.4086	0.5262	125
70	Dharwad	Navalgund	0.4795	0.4929	0.4446	0.4719	148
71	Gadag	Gadag	0.6872	0.4662	0.4842	0.5373	120
72	Gadag	Mundargi	0.7246	0.3612	0.3848	0.4653	151
73	Gadag	Naragund	0.6172	0.4640	0.4245	0.4954	143
74	Gadag	Rona	0.6346	0.4084	0.3578	0.4526	157
75	Gadag	Shirahatti	0.6236	0.3684	0.4217	0.4593	152
76	Hassan	Alur	0.7669	0.4452	0.5938	0.5875	83
77	Hassan	Arkalgud	0.8388	0.4658	0.5907	0.6134	55
78	Hassan	Arsikere	0.6601	0.4470	0.6346	0.5721	103
79	Hassan	Belur	0.7190	0.4151	0.5493	0.5473	114
80	Hassan	Channarayapatna	0.8076	0.4535	0.6138	0.6081	62
81	Hassan	Hassan	0.8588	0.5553	0.6581	0.6796	25
82	Hassan	Holenarasipura	0.6162	0.4448	0.5276	0.5249	127
83	Hassan	Sakleshpura	0.8446	0.4259	0.6465	0.6149	53
84	Haveri	Byadagi	0.9147	0.4254	0.5356	0.5929	78

Sl No	District	Taluka	Health index	Education Index	Standard of living Index	HDI	Rank
85	Haveri	Hangal	0.6229	0.3851	0.5197	0.4996	141
86	Haveri	Haveri	0.5469	0.4672	0.5469	0.5189	130
87	Haveri	Hirekerur	0.7508	0.4091	0.4569	0.5197	128
88	Haveri	Ranebennur	0.6836	0.4491	0.6316	0.5788	93
89	Haveri	Savanur	0.4315	0.4007	0.4217	0.4178	171
90	Haveri	Shiggaon	0.4857	0.4453	0.4685	0.4662	150
91	Kalburgi	Afzalpur	0.7317	0.4639	0.4118	0.5190	129
92	Kalburgi	Aland	0.6123	0.3861	0.3960	0.4541	156
93	Kalburgi	Chincholi	0.6736	0.2972	0.3749	0.4218	168
94	Kalburgi	Chittapur	0.6964	0.3583	0.3323	0.4360	163
95	Kalburgi	Gulbarga	0.7628	0.5792	0.4358	0.5775	95
96	Kalburgi	Jevargi	0.6216	0.3216	0.1785	0.3292	175
97	Kalburgi	Sedam	0.6730	0.2994	0.3977	0.4312	166
98	Kodagu	Madikeri	0.7058	0.4994	0.6782	0.6206	48
99	Kodagu	somawarpet	0.8006	0.5263	0.7147	0.6703	29
100	Kodagu	Virajpet	0.5720	0.5013	0.7112	0.5886	82
101	Kolara	BANGARPET	0.8804	0.5657	0.6844	0.6986	14
102	Kolara	Kolar	0.8545	0.4963	0.6934	0.6650	32
103	Kolara	Malur	0.8181	0.5151	0.6452	0.6478	37
104	Kolara	Mulabagilu	0.8193	0.4453	0.6114	0.6065	64
105	Kolara	Srinivaspura	0.8455	0.4687	0.6388	0.6326	41
106	Koppal	Gangavathi	0.6243	0.3458	0.4718	0.4670	149
107	Koppal	Koppal	0.5534	0.5409	0.4184	0.5003	139
108	Koppal	Kushtagi	0.5760	0.3390	0.4703	0.4512	158
109	Koppal	yelburga	0.4801	0.3637	0.4042	0.4133	172
110	Mandya	Krishnarajpet	0.8106	0.4292	0.6032	0.5942	77
111	Mandya	Maddur	0.8273	0.5241	0.5996	0.6382	40
112	Mandya	Malavalli	0.8304	0.4391	0.6166	0.6081	61
113	Mandya	Mandya	0.8896	0.5447	0.7014	0.6979	15
114	Mandya	Nagamangala	0.8564	0.4142	0.5973	0.5961	72
115	Mandya	Pandavpura	0.8209	0.4832	0.6279	0.6292	43
116	Mandya	Srirangapatna	0.8275	0.4668	0.6064	0.6164	51
117	Mysuru	Heggadadevanakote	0.6628	0.3656	0.6056	0.5275	123
118	Mysuru	Hunsur	0.7601	0.4315	0.6472	0.5965	71
119	Mysuru	K.R.Nagar	0.7561	0.2649	0.6386	0.5039	136
120	Mysuru	Mysuru	0.8179	0.5425	0.7156	0.6822	23
121	Mysuru	Nanjangud	0.7976	0.3573	0.6820	0.5792	92
122	Mysuru	Piriyapatna	0.6519	0.3919	0.6313	0.5443	116
123	Mysuru	T.Narasipura	0.8054	0.4167	0.6736	0.6092	60
124	Raichur	Devdurga	0.5994	0.3921	0.3759	0.4454	160
125	Raichur	Lingasugur	0.7032	0.4259	0.4842	0.5254	126
126	Raichur	Manvi	0.7446	0.2937	0.4344	0.4563	155
127	Raichur	Raichur	0.7342	0.3178	0.5406	0.5015	137

Sl No	District	Taluka	Health index	Education Index	Standard of living Index	HDI	Rank
128	Raichur	Sindhanur	0.4881	0.3326	0.4518	0.4186	170
129	Ramanagara	Channapatna	0.8884	0.5311	0.6955	0.6898	19
130	Ramanagara	Kanakpura	0.7412	0.4708	0.6539	0.6111	59
131	Ramanagara	Magadi	0.9188	0.4754	0.6906	0.6707	28
132	Ramanagara	Ramanagar	0.8939	0.5836	0.7253	0.7233	8
133	Shivamogga	Bhadravathi	0.7543	0.4092	0.6487	0.5850	86
134	Shivamogga	Hosanagar	0.6582	0.4209	0.4831	0.5115	133
135	Shivamogga	Sagara	0.8628	0.5278	0.5120	0.6155	52
136	Shivamogga	shikaripura	0.8488	0.4349	0.5105	0.5733	101
137	Shivamogga	shimoga	0.7061	0.5578	0.6161	0.6237	46
138	Shivamogga	Soraba	0.8109	0.5071	0.5342	0.6034	66
139	Shivamogga	Thirthahalli	0.8830	0.3369	0.6404	0.5754	97
140	Tumakuru	Chiknayakanahalli	0.7665	0.5289	0.6232	0.6322	42
141	Tumakuru	Gubbi	0.9171	0.5549	0.6194	0.6805	24
142	Tumakuru	Koratagere	0.6321	0.5197	0.6009	0.5822	89
143	Tumakuru	Kunigal	0.7190	0.4967	0.5909	0.5954	74
144	Tumakuru	Madhugiri	0.8038	0.4867	0.5996	0.6167	50
145	Tumakuru	Pavagada	0.8503	0.4590	0.5621	0.6031	67
146	Tumakuru	Sira	0.8806	0.5582	0.6224	0.6738	26
147	Tumakuru	Tiptur	0.7584	0.5523	0.6626	0.6523	36
148	Tumakuru	Tumkur	0.8593	0.6431	0.6855	0.7235	7
149	Tumakuru	Turuvekere	0.8844	0.5353	0.6243	0.6661	31
150	Udupi	Karkala	0.6122	0.6999	0.5668	0.6239	45
151	Udupi	Kundapur	0.5880	0.6273	0.6229	0.6125	57
152	Udupi	Udupi	0.8395	0.6634	0.6458	0.7111	9
153	Uttara_Kannada	Ankola	0.7674	0.4569	0.5438	0.5756	96
154	Uttara_Kannada	Bhatkal	0.7376	0.8154	0.6610	0.7353	6
155	Uttara_Kannada	Haliyal	0.8423	0.5295	0.4633	0.5912	79
156	Uttara_Kannada	Honnavar	0.4144	0.6062	0.6339	0.5420	117
157	Uttara_Kannada	Joida	0.6183	0.3809	0.4745	0.4817	145
158	Uttara_Kannada	Karwar	0.6693	0.6486	0.5563	0.6227	47
159	Uttara_Kannada	Kumta	0.6365	0.5540	0.5694	0.5856	85
160	Uttara_Kannada	Mundgod	0.6357	0.6273	0.5757	0.6123	58
161	Uttara_Kannada	Siddapur	0.7076	0.4577	0.5884	0.5754	98
162	Uttara_Kannada	Sirsi	0.6713	0.6321	0.6889	0.6637	33
163	Uttara_Kannada	Yellapur	0.5947	0.4666	0.6355	0.5608	109
164	Vijayanagara	Hadagali	0.4573	0.4274	0.4893	0.4573	153
165	Vijayanagara	Hagaribommanahalli	0.6829	0.4741	0.4846	0.5394	119
166	Vijayanagara	Harapanahalli	0.5723	0.4560	0.5098	0.5105	134
167	Vijayanagara	Hospet	0.8007	0.4313	0.5019	0.5576	111
168	Vijayanagara	Kudligi	0.6083	0.2195	0.3148	0.3477	174
169	Vijayapura	Basavan Bagewadi	0.4107	0.4454	0.4050	0.4200	169
170	Vijayapura	Bijapur	0.7284	0.5490	0.3872	0.5370	121

Sl No	District	Taluka	Health index	Education Index	Standard of living Index	HDI	Rank
171	Vijayapura	Indi	0.5392	0.4686	0.3623	0.4507	159
172	Vijayapura	Muddebihal	0.5589	0.4355	0.3347	0.4335	164
173	Vijayapura	Sindagi	0.4677	0.4694	0.3662	0.4316	165
174	Yadgir	Shahapur	0.7655	0.2609	0.3975	0.4298	167
175	Yadgir	Shorapur	0.7097	0.1980	0.3541	0.3678	173
176	Yadgir	Yadgir	0.5967	0.1495	0.3847	0.3250	176

Annexure - 2.4 - Aspiration Talukas • • • Education

Sl No	District	Taluka	KKR	SDG 4 multi-dimensional index	ICT Lab % - Govt	Regular teachers (%)	Graduate teachers (%)	Teachers trained in computer %	Net Enrolment Rate (NER) Secondary education	Pupil Teacher Rate Secondary	Literacy rate	SSLC Result (5 years average prior to 2020-21)	PUC Result (5 years average prior to 2020-21)	C SAS (average of 2 assesment)	Secondary Dropout rate 2020 - 21
1	Kalburgi	Afzalpur	Kalaburgi	0.5013	3.33	99.91	35.03	24.39	78.24	18.53	60.88	78.03	41.71	62.28	3.62
2	Kalburgi	Aland	Kalaburgi	0.5324	2.18	99.78	40.09	24.87	64.46	17.25	64.37	80.86	49.60	60.23	1.05
3	Dharwad	ANNIGERI	Belagavi	0.5367	0.83	100.00	35.09	16.19	71.14	16.34	73.66	79.14	59.49	63.76	4.74
4	Bidar	Aurad	Kalaburgi	0.4306	1.59	100.00	46.03	22.05	57.10	16.83	68.16	68.64	43.99	53.45	6.35
5	Vijayapura	Babaleshwara	Belagavi	0.4941	1.18	99.10	40.26	20.00	96.37	18.27	69.12	74.27	29.25	60.19	3.81
6	Chikkaballapura	Bagepalli	Bengaluru	0.5587	2.01	100.00	42.07	27.39	80.60	18.50	62.13	75.69	59.93	59.32	0.00
7	Belagavi	Bailhongal	Belagavi	0.5727	2.78	98.73	38.56	25.44	100.18	18.24	73.86	78.52	24.85	69.91	1.21
8	Ballari	Ballari	Kalaburgi	0.4846	2.72	99.36	36.51	25.03	84.30	28.32	63.40	74.22	29.16	61.62	6.88
9	Bidar	Basavakalyan	Kalaburgi	0.4484	1.76	100.00	38.18	21.17	70.76	14.78	70.17	63.83	38.78	55.01	5.54
10	Vijayapura	Basavan Bagewadi	Belagavi	0.4863	0.95	99.92	37.37	23.07	83.60	19.74	65.18	71.49	58.42	61.82	4.18
11	Bidar	Bhalki	Kalaburgi	0.4953	0.81	100.00	43.25	21.90	65.99	12.08	71.56	74.72	52.68	52.64	3.23
12	Bidar	Bidar	Kalaburgi	0.5487	1.69	100.00	45.36	22.90	75.71	11.80	74.51	67.78	44.22	55.97	2.63
13	Vijayapura	Bijapur	Belagavi	0.5317	1.18	99.10	40.26	20.00	96.37	18.27	69.12	74.27	29.25	60.19	3.81
14	Bagalkot	Bilagi	Belagavi	0.5683	1.92	98.32	41.82	27.25	91.84	19.80	65.05	73.05	71.89	66.70	1.03
15	Vijayapura	Chadachana	Belagavi	0.4541	0.38	99.51	42.93	17.74	88.09	23.08	64.49	77.01	26.21	60.75	3.75
16	Chamarajanagara	Chamarajanagara	Mysuru	0.5445	2.43	98.60	35.51	24.07	76.43	16.34	59.96	76.54	67.51	56.76	2.59
17	Kalburgi	Chincholi	Kalaburgi	0.4260	2.39	99.73	37.05	24.62	53.92	21.04	62.18	78.42	35.09	56.88	9.61
18	Bidar	Chittaguppa	Kalaburgi	0.4788	0.00	100.00	47.22	37.04	83.14	14.28	67.64	72.65	43.29	54.01	2.74
19	Kalburgi	Chittapur	Kalaburgi	0.5063	1.26	99.67	37.78	25.15	68.68	19.50	56.60	63.83	43.18	55.18	2.49
20	Vijayapura	Devara Hipparagi	Belagavi	0.4643	2.52	99.14	37.00	23.87	83.68	20.30	64.35	74.12	54.17	60.96	4.26
21	Raichur	Devdurga	Kalaburgi	0.4050	0.58	99.46	45.88	23.53	84.50	31.83	49.49	69.85	40.98	62.84	2.85
22	Gadag	Gadag	Belagavi	0.5406	4.90	99.18	37.59	26.21	85.87	15.13	75.04	70.41	31.94	60.64	2.73
23	Gadag	Gajendragad	Belagavi	0.5476	4.58	99.53	37.95	29.03	77.82	17.30	73.95	65.38	54.45	64.92	2.31
24	Koppal	Gangavathi	Kalaburgi	0.5607	2.47	98.65	39.57	28.56	78.83	32.24	66.00	77.48	66.06	65.45	3.13
25	Chikkaballapura	gauribidanur	Bengaluru	0.5539	1.85	100.00	32.65	20.26	70.89	19.70	70.15	71.44	58.31	58.08	1.05
26	Chamarajanagara	Gundlupet	Mysuru	0.5151	4.03	100.00	43.37	30.32	73.98	15.28	60.17	67.84	75.75	55.25	4.26
27	Yadgir	Gurumithakala	Kalaburgi	0.2932	2.58	100.00	34.32	22.22	67.50	27.66	48.38	60.14	46.15	54.27	7.30
28	Ballari	Hadagali	Kalaburgi	0.5282	1.31	99.18	40.94	22.98	82.79	20.35	71.23	66.32	52.02	68.35	1.33

Sl No	District	Taluka	KKR	SDG 4 multi-dimensional index	ICT Lab % - Govt	Regular teachers (%)	Graduate teachers (%)	Teachers trained in computer %	Net Enrolment Rate (NER) Secondary education	Pupil Teacher Rate Secondary	Literacy rate	SSLC Result (5 years average prior to 2020-21)	PUC Result (5 years average prior to 2020-21)	C SAS (average of 2 assesment)	Secondary Dropout rate 2020 - 21
29	Ballari	Hagaribommanahalli	Kalaburgi	0.5081	4.47	99.56	40.39	21.18	80.09	20.52	69.40	79.93	59.20	66.54	6.20
30	Haveri	Hangal	Belagavi	0.5433	0.00	100.00	44.01	22.91	75.43	19.00	77.73	69.28	75.43	58.27	5.15
31	Ballari	Harapanahalli	Kalaburgi	0.5426	2.81	99.41	34.18	17.45	86.02	21.22	68.13	88.69	54.85	62.62	1.12
32	Haveri	Haveri	Belagavi	0.5466	2.19	100.00	36.08	20.94	84.13	16.26	76.60	72.32	69.20	63.27	5.34
33	Mysuru	Heggadadevanakote	Mysuru	0.5682	0.91	98.46	33.83	23.58	68.26	18.73	63.76	80.96	64.57	60.97	1.27
34	Ballari	Hospet	Kalaburgi	0.5027	1.40	99.47	38.61	23.54	87.77	31.11	66.99	73.16	57.80	61.49	3.46
35	Bidar	Hulasuru	Kalaburgi	0.4508	1.76	100.00	38.18	21.17	70.76	14.78	70.17	63.83	38.78	55.01	5.54
36	Bidar	Humnabad	Kalaburgi	0.4768	0.00	100.00	47.22	37.04	83.14	14.28	67.64	72.65	43.29	54.01	2.74
37	Yadgir	Hunisigi	Kalaburgi	0.3289	2.52	98.77	45.71	26.19	55.45	28.70	54.83	56.55	50.34	57.46	5.96
38	Vijayapura	Indi	Belagavi	0.4672	3.24	99.91	39.10	21.34	88.09	23.08	64.49	77.01	26.21	60.75	2.51
39	Bagalkot	Jamakhandi	Belagavi	0.5431	3.13	99.33	39.09	32.00	92.27	25.55	68.26	67.98	80.40	63.15	4.60
40	Kalburgi	Jevargi	Kalaburgi	0.4722	10.23	100.00	39.00	24.94	71.81	21.06	56.55	78.40	43.09	63.66	7.67
41	Kalburgi	Kalagi	Kalaburgi	0.4654	1.82	99.70	37.41	24.89	61.30	20.27	59.39	71.13	39.14	56.03	6.05
42	Dharwad	Kalgatgi	Belagavi	0.5501	0.00	100.00	58.82	52.94	81.55	21.90	68.81	85.05	57.64	64.27	3.69
43	Bidar	Kamalanagara	Kalaburgi	0.5035	4.15	99.84	37.77	24.30	69.92	17.44	65.25	77.07	36.33	58.24	4.42
44	Kalburgi	Kamalapura	Kalaburgi	0.4286	1.59	100.00	46.03	22.05	57.10	16.83	68.16	68.64	43.99	53.45	6.35
45	Ballari	Kampli	Kalaburgi	0.4916	2.06	99.41	37.56	24.28	86.03	29.72	65.19	73.69	43.48	61.55	5.17
46	Koppal	Kanakagiri	Kalaburgi	0.5461	2.47	98.65	39.57	28.56	78.83	32.24	66.00	77.48	66.06	65.45	3.13
47	Koppal	Karatagi	Kalaburgi	0.5552	2.47	98.65	39.57	28.56	78.83	32.24	66.00	77.48	66.06	65.45	3.13
48	Belagavi	Khanapur	Belagavi	0.5578	1.09	99.31	37.17	13.66	89.19	17.05	75.65	69.99	53.95	64.10	1.70
49	Vijayapura	Kolhara	Belagavi	0.4842	0.95	99.92	37.37	23.07	83.60	19.74	65.18	71.49	58.42	61.82	4.18
50	Koppal	koppal	Kalaburgi	0.4804	2.13	99.78	41.79	27.62	74.58	26.28	70.58	74.49	57.41	60.41	8.51
51	Ballari	Kotturu	Kalaburgi	0.5157	2.68	99.61	39.80	21.35	70.12	20.38	70.09	80.87	57.69	66.02	5.20
52	Ballari	Kudligi	Kalaburgi	0.5185	0.89	99.66	39.20	21.52	60.15	20.24	70.77	81.81	56.17	65.51	4.19
53	Koppal	Kukanuru	Kalaburgi	0.4969	2.26	100.00	33.85	27.37	81.27	23.24	67.73	76.96	58.90	66.77	5.98
54	Dharwad	Kundgol	Belagavi	0.5363	1.15	100.00	47.17	28.27	69.44	21.13	74.50	71.74	55.97	63.23	3.00
55	Ballari	Kurugodu	Kalaburgi	0.4810	2.72	99.36	36.51	25.03	84.30	28.32	63.40	74.22	29.16	61.62	6.88
56	Koppal	Kushtagi	Kalaburgi	0.5273	3.99	99.61	33.89	27.54	83.27	28.42	66.76	84.01	54.35	69.21	2.47
57	Gadag	Laxmeshwar	Belagavi	0.5040	4.76	99.80	30.66	22.24	81.51	21.05	72.17	70.60	55.78	62.36	2.55
58	Raichur	Lingasugur	Kalaburgi	0.4736	2.18	99.70	43.84	26.09	70.12	20.38	60.43	73.67	55.25	68.17	4.76
59	Raichur	Manvi	Kalaburgi	0.3950	2.39	99.56	48.06	28.36	74.90	29.32	54.38	69.60	50.12	62.33	5.42
60	Raichur	Maski	Kalaburgi	0.4493	2.65	99.75	45.91	27.93	69.60	23.91	59.17	71.66	53.64	64.22	4.81
61	Vijayapura	Muddebihal	Belagavi	0.4796	1.22	98.12	35.17	20.05	80.36	20.02	68.20	74.84	51.12	60.60	0.34
62	Bagalkot	Mudhol	Belagavi	0.5394	2.82	99.57	44.19	26.71	96.68	26.42	65.32	72.59	75.77	64.29	4.36

Sl No	District	Taluka	KKR	SDG 4 multi-dimensional index	ICT Lab % - Govt	Regular teachers (%)	Graduate teachers (%)	Teachers trained in computer %	Net Enrolment Rate (NER) Secondary education	Pupil Teacher Rate Secondary	Literacy rate	SSLC Result (5 years average prior to 2020-21)	PUC Result (5 years average prior to 2020-21)	C SAS (average of 2 assesment)	Secondary Dropout rate 2020 - 21
63	Gadag	Mundargi	Belagavi	0.5205	2.56	99.22	39.69	25.58	101.98	18.77	71.97	72.14	52.19	59.96	5.24
64	Mysuru	Nanjangud	Mysuru	0.5290	2.62	95.32	37.32	24.64	64.07	16.46	62.09	82.43	61.58	60.65	5.54
65	Gadag	Naragund	Belagavi	0.5301	4.44	99.25	34.83	38.39	78.33	16.31	74.16	67.63	53.90	63.59	0.03
66	Dharwad	Navalgund	Belagavi	0.5317	0.83	100.00	35.09	16.19	71.14	16.34	73.66	79.14	59.49	63.76	4.74
67	Vijayapura	Nidagundi	Belagavi	0.4786	1.08	99.02	36.27	21.56	81.98	19.88	66.69	73.16	54.77	61.21	2.26
68	Bagalkot	Rabakavi Banahatti	Belagavi	0.5478	2.97	99.45	41.64	29.36	94.48	25.99	66.79	70.28	78.09	63.72	4.48
69	Raichur	Raichur	Kalaburgi	0.4684	4.03	100.00	40.05	19.77	74.86	25.44	65.18	70.46	45.90	65.45	2.69
70	Gadag	Rona	Belagavi	0.5318	4.58	99.53	37.95	29.03	77.82	17.30	73.95	65.38	54.45	64.92	2.31
71	Mysuru	Saraguru	Mysuru	0.5694	0.91	98.46	33.83	23.58	68.26	18.73	63.76	80.96	64.57	60.97	1.27
72	Belagavi	Savadatti	Belagavi	0.5578	1.63	100.00	40.76	18.94	95.19	26.93	68.64	77.24	59.03	68.89	2.56
73	Haveri	Savanur	Belagavi	0.5114	0.71	99.38	47.64	28.98	75.19	20.57	71.16	72.24	63.64	63.22	7.66
74	Kalburgi	Sedam	Kalaburgi	0.4458	1.49	100.00	41.69	32.98	63.02	20.11	57.53	66.04	46.52	57.34	5.94
75	Yadgir	Shahapur	Kalaburgi	0.3108	3.19	97.76	44.16	27.17	63.48	33.09	49.60	59.20	54.09	59.57	7.63
76	Kalburgi	Shahbadha	Kalaburgi	0.5028	1.26	99.67	37.78	25.15	68.68	19.50	56.60	63.83	43.18	55.18	2.49
77	Haveri	Shiggaon	Belagavi	0.5595	0.00	100.00	34.67	31.50	84.40	18.93	76.07	70.38	69.49	63.51	4.00
78	Shivamogga	shikaripura	Bengaluru	0.5557	2.16	99.88	39.35	22.92	83.87	13.51	75.77	73.18	82.83	60.58	3.60
79	Gadag	Shirahatti	Belagavi	0.4965	4.76	99.80	30.66	22.24	81.51	21.05	72.17	70.60	55.78	62.36	2.55
80	Yadgir	Shorapur	Kalaburgi	0.3119	2.52	98.77	45.71	26.19	55.45	28.70	54.83	56.55	50.34	57.46	5.96
81	Vijayapura	Sindagi	Belagavi	0.4436	4.09	98.35	36.63	24.67	83.76	20.85	63.52	76.75	49.92	60.10	4.34
82	Raichur	Sindhanur	Kalaburgi	0.4580	3.37	100.00	45.84	29.35	63.78	22.04	62.71	71.70	55.56	62.16	4.26
83	Ballari	Siraguppa	Kalaburgi	0.4051	6.00	96.92	41.03	27.18	84.93	42.05	53.26	71.01	63.80	63.72	7.15
84	Raichur	Sirivara	Kalaburgi	0.4422	3.37	100.00	45.84	29.35	63.78	22.04	62.71	71.70	55.56	62.16	4.26
85	Ballari	Sonduru	Kalaburgi	0.4732	0.93	99.83	40.00	34.96	89.20	30.64	66.81	79.74	47.05	64.68	7.44
86	Shivamogga	Soraba	Bengaluru	0.5406	1.69	100.00	35.88	23.35	84.58	18.61	78.67	77.81	69.40	61.32	2.51
87	Vijayapura	Talikote	Belagavi	0.4820	2.09	98.80	36.39	22.59	82.57	20.20	65.63	74.36	53.15	60.84	2.95
88	Vijayapura	Tikota	Belagavi	0.4981	1.18	99.10	40.26	20.00	96.37	18.27	69.12	74.27	29.25	60.19	3.81
89	Yadgir	Vadagera	Kalaburgi	0.3305	3.19	97.76	44.16	27.17	63.48	33.09	49.60	59.20	54.09	59.57	7.63
90	Yadgir	Yadgir	Kalaburgi	0.3096	2.58	100.00	34.32	22.22	67.50	27.66	48.38	60.14	46.15	54.27	7.30
91	Kalburgi	Yadrami	Kalaburgi	0.4781	10.23	100.00	39.00	24.94	71.81	21.06	56.55	78.40	43.09	63.66	7.67
92	Chamarajanagara	Yalandur	Mysuru	0.5673	2.26	99.09	37.02	22.74	66.93	15.90	61.76	82.93	54.88	61.28	1.88
93	Koppal	Yelburga	Kalaburgi	0.4815	2.26	100.00	33.85	27.37	81.27	23.24	67.73	76.96	58.90	66.77	5.98

Annexure 2.5 - Aspiration Talukas(100) – Health

Sl No	District	Taluk	Index	No. of Children 6 months to 6 yrs	No. of Children Stunted (0 - 5yrs)	No. of Children Wasted (0 - 5yrs)	No. of Children Underweight (0 - 5yrs)	No. of Children Anaemic (0 - 5yrs)	Pregnant Women Anaemic (%)	Adolescent girls anaemic (%)	Adolescent girls underweight (%)
1	Davanagere	Honnali	0.3985	16,668	6,436	4,114	6,979	8,823	602	41.30	39.22
2	Chikmagalur	Mudigere	0.4253	9,389	2,647	987	3,552	1,763	578	44.05	32.39
3	Raichur	Lingasugur	0.4363	40,504	18,546	12,518	20,181	22,649	4,127	75.35	44.61
4	Vijayanagara	Hagaribommanahalli	0.4363	18,419	7,600	4,939	6,902	11,921	1,276	59.71	45.72
5	Shimoga	Soraba	0.4366	18,355	5,345	3,154	6,954	6,348	283	46.74	50.11
6	Dakshina Kannada	Mudabidri	0.4476	9,078	1,549	3,433	2,262	5,187	295	85.71	89.29
7	Belagavi	Gokak	0.4493	44,901	15,405	9,729	16,395	14,356	6,483	62.02	40.14
8	Bidar	Hulasuru	0.4539	5,939	4,155	1,149	3,038	4,498	224	44.34	40.57
9	Gadag	Shirahatti	0.4573	9,638	4,182	932	2,496	1,856	323	25.86	39.64
10	Dakshina Kannada	Kadaba	0.4578	10,337	3,208	2,781	2,301	3,770	466	29.26	43.08
11	Uttara Kannada	Ankola	0.4578	9,730	2,350	1,988	1,754	4,230	184	37.82	41.96
12	Bidar	Bidar	0.4590	54,667	26,836	14,393	24,435	30,653	5,295	49.15	32.61
13	Bagalkot	Hungund	0.4602	19,279	11,169	3,052	9,839	10,406	931	60.45	49.92
14	Vijayapura	Devara Hipparagi	0.4616	13,524	6,596	2,906	6,759	7,754	463	43.58	60.67
15	Uttara Kannada	Karwar	0.4640	14,149	3,316	3,727	5,098	5,462	1,028	34.94	53.28
16	Bidar	Chittaguppa	0.4643	15,070	6,918	2,902	6,505	8,829	891	49.68	35.28
17	Yadgir	Gurumithakala	0.4654	26,544	17,844	3,723	13,333	10,979	1,266	58.87	61.92
18	Dakshina Kannada	Belthangady	0.4658	22,967	7,246	7,233	6,702	9,157	579	22.88	42.16
19	Dakshina Kannada	Bantwal	0.4673	34,062	9,158	10,998	9,178	14,878	574	34.29	49.27
20	Gadag	Rona	0.4676	15,787	7,424	1,551	6,647	6,653	676	57.42	48.65
21	Uttara Kannada	Siddapur	0.4678	8,791	3,185	1,614	2,859	3,866	395	50.89	34.38
22	Shimoga	Bhadravathi	0.4694	28,778	7,109	4,190	10,866	9,709	1,320	38.70	52.04
23	Vijayapura	Kolhara	0.4696	10,223	5,367	1,807	4,810	5,969	582	40.68	61.74
24	Mysuru	Saraguru	0.4697	24,489	9,649	3,701	7,601	13,255	294	47.00	45.08
25	Ballari	Kampli	0.4700	12,778	5,507	4,163	6,286	9,082	1,196	80.22	83.36
26	Hassan	Holenarasipura	0.4709	14,603	2,027	6,121	1,410	9,045	1,628	38.39	40.63
27	Bidar	Humnabad	0.4711	22,502	9,423	4,674	9,299	13,724	2,006	55.48	33.83
28	Raichur	Maski	0.4711	12,142	5,592	2,810	5,695	7,667	525	76.74	67.62
29	Belagavi	Ramadurg	0.4714	28,950	9,102	5,070	12,042	8,249	1,443	51.84	44.86
30	Uttara Kannada	Mundgod	0.4718	9,602	3,499	1,269	4,545	3,979	1,063	37.61	40.52
31	Uttara Kannada	Sirsi	0.4728	16,961	4,770	2,579	6,904	3,598	1,460	50.57	44.94
32	Chitradurga	Holalkere	0.4733	19,687	4,324	3,816	8,042	8,212	345	49.53	64.52

Sl No	District	Taluk	Index	No. of Children 6 months to 6 yrs	No. of Children Stunted (0 - 5yrs)	No. of Children Wasted (0 - 5yrs)	No. of Children Underweight (0 - 5yrs)	No. of Children Anaemic (0 - 5yrs)	Pregnant Women Anaemic (%)	Adolescent girls anaemic (%)	Adolescent girls underweight (%)
33	Chamarajanagara	Kollegala	0.4734	15,396	2,478	3,162	2,752	5,638	916	71.56	60.01
34	Chitradurga	Molakalmuru	0.4737	13,429	6,437	1,090	3,394	8,131	484	54.08	49.56
35	Tumkur	Gubbi	0.4743	22,039	9,207	2,491	5,796	12,258	801	57.48	36.24
36	Chikmagalur	Tarikere	0.4747	11,837	3,283	2,344	3,232	3,441	2,128	26.01	35.39
37	Raichur	Sindhanur	0.4749	40,343	14,229	9,443	19,131	18,811	3,396	73.73	70.30
38	Vijayanagara	Harapanahalli	0.4765	29,556	8,891	9,486	8,688	20,191	1,158	32.37	34.72
39	Uttara Kannada	Haliyal	0.4768	9,517	4,885	2,523	3,915	4,025	898	35.91	51.66
40	Tumkur	Chiknayakanahalli	0.4769	18,149	4,951	1,545	3,082	13,093	296	35.40	32.62
41	Kalaburgi	Kamalapura	0.4772	19,085	5,947	3,559	8,221	10,390	549	54.00	52.98
42	Dakshina Kannada	Puttur	0.4774	15,979	5,185	2,244	3,494	6,189	1,587	31.45	57.18
43	Belagavi	Kitthuru	0.4779	13,700	6,455	2,243	5,012	6,638	472	42.13	42.73
44	Ballari	Sonduru	0.4801	32,311	10,902	7,824	11,403	20,103	1,360	52.17	45.37
45	Chikballapur	Gudibande	0.4805	5,033	1,172	626	2,132	1,630	312	26.95	41.03
46	Haveri	Hangal	0.4805	27,223	7,828	5,606	10,222	14,237	608	45.27	19.00
47	Belagavi	Raibag	0.4810	45,301	17,001	9,160	17,132	15,505	1,894	60.65	38.62
48	Mandya	Mandya	0.4813	35,006	4,960	3,963	3,001	27,124	4,376	24.78	23.31
49	Bidar	Aurad	0.4817	17,963	6,739	4,631	8,107	10,203	870	40.01	41.07
50	Udupi	Kapu	0.4822	11,331	1,486	4,067	2,581	6,649	64	39.13	21.50
51	Dharwad	Dharwad	0.4841	46,833	30,126	11,592	23,238	31,593	514	56.93	61.08
52	Kolar	Kolar	0.4848	37,108	10,991	4,922	5,582	8,487	6,169	37.37	31.91
53	Belagavi	Bailhongal	0.4855	28,970	12,225	4,725	9,413	11,430	1,471	49.42	38.94
54	Chitradurga	Challakere	0.4855	34,935	10,362	8,411	13,282	16,159	1,435	31.08	51.89
55	Uttara Kannada	Yellapur	0.4860	7,125	4,519	971	5,205	1,664	472	62.96	18.63
56	Chamarajanagara	Gundlupet	0.4863	18,960	4,860	2,717	4,076	9,310	783	58.09	45.27
57	Uttara Kannada	Honnavar	0.4873	15,006	5,711	2,905	5,639	7,016	1,449	41.19	46.68
58	Vijayapura	Nidagundi	0.4878	10,918	5,756	1,967	5,223	6,656	184	38.61	61.64
59	Vijayapura	Sindagi	0.4883	34,612	18,349	5,876	16,547	20,368	1,295	30.26	47.92
60	Koppal	Karatagi	0.4884	15,778	7,996	4,554	7,889	10,096	821	37.75	30.07
61	Tumkur	Koratagere	0.4890	14,122	6,094	1,822	3,892	6,835	365	57.63	29.88
62	Kolar	Mulabagilu	0.4896	24,585	6,367	4,381	3,905	8,758	1,824	62.72	22.57
63	Vijayapura	Chadachana	0.4900	15,250	7,771	2,558	7,247	9,301	971	50.58	53.15
64	Vijayapura	Babaleshwara	0.4901	16,152	8,545	3,704	7,584	8,867	355	50.27	39.99
65	Bidar	Kamalanagara	0.4904	13,136	6,261	3,644	5,616	9,176	551	59.77	45.25
66	Koppal	Gangavathi	0.4906	30,102	18,398	7,668	17,608	19,873	4,395	27.09	26.48
67	Koppal	Kushtagi	0.4907	35,483	18,165	7,210	14,833	20,581	3,102	51.80	31.97
68	Shimoga	Thirthahalli	0.4928	11,894	2,906	1,993	4,888	3,507	676	47.52	46.67
69	Udupi	Hebri	0.4929	3,238	910	897	896	1,806	14	51.54	31.55

Sl No	District	Taluk	Index	No. of Children 6 months to 6 yrs	No. of Children Stunted (0 - 5yrs)	No. of Children Wasted (0 - 5yrs)	No. of Children Underweight (0 - 5yrs)	No. of Children Anaemic (0 - 5yrs)	Pregnant Women Anaemic (%)	Adolescent girls anaemic (%)	Adolescent girls underweight (%)
70	Mysuru	Mysuru	0.4934	1,20,138	41,463	24,460	39,961	56,117	20,511	34.40	27.54
71	Mysuru	T.Narasipura	0.4937	6,824	2,934	2,112	2,765	3,304	894	30.21	54.28
72	Belagavi	Khanapur	0.4942	28,896	13,729	7,139	9,903	10,413	1,142	50.35	34.75
73	Kalaburgi	Aland	0.4942	38,066	13,784	10,958	19,903	18,829	2,251	66.58	49.57
74	Bagalkot	Jamakhandi	0.4943	32,437	15,897	4,018	14,757	11,155	3,883	43.13	35.98
75	Kodagu	Madikeri	0.4955	12,692	4,118	1,914	2,904	5,670	1,809	23.85	44.05
76	Vijayanagara	Kudligi	0.4964	22,263	6,620	11,849	8,049	11,034	799	74.30	60.71
77	Ramanagar	Ramanagar	0.4968	23,956	4,827	2,658	2,346	9,137	2,605	49.44	45.69
78	Raichur	Raichur	0.4977	61,279	24,236	14,287	19,698	38,510	3,858	65.01	54.04
79	Chikballapur	Shidlagatta	0.4982	19,578	6,913	4,109	4,518	10,132	688	51.77	63.83
80	Bidar	Bhalki	0.4983	31,117	10,088	8,517	8,558	20,858	1,490	49.95	50.33
81	Belagavi	Chikkodi	0.4988	40,080	15,628	6,086	13,802	15,647	4,610	49.69	39.88
82	Bidar	Basavakalyan	0.4990	33,053	12,187	7,730	12,822	19,416	2,762	42.74	41.43
83	Kalaburgi	Chincholi	0.4999	25,474	8,121	8,218	10,944	14,173	1,324	58.74	42.92
84	Bagalkot	Bagalkote	0.5007	35,670	19,177	9,121	19,651	19,271	3,632	48.14	38.24
85	Kalaburgi	Kalagi	0.5010	14,209	8,097	3,570	9,149	8,603	726	60.85	37.37
86	Vijayanagara	Hadagali	0.5012	19,948	7,355	5,409	7,503	12,457	852	55.33	48.23
87	Vijayanagara	Hospet	0.5016	40,263	12,594	9,871	13,488	27,293	4,361	59.50	62.95
88	Chikmagalur	Koppa	0.5018	6,641	1,059	1,262	1,804	1,468	869	56.36	43.15
89	Chikballapur	Bagepalli	0.5022	16,573	6,516	4,125	5,717	6,703	874	33.02	42.11
90	Yadgir	Shorapur	0.5027	29,462	15,289	5,611	13,392	15,596	1,722	58.93	52.14
91	Bengaluru Urban	Bangalore-East	0.5031	1,23,066	7,801	45,490	49,446	11,898	11,449	81.24	88.21
92	Gadag	Gajendragad	0.5034	11,874	5,720	3,857	5,931	7,328	574	50.76	45.90
93	Gadag	Laxmeshwar	0.5034	11,946	6,814	2,418	6,172	5,824	642	51.56	44.40
94	Hassan	Hassan	0.5036	33,936	12,517	3,759	8,971	15,853	3,878	31.05	44.82
95	Udupi	Bynduru	0.5039	8,412	1,701	401	1,306	3,367	14	49.35	28.61
96	Uttara Kannada	Kumta	0.5040	13,966	3,703	3,241	4,122	8,098	1,025	35.12	47.21
97	Mandya	Pandavpura	0.5044	15,199	4,171	2,448	3,225	7,247	353	33.42	25.09
98	Shimoga	Sagara	0.5045	17,889	5,153	3,443	5,117	6,168	1,375	40.96	51.39
99	Bengaluru Rural	Doddaballapura	0.5047	28,267	8,001	10,649	5,102	17,717	1,423	43.12	56.01
100	Hassan	Alur	0.5049	6,688	1,570	1,101	1,470	3,500	305	25.19	38.94

Annexure 2.6 - Aspiration Talukas - 102 Nutrition

Sl No	District	Taluka	Index	No. of Children Stunted	Number of children wasted	Number of Underweight Children	Number of anaemic Children	Pregnant Women anaemic	Number of Anganwadis to be constructed (not in own building)
1	Tumakuru	Kunigal	0.6154	9012	194	6415	13801	1059	51
2	Yadgir	Gurumithakala	0.6224	17844	3723	13333	10979	1266	57
3	Vijayapura	Talikote	0.6420	10661	1577	9693	8454	1513	74
4	Bagalkot	Ilkal	0.6485	16441	11819	14666	15922	2073	69
5	Yadgir	Vadagera	0.6532	12119	6829	12338	15422	839	39
6	Bengaluru_Urban	Anekal	0.6548	10507	13452	15284	13796	2937	101
7	Raichur	Maski	0.6575	5592	2810	5695	7667	525	72
8	Raichur	Devdurga	0.6606	16495	8444	16685	25487	4982	102
9	Mysuru	Heggadadevanakote	0.6635	6913	1101	3133	11320	1292	6
10	Ballari	Kotturu	0.6676	5382	2075	5157	5996	455	9
11	Kalburgi	Shahbadha	0.6700	5208	4542	7299	8945	297	34
12	Bengaluru_Urban	Bangalore (North)	0.6735	171956	5468	231164	284285	30522	331
13	Kalburgi	Yadrami	0.6763	10523	2993	9280	9408	772	31
14	Kalburgi	Aland	0.6768	13784	10958	19903	18829	2251	73
15	Vijayapura	Sindagi	0.6781	18349	5876	16547	20368	1295	53
16	Chitradurga	Molakalmuru	0.6782	6437	1090	3394	8131	484	7
17	Yadgir	Shorapur	0.6786	15289	5611	13392	15596	1722	82
18	Kalburgi	Afzalpur	0.6798	12121	7212	12576	14913	2188	32
19	Dharwad	Kundgol	0.6825	10928	1086	10868	10827	420	26
20	Vijayapura	Indi	0.6844	18870	6166	17945	20451	1902	74
21	Gadag	Gajendragad	0.6845	5720	3857	5931	7328	574	31
22	Dharwad	Dharwad	0.6878	30126	11592	23238	31593	514	148
23	Raichur	Sindhanur	0.6879	14229	9443	19131	18811	3396	185
24	Koppal	Yelburga	0.6879	9297	6142	10698	11453	1209	23
25	Hassan	Channarayapatna	0.6887	7864	1612	5073	16325	1113	38
26	Tumakuru	Pavagada	0.6888	12053	3242	5766	6213	1518	20
27	Raichur	Sirivara	0.6899	8035	4125	7573	11561	461	76
28	Vijayapura	Chadachana	0.6906	7771	2558	7247	9301	971	38
29	Yadgir	Hunisigi	0.6908	16264	6377	12371	14650	1237	39
30	Vijayapura	Kolhara	0.6932	5367	1807	4810	5969	582	7
31	Yadgir	Yadgir	0.6952	16224	4679	10503	10871	5014	103
32	Ballari	Siraguppa	0.6954	10014	8700	11255	18795	1563	37
33	Bengaluru_Rural	Doddaballapura	0.6965	8001	10649	5102	17717	1423	49
34	Vijayapura	Devara Hipparagi	0.6966	6596	2906	6759	7754	463	25

Sl No	District	Taluka	Index	No. of Children Stunted	Number of children wasted	Number of Underweight Children	Number of anaemic Children	Pregnant Women anaemic	Number of Anganwadis to be constructed (not in own building)
35	Tumakuru	Madhugiri	0.6992	9396	3442	7373	11969	601	59
36	Gadag	Gadag	0.6997	22168	13026	20740	22299	4807	48
37	Dakshina_Kannada	Mudabidri	0.7000	1549	3433	2262	5187	295	1
38	Raichur	Lingasugur	0.7006	18546	12518	20181	22649	4127	107
39	Vijayapura	Muddebihal	0.7015	11772	3326	10787	12540	605	81
40	Raichur	Raichur	0.7034	24236	14287	19698	38510	3858	266
41	Koppal	Karatagi	0.7039	7996	4554	7889	10096	821	50
42	Bagalkot	Guledagudda	0.7044	6181	1519	8627	5772	1312	35
43	Ballari	Hospet	0.7045	12594	9871	13488	27293	4361	102
44	Yadgir	Shahapur	0.7063	14074	5396	11993	15712	2878	65
45	Uttara_Kannada	Yellapur	0.7069	4519	971	5205	1664	472	5
46	Kalburgi	Jevargi	0.7069	10603	6460	11151	13740	1635	51
47	Mysuru	T.Narasipura	0.7073	2934	2112	2765	3304	894	35
48	Vijayapura	Nidagundi	0.7076	5756	1967	5223	6656	184	5
49	Chitradurga	Holalkere	0.7086	4324	3816	8042	8212	345	23
50	Bengaluru_Urban	Yelahanka	0.7089	18667	2191	25140	30889	233	75
51	Bidar	Kamalanagara	0.7097	6261	3644	5616	9176	551	26
52	Tumakuru	Turuvekere	0.7104	5140	1114	3178	6941	436	58
53	Tumakuru	Gubbi	0.7110	9207	2491	5796	12258	801	29
54	Ballari	Hagaribommanahalli	0.7127	7600	4939	6902	11921	1276	17
55	Dharwad	Alnavara	0.7131	1845	932	1569	2001	174	10
56	Chitradurga	Hiriyur	0.7136	7994	6131	10276	13171	1477	49
57	Tumakuru	Koratagere	0.7141	6094	1822	3892	6835	365	53
58	Koppal	Kukanuru	0.7142	7442	3274	6923	7314	491	26
59	Ballari	Hadagali	0.7144	7355	5409	7503	12457	852	28
60	Uttara_Kannada	Karwar	0.7155	3316	3727	5098	5462	1028	62
61	Vijayapura	Basavan Bagewadi	0.7177	8774	4944	10075	10759	847	59
62	Raichur	Manvi	0.7179	7762	3837	7838	10253	904	60
63	Vijayapura	Bijapur	0.7180	22450	13845	22927	35982	6275	144
64	Kalburgi	Kalagi	0.7192	8097	3570	9149	8603	726	12
65	Tumakuru	Chiknayakanahalli	0.7193	4951	1545	3082	13093	296	36
66	Tumakuru	Sira	0.7201	12265	3353	8888	11973	1392	91
67	Uttara_Kannada	Kumta	0.7204	3703	3241	4122	8098	1025	38
68	Bidar	Hulasuru	0.7205	4155	1149	3038	4498	224	20
69	Kalburgi	Sedam	0.7206	11373	8389	13517	15868	1933	50
70	Haveri	Savanur	0.7215	6934	4335	9215	9379	926	47
71	Bagalkot	Badami	0.7218	17688	8078	18096	15212	1589	50

Sl No	District	Taluka	Index	No. of Children Stunted	Number of children wasted	Number of Underweight Children	Number of anaemic Children	Pregnant Women anaemic	Number of Anganwadis to be constructed (not in own building)
72	Koppal	Kushtagi	0.7228	18165	7210	14833	20581	3102	79
73	Tumakuru	Tiptur	0.7238	5125	1116	3869	8765	3549	45
74	Koppal	Gangavathi	0.7240	18398	7668	17608	19873	4395	106
75	Vijayapura	Babaleshwara	0.7241	8545	3704	7584	8867	355	20
76	Koppal	Kanakagiri	0.7243	6051	2489	5076	7087	699	31
77	Dakshina_Kannada	Mangalore	0.7243	22338	27714	25345	36530	5233	45
78	Ballari	Kurugodu	0.7255	4653	1392	4652	8965	472	24
79	Chamarajanagara	Kollegala(Hanur)	0.7262	4107	1236	4066	7457	369	72
80	Bidar	Bhalki	0.7263	10088	8517	8558	20858	1490	67
81	Vijayapura	Tikota	0.7264	8161	5268	10353	8061	739	26
82	Ballari	Kampli	0.7267	5507	4163	6286	9082	1196	38
83	Uttara_Kannada	Bhatkal	0.7269	2576	3210	4286	8627	1000	5
84	Uttara_Kannada	Joida	0.7286	1805	1272	2294	1836	239	15
85	Bidar	Humnabad	0.7289	9423	4674	9299	13724	2006	43
86	Chitradurga	Challakere	0.7294	10362	8411	13282	16159	1435	58
87	Dharwad	Navalgund	0.7296	5424	2142	5169	6775	497	16
88	Bagalkot	Hungund	0.7298	11169	3052	9839	10406	931	48
89	Kalburgi	Chincholi	0.7312	8121	8218	10944	14173	1324	39
90	Uttara_Kannada	Honnavar	0.7327	5711	2905	5639	7016	1449	53
91	Koppal	Koppal	0.7327	22386	9447	20908	29047	5244	51
92	Ballari	Ballari	0.7332	23393	16913	25579	45453	8234	173
93	Bidar	Aurad	0.7339	6739	4631	8107	10203	870	49
94	Bagalkot	Mudhol	0.7347	17048	7728	17391	16671	977	50
95	Mysuru	K.R.Nagar	0.7360	9007	2723	7038	12484	1274	36
96	Kodagu	Madikeri	0.7362	4118	1914	2904	5670	1809	32
97	Uttara_Kannada	Haliyal	0.7365	4885	2523	3915	4025	898	24
98	Chikkaballapura	Shidlagatta	0.7376	6913	4109	4518	10132	688	91
99	Hassan	Arkalgud	0.7385	4633	2631	3890	9722	529	11
100	Chikkaballapura	Chinthamani	0.7396	7273	9396	11542	11173	1838	95
101	Chikkaballapura	Gauribidanur	0.7420	8311	6240	7909	12158	1419	38
102	Bidar	Basavakalyan	0.7456	12187	7730	12822	19416	2762	65

Anexxure 2.7 - Mapping of HDI Indicators to the schemes of 2022-23

(Rs.crore)

HDI Indicators	Dimension	H/AC	Scheme Code	Scheme Name	Dept	2022-23(BE)	No. of Indicators addressing	Indicator-wise Budget
Percentage of HHs having access to modern cooking fuel like LPG, electricity, gas etc	Standard of Living	2408-01-102-0-01		Subsidy for Food Grains Distribution for AAY and PHH benficieries under Annabhagya Scheme	Food & Civil Supplies	2800.00	1	2800.00
		2801-80-101-1-04		Subsidy for Supply to IP Sets, BJ/KJ Consumers	Energy	12000.00	2	6000.00
Percentage of HHs having access to toilet within the premises		2215-01-198-6-01	2215-00-102-0-91	CSS-Central Share-Swachha Bharath Mission (Grameena)	RDPR	249.60	1	249.60
		2230-01-198-6-01	2230-00-101-0-01	CSS-State Share-Swachha Bharath Mission (Grameena)	RDPR	4.22	1	4.22
		2217-80-800-0-35		CSS-Central Share-Mukhya Mantri Nairmalya Yojane (Swaccha Bharat)	Urban Development	50.00	1	50.00
		2217-80-800-0-37		CSS-State Share-Mukhya Mantri Nairmalya Yojane (Swaccha Bharat)	Urban Development	200.00	1	200.00
		4215-02-101-0-01		Capital Support to Urban Sanitation Schemes	Urban Development	200.00	1	200.00
Percentage of HHs having access to water - tap water (treated and untreated), well water (covered), hand pump, tube well (bore hole) (*as per Census 2011 definition)		2215-01-102-9-08		CSS-Central Share-Jal Jeevan Mission (Rural Water Supply Scheme)	RDPR	2500.00	1	2500.00
		2215-01-102-9-10		CSS-State Share-Jal Jeevan Mission (Rural Water Supply Scheme)	RDPR	2700.00	1	2700.00
		4215-01-102-2-01		Rural Water Supply Scheme including Jaladhare	RDPR	278.39	1	278.39
		2215-01-101-0-01		Support to BWSSB to Provide Drinking Water to Slums	Urban Development	6.00	1	6.00
		6215-01-190-2-86		Bengaluru Water Supply and Sewerage Project(BWSSP) Phase III (Cauvery Water Supply Scheme-Stage-V)-EAP	Urban Development	1341.84	1	1341.84
		2217-05-191-1-87		Karnataka Integrated Urban Water Management Investment Programme-Jalasiri EAP	Urban Development	250.00	1	250.00
		4215-02-190-0-03		Karnataka Urban Water Supply Modernisation Project-EAP	Urban Development	400.00	1	400.00
		4215-01-101-0-01		Capital Support to Urban Water Supply Schemes	Urban Development	400.00	1	400.00
Percentage of HHs having electricity		2801-80-101-1-04		Subsidy for Supply to IP Sets, BJ/KJ Consumers	Energy	12000.00	2	6000.00
Percentage of HHs having pucca houses (*good houses as per 2011 definition) (computed based on permanency in		2216-02-101-0-07		Vajpayee Urban Housing Scheme	Housing	400.00	1	400.00
		2216-03-104-0-01		Ashraya-Basava Vasathi	Housing	1000.00	1	1000.00
		2216-03-104-0-03		Dr. B.R.Ambedkar Nivas Scheme	Housing	1000.00	1	1000.00

roof and wall)		2216-03-190-0-01		Rajiv Gandhi Rural Housing Corporation	Housing	8.64	1	8.64
		2216-80-198-6-02	2216-00-102-0-14	CSS-Central Share-Pradhan Mantri Awas Yojane Grameena	Housing	100.00	1	100.00
Percentage of non-agricultural workers (main + marginal) to total workers								
Per Capita Income (GDP) at Taluk level at current prices (2008-09)								
Children (0-5 years) died for 1000 live births	Health	2210-03-800-0-18		CSS-Central Share-National Health Mission (Rural)	Health	890.21	2	445.11
		2210-03-800-0-19		CSS-State Share-National Urban Health Mission(NUHM)	Health	38.35	2	19.17
Maternal deaths per 100000 live births		2210-80-101-0-01		Ayushman Bharata - Pradhana Mantri Jana Arogya Yojane(PMJAY)	Health	1039.28	1	1039.28
		2210-03-800-0-18		CSS-Central Share-National Health Mission (Rural)	Health	890.21	2	445.11
		2210-03-800-0-19		CSS-State Share-National Urban Health Mission(NUHM)	Health	38.35	2	19.17
Male Literacy Rate	Education	2202-01-113-0-02		CSS-Central Share-Samagra Shikshana Abhiyana- Karnataka	Primary & Secondary Education	144.00	2	72.00
		2202-01-113-0-01		CSS-State Share-Samagra Shikshana Abhiyana- Karnataka	Primary & Secondary Education	134.23	2	67.12
Female Literacy Rate		2202-01-113-0-02		CSS-Central Share-Samagra Shikshana Abhiyana- Karnataka	Primary & Secondary Education	144.00	2	72.00
		2202-01-113-0-01		CSS-State Share-Samagra Shikshana Abhiyana- Karnataka	Primary & Secondary Education	134.23	2	67.12
Gross Enrolment Rate (Elementary)		2202-01-109-0-03		Vidya Vikasa Scheme-Incentive for Students	Primary & Secondary Education	363.27	1	363.27
		2202-01-196-6-02	2202-00-101-0-20	CSS-Central Share-Mid Day Meal Program (MDM)	Primary & Secondary Education	526.76	1	526.76
		2202-01-196-6-03	2202-00-101-0-21	CSS-State Share-Mid Day Meal Program (MDM)	Primary & Secondary Education	432.82	1	432.82
		2202-01-102-0-05		Reimbursement of fees to Private Schools under RTE	Primary & Secondary Education	500.00	1	500.00
Gross Enrolment Rate (Secondary)		4202-01-202-1-05		Infrastructure facilities for High Schools and PU Colleges	Primary & Secondary Education	258.34	1	258.34
		4202-01-202-2-01		Equipment and Furniture for High School and PU-College	Primary & Secondary Education	50.00	1	50.00
		2202-80-800-0-47		Quality Assurance Initiatives	Primary & Secondary Education	4.00	1	4.00
		2202-80-800-0-48		Education Quality Improvement Program	Primary & Secondary Education	6.00	1	6.00
		2202-80-800-0-49		Student Motivation Initiative	Primary & Secondary Education	5.00	1	5.00
Grand Total								**30280.94**

Annexure-2.8 Talukas with Multiple Deprivations (Nutrition, Health, & Education)

Sl No	SDG 2 - Zero Hunger		SDG 3 - Good Health and Well Being		SDG 4 - Quality Education	
	District	Taluka	District	Taluka	District	Taluka
1	**Bagalkot**	Hungund	Bagalkot	Hungund	Bagalkot	Hungund
2	**Ballari**	Sonduru	Ballari	Sonduru	Ballari	Sonduru
3		Hospet		Hospet		Kurugodu
4		Kurugodu	**Belagavi**	Kitthuru	**Belagavi**	Nippani
5	**Belagavi**	Athani		Raibag		Athani
6		Bailhongal		Bailhongal		Raibag
7		Chikkodi		Khanapur	**Bengaluru (Rural)**	Nelamangala
8		Hukkeri		Chikkodi	**Bengaluru (Urban)**	Anekal
9		Kagavada	**Bengaluru (Rural)**	Doddaballapura		Bangalore-East
10		Khanapur		Hoskote	**Bidar**	Aurad
11		Kitthuru	**Bengaluru (Urban)**	Bangalore-East		Bidar
12		Raibag	**Bidar**	Hulasuru		Chittaguppa
13	**Bengaluru (Rural)**	Hoskote		Bidar		Hulasuru
14		Nelamangala		Chittaguppa		Humnabad
15				Humnabad	**Chamarajanagara**	Yalandur
16	**Bidar**	Aurad		Aurad		Kollegala(Hanur)
17		Bhalki		Kamalanagara		Gundlupet
18		Chittaguppa		Bhalki	**Chitradurga**	Challakere
19		Kamalanagara		Basavakalyan		Molakalmuru
Sl No	**SDG 2 - Zero Hunger**		**SDG 3 - Good Health and Well Being**		**SDG 4 - Quality Education**	
	District	**Taluka**	**District**	**Taluka**	**District**	**Taluka**
20	**Chamarajanagara**	Gundlupet	**Chamarajanagara**	Kollegala	**Dakshina Kannada**	Mangalore
21	**Chikkaballapura**	Shidlagatta		Gundlupet		Bantwal
22	**Chitradurga**	Challakere		Yalandur		Belthangady
23		Molakalmuru	**Chikkaballapura**	Shidlagatta		Kadaba
24	**Dakshina Kannada**	Bantwal	**Chitradurga**	Molakalmuru	**Dharwad**	Dharwad
25		Belthangady		Challakere	**Gadag**	Rona
26		Mangalore	**Dakshina Kannada**	Mudabidri		Shirahatti
27		Mudabidri		Belthangady	**Haveri**	Shiggaon

28	**Gadag**	Rona		Bantwal		Ranebennur
29	**Hassan**	Hassan	**Davanagere**	Davanagere		Hangal
30		Hangal	**Dharwad**	Dharwad	**Kalburgi**	Chittapur
31	**Haveri**	Haveri	**Gadag**	Rona		Jevargi
32		Savanur	**Hassan**	Hassan	**Kodagu**	Somawarpet
33	**Kalburgi**	Chincholi		Hangal	**Kolara**	K.G.F
34		Kalagi	**Haveri**	Haveri		Kolar
35	**Kodagu**	Madikeri		Savanur	**Koppal**	Kanakagiri
36		Somawarpet		Chincholi		Mandya
37	**Kolara**	Kolar	**Kalburgi**	Kalagi	**Mandya**	Srirangapatna
38	**Koppal**	Kanakagiri		Jevargi		Krishnarajpet
39		Krishnarajpet	**Kodagu**	Madikeri		Pandavpura
40	**Mandya**	Mandya	**Kolara**	Kolar	**Mysuru**	Nanjangud
41		Pandavpura		Mandya	**Raichur**	Lingasugur
42	**Mysuru**	Nanjangud	**Mandya**	Pandavpura		Devdurga
43		T.Narasipura		Srirangapatna	**Shivamogga**	Hosanagar
44		Manvi	**Mysuru**	T.Narasipura		Sagara
45	**Raichur**	Raichur		Lingasugur		Bhadravathi
46		Sindhanur	**Raichur**	Sindhanur	**Tumakuru**	Kunigal
47	**Ramanagara**	Ramanagar		Raichur		Koratagere
48		Bhadravathi		Manvi		Kapu
49	**Shivamogga**	Hosanagar	**Ramanagara**	Ramanagar	**Udupi**	Bynduru
50		Sagara	**Shivamogga**	Bhadravathi		Bramhavara
51	**Udupi**	Bramhavara		Sagara		Joida
52		Bynduru		Gubbi		Karwar
53		Dandelli	**Tumakuru**	Koratagere	**Uttara Kannada**	Ankola
54		Haliyal		Kunigal		Kumta
55	**Uttara Kannada**	Honnavar	**Udupi**	Kapu		Honnavar
56		Joida		Bynduru		Yellapur
57		Kumta		Ankola	**Vijayapura**	Devara Hipparagi
58		Mundgod		Karwar		Bijapur
59		Yellapur		Mundgod		Talikote
60		Bijapur	**Uttara Kannada**	Haliyal		Indi
61	**Vijayapura**	Chadachana		Yellapur	**Yadgir**	Yadgir
62		Indi		Honnavar		Gurumithakala
63		Nidagundi		Kumta		
64		Shorapur		Dandelli		
65	**Yadgir**	Yadgir		Devara Hipparagi		
66				Nidagundi		
67			**Vijayapura**	Chadachana		
68				Bijapur		
69				Talikote		
70			**Yadgir**	Gurumithakala		
71				Shorapur		

Annexure 2.9: Malnutrition Index at Taluka level

District	Taluka	Child Malnutrition	PWLM Malnutrition	Adolescent Malnutrition	Malnutrition Index	Quartile	Rank
Udupi	Karkala	0.0681	0.0939	0.2605	0.1408	Best Performing	1
Davanagere	Channagiri	0.1370	0.0959	0.2569	0.1633	Best Performing	2
Udupi	Kundapur	0.1147	0.0830	0.2991	0.1656	Best Performing	3
Gadag	Shirahatti	0.1642	0.0823	0.2637	0.1701	Best Performing	4
Mandya	Krishnarajpet	0.1325	0.1004	0.3006	0.1778	Best Performing	5
Kolara	Kolar	0.1277	0.1425	0.2643	0.1782	Best Performing	6
Udupi	Bynduru	0.1570	0.1364	0.2446	0.1793	Best Performing	7
Mandya	Nagamangala	0.1305	0.1484	0.2648	0.1812	Best Performing	8
Mandya	Mandya	0.1283	0.1406	0.2795	0.1828	Best Performing	9
Chamarajanagara	Chamarajanagara	0.1636	0.0991	0.2859	0.1828	Best Performing	10
Mandya	Pandavpura	0.1564	0.1261	0.2685	0.1837	Best Performing	11
Chitradurga	hosadurga	0.2311	0.1121	0.2246	0.1893	Best Performing	12
Dakshina_Kannada	Sulya	0.1578	0.1182	0.2924	0.1895	Best Performing	13
Ramanagara	Kanakpura	0.1091	0.1417	0.3269	0.1926	Best Performing	14
Chikkamagaluru	Narasimharajapura	0.1614	0.1492	0.2719	0.1942	Best Performing	15
Kolara	Malur	0.1700	0.1290	0.2869	0.1953	Best Performing	16
Uttara_Kannada	Ankola	0.1945	0.1151	0.2807	0.1968	Best Performing	17
Dakshina_Kannada	Kadaba	0.1679	0.1320	0.2993	0.1998	Best Performing	18
Chikkamagaluru	Mudigere	0.1960	0.1318	0.2760	0.2012	Best Performing	19
Kolara	BANGARPET	0.1672	0.1278	0.3102	0.2017	Best Performing	20
Dakshina_Kannada	Puttur	0.2033	0.0996	0.3051	0.2027	Best Performing	21
Udupi	Kapu	0.1382	0.0932	0.3767	0.2027	Best Performing	22
Haveri	Ranebennur	0.2205	0.1368	0.2519	0.2031	Best Performing	23
Mandya	Maddur	0.1963	0.1231	0.2915	0.2036	Best Performing	24
Shivamogga	Bhadravathi	0.1881	0.0885	0.3344	0.2037	Best Performing	25
Haveri	Hirekerur	0.2560	0.1449	0.2136	0.2048	Best Performing	26
Mandya	Malavalli	0.1555	0.1245	0.3354	0.2051	Best Performing	27
Ramanagara	Magadi	0.0788	0.1836	0.3537	0.2054	Best Performing	28
Tumakuru	Tumkur	0.1736	0.1794	0.2689	0.2073	Best Performing	29
Udupi	Hebri	0.1898	0.1178	0.3190	0.2088	Best Performing	30
Kolara	Mulabagilu	0.1587	0.1448	0.3260	0.2099	Best Performing	31
Shivamogga	Thirthahalli	0.1550	0.1087	0.3667	0.2101	Best Performing	32
Udupi	Udupi	0.1120	0.1103	0.4092	0.2105	Best Performing	33
Davanagere	Jagaluru	0.1997	0.1293	0.3048	0.2113	Best Performing	34

District	Taluka	Child Malnutrition	PWLM Malnutrition	Adolescent Malnutrition	Malnutrition Index	Quartile	Rank
Mandya	Srirangapatna	0.1936	0.1254	0.3160	0.2117	Best Performing	35
Haveri	Ratteehalli	0.1705	0.1614	0.3038	0.2119	Best Performing	36
Chikkamagaluru	Sringeri	0.1729	0.1244	0.3387	0.2120	Best Performing	37
Dakshina_Kannada	Belthangady	0.2360	0.1136	0.2867	0.2121	Best Performing	38
Davanagere	Harihar	0.2115	0.1438	0.2815	0.2123	Best Performing	39
Chikkamagaluru	Tarikere	0.1951	0.1659	0.2781	0.2130	Best Performing	40
Chikkamagaluru	Koppa	0.1744	0.1130	0.3520	0.2131	Best Performing	41
Kolara	Srinivaspura	0.1756	0.1637	0.3002	0.2131	Best Performing	42
Kolara	K.G.F	0.1995	0.1367	0.3102	0.2155	Best Performing	43
Haveri	Byadagi	0.2168	0.1066	0.3232	0.2155	Best Performing	44
Ramanagara	Ramanagar	0.0904	0.1554	0.4037	0.2165	Best Performing	45
Shivamogga	Hosanagar	0.1777	0.1270	0.3468	0.2172	Best Performing	46
Haveri	Shiggaon	0.1905	0.1637	0.2975	0.2172	Best Performing	47
Davanagere	Honnali	0.2519	0.1131	0.2933	0.2195	Best Performing	48
Dakshina_Kannada	Bantwal	0.2327	0.1137	0.3172	0.2212	Best Performing	49
Mysuru	Piriyapatna	0.1475	0.2024	0.3161	0.2220	Best Performing	50
Shivamogga	shikaripura	0.1652	0.1454	0.3568	0.2225	Best Performing	51
Haveri	Hangal	0.2372	0.1437	0.2896	0.2235	Best Performing	52
Bengaluru_Rural	Nelamangala	0.2493	0.1275	0.2948	0.2239	Best Performing	53
Belagavi	Chikkodi	0.2032	0.1366	0.3325	0.2241	Best Performing	54
Belagavi	Nippani	0.1873	0.1337	0.3517	0.2243	Best Performing	55
Chikkaballapura	chikballapur	0.1803	0.1091	0.3834	0.2243	Best Performing	56
Chitradurga	chitradurga	0.2037	0.1418	0.3279	0.2244	Best Performing	57
Belagavi	Kagavada	0.2075	0.1298	0.3363	0.2245	Good Performing	58
Chikkaballapura	gudibande	0.2066	0.1068	0.3663	0.2266	Good Performing	59
Belagavi	Belagavi	0.1611	0.1684	0.3516	0.2270	Good Performing	60
Belagavi	Athani	0.2072	0.1351	0.3394	0.2272	Good Performing	61
Haveri	Haveri	0.2557	0.1560	0.2715	0.2277	Good Performing	62
Uttara_Kannada	Sirsi	0.1867	0.1215	0.3756	0.2279	Good Performing	63
Hassan	Hassan	0.2109	0.1278	0.3457	0.2281	Good Performing	64
Shivamogga	Soraba	0.1979	0.1430	0.3439	0.2283	Good Performing	65
Chikkamagaluru	Kadur	0.2049	0.1400	0.3403	0.2284	Good Performing	66
Shivamogga	shimoga	0.2555	0.1129	0.3181	0.2288	Good Performing	67
Bagalkot	RABAKAVI BANAHATTI	0.2687	0.1383	0.2802	0.2291	Good Performing	68
Shivamogga	Sagara	0.1753	0.1437	0.3710	0.2300	Good Performing	69
Hassan	Sakleshpura	0.2092	0.1191	0.3624	0.2302	Good Performing	70

District	Taluka	Child Malnutrition	PWLM Malnutrition	Adolescent Malnutrition	Malnutrition Index	Quartile	Rank
Mysuru	Mysuru	0.1971	0.1394	0.3546	0.2304	Good Performing	71
Bagalkot	Jamakhandi	0.2650	0.0964	0.3313	0.2309	Good Performing	72
Gadag	Mundargi	0.2360	0.0994	0.3597	0.2317	Good Performing	73
Hassan	Alur	0.1931	0.1393	0.3645	0.2323	Good Performing	74
Gadag	Rona	0.2271	0.1080	0.3618	0.2323	Good Performing	75
Mysuru	Nanjangud	0.1492	0.2146	0.3342	0.2327	Good Performing	76
Belagavi	Bailhongal	0.2210	0.1396	0.3391	0.2332	Good Performing	77
Ramanagara	Channapatna	0.1691	0.1282	0.4044	0.2339	Good Performing	78
Belagavi	Savadatti	0.2024	0.1285	0.3710	0.2340	Good Performing	79
Dharwad	Kalgatgi	0.2140	0.1574	0.3308	0.2341	Good Performing	80
Davanagere	Davanagere	0.1900	0.1263	0.3868	0.2344	Good Performing	81
Belagavi	Ramadurg	0.1905	0.1304	0.3858	0.2355	Good Performing	82
Ballari	Sonduru	0.2200	0.1331	0.3539	0.2357	Good Performing	83
Udupi	Bramhavara	0.1562	0.0891	0.4624	0.2359	Good Performing	84
Bengaluru_Urban	Bangalore-South	0.1281	0.0888	0.4943	0.2371	Good Performing	85
Bengaluru_Rural	Devanahalli	0.2431	0.1400	0.3286	0.2373	Good Performing	86
Chamarajanagara	Gundlupet	0.1559	0.1165	0.4394	0.2373	Good Performing	87
Chikkamagaluru	Chikmagalur	0.1854	0.1249	0.4052	0.2385	Good Performing	88
Hassan	Holenarasipura	0.2283	0.1453	0.3446	0.2394	Good Performing	89
Belagavi	Raibag	0.2146	0.1546	0.3511	0.2401	Good Performing	90
Kodagu	Virajpet	0.1648	0.1600	0.3956	0.2401	Good Performing	91
Bidar	Bidar	0.2852	0.1356	0.3013	0.2407	Good Performing	92
Uttara_Kannada	Siddapur	0.2293	0.1455	0.3476	0.2408	Good Performing	93
Mysuru	Hunsur	0.1895	0.1868	0.3489	0.2417	Good Performing	94
Hassan	Arsikere	0.1590	0.1592	0.4076	0.2419	Good Performing	95
Uttara_Kannada	Dandelli	0.2359	0.1240	0.3685	0.2428	Good Performing	96
Belagavi	Khanapur	0.2496	0.1407	0.3392	0.2432	Good Performing	97
Chamarajanagara	Yalandur	0.1676	0.1135	0.4487	0.2433	Good Performing	98
Hassan	Belur	0.2130	0.1378	0.3798	0.2436	Good Performing	99
Belagavi	Kitthuru	0.2422	0.1598	0.3294	0.2438	Good Performing	100
Belagavi	Mudalagi	0.2256	0.1641	0.3423	0.2440	Good Performing	101
Belagavi	Hukkeri	0.2114	0.1673	0.3539	0.2442	Good Performing	102
Gadag	Naragund	0.3061	0.0790	0.3483	0.2444	Good Performing	103
Bagalkot	Bagalkote	0.2935	0.1187	0.3216	0.2446	Good Performing	104
Chikkamagaluru	Ajjampura	0.2074	0.1485	0.3783	0.2447	Good Performing	105
Belagavi	Gokak	0.2250	0.1650	0.3456	0.2452	Good Performing	106
Uttara_Kannada	Mundgod	0.2631	0.0979	0.3757	0.2456	Good Performing	107

District	Taluka	Child Malnutrition	PWLM Malnutrition	Adolescent Malnutrition	Malnutrition Index	Quartile	Rank
Chikkaballapura	Bagepalli	0.2322	0.1054	0.4018	0.2465	Good Performing	108
Ballari	Harapanahalli	0.2410	0.0947	0.4065	0.2474	Good Performing	109
Bagalkot	Bilagi	0.2588	0.1062	0.3773	0.2474	Good Performing	110
Bengaluru_Rural	Hoskote	0.3335	0.1366	0.2735	0.2479	Good Performing	111
Dharwad	Hubli	0.2670	0.1099	0.3731	0.2500	Good Performing	112
Gadag	Laxmeshwar	0.2590	0.1094	0.3816	0.2500	Good Performing	113
Bidar	Basavakalyan	0.2759	0.1422	0.3349	0.2510	Bad Performing	114
Chikkaballapura	gauribidanur	0.2271	0.1546	0.3748	0.2522	Bad Performing	115
Kodagu	Madikeri	0.1971	0.1716	0.3889	0.2525	Bad Performing	116
Bagalkot	Mudhol	0.3072	0.1201	0.3319	0.2530	Bad Performing	117
Bidar	Aurad	0.2856	0.1529	0.3212	0.2532	Bad Performing	118
Ballari	Ballari	0.2674	0.1696	0.3239	0.2537	Bad Performing	119
Kodagu	somawarpet	0.1780	0.1659	0.4193	0.2544	Bad Performing	120
Chitradurga	Challakere	0.2528	0.1490	0.3643	0.2554	Bad Performing	121
Uttara_Kannada	Joida	0.2552	0.1743	0.3368	0.2554	Bad Performing	122
Uttara_Kannada	Kumta	0.2500	0.1461	0.3712	0.2557	Bad Performing	123
Vijayapura	Basavan Bagewadi	0.2639	0.1479	0.3617	0.2578	Bad Performing	124
Chamarajanagara	Kollegala	0.1403	0.1181	0.5157	0.2580	Bad Performing	125
Uttara_Kannada	Karwar	0.1787	0.1541	0.4415	0.2581	Bad Performing	126
Chikkaballapura	Chinthamani	0.2664	0.1521	0.3628	0.2604	Bad Performing	127
Hassan	Arkalgud	0.2416	0.1471	0.3958	0.2615	Bad Performing	128
Chikkaballapura	Shidlagatta	0.2578	0.0934	0.4360	0.2624	Bad Performing	129
Uttara_Kannada	Haliyal	0.2756	0.1147	0.4003	0.2635	Bad Performing	130
Ballari	Kudligi	0.2051	0.1442	0.4419	0.2638	Bad Performing	131
Mysuru	K.R.Nagar	0.2126	0.1979	0.3816	0.2640	Bad Performing	132
Kalburgi	Gulbarga	0.2554	0.1334	0.4071	0.2653	Bad Performing	133
Bengaluru_Urban	Bangalore-East	0.2355	0.0670	0.4957	0.2661	Bad Performing	134
Mysuru	Saraguru	0.2107	0.2204	0.3693	0.2668	Bad Performing	135
Koppal	koppal	0.3269	0.1359	0.3390	0.2673	Bad Performing	136
Uttara_Kannada	Honnavar	0.2711	0.1357	0.3949	0.2673	Bad Performing	137
Kalburgi	Chincholi	0.2832	0.1401	0.3831	0.2688	Bad Performing	138
Bagalkot	Hungund	0.2795	0.1432	0.3877	0.2702	Bad Performing	139
Dharwad	Navalgund	0.2963	0.1392	0.3757	0.2704	Bad Performing	140
Davanagere	Nyamati	0.3431	0.1300	0.3386	0.2706	Bad Performing	141
Bidar	Humnabad	0.2937	0.1947	0.3248	0.2711	Bad Performing	142
Bidar	Chittaguppa	0.3028	0.1719	0.3394	0.2714	Bad Performing	143

District	Taluka	Child Malnutrition	PWLM Malnutrition	Adolescent Malnutrition	Malnutrition Index	Quartile	Rank
Uttara_Kannada	Bhatkal	0.2266	0.1569	0.4357	0.2731	Bad Performing	144
Ballari	Kampli	0.2354	0.1494	0.4352	0.2733	Bad Performing	145
Vijayapura	Tikota	0.3717	0.1227	0.3265	0.2736	Bad Performing	146
Bidar	Bhalki	0.2633	0.1919	0.3658	0.2737	Bad Performing	147
Chamarajanagara	Kollegala(Hanur	0.2064	0.1475	0.4675	0.2738	Bad Performing	148
Ballari	Kurugodu	0.2986	0.1875	0.3373	0.2745	Bad Performing	149
Dakshina_Kannada	Mangalore	0.2532	0.1284	0.4454	0.2757	Bad Performing	150
Koppal	Kanakagiri	0.3298	0.1350	0.3625	0.2757	Bad Performing	151
Vijayapura	Babaleshwara	0.3289	0.1397	0.3593	0.2759	Bad Performing	152
Koppal	Gangavathi	0.3758	0.1236	0.3287	0.2760	Bad Performing	153
Tumakuru	Tiptur	0.2063	0.1865	0.4358	0.2762	Bad Performing	154
Koppal	Kushtagi	0.3037	0.1392	0.3888	0.2772	Bad Performing	155
Bagalkot	Badami	0.3684	0.1167	0.3495	0.2782	Bad Performing	156
Haveri	Savanur	0.3048	0.1374	0.3934	0.2785	Bad Performing	157
Kalburgi	Sedam	0.3144	0.1432	0.3807	0.2794	Bad Performing	158
Bidar	Hulasuru	0.3654	0.1777	0.2954	0.2795	Bad Performing	159
Dharwad	ANNIGERI	0.3310	0.1162	0.3917	0.2796	Bad Performing	160
Tumakuru	Sira	0.2584	0.1468	0.4347	0.2799	Bad Performing	161
Tumakuru	Chiknayakanahalli	0.2682	0.1543	0.4196	0.2807	Bad Performing	162
Kalburgi	Kalagi	0.3532	0.1764	0.3127	0.2808	Bad Performing	163
Vijayapura	Bijapur	0.2827	0.1265	0.4366	0.2820	Bad Performing	164
Raichur	Manvi	0.2376	0.1263	0.4826	0.2821	Bad Performing	165
Kalburgi	Kamalapura	0.2453	0.1827	0.4189	0.2823	Bad Performing	166
Kalburgi	Chittapur	0.3412	0.1476	0.3647	0.2845	Bad Performing	167
Ballari	Hadagali	0.2342	0.1654	0.4571	0.2856	Bad Performing	168
Koppal	Kukanuru	0.3299	0.1362	0.3912	0.2858	Bad Performing	169
Tumakuru	Koratagere	0.2470	0.1783	0.4324	0.2859	Worst Performing	170
Chitradurga	hiriyur	0.2705	0.1757	0.4130	0.2864	Worst Performing	171
Dharwad	Alnavara	0.3595	0.1395	0.3618	0.2869	Worst Performing	172
Ballari	Hagaribommanahalli	0.2608	0.1573	0.4437	0.2873	Worst Performing	173
Tumakuru	Gubbi	0.2441	0.1451	0.4777	0.2890	Worst Performing	174
Tumakuru	Turuvekere	0.2022	0.2327	0.4337	0.2896	Worst Performing	175
Bidar	Kamalanagara	0.2964	0.1645	0.4099	0.2903	Worst Performing	176
Bengaluru_Urban	Yelahanka	0.3021	0.1387	0.4325	0.2911	Worst Performing	177
Chitradurga	holalkere	0.2265	0.1322	0.5154	0.2914	Worst Performing	178
Vijayapura	Nidagundi	0.2844	0.1522	0.4408	0.2924	Worst Performing	179

District	Taluka	Child Malnutrition	PWLM Malnutrition	Adolescent Malnutrition	Malnutrition Index	Quartile	Rank
Mysuru	T.Narasipura	0.2771	0.2059	0.3952	0.2927	Worst Performing	180
Kalburgi	Jevargi	0.3229	0.1458	0.4105	0.2931	Worst Performing	181
Uttara_Kannada	Yellapur	0.3933	0.1197	0.3662	0.2931	Worst Performing	182
Yadgir	Shahapur	0.3269	0.1270	0.4274	0.2937	Worst Performing	183
Ballari	Hospet	0.2451	0.1241	0.5173	0.2955	Worst Performing	184
Bagalkot	Guledagudda	0.3666	0.1505	0.3696	0.2956	Worst Performing	185
Koppal	Karatagi	0.3749	0.1443	0.3692	0.2961	Worst Performing	186
Raichur	Raichur	0.2801	0.1536	0.4562	0.2966	Worst Performing	187
Vijayapura	Muddebihal	0.2797	0.1552	0.4605	0.2985	Worst Performing	188
Raichur	Lingasugur	0.2800	0.1475	0.4706	0.2994	Worst Performing	189
Dakshina_Kannada	Mudabidri	0.2598	0.1292	0.5111	0.3000	Worst Performing	190
Gadag	Gadag	0.3087	0.1231	0.4691	0.3003	Worst Performing	191
Tumakuru	Madhugiri	0.2761	0.1622	0.4640	0.3008	Worst Performing	192
Vijayapura	Devara Hipparagi	0.2928	0.1624	0.4550	0.3034	Worst Performing	193
Bengaluru_Rural	Doddaballapura	0.2642	0.2122	0.4341	0.3035	Worst Performing	194
Ballari	Siraguppa	0.3158	0.1620	0.4361	0.3046	Worst Performing	195
Yadgir	Yadgir	0.2459	0.1640	0.5046	0.3048	Worst Performing	196
Vijayapura	Kolhara	0.2940	0.1634	0.4629	0.3068	Worst Performing	197
Yadgir	Hunisigi	0.3358	0.1212	0.4707	0.3092	Worst Performing	198
Vijayapura	Chadachana	0.3157	0.1639	0.4487	0.3094	Worst Performing	199
Raichur	Sirivara	0.2791	0.1534	0.4978	0.3101	Worst Performing	200
Tumakuru	Pavagada	0.2641	0.1511	0.5185	0.3112	Worst Performing	201
Hassan	Channarayapatna	0.2835	0.1894	0.4611	0.3113	Worst Performing	202
Koppal	yelburga	0.3727	0.1426	0.4211	0.3121	Worst Performing	203
Raichur	Sindhanur	0.2807	0.1280	0.5277	0.3121	Worst Performing	204
Dharwad	Dharwad	0.3757	0.1160	0.4449	0.3122	Worst Performing	205
Gadag	Gajendragad	0.3781	0.1840	0.3845	0.3155	Worst Performing	206
Vijayapura	Indi	0.3136	0.1673	0.4661	0.3156	Worst Performing	207
Dharwad	Kundgol	0.4170	0.1666	0.3689	0.3175	Worst Performing	208
Kalburgi	Afzalpur	0.3253	0.1517	0.4836	0.3202	Worst Performing	209
Yadgir	Shorapur	0.3101	0.1541	0.5000	0.3214	Worst Performing	210
Chitradurga	Molakalmuru	0.3031	0.2083	0.4540	0.3218	Worst Performing	211
Vijayapura	Sindagi	0.3094	0.1819	0.4743	0.3219	Worst Performing	212
Kalburgi	Aland	0.3345	0.1691	0.4660	0.3232	Worst Performing	213
Kalburgi	Yadrami	0.3897	0.1848	0.3965	0.3237	Worst Performing	214
Bengaluru_Urban	Bangalore (North	0.4105	0.1639	0.4051	0.3265	Worst Performing	215
Kalburgi	Shahbadha	0.4155	0.1430	0.4315	0.3300	Worst Performing	216

District	Taluka	Child Malnutrition	PWLM Malnutrition	Adolescent Malnutrition	Malnutrition Index	Quartile	Rank
Ballari	Kotturu	0.3355	0.1708	0.4907	0.3324	Worst Performing	217
Mysuru	Heggadadevanakote	0.2417	0.3517	0.4161	0.3365	Worst Performing	218
Raichur	Devdurga	0.2893	0.1919	0.5369	0.3394	Worst Performing	219
Raichur	Maski	0.3151	0.1462	0.5664	0.3425	Worst Performing	220
Bengaluru_Urban	Anekal	0.2937	0.1497	0.5922	0.3452	Worst Performing	221
Yadgir	Vadagera	0.3696	0.1176	0.5531	0.3468	Worst Performing	222
Bagalkot	Ilkal	0.5103	0.1461	0.3980	0.3515	Worst Performing	223
Vijayapura	Talikote	0.2998	0.2380	0.5362	0.3580	Worst Performing	224
Yadgir	Gurumithakala	0.3262	0.2057	0.6009	0.3776	Worst Performing	225
Tumakuru	Kunigal	0.2753	0.2442	0.6343	0.3846	Worst Performing	226

State	Average	0.2441	0.1435	0.3789	0.2555

Annexure 4.1: Infant Mortality & Under 5 Mortality Rates from April 2021-Feb 2022

Sl.No	Districts	Infant Mortality Rate per 1000 live births	Under 5 Mortality Rate per 1000 live births
1	Bagalkote	3	4
2	Ballari	17	20
3	Belagavi	2	2
4	Bengaluru Rural	1	3
5	Bengaluru Urban	6	6
6	Bidar	7	8
7	Chamarajanagara	10	10
8	Chikkaballapura	6	7
9	Chikkamagaluru	5	6
10	Chitradurga	10	12
11	Dakshina Kannada	12	13
12	Davangere	14	16
13	Dharwad	10	10
14	Gadag	11	12
15	Hassan	20	22
16	Haveri	3	4
17	Kalaburagi	6	7
18	Kodagu	12	14
19	Kolar	10	11
20	Koppal	16	19
21	Mandya	13	14
22	Mysuru	26	29
23	Raichur	20	22
24	Ramanagara	2	5
25	Shivamogga	19	21
26	Tumakuru	9	10
27	Udupi	8	11
28	Uttara Kannada	6	9
29	Vijayapura	3	4
30	Yadgir	4	6
Total		**9**	**11**

Source: HMIS, Karnataka State

Annexure 4.2: District wise Birth rate, Death rate and Infant Mortality rate 2020 (Provisional)

Sl. No	District	Birth rate	Death rate	Infant mortality rate	Sex ratio
1	**2**	**3**	**4**	**5**	**6**
1	BAGALKOTE	16.96	8.48	4.28	940
2	BANGALORE (R)	11.96	8.28	2.32	932
3	BANGALORE (U)	10.28	5.53	7.39	937
4	BELGAUM	14.56	8.42	6.24	928
5	BELLARY	19.42	9.30	12.14	942
6	BIDAR	19.29	7.12	7.52	919
7	BIJAPUR	19.42	7.70	11.12	926
8	CHAMARAJANAGAR	10.92	10.55	18.2	929
9	CHICKBALLAPUR	12.55	8.67	7.69	921
10	CHIKMAGALUR	13.54	10.33	10.88	955
11	CHITRADURGA	14.23	9.98	9.99	927
12	DAKSHINA KANNADA	12.94	8.45	8.63	968
13	DAVANAGERE	16.05	8.67	7.02	955
14	DHARWAD	15.05	9.28	13.77	937
15	GADAG	16.18	10.11	10.08	964
16	GULBARGA	18.51	6.77	6.41	950
17	HASSAN	11.84	10.45	6.75	952
18	HAVERI	16.15	9.38	11.27	933
19	KODAGU	11.51	9,11	16.19	945
20	KOLAR	13.03	7.96	8.13	906
21	KOPPAL	18.28	7.24	3.68	923
22	MANDYA	12.12	10.96	13.14	884
23	MYSORE	12.04	9.75	25.46	932
24	RAICHUR	23.72	6.40	1.65	943
25	RAMANAGAR	12.09	11.04	9.42	950
26	SHIMOGA	13.77	9.38	10.00	944
27	TUMKUR	12.61	10.69	7.03	954
28	UDUPI	11.56	9.39	5.99	968
29	UTTARA KANNADA	13.77	8.95	8.92	934
30	YADGIR	19.94	6.11	2.33	950
	STATE	**14.34**	**8.18**	**8.61**	**938**

Source: HMIS

Annexure 4.3: Indicators of under nutrition in children under 5 across districts, Karnataka 2019-20

District	Children under 5 years who are stunted (%)	Children under 5 years who are wasted (%)	Children under 5 years who are severely wasted (weight-for-height)(%)	Children under 5 years who are underweight (%)	Children under 5 years who are overweight (weight-for-height)(%)	Children age 6-59 months who are anaemic (%)
1	2	3	4	5	6	7
Belgaum	32.8	23.6	10.2	36.9	2.9	72.7
Bagalkot	48.3	16.9	4.4	42.3	2.4	63.8
Bijapur	45.9	15.0	4.3	39.0	2.7	65.2
Bidar	36.8	22.1	11.1	36.1	2.5	69.3
Raichur	39.8	23.2	11.7	40.7	1.6	73.6
Koppal	49.1	23.1	3.8	45.8	0.8	70.7
Gadag	45.2	18.2	4.5	39.8	1.5	70.3
Dharwad	45.2	16.5	4.6	40.4	2.8	67.2
Uttara Kannada	29.6	21.9	13.1	33.3	3.3	69.0
Haveri	29.9	17.7	3.9	35.0	0.0	66.9
Bellary	36.1	22.9	13.6	36.5	1.3	67.5
Chitradurga	36.0	17.9	8.3	32.4	3.1	61.1
Davanagere	38.4	18.8	3.9	32.8	2.5	70.2
Shimoga	29.0	23.2	13.5	34.4	6.0	68.9
Udupi	23.1	17.6	6.0	21.0	3.2	58.3
Chikmagalur	27.3	24.9	11.5	25.4	6.6	53.2
Tumkur	40.3	10.9	3.1	26.7	6.1	67.6
Bangalore	31.3	19.2	11.4	28.1	4.3	58.9
Mandya	24.3	11.8	5.3	16.7	1.3	58.2
Hassan	27.1	15.2	5.2	23.8	5.1	63.6
Dakshina Kannada	25.1	30.5	15.7	26.4	6.9	51.1
Kodagu	30.4	21.7	9.3	22.6	7.3	54.4
Mysore	27.5	15.6	7.2	28.2	1.3	57.2
Chamarajanagar	32.2	18.0	6.8	28.7	1.6	68.7
Gulbarga	34.5	25.0	12.2	36.2	4.1	75.1
Yadgir	57.6	17.7	7.2	45.2	2.3	76.0
Kolar	31.1	15.5	5.8	15.7	5.3	57.9
Chikkaballapura	31.3	16.1	6.1	25.2	2.2	59.0
Bangalore Rural	36.6	16.2	9.4	23.8	6.0	60.8
Ramanagara	15.6	20.0	7.7	19.8	4.0	60.2
Karnataka	**35.4**	**19.5**	**8.4**	**32.9**	**3.2**	**65.5**

Source: NFHS 5 (2019-21) Fact Sheet. NFHS 5 was conducted in Karnataka in 2019

Annexure 4.4: Indicators of Malnutrition in Women aged 15-49 years across Districts, Karnataka 2019

District	Women whose Body Mass Index (BMI) is below normal (BMI <18.5 kg/m^2)[21] (%)	Women who are overweight or obese (BMI ≥25.0 kg/m^2)[21] (%)	Women who have high risk waist-to-hip ratio (≥0.85) (%)	All women age 15-19 years who are anaemic[22] (%)
1	2	3	4	5
Belgaum	22.2	23.8	44.1	48.5
Bagalkot	17.1	28.6	40.5	50.7
Bijapur	18.1	27.4	32.0	52.6
Bidar	24.9	20.8	39.6	51.7
Raichur	23.3	19.9	42.6	64.8
Koppal	24.9	21.9	28.6	55.3
Gadag	18.9	30.6	41.4	54.1
Dharwad	17.3	33.8	41.9	50.5
Uttara Kannada	18.4	22.6	47.5	44.6
Haveri	19.9	29.1	42.1	51.5
Bellary	22.2	27.3	45.1	58.5
Chitradurga	14.5	37.4	36.3	50.2
Davanagere	15.9	38.1	40.4	51.5
Shimoga	15.0	30.3	52.6	44.7
Udupi	23.8	22.9	51.9	49.9
Chikmagalur	14.2	33.2	50.6	45.6
Tumkur	15.2	30.4	48.1	47.9
Bangalore	10.0	40.1	44.4	45.1
Mandya	13.7	38.7	47.0	42.9
Hassan	11.1	36.1	57.0	34.2
Dakshina Kannada	12.6	22.2	53.5	35.0
Kodagu	12.0	34.7	54.7	35.8
Mysore	14.7	36.4	54.0	41.7
Chamarajanagar	17.9	30.6	37.7	52.9
Gulbarga	20.8	21.8	46.2	61.4
Yadgir	26.0	18.8	32.4	61.8
Kolar	17.8	27.9	47.5	46.9
Chikkaballapura	22.6	26.6	43.1	46.9
Bangalore Rural	14.1	33.2	60.2	43.9
Ramanagara	13.2	36.5	45.4	47.2
Karnataka	**17.2**	**30.1**	**45.1**	**49.4**

Source: NFHS 5 (2019-21) Fact Sheet. NFHS 5 was conducted in Karnataka in 2019

Annexure 7.1: Youth Schemes

Sl.No	Department	No. of schemes
1	Agriculture	27
2	Horticulture	22
3	Women and Child development	42
4	Health and Family welfare	13
5	Fisheries	18
6	Karnataka State Finance Institution(KSFI)	16
7	Primary and Secondary	10
8	Watershed development	7
9	Cooperation	11
10	Animal Husbandry and Veterinary medicines	12
11	Energy	4
12	Karnataka State Coconut Fiber General Council	2
13	Law	17
14	Revenue	13
15	Transport	12
16	Hubli Electricity Supply Company Limited	3
17	Directorate of Empowerment of Differently Abled and Senior Citizens	7
18	Integrated Child Protection Scheme Officers List	11
19	Karnataka State Women Development Corporation	6
20	Rural Development and Panchayat Raj Department	7
21	Minor Irrigation & Ground Water Development Division	2
22	Energy Department	7
23	Commerce and Industry Department	21
24	Karnataka Handicraft Development Company Limited	2
25	Karnataka State Textile Infrastructure Development Corporation Limited	3
26	Karnataka Industrial Areas Development Board	2
27	Directorate of micro, small & medium enterprises	31
28	Dr Babu Jagjivanaraman Skin Industrial Development Corporation Limited	7
29	Kannada Cultrure and News Department	5
30	Department of Information and Public Relations	5
31	Food Civil Supplies and Consumer Affairs and Legal Metrology Department	1
32	Housing Department	8
33	Department of Information Technology and Biotechnology	5

Annexure 7.1 Cont...		
Sl.No	**Department**	**No. of schemes**
34	Skill Development, Entrepreneurship and Livelihood Department	11
35	Labour Department	2
36	Karnataka Labour Welfare Board	6
37	Karnataka Workers Welfare and Social Security (Ashadeepa Scheme) Society	3
38	Youth Empowerment and Sports Department	12
39	Medical Education Department	11
40	Urban Development Department	5
41	Higher Education Department	6
42	Backward Classes Welfare Department	24
43	Minority Welfare Department	9
44	Social Welfare Department	12
45	Karnataka State Seeds Corporation Limited	3
46	Karnataka Minorities Development Corporation Ltd	6
47	Karnataka State Road Transport Corporation	3
48	Handlooms & Textile Dept	6
49	Public Works Department	6
50	Sericulture Department	28
51	Rajiv Gandhi Housing Corporation Limited	7
52	Karnataka State Financial Corporation (KSFC)	16
Total		**535**

Annexure -9.1: District wise number and percentage of taluks affected by Drought in Karnataka State

District	No: of Taluks	Taluks affected by drought								Av. % of drought affected taluks
		2015		2016		2018		2019		
		No's	%	No's	%	No's	%	No's	%	
Bagalkot	9	6	66.67	6	66.67	6	66.67	2	22.22	55.56
Bangalore Rural	4	3	75.00	4	100.00	4	100.00	1	25.00	75.00
Bangalore Urban	5	0	0.00	4	80.00	4	80.00	5	100.00	65.00
Belgaum	14	10	71.43	10	71.43	10	71.43	0	0.00	53.57
Bellary	11	7	63.64	7	63.64	7	63.64	0	0.00	47.73
Bidar	8	5	62.50	1	12.50	5	62.50		0.00	34.38
Bijapur	12	5	41.67	5	41.67	5	41.67	2	16.67	35.42
Chamarajanagar	5	3	60.00	4	80.00	4	80.00	2	40.00	65.00
Chikkaballapura	6	6	100.00	6	100.00	6	100.00	0	0.00	75.00
Chikmagalur	8	3	37.50	6	75.00	6	75.00	0	0.00	46.88
Chitradurga	6	5	83.33	6	100.00	6	100.00	5	83.33	91.67
Dakshina Kannada	7	0	0.00	2	28.57	5	71.43	0	0.00	25.00
Davanagere	6	5	83.33	6	100.00	6	100.00	0	0.00	70.83
Dharwad	8	5	62.50	5	62.50	5	62.50	0	0.00	46.88
Gadag	7	5	71.43	5	71.43	5	71.43	1	14.29	57.14
Gulbarga	11	7	63.64	7	63.64	7	63.64	2	18.18	52.27
Hassan	8	8	100.00	7	87.50	8	100.00	0	0.00	71.88
Haveri	8	6	75.00	7	87.50	7	87.50	0	0.00	62.50
Kodagu	3	1	33.33	3	100.00	3	100.00		0.00	58.33
Kolar	6	5	83.33	5	83.33	5	83.33	6	100.00	87.50
Koppal	7	4	57.14	4	57.14	4	57.14	0	0.00	42.86
Mandya	7	7	100.00	7	100.00	7	100.00	0	0.00	75.00
Mysore	8	5	62.50	7	87.50	2	25.00	0	0.00	43.75
Raichur	7	5	71.43	5	71.43	5	71.43	3	42.86	64.29
Ramanagara	4	1	25.00	4	100.00	4	100.00	2	50.00	68.75
Shimoga	7	1	14.29	7	100.00	7	100.00	0	0.00	53.57
Tumkur	10	9	90.00	10	100.00	10	100.00	6	60.00	87.50
Udupi	7	0	0.00	3	42.86	3	42.86	0	0.00	21.43
Uttara Kannada	12	6	50.00	8	66.67	5	41.67	0	0.00	39.58
Yadgir	6	3	50.00	3	50.00	3	50.00	0	0.00	37.50
Karnataka	**227**	136	**60**	164	**72**	164	**72**	37	**16**	**55**

Data Source: KSDMA (2021)

Annexure–9.2: District wise number and percentage of taluks affected by floods in Karnataka State

Taluks affected by floods								
District	No.of taluks	2015		2018		2019		Av.%
		Number	%	Number	%	Number	%	
Bagalkot	9.00	1.00	11.11	0.00	0.00	6.00	66.67	25.93
Bangalore	4.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bangalore	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Belgaum	14.00	5.00	35.71	0.00	0.00	10.00	71.43	35.71
Bellary	11.00	0.00	0.00	0.00	0.00	2.00	18.18	6.06
Bidar	8.00	5.00	62.50	0.00	0.00	0.00	0.00	20.83
Bijapur	12.00	0.00	0.00	0.00	0.00	4.00	33.33	11.11
Chamaraja	5.00	0.00	0.00	0.00	0.00	1.00	20.00	6.67
Chikkaball	6.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Chikmagal	8.00	0.00	0.00	4.00	50.00	5.00	62.50	37.50
Chitradurg	6.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dakshina I	7.00	0.00	0.00	5.00	71.43	5.00	71.43	47.62
Davanager	6.00	0.00	0.00	0.00	0.00	2.00	33.33	11.11
Dharwad	8.00	0.00	0.00	0.00	0.00	5.00	62.50	20.83
Gadag	7.00	0.00	0.00	0.00	0.00	3.00	42.86	14.29
Gulbarga	11.00	7.00	63.64	0.00	0.00	4.00	36.36	33.33
Hassan	8.00	0.00	0.00	1.00	12.50	6.00	75.00	29.17
Haveri	8.00	0.00	0.00	0.00	0.00	7.00	87.50	29.17
Kodagu	3.00	0.00	0.00	3.00	100.00	3.00	100.00	66.67
Kolar	6.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Koppal	7.00	0.00	0.00	0.00	0.00	2.00	28.57	9.52
Mandya	7.00	0.00	0.00	0.00	0.00	4.00	57.14	19.05
Mysore	8.00	0.00	0.00	0.00	0.00	5.00	62.50	20.83
Raichur	7.00	3.00	42.86	0.00	0.00	5.00	71.43	38.10
Ramanaga	4.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Shimoga	7.00	0.00	0.00	4.00	57.14	7.00	100.00	52.38
Tumkur	10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Udupi	7.00	0.00	0.00	3.00	42.86	3.00	42.86	28.57
Uttara Kar	12.00	0.00	0.00	5.00	41.67	6.00	50.00	30.56
Yadgir	6.00	3.00	50.00	0.00	0.00	3.00	50.00	33.33
Karnataka	**227.00**	24.00	**10.57**	25.00	**11.01**	98.00	**43.17**	**21.59**

Data source: KSDMA (2021)

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Abbreviation

List of Abbrevations	
ANY	Dr. B.R. Ambedkar NivasYojane
AFR	Adolescent fertility rate
AISHE	All India survey on higher Education
AWWT	Advanced waste water treatment
BBMP	Bruhat Bengaluru Mahanagara Palike
Bcm	Billion cubic metre
BMI	Body mass Index
BNI	Bare Necessities Index
BVY	Basava Vasathi Yojane
BWSSB	Bangalore Water Supply and Sewerage Board
CAG	Comptroller Auditor General
CAGR	Compound Annual growth rate
CEEW	Council on Energy, Environment and Water
CFR	Case Fatality Ratio
CHC	Community Health Centres
DDP	Desert Development Programme
DMC	Designated Microscopic Centres
DRNCD	Diet-related non-communicable disease (NCD) Index
DTC	District TB Centres
DUGJY	Deendayal Upadhyaya Gram Jyoti Yojana
DUHS	Devaraj Urs Housing Scheme
ECO	Education Coordinator
EI	Educational Index
EV	Electric vehicles
EYS	Expected years of schooling
FD	Fiscal Deficit
FHTC	Functional Household Tap Connection
FICCI	Federation of Indian Chambers of Commerce and Industry
FTSCs	Fast Track Special Courts
FWPR	Female Worker Population Ratio
GDI	Gender Development Index
GDP	Gross Domestic Product
GEE	General energy efficiency
GEI	Gender Employment Index

GEI	Gender Empowerment Index
GII	Gender Inequality Index
GNI	Gross national Income
GNR	Global Nutrition Report
GoK	Government of Karnataka's
GP	Gram Panchayat
GPI	Gender Parity index
GSDP	Karnataka State Demostic product
HDI	Human Development Index
HDR	Human Development Reports
HEI	Higher Education Institutions
HH	Household
HWC	Health and Welness centre
IAER	Institute of Advance Education and Research
IAY	Indira Awas Yojana
ICT	Information and Communication Technology
IDSP	Integrated Disease Surveillance Project
IFS	Integrated farming systems
IHDI	Inequality-adjusted Human Development Index
IHHL	Individual House Hold Latrine
IIA	Indian Institute of Astrophysics
IIITB	International Institute of Information Technology, Bangalore
IIMB	Indian Institute of Science, Bangalore
IMD	Indian Meteorology Department
IMR	Infant Mortality Rate
IPCC	Intergovernmental Panel on Climate Change
ISEC	Institute of Social and Economic Change
ISRO	Indian Satellite Research Organisation
IWRM	Integrated Water Resources Management
JJM	Jal Jeevan Mission
JNCASR	Jawaharlal Nehru Centre for Advanced Scientific Research
JNNURM	Jawaharlal Nehru National Urban Renewal Mission
KFRA	Karnataka Fiscal Responsibility Act
KNN	K Nearest Neighbour
KRDCL	Karnataka Road Development Corporation Limited

KSAPCC	Karnataka State Action Plan for Climate Change
KSDMP	Karnataka State Disaster Management Plan
KSHEC	Karnataka State Higher Education Council
KSHIP	Karnataka State Highways Improvement Project
KUWSDB	Karnataka Urban Water Supply and Drainage Board
LFPR	Labour force participation rate
LHV	Lady health Volunteer
Lpcd	Litres per Capita per Day
LSRIB	Life Style Related Ill-being Index (LSRIB) Index
MDR	Major District Roads
MGNREGA	Mahatma Gandhi National Rural employment guarantee Act
MIAYCN	Maternal Infant Adolescent and young Child Nutrition
MIYCN	Maternal, Infant and Young Child Nutrition
MLD	Millions of Liters Per Day
MMG	Mane Manege Gange
MMR	Maternal Mortality Ratio
MOHFW	Ministry of Health and Family Welfar
MoHUA	Ministry of Ministry of Housing and Urban Affairs
MPI	Multidimensional Poverty Index
MTFP	Medium Term Fiscal Policy
MVS	multi village water supply schemes
MYS	Mean year of schooling
NAL	National Aeronautics Laboratory
NCBS	National Centre for Biological Sciences
NCBS	National Conservation and Biological Sciences
NCD	Non-communicable disease
NDC	Nationally Determined Contributions
NEP	National Educational Policy
NER	Net Enrolment Rate
NFHS	National Family and Health Survey
NFSM	National Food Security Mission
NGO	Non Governmental Organization
NH	National Highways
NHM	National Health Mission
NIAS	National Institute of Advanced Studied

NIP	New industrial processes
NITI Ayoga	National Institute of Transforming India Ayoga
NLEP	National Leprosy Eradication Programme
NLSIU	National Law School of India University
NNMR	Neo natal Mortality rate
NRDWP	National Rural Drinking Water Programme
NRHM	National Rural Health Mission
NRMS	Natural Resource Management Systems
NSO	national statistical organisation
NSS	National Sample Survey
NTCP	National Tuberculosis Control Programme
NTEP	National Tuberculosis Elimination Programme
NVBDCD	National Vector Borne Disease Control Programme
ODF	Open Defecation Free
ODR	Other District Roads
OOPE	The total out of pocket expenditure
PCMA	Prohibition of Child Marriage Act
PER	Public Expenditure Ratio
PHC	Primary Health Centres
PLFS	Periodic labour Force Survey
PMAY	Pradhan Mantri AwasYojane
PMAYG	Pradhan Mantri Awas Yojana - Gramin
PMGSY	Pradhan Mantri Gram Sadak Yojana
PMSMA	Pradhan Mantri Surakshit Matritva Abhiyan
PMUY	Pradhan Mantri Ujjwala Yojana
PPP	Purchasing Power Parity
PR	Parliamentary Representation
PSL	Priority Sector Lending
PTR	Pupil Teacher Ratio
PWS	public water system
RAY	Rajiv Awas Yojana
RD	Revenue Deficit
RGGVYP	Rajiv Gandhi Grameen Vidyutikaran Yojana Programme
RGHCL	Rajiv Gandhi Rural Housing Corporation Limited
RPO	Renewable Purchase Obligation

RRI	Raman Research Institute
RWA	Residential Welfare Scheme
RWH	rain water harvesting
SAADMEX	South Asian Annual Disaster Management Exercise
SAR	Social Allocation Ratio
SATS	Student Achievement tracking System
SBM	Swachh Bharat Mission
SC	Sub Centres
SDG	Sustainable Development Goals
SDH	Sub Divisional hospital
SDP	Special Development Plan
SEQI	School Education Quality Index
SFDRR	Sendai Framework for Disaster Risk Reduction
SGA	Small for Gestational Age
SGSYS	Swarnajayanti Gram Swarojgar Yojana
SH	State Highways
SHGs	Self Help Groups
SLWM	solid and liquid waste management
SPR	Social Priority Ratio
SRS	Sample Registration Survey
STEM	Science, Technology, Engineering and Mathematics
TALP	Technology Assisted Learning Programme
TFR	Total fertility rate
THE	Total Health Expenditure
UGC	University Grants Commission
UHC	Universal Health Coverage
ULBs	Urban Local Bodies
UNDP	United Nations Development programme
UNDP:HDR	United Nations Development Programme :Human Development Reports
UNFCCC	United Nations Framework Convention on Climate Change
UNISDR	The United Nations International Strategy for Disaster Risk Reduction
VER/ WER	Village Education Register/Ward Education Register
VET	Vocational Education and Training
VR	Village Roads
WHO	World health Organization
WHR	Waste heat recovery
WPR	Worker Population Ratio
WQMandSP	Water Quality Monitoring and Surveillance Programme

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