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Defending the Green Realm: The Forest Conservation Act 1980 of India in Theory and Practice

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Foreword

This monograph on the Forest (Conservation) Act, 1980 of India was prepared by Dr P J Dilip Kumar, IFS (Retd.), on a Senior Fellowship of the Indian Council of Social Science Research, during 2013-2015. The author, who served in the Indian Forest Service for almost 39 years and retired as Director-General of Forests in the Ministry of Environment and Forests, Government of India, has obviously drawn on his long and varied experience in preparing this report.

The central issue addressed in the monograph is, how does a nation make the choice between preserving its green wealth in the form of forests, grasslands, wetlands, water bodies, coastal zones and beaches, marine resources, and wildlife habitats and meeting the ever-increasing demands from the development sectors? One response was that of the British administration in India, by putting the extant tracts of good forest under the stewardship of a cadre of trained officers and field staff, called the Forest Department. Thanks to this law and the process of reservation of forest lands, India today can be justly proud of the fact that in spite of having less than 1% of the world's forest area with 15% of the world's human population and 19% of the world's cattle, there is still some 69 million hectares of forest cover standing today, which amounts to some 21% of the land area. With the rising consciousness of the environmental value of the forests and an awareness that they were balanced precariously on a knife-edge, the Forest (Conservation) Act, 1980, was enacted during the Prime Ministership of Indira Gandhi, which has been lauded by conservationists as a landmark act of political bravery and practical sagaciousness in ensuring the safety of India's forests.

However, environmental activists, on one side, feel that the government is too sympathetic to the demands of the industrial lobbies, and the forest department's approach is too top-down and unsympathetic to the needs and rights of the local communities. On the other hand, development protagonists complain that the Forest Conservation Act is slowing down the national development programme, increasing costs and introducing too much delay and procedural complications. The whole process seems to be arbitrary and unpredictable, because the processes and criteria are not consistent or clearly enunciated. Hence efforts are continually being made to dilute the Act in its operation, and the forest department is made the villain from both ends of the whole environment-versus-development debate.

The author himself recognizes that there is a need to explain the working of the Forest Conservation Act in all its complications, so that the

public and the interested stakeholders are better informed and equipped to deal with it in the spirit in which the law was made. It is hoped that the present monograph, by a senior and now retired member of the Indian Forest Service, will also contribute in its own small way to this building up of public understanding.

In conclusion, I could not do better than to quote a few lines from one of the paper's reviewers:

"What makes this exposition very useful is not so much the discussion of the Act itself, but of the manner it is administered through the various Rules, and over time, how this practice has been shaped by various Court decisions. For example, how do we define forest? So much depends on this. I, for one, leaned a great deal from the detailed discussion of this simple question. What are 'cut offs'? What is a 'Go-No Go' classification? What are the different groups with an interest in the outcomes of each of these? The book has many such insights to offer."

I am happy that ISEC could support the author in his efforts to "think, ruminate and write" on this crucial topic, and hope that it will suggest avenues for further studies into the political economy of natural resources conservation and sustainable development.

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K S James
Acting Director, ISEC

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ACRONYMS AND ABBREVIATIONS

ANILCA:	Alaska National Interest Lands Conservation Act of 1980
BLM:	Bureau of Land Management (USA)
CA:	Compensatory Afforestation
CAMPA:	Compensatory Afforestation Management & Planning Agency
CBO:	Community-Based Organization
CCF:	Chief Conservator of Forests
CEC:	Central Empowered Committee
CIL:	Coal India Ltd.
CMPDI:	Central Mining Plan Design Institute
CSR:	Corporate Social Responsibility
DCF:	Deputy Conservator of Forests
DGF:	Director-General of Forests
EC:	Environmental clearance
EIA:	Environmental Impact Assessment
EPA:	Environment (Protection) Act, 1986
EWG:	Environmental Working Group (www.ewg.org),
FAC:	Forest Advisory Committee
FAO:	Food & Agriculture Organization
FCA:	Forest (Conservation) Act, 1980
FD:	Forest Department
FRA:	Forest Rights Act
FRH:	Forest Rest House
FRI:	Forest Research Institute (Dehradun)
FSI:	Forest Survey of India
GDP:	Gross Domestic Product
GFC:	Gross Forest Cover
GIM:	Green India Mission
GoM:	Group of Ministers
GP:	Gram Panchayat
GS:	Gram Sabha
H-A:	Hasdeo-Arand (coal field)
Ha:	Hectare (mha: million hectare)
IFA:	Indian Forest Act
JFM:	Joint Forest Management
JLR:	Jungle Lodges & Resorts, Karnataka
JVC:	Joint Venture Companies
Kgoe:	Kilogram Oil Equivalent
LNG:	Liquefied Natural Gas
MDF:	Moderately Dense Forest
MEF:	Minister for Environment & Forests
mha:	million hectares
MoEF:	Ministry of Environment & Forests

mty:	million tonnes per year
NAP:	National Afforestation Programme
NBWL:	National Board for Wildlife
NCA:	National Commission for Agriculture
NF:	National Forest (USA)
NFP:	National Forest Policy
NGT:	National Green Tribunal
NIB:	National Investment Board
NGO:	Non-Governmental Organization
NP:	National Park
NPV:	Net Present Value
NREGA:	National Rural Employment Guarantee Act
NTCA:	National Tiger Conservation Authority
NTFP:	Non-Timber Forest Product
NTPC:	National Thermal Power Corporation
OED:	Operations Evaluation Department (World Bank)
OF:	Open Forest
PAs:	Protected Areas
PF:	Protected Forest
PMO:	Prime Minister's Office
PPP:	Purchasing Power Parity
PPP:	Public-Private Partnership
PRI:	Panchayati Raj Institution
PSU:	Public Sector Undertaking
R&R:	Resettlement and Rehabilitation
RF:	Reserved Forest
ROD:	Record of Decision (US Forest Service)
SAF:	Society of American Foresters
SAG:	State Advisory Group
SAM:	Sahabat Alam Malaysia
SC:	Supreme Court
SFR:	State of Forest Reports
VDF:	Very Dense Forest
VFC:	Village Forest Committee
WB:	World Bank
WFC:	Weighted Forest Cover
WII:	Wildlife Institute of India (Dehradun)
WLPA:	Wild Life (Preservation) Act, 1972
WLS:	Wildlife Sanctuary

Indian big numbers: Lakh – 100,000 or 0.1 million; crore – 10 million

Keywords: Forest conservation, governance, clearances, non-forestry uses, diversion, sustainable management, natural resources, Godavarman judgment

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As mentioned elsewhere, the main inspiration for this paper has been my long service in the forest department, where I have, along with my colleagues, shouldered the responsibility of carrying out the mandate of the forest policy while at the same time achieving a balance between conservation and development, not as an academic exercise, but as a daily occupation. I therefore have to acknowledge my debt to all these colleagues in the forest and other departments, the ministries in the state and at the Centre, and the concerned staff. I am also deeply indebted to the experts, both academic and administrative, on the various advisory and technical committees with which I have been associated, who have over the years improved my own understanding, and thus indirectly contributed to this study.

Needless to say, all responsibility for any shortcomings and errors is mine alone, and I would be happy to receive any comments or suggestions to improve this report. I hope it will be of some interest and use to field practitioners, implementors and industry people, government departments, NGOs and others in their practical work as well as in the formulation of future policy initiatives. Further development of these themes may be found in my website, www.forestmatters.blogspot.in.

Dilip Kumar P J

INTRODUCTION: NATURE AND SCOPE OF THE STUDY

How does a nation safeguard its green wealth in the form of its forests, grasslands, wetlands, water bodies, coastal zones and beaches, marine resources, and wildlife habitats? In the middle of the 19th century, this was the puzzle facing the colonial administrators in India and many other tropical countries of the world. In a reaction to the unbridled operation of the private profit principle that characterized the initial period of colonialism, the British administration chose the alternative of safeguarding the people from their own improvidence by putting the extant tracts of good forest under a separate department and a cadre of trained officers and men, called the Forest Department. The forests were notified as Reserved Forests and Protected Forests, and a comprehensive law was put in place to govern their formation, use and management (see Shyam Sunder and Parameswarappa 2014, for a recent recapitulation of this history).

Like many other laws drawn up by the British government, this law has stood the test of time these one-and–a-half centuries, albeit in the teeth of resistance from the communities and politicians, and bitter and impassioned criticism by people-centered social scientists, activists, and even revenue officers and civil service administrators [see Lele and Menon (Eds) 2014, for a recent summary and exhaustive lists of references]. Thanks however to this law and the process of reservation of forest lands, India today can justifiably be proud of the fact that in spite of having less than 1% of the world's forest area with 15% of the world's human population and 19% of the world's cattle, there are still some 69 million hectares (mha) of forest cover standing today, that amount to some 21% of the country's land area, and which serve as an internal defence against ecological collapse and destruction of economic activity. From these forested uplands rise India's major rivers, and in them is nurtured the astoundingly rich biodiversity of the country, including half the world's population of tigers in the wild and major populations of Asian elephants and other fauna and a wealth of plant and tree species as well.

This achievement is sometimes (and not kindly) dubbed a 'miracle' (Mazoomdar 2012) , as if forests are indestructible and self-sustaining. We should be at pains to stress that they are nothing of the sort, and without the long foresight of the colonial administrators, the dedicated work of the staff on the ground, and the culture and ethos of the people which engenders a natural respect for life and nature, a country with such a huge population and so many problems could hardly have succeeded in maintaining such a rich biodiversity stock and forest cover. Conscious of the knife-edge on

which the forests of the country are balanced, and to impose some brake on the reckless diversion of forests for other uses, the Indian Parliament passed the brief and pithy *Forest (Conservation) Act*, 1980 (referred to as the FCA). Much of the credit for this act of political bravery and practical farsightedness in ensuring the safety of India's forests must go to the Prime Minister, Indira Gandhi, who steered the legislation.[1]

Despite these successes, there has been a concerted attempt at undermining this approach to forest and environmental conservation, on the grounds that it is an authoritarian, top-down approach. Two disparate schools of thought are seen to have developed to challenge the law-based approach to forest conservation: one based on social considerations like justice, empowerment, and constitutional provisions for decentralization and local governance (the so-called New Public Administration approach), and the other based on the supremacy of market mechanisms in achieving socially optimal solutions (the neo-liberal approach).

In the first of these groups, who can be called 'social ecologists', exemplified by Gadgil and Guha (1992) and further developed in the recent publication already alluded to (Lele and Menon 2014), it is effectively argued that the State, as represented by the Forest Department, is an interloper in the rural realm, a vestige of a brutal colonial regime, and that it does not deserve to be continued in an independent India. On the concerted campaigning and lobbying by this coalition of social reformers, activists and academics, with the support of international NGOs and aid agencies, a separate legislation, popularly known as the *Forest Rights Act*, 2006,[2] was passed by Parliament to set right the historic injustices to the forest-dependent people, especially tribals, and to give the village communities the right to protect and manage the forests that were their traditional habitat. Consequently, there is now a sense of confusion regarding the respective roles of the forest department (FD), the Panchayati Raj Institutions (PRIs), and the village community, and on how the different laws are actually to be implemented: the Indian Forest Act (IFA), the Forest Conservation Act (FCA), or the Forest Rights Act (FRA), in each situation.

The social ecologists have garnered an unexpected ally in their campaign to topple the forest departments from the commanding position, in the leaders of commerce and industry, who find the Forest Conservation Act an impediment to the smooth and fast promotion of their enterprises. The entire government apparatus is also with them, as the country has decided to accelerate the pace of development and economic growth. Hence efforts are continually being made to dilute the FCA in its operation, and the

Ministry of Environment and Forests (MEF), which looks after the FCA, is made the villain in the whole environment-versus-development debate.

On the other hand, the Forest Service, which basically administers this important Act, has not been able to explain to the people of the country how it is doing so. The whole process seems to be arbitrary and unpredictable, because the processes and criteria are not consistent or clearly enunciated. Indeed a number of attempts have been made at the highest level to codify the regulations and simplify the procedures, but somehow these efforts seem to have skirted the real issues and gone after peripheral matters. This is in contrast to the environmental rules, which appear precise and scientific, although in practice there is much to be questioned about the practical aspects of the environmental safeguards and prescriptions as well.[3]

There is a need, therefore, to analyze and explain the working of the Forest Conservation Act in all its ramifications and applications. Existing writings on the subject tend to only present the salient points of the Act and the accompanying regulations, but do not address the deeper question of how the Act should be interpreted and implemented, leaving this essentially to the Courts to adjudicate. The Courts, on the other hand, also do need occasional guidance and reference material on which to base their judgments and directions.

This is the task that is set out here in this work. The actual criteria and considerations that weighed in the decisions taken over the last few years are discussed, and hopefully this can serve as a basis for further work on developing a set of criteria and procedures to translate the intentions of the Act into practice without attracting the ire of the people at the receiving end of its requirements.

The study is based mainly on the author's practical experience in the forest department, and discussions with colleagues in the Forest Service and user agencies. It does not present a particular hypothesis or research undertaking in the scientific sense, but is more of a descriptive assessment of the subject in order to elucidate the working and thinking involved, and provide a basis for improvements to make the process more objective and transparent. It is an attempt to explain the working of the Forest Conservation Act, and how decisions are to be seen in the present environment of a vocal civil society and an economy that is straining at the reins of the control-and-command governance setup. Thankfully, the articulate and learned former minister of state for environment and forests has made a signal contribution to this effort by placing most of the relevant ministry orders and documents in the public realm, thereby reducing the sphere of speculation and increasing clarity (Ramesh 2015).

If a hypothesis needs to be cited, it may be phrased thus: that it is possible and feasible to develop an objective basis and scientific methodology to take decisions on the diversion of forest areas for non-forestry purposes; and that there are procedures and methodologies available to evaluate trade-offs in an objective manner and arrive at socially optimal decisions. The principles usually suggested by natural resource economists would be that of abundant precaution, adequate risk management, assessment of the values of ecological and other services vis-à-vis developmental needs, and adequate compensation for both market and non-market losses, both actual and potential. These academic concepts are beyond the scope of this paper, which attempts a more modest assessment of ground reality in a number of typical cases, covering a broad spectrum of socio-economic situations and environmental concerns, that will try to lay forth the thinking and considerations that have gone into FCA decisions during recent years, along with a few suggestions here and there for improvement.

Relevance and Application

Because there has been little effort by the administration to explain the workings of the FCA, the situation as it obtains causes much frustration to the project proponents and development departments of the country, and much inter-departmental strife and mutual recriminations. All this is highlighted in an adverse manner in the press and media, leading to waning of investors' confidence and difficulty in planning development and investment. A book explaining the concerns of the forest administrators and conservationists and the main processes and procedures, will be instrumental in clarifying the situation, providing guidance and making the process less complicated and more transparent. It will serve to fore-warn investors and developers of potential pitfalls, help them draw up proposals more professionally, and help all parties concerned to address the actual concerns and take up mitigation measures in a proper manner. As such, one hopes that this work will be a small contribution to the task of placing the forest conservation governance system on a firm footing.

Topics Covered

The following topics are covered in the course of the report:

- Genesis and Background of the Forest Conservation Act, 1980
- Main provisions of the Act and Regulations and Guidelines
- Judicial orders and judgments
- The Supreme Court steps in: The Godavarman case

- How the Act is implemented: Processes and Procedures
- Macro-analysis of the Forest Clearances
- Sector-wise issues
- Policy implications: Development versus Regulation
- Comparison with other countries
- Quest for objective criteria and transparency
- Policy recommendations

I

FEATURES OF THE FOREST CONSERVATION ACT, 1980

In the words of the Supreme Court order[4] dated 12-12-1996, "… the Forest Conservation Act, 1980, was enacted with a view to check further deforestation which ultimately results in ecological imbalance." Thus, there has been an expectation among the lay public, and with justification, that the FCA would serve as a brake on the seemingly reckless way in which forests were diverted to other uses in the past, especially during the first decades after Independence when the nation was eager to develop agriculture and industry. However, the development sectors in both government and private spheres look upon the FCA as an impediment, or at best, a necessary evil, and fully expect that the State will use its discretionary power in the interests of development.

The salient point to note about the nature of this Act is that it is regulatory, not prohibitory. In other words, it may even be viewed as a process to facilitate the placing of forest land at the disposal of various user agencies. However, in comparison with the situation obtaining before the Act, one may say that it is a controlled and supervised diversion for only unavoidable public purposes, rather than a free distribution based on personal whims and fancies of those in power in the state governments. In principle, then, it should serve to check the "indiscriminate diversion of pristine forest areas", as stated by the then Minister for Environment and Forests, Government of India, in the foreword to the 'Handbook' (Government of India 2004).

Prior to this Act, forest would have to justify its claim to exist on a particular tract or parcel of land, as there are so many other, and from the government's point of view more pressing, needs: for habitations, urban development, industries, irrigation, communications and infrastructure, defence, and so on. After the Act, at least in theory, forest has the upper hand, and now the onus of justifying any diversion is on the user agency. In practice, however, it has not been easy for the system to accord priority to the interests of the forest, and the claims of development (real or so-called) have always taken precedence, as the ensuing discussion of the macro-situation and the case-studies will show.

What then has been the main achievement of the Act? While it may not be possible to unilaterally prohibit or reject outright a proposed non-forest use, the long-winded procedures and onerous requirements of documentation and inspection at successive levels have probably toned

down the unmindful rush to deforestation in the name of development. Because of the painful procedures and the substantial payments towards Net Present Value (NPV) and Compensatory Afforestation (CA), as well as the obligation to find land for CA (although the Central Government and its public sector undertakings can get away with afforestation of twice the area of degraded forest), diversion of forest areas is definitely not a trivial exercise, and the time and labour involved may persuade many a potential proponent to search out less difficult alternatives. To this extent, it would probably be reasonable to claim that the enactment and implementation of the FCA 1980 has slowed down the rate of diversion. As per the figures cited by the central minister in his Foreword to the Handbook (*op. cit.*, p.1), whereas some 1,50,000 hectares forest used to be diverted annually between 1950 and 1980, it came down to as low as 38,000 ha after 1980, or if the pre-1980 legacy of 3,66,000 ha of eligible lands are excluded, only 23,000 ha per annum.[5]

An updated set of such estimates and comparisons is provided later on in the section "Macro-analysis of the Forest Clearances".

Main Provisions of the Act and Regulations and Guidelines

The main provisions of the Forest (Conservation) Act, 1980, as it is formally known, are now summarized. In a remarkably short ambit of four sections, it lays down the conditions and considerations for "the dereservation of forests or use of forest land for non-forest purpose" (Section 2). The primary condition is that "the prior approval of the Central Government" is mandatory before any "State Government or other authority" makes any order for an action falling under the following descriptions:[6]

(i) making a reserved forest no longer reserved (dereservation);
(ii) permitting use of "any forest land" for "any non-forest purpose";
(iii) assigning "by way of lease or otherwise" any forest land to a private person or any entity "not owned, managed or controlled by Government"; and
(iv) clearing any forest land of naturally grown trees "for the purpose of using it for afforestation".

This is followed by an 'Explanation', which will be discussed further on after mentioning the contents of the other Sections.

Section 3 of the Act permits the Central Government to constitute an Advisory Committee to help it to take decisions under the above

conditions. The number of members can be as the government may deem fit. The Committee is meant to advise the government about (i) the grant of approval under Section 2; and (ii) "any other matter connected with the conservation of forests which may be referred to it by the Central Government". Section 3 provides for fixing accountability and penalty of up to 15 days' simple imprisonment in case of infringement of the Act: and further that the head of a government department or authority is deemed to be responsible for any offence under the Act (along with the primarily culpable officer), unless he or she "proves that the offence was committed without his knowledge or that he exercised all due diligence to prevent the commission of such offence".

The fourth, and final, section empowers the Central Government to make rules for carrying out the provisions of the Act, by notifying in the Official Gazette, and subsequently ("as soon as may be after it is made") laying them before each House of Parliament for confirmation, modification or rejection as the case may be, but "without prejudice to the validity of anything previously done under that rule".

Coming back to the 'Explanation' under Section 2, this clarifies what is a "non-forest purpose": it is "the breaking up or clearing of any forest land or portion thereof" for "(a) the cultivation of tea, coffee, spices, rubber, palms, oil-bearing plants, horticultural crops or medicinal plants; and "(b) any purpose other than reafforestation". This two-part phrasing is somewhat unusual, as the general provision would usually be expected first, to be followed by the narrowing down by specifying the plantation crops that would not be in the permitted category. Here the list of specific crops in the negative, prohibited category are stated first, and then the general proviso of all activities "other than reafforestation". This is probably because many people often argue that forests should be allowed to be utilized for raising income-yielding perennial crops (say, rubber or coffee), especially where there are indigenous communities who are in need of income-earning activities. This clause expressly places such tree or plant crops in the non-forest category, so that any such proposal needs to be examined by the Central Government. It is interesting that even medicinal plants are included in the negative category, although they could conceivably be raised under the tree canopy without much disturbance to the soil. Many of the prescriptions normally occurring in our working plans regarding treatment of undergrowth and what may be called augmentation plantings (to restock sparsely clothed or degraded lands), which often involve such non-forest activities, would probably attract this section.

There is a further clarification to this negative category, which exempts "any work relating or ancillary to conservation, development and management of forests and wildlife, namely, the establishment of check-posts, fire lines, wireless communications and construction of fencing, bridges and culverts, dams, waterholes, trench marks, boundary marks, pipelines or other like purposes". It is instructive to see how plantation-type activities have again been carefully cordoned off from this palliative list, whereas activities in support of protection have been retained in the exempted list. What this suggests is that the framers of this Act wished to make a clear distinction between measures to conserve and protect the natural forest, and 'development' measures such as the departmental predilection to raise artificial plantations of usually non-native and commercial species. The latter is obviously subject to more scrutiny, which presently is being done mainly through the Working Plans.[7]

Thus far, we have what appears to be a remarkably concise and precise Act with one simple message: apply for permission to the Central Government whenever any forest land is required for any non-forest purpose. The main question remaining to be clarified, then, is: what is a forest land? Reserved forest, used in Section 2, clause (i), is clear: it is a legal category notified under the Forest Act[8]; but the term "forest land" has not been defined (indeed there is no Section of definitions, as there usually is in most such enactments). The definition of "forest land" has been developed over time through court judgments, and this is one of the features of this Act, that sets it apart from other similar legislations.

The Supreme Court Steps In: What is a 'Forest'?

What is a forest land for the purposes of the Forest Conservation Act? The question was addressed by the Supreme Court in the Writ Petition No. 202 of 1995, which has become famous in Indian jurisprudence as the 'Godavarman' case. A limited matter was expanded to cover the whole gamut of environmental and forest issues by the Supreme Court, as described by Dutta and Yadav (2011, Chapter I).

The direction of the Supreme Court on the definition of 'forest land' was issued in the order dated 12.12.96:

> "The term 'forest land' occurring in Section 2, will not only include 'forest' as understood in the dictionary sense, but also any area recorded as forest in the Government record irrespective of ownership. The provisions enacted in the Forest Conservation Act, 1980 for the conservation of forests, and the matters connected therewith must apply clearly to all forests so understood." Dutta and Yadav (*op. cit.*)

In this master stroke, then, the Supreme Court brought **all** lands that had **either** the legal status **or** the nature of a forest in the dictionary sense, whatsoever be the formal classification or present ownership, under the ambit of the Act. It does not have to be land in the possession of the forest department alone; it may also be under other departments, or even, apparently, under community control or private entities.

The last possibility introduces some cause for confusion, because, on a close reading, the FCA is a regulation not so much on use *per se* of forest land, but on the power of the "State Government or other authority" to make any order directing the dereservation of reserved forest or allowing use of any forest land for non-forest purpose. Under this reading, it would appear that the FCA is not a curb on a private entity against using their own forest land for non-forest purpose.[9] Presumably, the question of honouring the Forest Conservation Act would arise only if the State Government or other authority needs to make an order regarding the land (for instance, giving permission to fell trees if there is a Tree Protection Act in force).

A small comment may be made (parenthetically, so to speak) on the phrasing of the Supreme Court's order on the definition of "forest land". It may have been more logical to reverse the order of the two categories: what the honourable Court seems to be saying is that "forest land" is not only the land so notified under the respective Forest Acts, and under the control of the forest departments, but also any land which has been classified as "forest" in any government records, as well as any land that falls under the dictionary sense of the word "forest", whosoever be the owner or whatsoever be its formal classification in any records. To give proper balance to the "before" and "after" portions around the phrases 'not only… but also', it would perhaps have been a happier choice to say, "…will include not only any area recorded as forest in the Government record, irrespective of its ownership, but also any 'forest' as understood in the dictionary sense, irrespective its ownership or classification". It is once again to be noted that there are two aspects here: ownership, and classification. Both are considered across the board, in the sense that the order of the court encompasses any land recorded as (classified formally as) forest irrespective of ownership or present condition, and conversely any land having the nature of forest in the dictionary sense, irrespective of its formal classification or present ownership.

Now however there is the question of what 'forest' in the dictionary sense should encompass. Would it include grasslands, for instance, or seasonal wetlands, which may be very important as wildlife habitat or a safe haven for biodiversity, but may have very few trees (they may not

even be forest according to the technical definition used by the Forest Survey of India or the FAO, for instance). Would the FCA come in the way of the State Government allotting such areas for non-forestry purposes?[10] Oxford dictionaries provide the definition of "forest" as "a large area covered chiefly with trees and undergrowth: e.g. *pine forest*". Cambridge dictionaries have "a large area of land covered with trees and plants, usually larger than a wood, or the trees and plants themselves". Merriam-Webster has "a dense growth of trees and underbrush covering a large tract; a tract of wooded land in England formerly owned by the sovereign and used for game". Thus, as far as the dictionary sense goes, an open grassland may not come under the purview of the "forest" classification, unless it had been recorded as forest or jungle or equivalent term in some government record (as is quite commonly the case in our revenue records), or had been notified as forest under the Forest Act or other act.

It may be as well to quote here some definitions from the specialized forest agencies like the Forest Survey of India (FSI). The FSI defines 'forest cover' as follows: "All lands, more than one hectare in area, with a tree canopy density of more than 10 per cent irrespective of ownership and legal status. Such lands may not necessarily be a recorded forest area. It also includes orchards, bamboos and palm."[11] Obviously we cannot simply take the whole definition for the purposes of the FCA 1980, as it would cause untold misery to orchard and palm plantations. The Food and Agriculture Organization (FAO) has a similar definition.

The Ministry of Environment & Forests (MoEF) did commission a study a few years ago on how to define "forest". Nothing much seems to have come of it, and it is understood that the experts more or less much came to the position that anything designated or classified as forest in any government records (revenue or forest records) ought to be considered as forest.[12] The official position is given in a concise statement in the Government of India FCA *Handbook* of 2004, under the Part-C, "Guidelines and Clarifications", para 1.1 which is reproduced here (see *Handbook*, p.19):

> "1.1
>
> (i) Definition: The term 'Forest land' mentioned in Section 2 of the Act refers to reserved forest, protected forest or any area recorded as forest in the government records. Lands which are notified under Section 4 of the Indian Forest Act would also come within the purview of the Act.[13] (Supreme Court's Judgement in NTPC's case). It would also include "Forest" as

> understood in the dictionary sense (Supreme Court order dated 12.12.1996 in WP No.202/1995-Annexure-I). Al proposals for diversion of such areas to any non-forest purpose, irrespective of its ownership, would require the prior approval of the Central Government".
>
> "Clarification: The term "forest" shall not be applicable to the plantations raised on private lands, except notified private forests. However, felling of trees in these private plantations shall be governed by various State Acts and Rules. Felling of trees in notified private forests will be as per the working plan/ management plan duly approved by Government of India."

It may be noticed here that lands notified as private forests, and private lands which have the nature of forest, will both attract the Forest Conservation Act. Plantations raised on private lands are exempt, plantations raised on notified forest are to be got approved by Central Government, not through application under the FCA, but through working plans or management plans. There is some ambiguity about planted trees or tree crops on public lands which have not been notified as forest under any law: one such case, of a public park in Uttar Pradesh, was examined in the courts and finally found to be outside the ambit of the FC Act[14] (although there may be other laws that govern such man-made formations, such as the Tree Preservation Acts or Public Parks and Gardens Acts where such exist).

The Supreme Court's order of 12.12.1996 obviously threw up big questions on what lands would come under the ambit of the FCA 1980 as per the dictionary meaning of the word (in contrast, for the lands classified in some or other record as forest, jungle, etc., there was no ambiguity, regardless of the ownership or current vegetation). The Supreme Court therefore gave an opportunity to the States to go through all the records and screen those lands which were fit to go into the category of "forest" as per the dictionary meaning, the so-called category of "deemed" forest (regardless of ownership), including areas which were earlier "forests" but stand degraded, denuded and cleared. States were to accordingly appoint Expert Committees to do the exercise, and they were to submit their final reports through affidavits to the Supreme Court.

The Supreme Court used another occasion to expand on its previous orders and throw more clarity on the criteria to be used to identify "forest" status. This was in the judgment on the so-called Lafarge case concerning a limestone mine in Meghalaya State. The case is to be discussed in detail further on, but some basic background may be in order here to better appreciate the salient points of the court's orders. Briefly then, the MoEF

accorded environmental clearance in August 2001 for a 2 million tonnes per annum (mTPA) limestone mining project in the Khasi Hills Autonomous District Council of Meghalaya State. During the course of monitoring for compliance of the conditions of environmental clearance, the regional office of the MoEF at Shillong observed in May 2006 and April 2007, that the site was actually classifiable as a forest, under the broad definition provided by the Supreme Court in the Godavarman judgment. The operations were ordered to be stopped in April 2007 and the project entity asked to apply for clearance under the FCA 1980. The Supreme Court passed the final orders in this and other related IAs on July 6, 2011.

In the operational part of the order, the Supreme Court has acknowledged that limestone mining is an activity that has been going on for centuries in the area, and has expressed satisfaction with the due diligence exercise undertaken by the MoEF in the matter of forest clearance. Apart from this, however, the interesting point to note is that in this judgment, the Supreme Court has directed that the National Forest Policy 1988 shall henceforth be read as part of the Forest Conservation Act, which suggests some additional criteria (see excerpt in case study below). In addition, the Supreme Court added a number of guidelines to strengthen the existing process of grant of clearances under FCA 1980 and the EPA 1986, till a regulatory mechanism is put in place (see the case study below). How these orders of the Supreme Court will affect the working of the FCA will be addressed after describing how the applications are being dealt with presently, and on what criteria the decisions of giving or denying FC clearance are being taken now.

How the Act is Implemented: Rules, Guidelines and Procedures

The Forest (Conservation) Act, 1980, is an important Central legislation which aims to *control and regulate* de-forestation, and thus provide a legal basis for the conservation of forests in the country. At the same time, it is also *de facto* a legal mechanism *providing for* diversion of forest for non-forest purposes, assigning forest to non-government agency, and for clearing naturally grown trees for the purpose of reafforestation. It is thus a double-edged knife, and the executive officers dealing with the proposals under this Act need some guidance as to which consideration is to be applied (the FCA as a conservation measure or the same Act as a mechanism for facilitating diversion of forest areas) and under what circumstances. This guidance is sought to be provided by a set of Rules issued under the powers conferred by sub-section (1) of Section 4 of the FCA, and Guidelines and Clarifications, which are described below.[15]

Basically, the project proponent, after examining all feasible alternatives, and coming to the conviction that use of the forest land is unavoidable, submits an application in the format prescribed in the Forest (Conservation) Rules, 2003 (Appendix- Form 'A'), to the Nodal Officer in the State Government (State Forest Department). This format has two parts: in Part-I, the project agency fills in details of the proposed project, including duly certified maps on 1:50,000 scale and cost-benefit analysis, purpose-wise break-up of total land required, details of displacement of people due to the project with proposed rehabilitation plan, an undertaking to bear the cost of compensatory afforestation (CA) etc. Part-II of the form is to be filled in by the Deputy Conservator of Forests or Divisional Forest Officer, and includes details of the forest such as location and area (obviously), but also its density, species-wise and diameter-wise number of trees on the land, vulnerability to erosion, distance from the boundary of the forest, wildlife aspects, whether any rare/ endangered/ unique species of flora or fauna is found, whether any protected monuments etc. are located therein, whether the forest area asked for is the barest minimum, details of compensatory afforestation (CA) areas proposed, site inspection report of the DCF, and division totals of areas so far diverted and CA done. The DCF signs off with his or her "specific recommendation …for acceptance or otherwise of the proposal with reasons". This application then goes to the next higher authority, the Conservator of Forests, who adds his or her inspection report and specific remarks, then to the Nodal Officer or Principal Chief Conservator of Forests or Head of the forest department to record the specific recommendation of the State Forest Department. The whole report is then countersigned by the Secretary of the Forest Department in the State Government (with specific comments on any adverse opinion recorded by any of the line officers).

As per Rule 6, the State Government is to send such proposals as require permission under Section 2 to the Central Government "within ninety days of the receipt of the proposal from the user agency for proposals seeking first time approval under the Act and within sixty days for proposals seeking renewal of leases where approval of the Central Government under the Act had already been obtained earlier". Proposals involving clearing naturally grown trees in forest land for the purpose of using it for reafforestation shall, however, be sent in the form of a Working Plan or Management Plan. As indicated already, proposals for more than 40 ha will go directly to the Minstry of Environment and Forests at New Delhi, which shall refer them (if found complete in all respects) to the Forest Advisory Committee, while propoals for land up to 40 ha will be sent first to the

Regional Office of the Ministry (as will also proposals for reafforestation referred to above).

The Forest Advisory Committee (referred to as FAC, not to be confused with FCA, which refers to the Act), while tendering its advice, may also suggest any conditions or restrictions on the use of the forest land, in order to minimize the adverse environmental impact. The Central Government, in turn is bound to consider the advice of the FAC, conduct "such further enquiry as it may consider necessary, grant approval to the proposal with or without conditions or reject the same within sixty days of its receipt".

Two aspects of this process are worthy of comment here: one is the meager basis for evaluating the proposals provided to the FAC in Rule 7, and the second is the time limits for each stage of the process, stated or implied. Much has been made about these time limits in criticisms about bureaucratic red tape and inefficiency, and a few points are discussed here below.

Time Limits for Dealing with FC Clearance Proposals

On a bald reading of the Rules, it appears that the following time limits are explicit: thus, for a fresh proposal, the State Government has 90 days from the date of receipt of the proposal from the user agency, to send the proposal to the Central Government. For the Central Government, acceptance or rejection has to be decided within 60 days of "its" receipt (Rule 8). Of course, in practice a proposal may take anything from one to many years to be processed.

This has occasioned much criticism from the user agencies and development ministries, as well as promise of reform from MoEF. However, one key element in these time limits is that the application has to be complete in all respects. For the FAC, for example, as long as there remain some doubts or data deficiencies, or a need is felt for additional impact assessments or incorporation of additional proposals for alternatives or added mitigative or corrective measures, it may be justifiable to treat the application as not quite complete. Once the FAC has come to a decision and put up its proceedings on the website, however, the clock starts ticking for the Ministry as such to take a decision. This means, in practice, that the Minister for Environment and Forests has got all of 60 days to get the file and record the decision within the stipulated time period of "its" receipt from the FAC: the time period cannot be counted from the time of receipt of the file from the State Government. Similar considerations would be applicable at the other

levels also: as long as there is discussion on the data or on field-level realities, the clock cannot be started, for instance at the State Government level to count the limit of 90 days. Even conceding this, there may be situations where the competent authority may require more time to take a view. Thus the time limits, while desirable in the interests of efficiency, transparency and accountability, are often not practically achievable.

(Abortive) Amendment of 2004 to the Forest Conservation Rules

The ministry (in 2004) made an attempt to weight the process in favour of the projects by proposing an amendment rule 1A after sub-rule 1 in Rule 7, to the effect that the Forest Advisory Committee should give its recommendations on any proposal within a period of 45 days from its receipt from the State Government.[16] Another change proposed in the Amendment was in the composition of the FAC: the three non-officials were to be experts "one each in Mining, Civil Engineering and Development Economics". These were notified as the Forest (Conservation) Amendment Rules, 2004, in the Gazette Extraordinary dated February 3, 2004, but before they could be given effect to, the composition of the FAC became "the subject-matter of various orders as well as detailed hearings in the Supreme Court", and "resulted in a situation where the Ministry of Environment and Forests was at loggerheads with the CEC on how the FAC should be constituted" (Dutta and Yadav 2011, p.13; CEC = Central Empowered Committee).

According to this source book on Supreme Court orders on forest matters, the genesis of the case can be traced to an Application (IA No.1126 of 2004) filed by the *amicus curiae* bringing to the notice of the court "how forest land was sought to be diverted under the guise of regularization of the rights of the tribals" (Dutta and Yadav 2011, p.13), to which the proposed amendment in the specializations required of the three expert FAC members was also annexed. The Court did not take much time to express its strong reservations about the ministry's proposed changes to the composition of the FAC, and stayed these amendments in its order dated 23-02-2004 (*op. cit.*, p.14). The ministry tried hard to argue the necessity of having these domain experts (in mining, engineering etc.) on the Forest Advisory Committee, but the Court was having none of this. In its order dated 15-09-2006, the Supreme Court asked the ministry to reconstitute the FAC in consultation with the *amicus curiae* in terms of the original (2003) Rules, which call for independent experts in forestry and allied disciplines to be nominated to the three non-officials' positions in the committee, and not as

per the amendment of 2004 which had been stayed by the Court (*op. cit.,* p.14 and p.409). In its order dated 28-11-2006 (*op. cit*., p.421), the SC clearly stated its conclusion that civil engineering, mining and other sectors of development (which are already well represented through the personnel in the concerned ministries and user agencies) cannot be said to be allied disciplines of forestry, and what is required for the FAC to discharge its role effectively as guardian of the ecology and environment, is persons who can speak for the conservation ethos: soil and water conservation, wildlife, biodiversity, etc. Indeed, so unacceptable did the SC find the ministry's arguments, that it characterized the latter's approach as, to say the least, showing "total unawareness of the object with which the aforesaid legislations and, in particular, FC Act were enacted" (*op. cit.,* p.424). The Court also observed (without amusement) that the ministry had kept the FAC, constituted with industry specialists according to the impugned 2004 amendment, on suspension, without taking the consequential action of reconstituting it according to the original, 2003, specifications (obviously leading to the piling up of hundreds of cases), and ordered the ministry do so forthwith (in consultation with the *amicus* and the Chairman of the CEC, as previously advised).

The story did not end there, however, as the ministry did not accept the names suggested, and the matter went back to the SC. In its order dated 15-12-2006 (Dutta & Yadav *op. cit.*, p.14 and p.429), the SC clearly finds "disturbing" the adversarial position of the ministry in reference to the names suggested, as also the ministry's calling for a "public oral examination" of their knowledge in open court. In its order dated 27-04-2007, the SC noted that the ministry had appointed its own candidates to the non-official positions on the FAC, without agreeing to the suggestions of the Court regarding some of the names from the list suggested by the CEC, but since time would be required for the Court to hear arguments on the legality of the FAC as reconstituted by the ministry, the Court decided that all fresh cases would continue to be examined by the current FAC, but each and every case would have to be submitted to the Court (along with opinion of the CEC) for final orders. Cases cleared after 15-09-2006 would be also submitted by the ministry along with CEC response without placing before the new FAC. The ministry seems to have had a rethinking of its position in the ensuing months, but it took till 2-05-2008 for the Court to finally be satisfied with the fresh names proposed by the ministry[17], and the stipulation that CEC (and the Court) should examine the FAC recommendations was finally withdrawn by order dated 2-05-2008 (*op. cit.*, p.15 and 485). Thus,

because of a certain intransigency on the part of the ministry, the very power conferred under the FCA 1980 of approving forest diversion was withdrawn from it for four years (albeit temporarily), and a potential for a legal wrangle about the constitutional limits of jurisdiction of the judiciary *vis-à-vis* the executive, was created.

One implication of the stay on the 2004 amendments was that the revised time limits specified for the FAC's scrutiny are no longer in force, and the rules revert back to the previous position that there are no strict time limits on the FAC to do its scrutiny, field visits, expert studies or whatever may be called for, and the time limit of 60 days specified for final decision by the ministry in Clause 8 of the 2003 FC Rules can be interpreted as applying *after* getting the final recommendation of the FAC.

Criteria and Considerations for FC Clearance

The other major issue of concern is the meager theoretical or conceptual basis available to the FAC (or other levels, for that matter) for deciding whether a particular diversion proposition is to be accepted or not. Rule 7 deals with the process to be adopted by the Forest Advisory Committee at the Ministry (*Handbook* 2004, p.5):

> "7. Committee to advise on proposals received by the Central Government -
>
> (1) The Central Government shall refer every proposal…
>
> "(2) The Committee shall have due regard to all or any of the following matters while tendering its advice on the proposals referred to it under sub-rule (1), namely:
>
> "(a) Whether the forest land proposed to be used for non-forest purpose forms part of a nature reserve, national park, wildlife sanctuary, biosphere reserve or form part of the habitat of any endangered or threatened species of flora and fauna or of an area lying in severely eroded catchment;
>
> "(b) Whether the use of any forest land is for agricultural purposes or for the rehabilitation of persons displaced from their residences by reason of any river valley or hydro-electric project;
>
> "(c) Whether the State Government or other authority has certified that it has considered all other alternatives and that no other alternatives in the circumstances are feasible and that the required area is the minimum needed for the purpose; and

> "(d) Whether the State Government or other authority undertakes to provide at its cost for the acquisition of land of an equivalent area and afforestation thereof."

The FAC is to have "due regard" to the wildlife aspect as laid out above, and to the erosion status of the land. The rule as such does not seem to be a prohibition on diversion, but implies that the FAC will have to take these aspects into consideration, for which probably it will have to call for specific ecological status and impact assessments from the concerned area experts. In practice, proposals for lands in or near notified wildlife protected areas (PAs) [18] are seldom taken up by the FAC, but instead referred first to the National Board for Wildlife (NBWL) and considered in their Standing Committee under the Chair of the Minister, MoEF. Also, in view of the many orders passed by the Supreme Court, prior approval of Supreme Court is needed for non-forest activities in PAs. If after all this, the Committee feels that the impact will not be adverse, or can be mitigated by suitable measures in such a way as to not negate the conservation objectives, they may decide to recommend the proposed project; this would depend on the priority they give to competing values. This is one reason why the background and inclination of the members is considered to be so crucial: in the original Rule 3 of 2003, the three non-Ministry members ("non-officials", as explicitly stipulated) were to be "eminent experts in forestry and allied disciplines", while in the abortive Amendment of February 3, 2004, the Ministry sought to stipulate "three non-official members who shall be experts one each in Mining, Civil Engineering and Development Economics". In this revised set-up, presumably the forest officers were expected to take care of the interests of wildlife and soil erosion. However, in practice this is not often the reality, as forest officers without a specific responsibility for wildlife areas do tend to look at forestry in a "business-as-usual" or routine manner; moreover, a forest official who went against the will of the government would soon find himself out in the cold without responsibility or work. Of course wildlife in notified sanctuaries and national parks would usually get special consideration, but wildlife values in general outside the notified PAs, especially in buffer zones and corridors, wetlands and coastal belts, would tend to get marginalised.

It is apparent that the 2004 Amendments to the FCA Rules (which are not in force now) were slanted toward the interests of industry and development, in comparison with the original 2003 Rules (which are in force). Indeed, when the FAC was reconstituted in 2012, one of the new members had to actually step down, as he had been a consultant to some

project entities previously as a mining expert. In general, professionals from the user sectors or industries would tend to have such conflict-of-interest issues, which would make them poor candidates for the FAC. This is all a manifestation of the underlying tension between the two divergent roles of the FCA: as an addition to the arsenal provided to protect forests from competing uses, or as a framework to manage diversion of forests for development in an orderly manner while taking care of the environmental sensitivities of the site and the society. These are, respectively, the prohibitive and the facilitative roles of the legislation.

The Guidelines contain a number of illuminative paragraphs on different aspects and issues, which will now be cited in brief.[19] For instance, in sub-para 1.2(i) of the Guidelines- Chapter 1 (*Handbook* 2004, p.19), it is clarified that cases where specific orders for de-reservation or diversion of forest lands were not passed before operation of this Act, but only administrative approval for the project was issued, prior approval of the Central Government under the FCA would be necessary.[20] In sub-para 1.2(ii), "Harvesting of fodder grasses, legumes etc. which grow naturally in forest areas" has been exempted from FCA clearance, but not if a lease of such areas is being contemplated to any organization or individual; under sub-para 1.2(iii) it is further clarified that rights, concessions and privileges accorded to "the local people for bonafide domestic use" will not be affected, provided it is ensured that "the right holders do not resort to felling of trees or break up the forest floor so as to procure stones, minerals, or take up constructions, etc.", and subject to the condition that "The forest produce so obtained shall not be utilized for any commercial purposes", and that the forest produce should not be transported by any mechanized vehicles.[21] Of course, the Supreme Court prohibition against removing any material from wildlife reserves is cited here in the Guidelines, in view of which, "rights and concessions cannot be enjoyed in the Protected Areas (PAs)" (*Handbook*, p.20).

Para 1.3 of the Guidelines (*Handbook*, p.20) gives exemption for mere investigation and survey in forest areas (other than PAs), provided there is no clearing of forest or cutting of trees or actual construction involved (an activity limited to clearing of undergrowth and lopping of trees is permissible without prior approval of Central Government under the FCA[22]). As per sub-para 1.3(v), prospecting for minerals requires FCA approval, but test drilling up to 10 bore holes per 100 sq km is exempted (the permissible limit is being revised upward on the plaint of the industry).

While cultivation of tea, coffee, spices, rubber and palm, is always a non-forest activity and therefore calls for prior FCA clearance (Para 1.4 (i)), as is mulberry plantation for silkworm rearing (sub-para 1.5(iii)), planting of fruit-bearing trees or oil-bearing plants, or medicinal plants would require FCA clearance except when the species are indigenous to the area in question, and such planting activity is "part of an overall afforestation programme for the forest area in question" (sub-para 1.4(ii)). Tusser cultivation in forest areas without undertaking monoculture of host trees like *asan* or *arjun* (*Terminalia* species) is exempted under sub-para 1.5(i), while if such planting is taken up, it is exempted if it does not involve any felling of existing trees, and if at least three species are planted, with none of them covering over 50% of the planted area (para 1.5(ii)).

Such clauses provide some guidance about the issue of what constitutes a non-forest activity, and seem to be fairly consistent, but they do not, of course, provide any guidance to the FAC or the Central Government on what criteria to adopt in allowing or disallowing such proposals. What the FCA 1980 does NOT do is to categorically prohibit such activities; so the ball is always in the Central Government's court in deciding such issues, and as per the principles of equity and fair play, once the Central Government allows one party for a particular type of activity, it would have to allow all subsequent similar applications under the principle of equality before the law and non-discrimination, unless they can come up with some other principle like carrying capacity to limit the number of permits issued. Any discretionary withholding of FC clearance may in turn attract allegations of favouritism or worse, and is the main problem plaguing our polity when it comes to disposing of natural resources to private entities. Mining block allocations, and perhaps allocation of wireless spectrum, are prime examples of these problems, and have given rise to allegations of huge scams and corruption, that have shaken the whole country and are still not completely resolved.

Issue of FCA clearance for mining in forest areas is taken up in Section 1.6 of the Guidelines (FCA *Handbook*, p.21), according to which it always requires prior approval under the FCA 1980, including renewal of an existing mining lease.[23] This also applies to removal of boulders, bajri, stone etc. in river beds located within forest areas, and has been the subject of intense discussion in Uttarakhand state as it supports thousands of people from Uttar Pradesh and Bihar states and cannot be lightly brushed aside regardless of potential ecological effects (see case study below).

Para 1.8 of the Guidelines throws light on some interesting points with regard to sanctioning of the Working Plans of the forests under sub-clause 2(iv) of the Act (*Handbook*, p.22). As per sub-para 1.8(i), prior FCA approval is required for any plan which involves clearing of naturally-grown trees, irrespective of their size, "for harnessing existing crop and/or raising plantation through artificial regeneration techniques, which may include coppicing, pollarding or any other mode of vegetative propagation". This approval is given at the level of the Regional Office of the MoEF, which is expected to "ensure that the final decision is in conformity with the National Forest Policy, Working Plan guidelines and other relevant rules and guidelines issued by the Central Government from time to time" (*Handbook*, p.22). However, the Regional Office is required to seek prior approval of the Central Ministry "whenever the proposal involves clear-felling of forest area having **density above 0.4** irrespective of the area involved", or "when the proposal is for clear felling of an area of size **more than 20 ha. in the plains and 10 ha. in the hilly region**, irrespective of density".

Para 1.10 of the Guidelines (*Handbook*, p.23) talks of "Diversion of Forest Land for Regularization of Encroachments". The detailed guidelines to be followed are given in Annexure IV of the Handbook, which opens by stating that "Encroachment of forest land for cultivation and other purposes continues to be the most pernicious practice endangering forest resources throughout the country" (*Handbook*, p.50). The circular goes on to lay down a detailed process for considering encroachments that were "eligible" as per the norms fixed by the State governments, which existed prior to the coming into force of the FCA, i.e. 25.10.1980, and in respect of which the State government had already taken a decision to regularize them based on certain conditions. However, with the promulgation of the Forest Rights Act, 2006, the legal picture changes considerably, as it can be claimed that the jurisdiction of the forest department is now taken away and vested with the Gram Sabha (see Lele & Menon 2014, for such arguments).

Obviously, there are a number of issues and aspects of the FCA 1980, and about the competing claims of forest conservation interests, community rights and people's livelihoods, economic development, and so on, which may be of interest and relevance, but would be difficult to address in the course of an individual case hearing. We are focused here on the limited question of the possibility of finding a more objective basis and reducing the unpredictability or arbitrariness of the FCA clearance (approval) process,

leaving the broader social and political issues raised in works like Lele & Menon (*op. cit.*) for a different occasion. We turn now to one such attempt during recent years to develop criteria for deciding whether a particular forest patch should be relinquished for non-forestry uses.

Cut-off Criteria Based on Density-weighted Forest Cover

An attempt was made in the Ministry at specifying criteria for deciding the eligibility for FC clearance. The motivation for this, in fact, was the reaction of the affected Ministries like Power and Coal, to the MoEF's rejection of some projects that were of crucial significance to them. As this will be described in detail in the ensuing case studies on the coal sector, only a bare summary is provided here.

The principle used here was to build a parameter based on two variables: one, the overall percentage of forest cover (the quantity, in a way), and the other, the percentage weighted by the density of the forest (a measure of quality). A cut-off is specified for each. Thus, if the overall (or gross) proportion of forest cover is (for instance) 30% or above in the particular patch of land, it is considered to be unavailable. However, if the patch contains less than this proportion of forest cover, but is of dense forest, there should be some measure to give extra weight to this. This is done by calculating another parameter, the weighted forest cover: each density class of forest is weighted by its corresponding (mid-class) density (see the coal sector case study below).

This approach may give a somewhat less arbitrary classification, but the crucial parameter is the cut-off level, which is once again an arbitrary decision. Indeed, as will be described later, the coal ministry were so unhappy with the initial outcomes, that the exercise had to be re-done with a higher cut-off (a less demanding cut-off). Of course there is no completely objective basis for fixing the cut-off, but the user ministry may not have realized that whatever criteria was used, certain tracts of continuous medium to very dense forest would probably always remain outside the permissible zone. Such tracts were found in some of the coal and iron ore fields in Central India (such as the Hasdeo-Arand coal fields in Chattisgarh State), which became the bone of contention between the user ministries, and the object of much heartburn and recriminations (usually against the MoEF, which rarely countered the vilifications and fulminations against it in the media).

When even the relaxed cut-offs failed to satisfy the user ministries, another route was tried whereby large blocks with patchy distribution of forest cover were sought to be split up into sub-blocks, so that the relatively

barren portions could be hived off and brought into the permissible stratum. Conversely, isolated small patches of forest were combined with neighbouring large blocks with sparse vegetation, so that overall weighted forest cover came down. This resulted in an increase in extent of permissible areas in the coal fields tested, as will be described in the case study later.

'Go-No Go' Classification

In the midst of these discussions to assuage the sense of being ill-used on the part of the user ministries, a terminology of 'Go-No Go' was interjected by the environment ministry on the urging of the user ministries. This was a pithy and idiomatic way of summing up the categories, but as far as the legal situation is concerned, it does not appear justifiable to leave large tracts open for diversion to non-forestry uses through a blanket classification of this nature. What it really amounts to is a 'No Go-May Go' categorization, meaning that those blocks that unequivocally come below (or here, above) the cut-off level of forest cover would not be available for diversion, whereas other areas would be available for application, but the final decision would still be contingent on closer scrutiny through the usual process. The user ministries would have ideally liked a situation where all the 'Go' blocks would be put directly at their disposal, something which of course the MoEF had neither the authority nor the inclination to do.

Since so few of the candidate blocks usually end up in rejection on the whole, it is mystifying, to say the least, why the user ministries lobbied so hard to bring into effect the blanket 'Go-No Go' classification. As indicated above, all their fulminations and exhortations would not have been successful in dragging the rejected blocks (mainly in Hasdeo-Arand coal fields in Chattisgarh State) into the Go category. The whole exercise, however, provided ample opportunity for the user ministries and industry, in combination with the Press and media, to throw various accusations at the MoEF, which was held responsible for bringing down the GDP growth rate, driving away foreign investment, and holding back the development of the power and industrial sectors in the country.

Identification of 'Inviolate' Areas

Since the user ministries seem to have been dissatisfied, for some reason,[24] with the 'Go-No Go' exercises of the MoEF, a Group of Ministers (GoM) was set up to go into these issues, and at their urging, the ministry initiated yet another proposal to identify 'inviolate' areas to safeguard such valuable forests which can never be regenerated to the desired quality

(which would thus amount to the 'No Go' category under another name). The new proposal involves an elaborate mapping exercise employing remote sensing satellite images, biodiversity and ecological mapping, biological richness, wildlife values, sinks and corridors, landscape integrity, water cycle value, socio-economic value, aesthetic value and so on (in addition to forest cover percentage, crown density, forest type, and proximity to PAs). The ministry indeed notified a committee (by an order dated March 30, 2012) under the Secretary, MoEF, and including among the members the officials of the MoEF itself, representatives of various organizations such a the National Biodiversity Authority (NBA), Forest Survey of India (FSI), Wildlife Institute of India (WLI), National Tiger Conservation Authority (NTCA), and PCCFs of certain states representing the different regions of the country, to formulate 'objective parameters' for identifying such 'inviolate' areas, and a report of this committee was put out in July 2012.

A brief presentation of the "measurable parameters" suggested by the committee follows. First (A) is "Forest Type", whereby it is intended that relative values or weights should be given (on a scale of 1 to 100) for conserving formations that are unique, rare, or geographically restricted (like the "Myristica swamp forest, reed breaks, desert dunes scrub etc."), and those that are "ecologically sensitive", such as the "Tropical Evergreen forests". The second (B) is weightage for "Biological Richness", whereby sites of high biodiversity value, high irreplaceability and high vulnerability should have the "highest conservation urgency". The third parameter (C) is for "Wildlife Value", which behooves us to treat the PAs (national parks, wildlife sanctuaries etc.) as inviolate. The same high conservation value should be accorded to wildlife areas outside the notified PAs, especially where they constitute corridors, special habitats such as wetlands, breeding sites (e.g. of important bird species), congregation sites, etc. The fourth parameter (D) is for "Forest Cover", which as the name implies, gives weightage to the extent (percentage) of forest cover as well as the quality (canopy density). This is obviously taken over from the previous exercise in the ministry to derive weighted aggregate scores for forest cover and forest density as already described. The fifth parameter (E) is for "Landscape Integrity", explained by the report as "an important factor to ensure integration of various elements of habitats, thereby fulfilling the requirement of connectivity, livelihoods and contiguity among them, besides lending aesthetic values".[25] The sixth parameter proposed (F) is "Hydrological Value", which is self-explanatory.

While formulating such concepts and sets of parameters is not an onerous job, of greater interest is obviously the question of how the ministry proposes to operationalize these parameters. It is claimed that "all the aforesaid parameters are measurable" and information on these can be "collected/ compiled" from already available data sources at various institutions like the FSI, IIRS, WII etc. The data being in "geo-spatial format", can be readily subject to analysis of various types for developing a "Decision Support System in a transparent and objective manner".

As for the "detailed methodology", it is proposed to divide the country into a 1km-by-1 km grid, and each cell of the grid will be evaluated on the aforesaid parameters, and any grid cell that goes above a threshold value would be termed "inviolate". As per "Decision Rule 1", the following shall be "automatically labeled inviolate": all grids falling within PAs or within 1 km of PA boundary; compact patches (of minimum 1 square km) of "very dense forests"; "last remnants of forest types having total geographical area in the entire country of less than 50 sq km"; areas located in "direct draining catchment of first-order perennial streams being utilized as water source/ feeder streams for water supply schemes for towns and other habitations"; similarly for first-order streams feeding hydro power, irrigation and other similar projects; areas located within 250-metre distance of perennial streams/ rivers and boundary of "important wetlands" (having more than 10 ha); and storage reservoirs of water supply, irrigation and similar projects.[26]

These parametric scores are supposed to be used in two ways: one, in relation to a cut-off threshold for each parameter, and second, as part of a cumulative, weighted composite score. "Decision Rule 2", for example, is that any grid (cell) that has an "average score" of over 70 (out of 100) "shall be labeled as inviolate". "Decision Rule 3" is that "Mining Blocks shall be considered inviolate if a majority of grid cells within a block have been labeled as inviolate". Instructions have been worked out for assigning scores: for forest cover, "gross forest cover and weighted forest cover" have been prescribed (much as in the previous ministry exercise), and overall score for forest cover would be the "average" of these two, "both expressed as fraction of the total area, multiplied by one hundred". The 178 forest types in India (as per the Champion & Seth classification) have been assigned scores (on a scale ranging from 1 to 100) based on the "functional value and abundance/ rarity", but any forest type that has a total area of less than 50 sq km has been assigned a score of 100.

Biological Richness is stated to have been mapped by the IIRS for the country, as a function of ecosystem uniqueness (EU), species diversity (H), biodiversity value (BV), terrain complexity and disturbance index (DI). These parameters are combined into a weighted total, and scaled from 1 to 100. For Wildlife Value, areas within PAs are automatically considered inviolate, and for areas outside PAs, specific scores have been given for various characters such as breeding habitats of rare/ endangered species (score 95), location on corridors linking important wildlife habitats (score of 90), etc. as mentioned already.

Landscape Integrity, as mentioned above, is an especially interesting concept that is quite challenging to capture in a score. The committee have suggested criteria such as "the level of fragmentation, size and distance from boundary of the un-fragmented landscapes in which these areas are located" for the purpose of assigning cores. Thus, an area "located at or near the centre of an un-fragmented landscape having more than 1,000 sq km area" would be given a score of 100, one near an un-fragmented landscape having more than 500-1000 sq km area would be given a score of 90, between 100-500 sq km a score of 80, the threshold for the lowest score of 70 being an un-fragmented landscape less than 100 sq km area. A zero score would be assigned if the area is located in a "totally fragmented" landscape having "not a single un-fragmented patch of size more than 5 hectare within and 2 km distance from boundary of the cell".[27]

The report proposes that as the relevant "country-wide geo-spatial data for all the six parameters are already available", the actual identification and categorization will be done by committee headed by the DG, Forest Survey of India (FSI) with representatives of various organizations such as the National Biodiversity Authority (NBA), Wildlife Institute of India (WLI), National Tiger Conservation Authority (NTCA), concerned state forest departments, state remote sensing agencies, etc. The lists would be notified by the environment ministry for public comments and the views of state governments, and finalized thereafter.

The above proposals have elicited interesting responses from different stakeholders and interested parties, as can be expected. Wildlife protagonists, for instance, while welcoming the move to identify and declare inviolate areas, have pointed out that it is necessary to accurately define the term 'inviolate'. They urge the association of independent wildlife biologists and ecologists in both the formulation of the scheme and in actual identification, as also the need to take the National Board for Wildlife (NBWL) on board, as the apex body for wildlife conservation under the

chairmanship of the Prime Minister himself. More ominously for the government, it has been suggested by one of them that after notification, existing activities that are incompatible with the inviolate character of the notified areas must be stopped or relocated as the occasion demands (personal comm.).

As far as the user ministries are concerned, the whole uproar about the arbitrary nature of the environment ministry's decisions seems to have boomeranged on them, as the intense scrutiny to which the ministry's processes were subjected (especially the lack of a 'scientific' basis and 'objective' criteria) have only led to proposals for much more data-intensive schema whose net effect may well be more restrictive than the current situation as far as the interests of the aggrieved user sectors are concerned. This may well be an example of a totally counter-productive offensive by them against the MoEF, seeing that whatever be the convolutions and combinations that may be tried for the criteria, there is little likelihood of bringing any of the rejected blocks which have really good forest cover into the permissible category. Further, most of the really serious rejections at the level of the Forest Advisory Committee (FAC), have ultimately been reversed at the higher levels, as explained in the orders passed in the case of Chiria iron ore mines in Saranda forest in Jharkhand (MEF's order dated February 9, 2011), and Hasdeo-Arand coal block cases in Chattisgarh State (MEF's order passed in June 2011). Perhaps the only example of a final rejection at the Government level is the 'Vedanta' aluminum ore case in Orissa, which got involved with the media opportunity of displaying the government's concern for Primitive Tribal Groups living there (see Ramesh 2015, for many of the documents concerned).

Institutional Change: Proposal for a 'National Investment Board'

In the midst of all these negotiations and counter-currents, another mechanism was thought up by the collective of user ministries to circumscribe the sphere of action of the environment ministry, that is the setting up of a 'National Investment Board' with over-arching powers to countermand any individual ministry. The environment ministry, as could be expected, did not see much merit in this (see Nithin Sethi's report in the *Times of India*, October 10, 2012), as the environmental and forest clearances were being processed by statutory bodies (like the Forest Advisory Committee) set up under the relevant laws. Any perceived weakening of these institutions was likely to attract the adverse notice of the ever-vigilant 'civil society' organizations, and even more so of the

Supreme Court itself, as had been experienced in the past with the attempts to change the composition of the FAC itself to bring in mining and industry consultants rather than experts only in environment and ecology. Approval for diversion of areas in wildlife sanctuaries or national parks also requires the ultimate concurrence of the Supreme Court itself, so any body of the executive like the proposed NIB would only introduce another, redundant layer in the process which would not really serve the purpose of doing away with the FAC or environment committees' work and processes.

Moreover, the NIB would not be able to materially reduce the time taken to process the proposals in the states, where the main portion of the time was taken up. More than creating another body like the NIB, it would be helpful if these processes at the state and field levels were addressed, and the administrative machinery strengthened to reduce the time taken by routine activities like survey and mapping, collection of field information, etc. As far as the ministry was concerned, some steps to strengthen the administrative infrastructure had already been initiated after the Lafarge judgment, such as the setting up of four additional regional offices, creation of a 'GIS-based decision support database' and web-based online monitoring system.[28] The then environment minister also came out quite emphatically against the dilution of the environment ministry's role (*ibid.*), and conservationists also were suspicious of it (Prerna Bindra, in the *Hindustan Times*, October 19, 2012).

Draft Policy on Inspection and Monitoring, July 2013

An important element of the ' Lafarge' case judgment of the Supreme Court of India[29] was that the environment ministry would prepare a " comprehensive policy" for the inspection, verification and monitoring of forests and the overall procedure relating to the grant of forest clearances and identification of forests in consultation with the states. The committee set up by the ministry came out with its draft policy statement in June 2013, which was put on the ministry website to invite comments.

The committee's report dealt with each of the issues listed by the SC, giving the existing position and its suggestions. Thus, for inspection of the forest lands to be diverted, existing guidelines require inspection by the Divisional Forest Officer (DFO) or the next higher Conservator of Forests (CF) in the state forest department, or, for areas over 100 ha, by the regional offices of the environment ministry. The Lafarge judgment had desired that in case of doubt whether any piece of land was a forest area or not, there should be a joint inspection by the state forest department and the ministry's

regional office, and that there should be a Standing Site Inspection Committee, with at least one non-official member who is an expert in forestry, at each regional office for this purpose. The draft policy endorses this suggestion. It is observed by the draft policy that while the formats are scrutinized at a number of levels, including the mandatory site inspections by the DCF, CF or the regional office, there is no "organized mechanism" at present for the Nodal Officer (Forest Conservation) or the Principal Chief Conservator of Forests (PCCF), or other authorities of the state government (or for that matter the environment ministry at the centre), to independently verify the information provided. For this, the committee advocates the setting up of a "GIS-based decision support database" that will incorporate regularly updated data on the location and boundaries of all the forest areas (as defined for the purposes of the FCA 1980), eco-sensitive zones under other laws like the WLPA 1972, important wildlife migratory corridors, and the forest land diverted in the past, as already desired by the SC through the Lafarge order. The committee proposes that the state and central authorities shall compare and cross check the information provided in the applications with this GIS-based database while considering the FCA clearance applications.

Monitoring for (routine) adherence to the conditions of FC permission is prescribed at present "as frequently as possible" or at least once in a year, with a more comprehensive review of impact (on air and water pollution) every five years by the regional offices. The main responsibility for monitoring forest clearance is however resting on the nodal officer of the state. The ministry has also introduced a stipulation that a self-monitoring report should be filed by the project entity every year. The committee in its draft proposals recognizes that monitoring is "the weakest link in the entire clearance process", and calls for a "transparent, effective and unbiased system to facilitate expeditious follow up action in case of non-compliance" of the FC clearance conditions. It suggests a multiple level monitoring system, starting with mandatory self-monitoring every year by the user agency; regular monitoring by the officers of the State government with frequency ranging from once a year to once in five years for different project "categories" (development sectors or departments); followed by report to the central ministry for appropriate action in case of any violations. The Central Government is to monitor compliance through its regional offices as well as a panel of "accredited institutions/ individual experts", and an "independent remote sensing satellite-based real time monitoring system", which is described in detail in the draft policy.

The draft policy also deals with the identification of forests, which is a knotty problem for areas outside the realm of notified forests under the forest department, such as revenue wastes, private fallows, uncultivated institutional lands, etc. The existing position is that the FC Act and Rules "do not contain anything" on this issue. It is the order dated December 12, 1996 of the SC in the Godavarman case (see above) that introduces the concept of forest being defined by the nature of the vegetation (the "dictionary meaning", regardless of ownership status) rather than only the legal classification. The SC had directed the states to expeditiously screen all the lands that could potentially be classed as forest (the so-called 'deemed forests') for the purpose of the FCA, under this broader definition of forest. In the order dated March 18, 2004 in the Writ Petition (Civil), No. 4677 of 1985 (MC Mehta versus the Union of India), the SC had further directed the inclusion of lands notified under the Punjab Land Preservation Act (PLPA) 1990, also under the ambit of the FCA 1980. The Lafarge judgment (Supreme Court, July 26, 2011) required the states to complete the identification of all potential 'deemed' forests as per the December 12, 1996 order, including areas which were earlier forest but stand degraded or denuded, putting them all on the geo-referenced map system alluded to already. The committee in its draft policy recommends that this should be done expeditiously, suggesting moreover that (in reference to the northeast, where survey and mapping are incomplete), "all compact patches of minimum one hectare area having crown density more than 30%,[30] on any day after December 12, 1996, as per the successive State of Forest reports", should be identified, and that the standing Site Inspection Committees also be nominated in the regional offices as prescribed by the Lafarge judgment.

These proposals to comply with SC directions will ostensibly make the clearance process more rigorous and fool-proof, in the sense that even areas outside the jurisdiction of the forest departments will now have to go through the whole process of FC clearance if there is the slightest possibility that they could be considered as 'forest' in the dictionary sense, including even denuded areas that may have been forest in the past (as per the Godavarman judgment of December 12, 1996). It will also be more successful in avoiding *fait accompli* situations of the Lafarge type (on 'forest' type lands outside the notified forests) as well as tightening up inspection and monitoring.

One of the gaps noticed in this draft policy is that there is no mention of consultation with the local communities, through either the Gram Sabha or through the local Forest Rights Committee of the village. In any case at present the ministry itself has prescribed that consent of the gram sabhas

should be enclosed along with the application (previously at the time of Stage II clearance, but increasing pressure is building to obtain them at Stage I itself), so it would be in the fitness of things to include the gram sabhas or FRA Committees at all stages, from the consideration of the project through inspection, imposition of conditions, and later on for monitoring compliance. The village communities can be the eyes and ears of the environmental monitoring and enforcement agencies. The draft at present seems to have left out this crucial and significant stakeholder in the whole process, perhaps by oversight, or perhaps because it was not explicitly prescribed in the Lafarge judgment.

NPV, CA and CAMPA

Compensatory Afforestation (CA) is dealt with in Chapter 3 of the FCA *Guidelines* (GoI, *Handbook*, p.31 *et seq*.), rather than in the Act or Rules themselves. The matter of CA, and subsequently of recovery of Net Present Value (NPV) and the constitution of a special body called the CAMPA to look after the fund and its allocation, has been the subject of detailed orders by the Supreme Court, and accordingly has been treated in detail in the compilation by Dutta and Yadav (2011). The topic therefore will be discussed here only in brief, with attention being drawn to the detailed exposition in the afore-mentioned volume and other similar compilations. The analysis here will however dwell on certain aspects of centre-state division of responsibilities under the federal structure of our polity, an issue that has been raised sometime back by a prominent environmental organization, TERI (see their report on "Environmental Federalism in India: Forests and Compensatory Afforestation", TERI & KAS 2014)

In brief, Chapter 3 of the *Guidlines* provides that compensatory afforestation (CA) should be raised on an equivalent area of non-forest land, at the cost of the user agency (project proponent). As a matter of "pragmatism", it is allowed to consider CA on lands that would come under the ambit of the FCA but not so far notified as forest, such as "zudpi jungle", "chhote/bade jhar ka jungle", "jungle-jhari land", "civil-soyam lands" and other such lands, provided they are then notified as reserved forest (RF). Land is to preferably located in the contiguity of existing notified forest, and in the same district, or else at least in the same state/UT, as close as possible to the site of diversion. If non-forest land is not at all available in the state, the Chief Secretary is required to certify this, and the CA may be taken up on twice the area in degraded forest in lieu of non-forest land (this is the basis for the present environment minster's argument that diversion

of forest is actually helpful as it leads to reafforestation of twice the area, thereby giving a net gain, as quoted in the newspapers[31]). As per the *Guidelines* of 2004, certain types of proposals have an *ab initio* relaxation of CA land requirements: river-bed extraction of minor minerals, link roads, small water works, minor irrigation works, school buildings, dispensaries, tiny rural industrial sheds, laying of transmission lines, firing ranges, underground mining, proposals up to 1 ha, etc. (specific relaxations and exemptions may be looked up in the said document). Special relaxation for Central government and Central government undertakings is provided (para (ix), p.32 of the *Guidelines*) permitting CA to be taken up on twice the area of degraded forest (without insisting on the Chief Secretary's certificate of non-availability of non-forest land).

The Rules originally provided that each state/UT would create a "special fund" into which the user agencies would deposit the amounts estimated for CA (Section 3.5, p.34), to be utilized by the Forest department or any other implementing agency so nominated for the purpose of undertaking CA. The *Guidelines* records that the Controller General of Accounts (CGA), Ministry of Finance had, in order dated 23.06.1992, instructed that the funds should be put under a certain head of "Reserve Funds not bearing interest", but that the Supreme Court in order dated 30.10.2002 had, subsequently, given directions on the setting up of a separate body for maintaining the fund, under the name of the "Compensatory Afforestation Management & Planning Agency (CAMPA)". Further, the Supreme Court in the cited order had also directed recovery of another payment for the ecological values lost, styled the "Net Present Value (NPV)", which would also be paid into the CAMPA account maintained by the Central government.

The setting up of the CAMPA and its account went through a number of twists and turns, which have been documented in detail in Dutta & Yadav (2011) and other works, and need not be recounted here. Suffice it to say that it was only in 2009 that a CAMPA notification and mechanism was presented to the Supreme Court that met with its approval, and that too as an interim measure (called the *ad-hoc* CAMPA), until the central government could come up with the final shape of the institutional set-up and procedures. Under this *ad hoc* arrangement, all the amounts paid by project agencies for CA, NPV, protected area (wildlife area) treatment, catchment area treatment, and so on, would be transferred to the central CAMPA account maintained in the MoEF, and all subsequent payments would also be made directly into this central account. Each state/UT was

required to set up a state-level CAMPA and open a similar account, into which the central CAMPA would transfer the funds allowed to be used each year. The Supreme Court had, in its order dated 10.07.2009, stipulated that the annual releases to each state/UT would be limited to around 10% of the principal amount lying to its credit in the central CAMPA fund, and the question of considering any additional quantum of releases would be taken up by the Court after seeing the progress made by the State level CAMPA and the effectiveness of the accounting, monitoring and evaluation systems. As per the Forest Sector Report India 2010 publication (ICFRE, 2012, p.77 *et seq.*), the *ad hoc* CAMPA account at the centre had accumulated a corpus of some Rs 18,506 crore (including interest accrued; it is now, January 2015, nearer Rs 33,000 crore). Funds were released to the states on the basis of annual proposals (subject to approval in the National CAMPA Council under the chairmanship of the environment minister) to the tune of Rs 1,000 crore a year from financial 2009-10 onwards. Unfortunately, there is no information on physical progress (obviously, as the money had just started trickling to the states), but it is mentioned that the discretionary portion (NPV component) is being allowed to be used for strengthening the infrastructure and capacity of the department in addition to actual afforestation (planting).

Since discussions and actual orders of the Supreme Court on various occasions related to CAMPA and Compensatory Afforestation (CA) issue in general are available in the publication cited above (and many others), it may not be useful to revisit them in detail. A couple of lesser known aspects of the matter that have come up in discussion recently may be of interest here. One of these is the issue of state-centre relations (federalism) and the way the fund is being administered. Another matter of some interest could be the issues of budget approvals, selective permission for various activities, implementation mechanism and quality control, monitoring, enforcement, inspection, regulation etc.

The "Forests and Federalism" issue has been taken up by the prominent environmental policy NGO, The Energy Research Institute (TERI), which held a consultation workshop on the topic in December, 2013 at its premises in New Delhi (www.teriin.org/ResUpdate/federalism/pdf/6th_December_Workshop_report.pdf, accessed October 2014; see also TERI & KAS, 2014). Their notes record that "even after 2009, when the CAMPA funds started being released to the states, there has been much discontent over the method of disbursement by the Central authority and utilization by the States" (*ibid.*, agenda notes). The TERI's argument appears

to be that so-called independent or ad hoc bodies like the CAMPA or the Central Empowered Committee (CEC) at the centre affect (i.e. take away from) the arrangement of division and delegation of powers in the federal structure. At the same time, concerns are expressed about how the funds are being utilized in the states, and a need is expressed for better supervision and control on the states. To reconcile this need for oversight and control with the professed commitment to decentralization in the spirit of the federal structure, the authors suggest that recourse is to be taken to bottom-up, community-level monitoring rather than the top-down approach of the usual government processes.

Unfortunately, there is no way to have both control and decentralization in this, as in many other, situations in public policy and administration. In stark terms, to this author, it appears that if one professes to have confidence in the states' capacities and convictions to carry out national policy, it follows logically that they should be given a relatively free hand within the boundaries of the national consensus. Supervision and control, therefore, has to be applied with a light touch, and national policy and guidelines need to be laid down in broad, process-based terms to allow individual units to mould them as per local requirements and conditions. We can probably agree with the TERI workshop report that the central government would find it difficult to physically monitor a scheme like the CA or CAMPA, for several reasons. The manpower available to the ad hoc CAMPA or its National CAMPA Advisory Council (NCAC) is severely limited, and it does not appear practical to have a complete separate organizational set-up with the required number of director-level staff to take up close monitoring and inspection of these works. By its very nature, the CA work spots are liable to be widely scattered, and it may not be practical for central personnel to spend the time required to access them periodically. The quantum of work taken up may be widely varying (as it depends on the area of forest diverted, among other things). It may be more practical, and effective in terms of time, manpower and sheer administrative effort, for the centre to monitor certain major sectors and projects, such as mining, where there may be large areas released in each project and correspondingly large areas for treatment. The central agency exercises its control on a purposive sampling basis, with a view to assessing program effectiveness and suggesting improvements and modifications, rather than as a regular counter-check on expenditure and accounting procedure.

However, it is also to be kept in mind that all this will entail rather delicate adjustment of jurisdiction between the state and central administrations. To be frank, such large goals cannot be pursued on the assumption that state administrations are all irresponsible and ineffective. After all, there has to be some level of confidence in the democratic government setup. There are a number of levels of monitoring and verification in the existing procedures of the state departments, involving both internal and external agency. Thus, the executive level in the field (e.g. Forest Range) is subject to financial and administrative control by the district level (Forest Division), entailing physical checking of a certain percentage of works, and general oversight by the higher levels (Forest Conservator's or higher). There is also, in most states, a regular evaluation of programs and schemes by the state evaluation agency, albeit on a sampling basis. Apart from this, there is financial audit by, respectively, the internal audit wing of the department, as well as statutory audit by the state Accountant-General staff. Most states also have a state-level governing council for major programmes, which also may undertake independent multi-stakeholder impact assessments with the participation of NGOs and experts; the state CAMPA councils under the chairmanship of the Chief Minister or Forest Minister, and state steering committees will be expected to undertake such studies or surveys. There is at best a small possibility of any central agency adding to the rigour of these multiple physical and financial checks and inspections by creating any additional agency at the Centre.

The dissatisfaction with CAMPA as a programme probably stems from other reasons or considerations. The programme as such is not central to the forest department's management or working plans, and is more often seen as an additional, and fairly problematic, distraction from the central functions. The forest-using projects themselves are scattered in random ways not in harmony with the forest management plans or silvicultural systems, and forest staff usually find it impractical to physically monitor them. The CA sites are equally scattered over an even wider countryside, as these are based on finding vacant blocks of non-forest land in villages that may not even be in the same neighbourhood as the project (one may envision the situation caused by large tracts of mining blocks, for instance). These, often isolated, bits and pieces of non-forest land are difficult to locate and take up, let alone protect and afforest, and plantation is the only feasible option for any meaningful use of the CA funds, however much one may cavil against it. Working against the long-term sustainability of the CA programme is the unusually long time gap between identification of the CA land parcels and the physical entry by the forest staff (which will usually

happen only when the CA funds are actually received). The cause-and-effect link between forest-consuming project and restorative CA is so tenuous (stretched out in physical location and in time) that the correlation is lost, and CA reverts to the business-as-usual plantatation activity of the type criticized by environmentalists. For instance, since the afforestation is not linked specifically to any local community, it may not be intergrated into any participatory process and therefore may not be designed to meet local felt needs (except in fortuitous circumstances). Further, since operations in the new forest or plantation are provided for only three years (usually), they tend to get abandoned after this initial investment, with overall poor results in terms of survival and growth. With all these uncertainties, it is not a surprise that forest staff tend to go for species that have the highest chance of reasonable success in hostile conditions, such as *Acacia auriculiformis*, casuarina, or even eucalyptus. Local, broad-leaved species tend to be slow-growing and exacting in site requirements, and usually die out as they are smothered by weeds, or damaged by grazing and ground fire, after the initial period of protection by the forest department is over. In the long term, to give at least a fair chance for the CA programme to have a modicum of success, it would probably be best if the plantations were integrated into the local community resources through a joint forestry framework and linkages to other schemes, such as the NAP or now the Green India Mission (GIM).

Another reason for the general dissatisfaction with CA and CAMPA may be that being a marginal programme in the scheme of the forest department's activities, there are few periodic reports about CA, unlike about say the National Afforestation Programme (NAP), Joint Forest Management (JFM) or wildlife protection. This may require the ministry to actually contract out report publishing to some outside agency, either an institution of excellence under the ministry itself, or some commercial firm (the latter would be costly, perhaps beyond the resources that can be mobilized by the ministry or the CAMPA council).

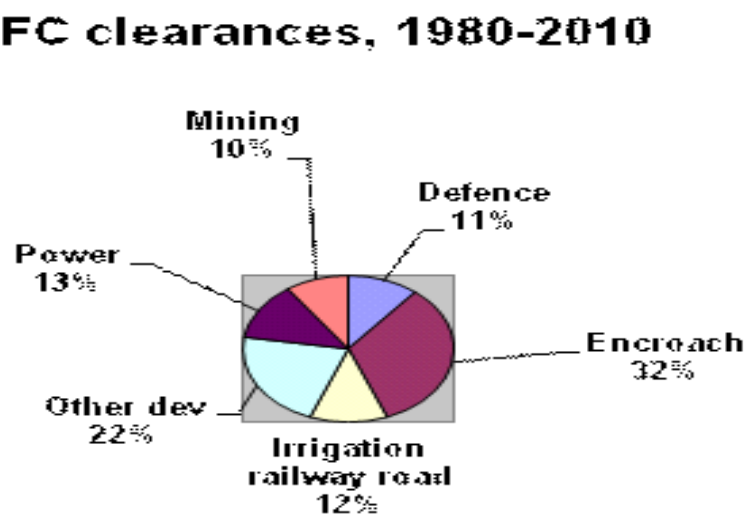
II

MACRO-ANALYSIS OF FOREST CLEARANCES AND POLICY

Before and after the Forest Conservation Act

It would be useful at this point to summarize the overall record of forest clearances over the years, as reported by various NGOs and writers, some of whom have made much of occasional variations in figures. Broadly speaking, ministry sources estimate that during the three decades prior to the enactment of the FCA 1980, the area of forest officially released has been around 1.5 mha, or around 50,000 ha per year. As against this, in the aftermath of the FCA being brought into force, the rate of diversion appears to have come down to around 38,000 ha or so per year, or even lower, 23,000 ha per year, if the regularization of encroachments existing prior to 1980 is taken out of the tally. (*Handbook* 2004, Foreword by the then environment minister). This is a demonstration of the moderating effect of the FCA in slowing down the rate of deforestation. Another estimate (ICFRE, *Forest Sector Report 2010*, p.42-43) puts the pre-FCA diversion at a much higher 4.156 mha (over the period 1951-1976, or around 1,18,700 ha per year), and the area diverted in the post-FCA period 1980-2011 at 1.133 mha, or 36,548 ha per year. The sector-wise break-up of the FCA clearances from 1980 to 2010 or thereabouts is as follows (MoEF sources):

Defence	10.90%
Encroachment regularization , conversion of villages	33.14
Development (irrigation 9.37+railway 0.63+road 1.89)	11.89
Other development (drinking water, school, hospital etc.)	21.64
Power (hydel 9.91+ thermal 0.36+ transmission 2.34+wind 0.09)	12.70
Mining	09.73
Total (39,05,157 ha up to February 2010)	100.00%



The Forest Sector Report 2010 report put together by Devendra Pandey (ICFRE 2012) gives a bar graph of FC clearances by 5-year periods (p.44), which suggests that while the number of cases has gone up markedly from the block periods 2001-2005 (~5000) to 2006-2011 (~10,000), the area diverted seems to have come down from ~400,000 ha to ~200,000 ha (actual figures are not given in the graph, so these are eye-estimates from the height of bars). However, environmentalists and NGOs feel that the pace of diversion has been speeded up in the latter period. An assessment by the Centre for Science and Environment (CSE 2011) based on the data of clearances granted, declared that forest clearances had been granted at an "unprecedented rate" during the 11th Plan period (2007-2012), involving diversion of some 2.04 lakh ha (0.2 mha) of forest during the period between 2007 and August 2011, which is "about 25 per cent of all forestland diverted for projects since 1981". They state that in one year alone (2009) as much as 87,883.67 ha of forestland was granted clearance, suggesting that the forest diversion rate had gone up under the development mandate of the government (however, see the ministry's clarification in paragraph below). They state that a large proportion of this was for mining and power projects, and the maximum amount of forest land diverted for mining in any single year happened in 2010 – about 14,500 ha. Another point made by the CSE assessment was that coal mines accounted for more than half of all forest land diverted for mining, leading to a doubling of capacity in almost all sectors, but almost all of this capacity remains unutilized. Another instructive summary has been presented in the TigerLink publication of November

2013,[32] which makes much of the fact that the quantum of forest clearances has gone up during the 11th Plan period, and even further after 2012. However, this is nothing to be surprised about, since the nation has decided to increase drastically the production of power and other products during the 11th and 12th Five-Year Plans. Obviously, there has to be a corresponding acceleration of mines development and installation of plants, and some of this will obviously reflect on the FC clearances. More pertinent to the policy issues, however, are the cases identified in the TigerLink report of over-ruling of FAC recommendations by the ministry, such as the Hasdeo-Arand coal mines and the Saranda iron ore proposals. These are discussed as case studies below.

In response, Ministry sources made the following clarifications and suggested the following corrections to the CSE figures. The overall figures are essentially the same (between 2007 and September 2011, Stage I or Stage II clearances were given for 8275 proposals involving 2.01 lakh ha of forestland). However, this figure includes bulk orders for regularization of 55,340 ha land long occupied by cultivation and habitations from the lands notified under the PLPA (Punjab Land Preservation Act, 1900), which had been awaiting final orders by the Supreme Court. This land does not constitute a fresh clearance, but the FC clearance issued with the authorization of the Supreme Court adds the rider that use for any other purpose except cultivation or habitations will require fresh FC clearance.[33] Other corrections are called for to avoid double counting of Stage I and Stage II clearances: we should use consistently one of the two, and it is generally recognized that it is Stage I clearances that amounts to taking fresh projects on board, whereas Stage II clearance is more or less a procedural formality consequent to the fulfillment of certain conditions like payment of NPV and CA funds, etc. On this basis, Stage I (fresh) approvals during the said period January 2007- September 2011 were for 7,576 projects, involving 1,17,651 ha of forest land, whereas Stage II clearances for another 699 proposals involving 83,515 ha (including the 55,340 ha PLPA land) were in respect of Stage I clearances accorded before this period. Accordingly, the rate of fresh Stage I clearances during the 4.75 years January 2007-September 2011 works out to 24,768 ha per year, compared with 35,550 ha per year over the previous 31 years. The 1,17,651 ha forest land given Stage I clearance during the period from 2007 to 2011 amounts to only 10.38% of the total 11,33,047 ha given clearance under the FCA, not 25%. Further, according to the ministry, renewal of decades-old mining leases on 22,108 ha out of 48,881 ha of forest land diverted for mining during the period, can not be considered on the same footing as completely fresh

clearances. Even out of the balance, Stage I clearance had been granted prior to the 4.75 years under report, on 8,675 ha for mining. All these factors weaken somewhat the force of the criticism implicit in the CSE assessment.

One of the details that may not be appreciated is that there are periods when proposals pile up due to some specific reason, so that the rate of disposal of FC clearances may fluctuate. Thus, before 2009, the tussle with the Supreme Court over the composition of the FAC may have served to hold up forest clearance proceedings (see above). While intervention of the Supreme Court and nomination of the CEC to supervise the FC clearance process to a certain extent forced the ministry to improve its standards and practices, in the final analysis it appears that even the Court and the CEC found it extraordinarily difficult to make rejection of proposals a more frequent occurrence. Thus, despite the best intentions and efforts,

> "the phase starting from 2000 has been characterized by a 'pay and deforest' regime – a kind of a combination of 'precautionary principle' and 'polluter pay principle'… If one analyzes the decisions of the Court over the last six years, it is apparent that most mining, dams and other projects which sought prior approval from the Court were eventually approved subject to certain conditions. The Court in a way became just another regulatory hurdle to be crossed before forest land could be used. Rejection of applications seeking prior approval of the Court became an exception and approval the norm as only a handful of projects were rejected. Many of the projects which were rejected initially were ultimately approved. Stringent conditions imposed earlier were subsequently relaxed". (Dutta and Yadav 2011, pp.ix)

Even the levy of net present value (NPV) and compensatory afforestation (CA) charges failed to act as a deterrent, as "… the high returns and profits of extractive industries merely regarded NPV as another cost to be factored in while calculating the project estimates" (*ibid.*). Only a very few cases were rejected, such as the iron ore mining in the heart of Kudremukh national park (Karnataka state) by a public sector undertaking, or the suspension of mining in the Aravallis around the National Capital Region (NCR). Dutta & Yadav (*op.cit.*) also cites the case of bauxite mining by Vedanta in the Nyamgiri hills in Odisha, which was finally rejected by the ministry even though the Supreme Court had given the green signal; in this case, the ministry had to take a precautionary opinion of the Attorney-General of India that the Court ruling did not bar the ministry from applying its own mind and coming to a contrarian decision (see Ramesh 2015). Therefore, any assessments must take into account the extraordinary

difficulty that regulatory agencies perceive in going against the current in the entire country and taking up adversarial positions that could be (and have been) branded as unreasonable and even anti-national (see, for example, the articles by Davesh Kumar and Prachi Bhuchar on "green terror", which accused the two successive environment ministers of an "obstructionist approach" to green clearances, at heavy cost to the economy and the interests of the nation (*India Today* newsmagazine, October 15, 2012).

In the ultimate analysis, there are really no overall caps on the level of diversion or disforestation prescribed, and therefore the entire debate has to center round the criteria for allowing the forest diversion or not. It does not appear that the regulations at present provide any guidance on this. Whether the Forest Policy can yield any such clear guidelines, or caps on rate of diversion, or grounds for rejection, is explored blow.

National Forest Policy and the FCA

As mentioned above, the Supreme Court, in the "Lafarge" judgment, ordered that the National Forest Policy shall henceforth be read as part of the FCA Guidelines. An attempt is made here to explore how this will affect the FCA regulations and guidelines, and in what directions efforts will have to be made to give meaningful force to this order of the Supreme Court.

It will be instructive to give a little background on how the national forest policy has been developed and modified over the decades, starting from the British government's resolution in 1894, then the first post-independence national forest policy of 1952, and finally the revised policy of 1988. This subject has, of course, been analysed in detail in a plethora of writings, so only brief points are presented here. A useful rapid summary is available in the report of the National Forest Commission, 2006 (just on the eve of the promulgation of the Forest Rights Act, so of limited relevance to today's situation), and the older policies are presented in the FRI (1961) publication *100 Years of Indian Forestry, 1861-1961* and in the pamphlet by Rai and Sarmah (no date), foresters of the Karnataka cadre.

The 1894 policy (Circular No.22-F., dated October 19, 1894), drawn up after the report of an agricultural expert, Dr Voelcker, was published, emphasized the contribution of forests to the health of the agricultural economy, through provision of green manure, fuelwood and fodder, stabilization of soil and water, and moderation of the effects of extremes of climate and natural hazards. It provided for four types of forest classes: forests for preservation, forests for commercial purposes, minor forests,

and pasture lands. Deference to the demands of agriculture was stipulated explicitly: "…whenever an effective demand for cultural land exists and can only be supplied from forest, the land should ordinarily be relinquished without hesitation" (para 6, 1894 policy resolution).

The 1952 policy (Resolution dated 12th May, 1952 of the Ministry of Food and Agriculture, Govt. of India) made a considerable change from this approach, by giving priority to the interests of forest conservation for national interests, even at the cost of local needs and communities' interests. The 1952 policy also provided for different types of forests, namely protected forest, national forest, village forest, and tree lands. While acknowledging the need to provide for the needs of villages also, through a programme of raising tree crops on village lands, panchayats, and 'treelands', the 1952 policy also declared that village use of forests should not be "at the cost of national interests", and

> The accident of a village being situated close to a forest does not prejudice the right of the country as a whole to receive the benefits of a national asset. The scientific conservation of a forest inevitably involves the regulation of rights and the restriction of the privileges of user, depending upon the value and importance of the forest, however irksome such restraint may be to the neighbouring areas. (1952 Forest Policy, para 7)

After the 1952 policy, the next major influence was the report of the National Commission for Agriculture, 1976, which reiterated the priority to the national economy, and gave a massive push to commercial forestry and the conversion of the mixed miscellaneous forest into monoculture of fast-growing industrial wood crops, mainly exotics. Local communities were at best tolerated as a source of labour. This led over time to a debate on the role of forests in the ecology of the country and the social well-being of the local communities in and around forests, mainly of the poor and landless, predominantly of scheduled castes and tribes, and the heavy costs being pushed onto them by converting the mixed forest of local species into arid monocultures, and by excluding them from the forests under the justification of forest development. The entire forestry debate became one of human rights and dependencies, rather than a mainly technocratic one of raising trees as portrayed in the 1952 policy and the NCA report, 1976. The result was the revised forest policy of 1988, which made many drastic changes in our approach to forests and communities.

The 1988 policy gave priority to: "Maintenance of environmental stability through preservation and, where necessary, restoration of the

ecological balance that has been adversely disturbed by serious depletion of the forests of the country"; "Conserving the natural heritage by preserving the remaining natural forests…"; "Checking soil erosion and denudation in the catchment areas…"; "Checking the extension of sand dunes…"; "Increasing substantially the forest/tree cover…"; "Meeting the requirements of fuelwood, fodder, minor forest produce and small timber of the rural and tribal populations"; "Increasing the productivity of forests to meet essential national needs"; "Encouraging efficient utilization…"; "Creating a massive people's movement…". Once again, the needs of the local populations is seen as something that must be met, rather than an inherent right, but the major change was that the needs of industries were to be met as far as possible from outside the state forests, from private lands through a massive investment in agro-forestry rather than through concessions in the state forests. Moreover, it was clearly stated that the rights and concessions of the people living within and near forests should be "fully protected", and that

> The holders of customary rights and concessions in forest areas should be motivated to identify themselves with the protection and development of forests from which they derive benefits. The rights and concessions from forest should primarily be for the bonafide use of the communities living within and around forest areas, especially the tribals. (National Forest Policy, 1988, para 4.3.4.2)
>
> Their domestic requirements of fuelwood, fodder, minor forest produce and construction timber should be the *first charge* on forest produce. (National Forest Policy, 1988, para 4.3.4.3)

Thus there was a drastic change in the approach required of the forest departments, which took advantage of the new policy as well as the positive results of some initiatives to develop the concept of joint forest management (JFM), which was given a national charter by the famous circular letter dated June 1, 1990 of the MoEF. However, it may be noted that the 1988 policy by itself does not quite extend the concept of meeting people's needs to one of giving people ownership of the forest; the JFM framework goes half-way to this by making people partners in forest management in strictly limited blocks earmarked for the community, with the forest department remaining in overall control of the village forest committees (VFCs). This was further challenged by the activists, who did not rest until the ownership rights of the communities were given full recognition by the Forest Rights Act, 2006, which introduced further

complications in the jurisdictional status of the communities (gram sabhas) vis-à-vis the forest departments.

The 1988 forest policy did have the following section specially for forest diversion:

> **4.4 Diversion of Forest Lands for Non-Forest Purposes**
>
> 4.4.1 Forest land or land with tree cover should not be treated merely as a resource readily available to be utilized for various projects and programmes, but as a national asset which requires to be properly safeguarded for providing sustained benefits to the entire community. Diversion… should be subject to the most careful examinations by specialists from the standpoint of social and environmental costs and benefits. Construction of dams and reservoirs, mining and industrial development and expansion of agriculture should be consistent with the need for conservation of trees and forests. Projects which involve such diversion should at least provide in their investment budget, funds for regeneration/ compensatory afforestation.
>
> 4.4.2 Beneficiaries who are allowed mining and quarrying in forest land and in land covered by trees should be required to repair and re-vegetate the area in accordance with established forestry practices. No mining lease should be granted to any party, private or public, without a proper mine management plan appraised from the environmental angle and enforced by adequate machinery. (National Forest Policy, 1988)

The question taken up here is, how the incorporation of the National Forest Policy (NFP) into the FCA will affect the operational practices of the ministry. The concerns expressed in the NFP mirror those in the FCA *Handbook* and circular orders. Unfortunately, there does not seem to be any specific guidance contained in the NFP about the minimum thresholds for relevant parameters which could form the basis of a 'go-no go' framework to adjudicate clearances. The policy pronouncements again reinforce the importance of environmental and biodiversity conservation concerns, as well as community interests, but do not constitute a prohibition or control on diverting forest lands, any more than does the FCA itself. In fact project proponents and user ministries are sure to pounce upon the lines on ameliorative and mitigative measures in the quoted paragraphs as nothing less than *enabling* clauses that give license to consider diversion of any piece of forest, the only condition being its ultimate rehabilitation. Since most mining leases are still running and will be current for many

decades, these conditions will be of little practical concern to the current lease-holders and aspirants. At the best, the FAC could quote some of these lines from the policy to shore up a negative recommendation, but there does not seem to be anything substantive to actively justify or legitimize such rejection on any objective basis.

Forest Rights Act, 2006, Panchayati Raj, and the FCA

The enactment of the Forest Rights Act 2006, properly known as The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006, is one of the most significant developments of the past decade. Even prior to this, the FCA Guidelines themselves recognize that the opinion of the communities should be taken through the resolution of the Gram Sabha (GS) in order to take on board the affected people (see *Handbook*, p.25/26). The 73rd Constitution Amendment, likewise, provided a list of (29) subjects that could be placed in the domain of the Gram Panchayats (GPs) by the state legislations, of which the ones relevant to our subject include minor minerals (but not major minerals, which continue to be governed by the respective special acts, see below), and in forestry, farm forestry and "minor forest products in the area under their jurisdiction".[34] However, the FRA makes a fundamental change in the way we look at people's role, as now their rights over the forest (based on their traditional usage) are *recognized* formally, rather than just provided at the pleasure of the state, and moreover the rights extend into the Reserved Forests (RF) proper; hence the division between Gram Sabha (GS) jurisdiction and forest department (FD) jurisdiction has now become porous and nebulous.

There is no doubt that the FDs have tended to act as if their control of the RF lands is absolute, and the FAC also tended to consider the FC applications mainly on the potential effects on the forest and wildlife values, and the effect on the local settlements and environment was left to the domain of Environmental Clearance (EC) which required public hearing in defined circumstances. Thus the separate Gram Sabha resolution was not demanded by the FAC if there was a mandate for public hearing under the EC procedure. Now, however, the legal, and indeed the constitutional, situation seems to be fundamentally altered: since the community has rights on the forest, and indeed in much of the country these rights are still in the process of being claimed and recognized, there is a specific requirement to wait for these rights to be recorded and finalized so that they can also be compensated if the State decided to go ahead with their acquisition. These

rights will have to figure in the package of R&R (resettlement and rehabilitation) which is decided ultimately. This would, in the usual course, be relegated to the State administration, when the community would be more or less at the receiving of a *fait accompli*, so the MoEF has, in fact, taken it upon itself to independently obtain the record of consent of the GS before issuing the FC clearance.

To put this on firmer ground, it may be desirable that the FC proposal be originated at the GS level right from the start, rather than the state government level. This would accord with the contemporary consensus in international forums that Fully Informed Prior Consent (FIPC) should be obtained before disposing of a natural resource which communities depend on. Whether the State can override the objections of a Gram Sabha, and go ahead with the project after due acquisition and compensation, is a question to be examined separately. On analogy with the reasoning recorded in certain orders of the MoEF wherein clearance was given despite the FAC objection, it would appear that the Executive still reserves the right of final decision, of course contingent on following proper procedures, which would entail in this case recognizing the interest-holders (the project-affected persons) and compensating them for loss.

A further question will arise, on who should be primarily responsible for following the law of the land in respect of FRA areas. There are many possible arrangements: the least acceptable to the advocates of local village (GS) autonomy may be that the area is retained under the custody of the FD, and any operations to be done on it based on an approved working scheme or microplan to be approved in a joint FD-GS management committee such as the JFM committees. Alternatively, the community forest areas could be transferred totally to the GS, with no jurisdiction of the FD or even FD control or representation on the management committee; or any via media between these extremes. Ideally, the community area recognized under the FRA would have to be clearly demarcated and handed over to the community, and the GS should be primarily responsible for observing various laws and court rulings in managing and using it as forest.

If the community is sincerely interested in forest conservation, there is likely to be considerable synergy in the objectives of FD and community, and an arrangement like the JFM can be thought of. There is a considerable ambiguity on the types of use which the FRA forests can be put to (such as proposals for coffee, rubber and other cash crops which are not permissible under the FCA), which may lead to conflicting directives in some cases. It would not be fair to the FD to make them the controllers of community activity, as that would lead to a situation of constant animosity and pose an

impossible burden on the forest official of having to drive the vehicle with only the brake pedal, with the clutch and accelerator in someone else's control. If, however, a particular community so desires,[35] they could have the option of entrusting a defined area to the FD to protect and manage, on the lines of JFM, with a written MoU that clearly demarcates the physical boundaries, as well as clearly spelling out the respective expectations, responsibilities, processes and remedies pertaining to each and all of the concerned stakeholders. As found by the Nobel laureate Elinor Ostrom and her associates on examining a number of case studies all over the world, it is clear that successful common property management is more likely to be sustainable in those communities that are able to relate positively to other institutions in society such as the courts, law and order agencies, departments of the administration, and so on in a 'nested' hierarchy of institutions (Ostrom 1990). Control, and culpability under the law of the land, would however have to be vested unambiguously in one or the other of the parties, to avoid a "tragedy of the commons" type of situation.

III

FOREST CONSERVATION LAWS - COMPARISON WITH OTHER COUNTRIES

As part of this exercise in assessing the forest conservation laws and procedures in India, it was a matter of interest to look at the legal framework obtaining in other countries as well. The results of this exercise in respect of some countries are discussed below.

World Bank Forest Strategy

One of the useful sources of information on the forest sector and governance issues of various countries is afforded by reviews and reports of the international agencies. Of especial interest is the 'Evaluation Country Case Study Series' reports published by the Operations Evaluation Department (OED) of the World Bank (WB) at the turn of the century (World Bank 2000, various). We summarize and discuss the reports concerning countries of greatest interest to us because of their similarity in socio-economic or development status, or in their importance in the world forest scenario, like China, Brazil, and Indonesia, based on these WB reports. Additionally, we also try to present the situation in respect of the USA, which has a comparable national forest area, and broadly similar antecedents to its forest governance regime, although of course it is in a totally different league if we take demographics and economics as criteria.

We may preface the discussion by referring to the policy positions taken at various times by the World Bank itself, such as the WB Policy Paper on the Forest Sector of 1991 (along with the Operational Policy Directive OP 4.36 of 1993 and a Good Practices Summary GP 4.36), which redrew the contours of the Bank's involvement in forestry. The WB Forest Sector Policy paper draws attention to the divergence of private costs and benefits from the social and national and global costs and benefits, and the familiar problem that such "externalities inexorably lead to excessive deforestation and insufficient planting of new trees" (World Bank 1991, p.9). The report accordingly identifies two main issues or objectives for its forestry programme: one, to "prevent excessive rates of deforestation, especially in the tropical moist forests"; and the second, "to ensure adequate planting of new trees and the management of existing tree resources to meet the rapidly growing demand" for forest products and services (*op. cit.*, p.10).

On the diagnosis of the problem of deforestation, the report recognizes that there is a wide range across the regions and forest types of "the individuals, communities, and corporations responsible for deforestation", and their motives for cutting trees. It recognizes that gathering of fuelwood, which accounts for the largest share (80%) of wood used in developing countries, impacts mainly the tropical dry forests and the "nonforest wooded areas", whereas in the case of tropical moist forests, the main causes are clearing for agriculture (60% of the area lost each year), then logging and other purposes such as roads, urbanization and fuelwood (*ibid.*). These pressures have increased because of increase in population, improved access due to development of roads and communications, and in some countries, deliberate support to "frontier settlement" and government incentives that make these activities "artificially profitable" (p.11). The report feels that if the negative externalities (costs) of these activities were imposed on those cutting the trees, there would be "significantly less deforestation".

On the positive side, the report finds much promise in the contributions that agro-forestry can make to farm family incomes, rural employment, and to the supply of forest products. However, the availability of wood from open-access forests depresses the price obtainable by private growers in the market. Therefore, the report says, government policies need to be modified to reduce the "incentive and institutional structures" that are inducing people to clear forests, and improve the returns to private growers of trees, and global externalities need to be internalized into local actions through "international cooperation and assistance" (*ibid.*, p.12).

All this leads to a four-fold strategy (p.12 *et seq.*): 1), "policies to alleviate poverty" especially in the areas adjacent to forests, by improving agricultural productivity, expanding "nonfarm employment opportunities", and dealing with the problem of externalities; 2) "forest zoning and regulation", through "specific legislative and regulatory measures", identifying priority areas for protection, and sustainable management for different uses including logging, based on "a realistic assessment of what is technically feasible in light of local capacities and incentive structures"; 3) "correcting private incentives" to align these with the zoning regulations, such as reversing the systematic under-pricing of forest concessions, possibly through auctioning, giving long-term contracts to encourage sustainable management, removing subsidies (e.g. for ranching) that encourage deforestation, and recognizing "customary land rights of forest dwellers" to protect them against encroachment and exploitation by "outside interests"; and 4) carefully regulating "public investments", such as

infrastructural projects, roads and reservoirs, with "more careful environmental assessments", strengthening of "forestry institutions" so that they can "better protect designated forest areas"; and providing more expenditures "to develop improved systems of silviculture, forest management, and policy-making; to conduct forest research and development; and to carry out afforestation and replanting, especially on degraded land" (*ibid*., p.14).

In addition to these four initiatives, the WB review also addresses the issue of managing the supply and demand situation. Firstly, as wood gets scarcer and dearer, they reason that this will reduce the growth in demand, but not to the socially optimal extent as the market does not capture the negative externalities of wood use. Hence this calls for "direct interventions to encourage conservation and the use of more efficient technologies" for wood and charcoal (p.14), including "more efficient markets for alternative fuel" like kerosene, and subsidies for converting to new technologies like solar stoves (p.15). Further, on the supply side, the review recommends dealing with wood production issues "at the farm level", reorienting forest departments, "utilizing the special capabilities of nongovernmental organizations", providing "economic incentives", promoting awareness of the ecological role of trees, providing a "ready supply of tree seedlings", and "improvements in rights to land and trees" (p.15). The review recognizes that community-level woodlots have often failed because of inadequate community organization, and recommends that future efforts should be focused on "smaller and more tightly defined groups of local actors, including the poor, who have a common interest in planting and raising trees", that "have shown promise" (p.15). In future programmes, greater emphasis would be given to "farm family and farm group forestry, including women's groups" (p.19). The "primary target areas for new plantings" would be "potentially productive degraded forests, wastelands, forest fallows, shrublands, and abandoned farmlands"; the "interests of communities that depend on such areas will have to be considered" in setting target areas (p.19).

The review also concedes that Bank lending for other projects, "particularly tree crops, agricultural settlements, and infrastructure, has sometimes had an undesirable impact on forest resources" (*ibid.*, p.18). This calls for a "reformulation" of the bank's forest policy, and suggests that future Bank projects in the forests sector "will be designed as a component of a multisectoral approach", to give "closer attention to infrastructural and other land-use projects and will minimize their potentially negative effects". The Bank will encourage international support for

biodiversity conservation, and will "continue to explore the feasibility of using global transfers to protect forests for their carbon sequestration" (p.18-19).[36] The Bank will support initiatives to expand forest areas designated as "parks and reserves", strengthen management in new and existing areas, and encourage governments to adopt a "precautionary principle toward utilization" (p.19). The Bank would not "under any circumstances" finance "commercial logging in primary tropical forests", and "(f)inancing of infrastructural projects (such as roads, dams and mines) that may lead to loss of tropical moist forests will be subject to rigorous environmental assessment as mandated by the Bank for projects that raise diverse and significant environmental and resettlement issues. A careful assessment of the social issues involved will also be required" (World Bank 1991, p.19).

The 2000 World Bank Forest Strategy review (World Bank 2000) conceded that the 1991 strategy had been "only partially implemented", that its effectiveness and sustainability are uncertain, and the "(f)orest concerns have not been well integrated into Country Assistance Strategies, nor in the Bank's economic and sector work" (*op. cit.*, Executive Summary, p.xix-xx). The strategy has not achieved two central objectives, "slowing down rates of deforestation and increasing forest cover", as forest-rich countries continue to exploit their forests "for legitimate development purposes, as well as for the benefit of powerful interest groups". It is some of the forest-poor countries, in fact, that have been effective in addressing the problems of forest conservation (*ibid.*). It is acknowledged that the 1991 strategy had too narrow a focus on economic incentive issues such as "the length and price of concessions" and "failed to address governance issues, which have proved to be central" (*op. cit.,* p.xxi).

As for the World Bank 2000 Forest Strategy review itself, amidst all the talk of leveraging other financial sources and establishing broader partnerships for consultation and sharing experiences, it has in effect only one recommendation even peripherally concerned with the broader strategy for forest conservation, which is that "(i)llegal logging needs to be reduced through the active promotion of improved governance and enforcement" (p.xiv, *op. cit.*).

The 2002 revised World Bank Forests Strategy (World Bank 2004) identified three "pillars": "harnessing the potential of forests to reduce poverty", "integrating forestry more effectively into sustainable development", and "protecting vital local and global environmental services and values" (World Bank 2004, p.4). The main strategy for achieving better

protection seems to be the suggestion that "new markets for the environmental services" are essential (*ibid.*, p.5).

However, we are here concerned not so much with the World's Bank's various policy statements and its evolution over time, as with the basis we are afforded to make an assessment of each country's legal and policy framework regarding use and diversion of forest lands. This we proceed to do, based on the World Bank's OED reports of certain sample countries in 2000 (including India, to ascertain how effectively the cited reports have captured the existing scenario).

India

If we look at the World Bank OED Country Case Study report for India (World Bank/Nalini Kumar *et al* 2000), the policy, legal and institutional framework comes through fairly clearly and systematically. As per the OED report, the forest (tree) cover itself increased over the period, according to FAO statistics from around 58.3 mha in 1980 to 65 mha in 1990 (*op. cit.*, p.7), but Forest Survey of India (FSI) figures show a decline from 1993 to 1997.[37] The report points out that there are inconsistencies with the land categorization figures, e.g. of the official "recorded" forests of 76.5 mha (23% of total land area), only about 64 mha (19%) is reportedly under tree cover, of which 36.72 mha (11.2%) is dense forest (*ibid.,* p.7). In the same paragraph, however, the OED report estimates that degraded forest area is more than 61 mha, "which implies that there is only 15 million ha of good forest land" (*ibid.*, p.8). However, the report accepts the assessment of Saxena (1999) that the rate of decline in tree cover has slowed significantly since the mid-1980s, thanks to a ban on green felling coupled with a relaxation of controls on imports of industrial wood, a decline in the importance of revenue from logging, the spread of farm forestry, and the success of Joint Forest Management (JFM).

In spite of having a "well-articulated forest policy", the report feels that "forest laws have lagged in translating the policy into an implementable strategy" that would help meet "the many diverse demands for forest products and services from the forest sector" (World Bank/Nalini Kumar *et al, op. cit.*, p.xx). There is however "considerable congruence" between the 1991 WB forest sector strategy and the National Forest Policy of 1988, e.g. the emphasis on the environmental role of forests and the need to fulfill local communities' needs before commercial working, but the report feels that this forest strategy is "relevant but not sufficient": ideally, there should be "a balance of all the three policy phases… industrial forestry, social forestry, and protection/ regeneration" (*ibid.*). In retrospect, the OED finds

that the Bank has been making "four important contributions" to India's forest sector: bridging the budgetary gap, building the capacity for production and management of good planting material, helping to change the attitude of the forest staff to working with the people, and playing a "catalytic role in bringing several policy and institutional issues to the table" (*op. cit.*, p.xxii). Among other issues, the report feels that the role of forests in poverty alleviation has not been yet clearly appreciated and articulated (p.xxiii, Table A), and "more commitment is needed from the Government of India to view the Bank's involvement in the forest sector in the larger and longer-term context of poverty alleviation and not simply as a source of finance" (*ibid.*, p.xxii).

The OED report has a clear exposition of the state of forest law in India (p.18 onwards). Annex B provided a convenient "Time Line" of forestry in India from 1878 (the original Indian Forest Act) to 1996 (Draft Natural Ecosystems Act[38]) (*op. cit.*, p.97). The report records that the 1952 National Forest Policy criticized the power given to the States to divert forest land to other uses, but did not change the law; thus, between 1951 and 1980, "millions of hectares of forest land were diverted" (p.18). Central government concern led to the 42nd Constitution Amendment in 1976, which made forests a "concurrent subject", and the remaining ambiguity in the powers of the centre and the states was resolved by the Forest Conservation Act (FCA) of 1980, "the first legislative attempt to slow deforestation by controlling government behavior" (*ibid.*), but the OED report finds the Ministry of Environment and Forests a "weak enforcer", and the record of compensatory afforestation in the states "has been poor". The OED feels that the (forest) law has remained essentially unchanged since 1927, and that it "neither supports people's participation in forest protection and management nor promotes social forestry" (*ibid.*, p.20). The OED further finds fault with the restrictions on cutting and transport of timber, which act as a disincentive on farm forestry[39].

The OED report also describes briefly the implication of other central legislation on the fate of the forests, such as the Wildlife (Protection) Act 1976, Biodiversity Conservation in general, the Environmental Protection Act of 1986, which gives the central government in the MoEF responsibility for imposing design modifications on projects that pose negative environmental impact, etc. This study of the OED (one of six country reports) does not seem to have much analysis of deforestation as such (in contrast with some of the others, especially the Brazil and Indonesia reports), probably because the legal and administrative framework in India has genuinely

reduced the pace of deforestation, as the OED report itself acknowledges that "Degradation, not deforestation, is currently the major problem in the forest sector in India, though deforestation was more important in the past" (*ibid*., p.xix).[40]

Brazil

Next, turning to the other World Bank OED Country Case Study reports, in the case of Brazil, for instance (World Bank /Lele 2000), we perceive a distinct sense of conflicting interests, massive amounts of energy applied to major changes in land use and forest management, and a changing and changeable legal and policy framework, distinctly different from the situation we are used to in India.

Looking at the forest scenario in Brazil, the first striking feature is of course the sheer size of the forest resource:[41] as per the FAO *State of the World's Forests* report (FAO 2011), this is nearly 520 million hectare (mha), or around 62% of total land area of 846 mha. It is also some seven times the most optimistic estimate of India's forest cover (around 75 mha), and in fact more than the total area of untruncated India (330 mha; the FAO report shows only 297 mha). Populations in 2008 were respectively 192 m in Brazil against 1181 m in India (FAO 2011), and per capita GDP (in 2008) was respectively $10,304 and $2,946 in purchasing-power parity (PPP) US dollars. This, more than anything else, will perhaps help us to understand why forest sector issues and approaches are so different in Brazil from India.

According to the OED, Brazil is "the world's largest consumer of tropical wood products", and much like India, consumes most of its own production (86% of it) domestically. Brazil (like India) was also one of the Bank's top borrowers, with loans totaling to USD 9.3 billion between 1992 and 1999 (although this was still a small amount relative to its annual GNP of USD 760 billion of those times) (World Bank/Lele 2000, p.xix).

The massive forest resources in the Amazon come with equally strong forces for loss of forest, around 1.3 mha per year in the post-1991 period (a little slower than the pre-1991 period), ascribable to such causes as "strong domestic and international demand, continued agricultural expansion, and investment in extensive transportation networks." The two major causes of deforestation are stated to be agricultural expansion, and unsustainable logging practices within the forest (80% of which was estimated to be illegal at the time of the OED report, p.20), both facilitated by roads of all types, which open the forest to "development and settlement"

(World Bank /Lele, 2000, p.17). Globalization, liberalization of trade policy, currency devaluation, and technological advances have led to a "booming agricultural sector" which puts increasing pressure on the forests, "in combination with the country's historically acute income and land inequalities" and the growing influence of the logging and agricultural interests along with decentralization of power to the state level (*ibid.*, p.xx). The growth of Brazil's plantation forest sector, which was "one of the most advanced in the developing countries", is stated to have slowed since 1988, when credit subsidies were withdrawn as part of economic reforms and general reduction in subsidies.

Economic returns to agriculture in the Western Amazon were found to be so high that land conversion was expected to continue "even if forest policies are modified to improve the profitability and sustainability of forest management" (*ibid.*, p.xxi). Development of the transport network further strengthens these pressures, implying that "only 'economic protection' of forests, caused either by remoteness or inaccessibility or both, would result in forest protection". An interesting comment is made on the proposition to pay the farmers for preserving forest cover ("in return for the globally beneficial environmental services of carbon sequestration and biodiversity conservation"): the extent of such payments, their affordability, and the feasibility of physically effecting them, all "remain a matter of much debate" (*ibid.*, p.xxi-xxii).[42] The Brazilian study team is cited to have argued that the ban on logging projects (following the 1991 World Bank forest strategy), seems to have been counter-productive, as it has only "prevented the Bank, GEF, and IFC from getting involved in the Brazilian forests", "inhibited the Bank from promoting conservation" by, for example, "not supporting experiments in improved forest management", and there seems to be a lack of "government demand" for the Bank's involvement (*ibid.*, p.xxii). Indeed, the government sees the international community's interest in preserving the Amazon "without commensurate financial transfers as being fundamentally at odds with national economic and political development objectives", and accordingly has "preferred to keep the Bank and the international donor community at arm's length on issues that, for understandable reasons, it considers to be of internal concern" (*ibid.*, p.xxiii). Similar disagreements and differences exist on the interests of "indigenous populations" and between those of the poor and the well-off.

Instead of preserving the natural forest, government policies and programmes since the 1960s have "systematically sought to open the Amazon to settlement and economic activity" (*ibid.*, p.19), as the forested areas are considered "undeveloped" and contribute little revenue compared

to other types of development (that the indigenous population also reportedly desires, p.19). However, as the government also wished to project a "greener" image after agreeing to host the Rio summit of 1992, and due to macroeconomic difficulties, it began making policy changes to remove subsidies, and also to become "more proactive in enforcing laws with regard to forest protection" (*ibid*., p.xxiii), "reversing or eliminating many of the policies and programs contributing to deforestation and taking important steps to increase forest protection", but nevertheless, the government "continues to view the Amazon as an opportunity for economic growth… in its fight against poverty". Therefore, current developmental efforts, such as the "Brazil in Action" plan, will continue to advance significant road construction, "undertaken with little or no consultation with the Ministry of Environment", and agricultural expansion with "little attention to the issues of zoning called for in the Bank's 1991 Forest Strategy", all of which will continue to threaten the Amazon forests (*ibid*., p.20).

On the Bank's part, it has "not proactively involved itself in addressing the issues of poverty or land tenure in the Amazon. Indeed, the Bank has consciously avoided covering the Amazon region in its land tenure and rural development activities. This may be because it is not clear that security of tenure or increased access to rural credit, even to small farmers, would slow deforestation. … The Bank's project experience with regard to zoning in coping with the powerful political and economic forces at the municipal and state levels in Rondonia and Mato Grosso has prompted it to operate more cautiously" (*ibid*., p.xxiii). By adopting a "hands-off" policy to avoid doing the "wrong" thing, the Bank may have missed constructive opportunities, for instance, to divert demand from the Amazon forests by reforesting the "devastated Atlantic forest" (p.xxiv). The Bank is moving away from direct involvement, to a role as an "implementing agency", such as the USD 300 million Rain Forest Trust/Pilot Program (PPG-7), the GEF funded by international donors, participation in an alliance with the WWF to encourage countries, including Brazil, "to set aside a global total of 50 million hectares of tropical forests by 2000, and bring an additional 200 million hectares under sustainable management" (p.xxiv).[43] A contemporary evaluation of the PPG-7 by "a blue-ribbon external panel" criticized the program and the World Bank for its "lack of an agreed pilot program strategy, weak program management, inability of the participants to address fundamental program issues, complex project design and financing plans, and slow coalition building with Brazil's civil society and private sector… The review argued for stronger government ownership of the program… an enabling framework for government leadership and ownership of the

program…" (*ibid*., p.xxv). The country would like to use its forests as an economic resource, and "could use assistance with funding sustainable development in the context of conservation" (quoting the Executive Secretary of the Ministry of Environment, p.xxvii),[44] and the Bank could help in several aspects but has chosen to "keep its hands clean". The basic question is whether the conflict between development and conservation can be resolved in mutually beneficial manners.

Coming to the more focused question of legal frameworks for forest regulation and protection (p.20, "Forest regulation"), a clear picture does not seem to emerge from the somewhat circumlocutory account. Firstly, regulations "governing the exploitation of natural forests" are said to fall into six areas: "environmental impact assessments, burning and clearing permits, property-specific cutting restrictions, geography-specific cutting restrictions, forest management requirements, and restrictions on exports of forest products" (*ibid*., p.20-21). There is a box which analyses the practice of "zoning", meant "to avoid conflicts between agricultural development and biodiversity conservation", and for "restricting land use in ecologically sensitive areas". This is criticized by Chomitz (1999), as cited in the World Bank report (World Bank/Lele 2000), as akin to the "command-and-control approaches to industrial pollution controls", and is said to have many inefficiencies that reduce its effectiveness, such as: ignoring market values in assessing alternative land uses, inducing "landholder opposition", compounded by "noncompliance because the government is reluctant or unable to enforce regulations". Chomitz is quoted as advocating an approach that "takes biodiversity conservation as an intrinsically valued goal" and that provides incentives for compliance and encourages conservation even on lands with low agricultural opportunity costs (*ibid*., p.21).

Brazil's "commitment to preserve forests" is reflected in its 1965 Forest Code, which requires certain minimum reserves of native (natural) forest to be maintained on each property, for instance, 20 per cent in southern Brazil (*ibid*., p.21). Also, "no primary forest can be cleared in the developed parts and no more than 50 per cent of primary forest may be cleared in undeveloped area of the region". In the northern (Amazonian) region, the proportion that property owners must set aside as reserves ranges from 50 per cent to 80 per cent, "depending on the local vegetation cover", and property owners must also maintain "areas of permanent protection on riverbanks, steep slopes, hilltops and around lakes and ponds". The enforcement of these regulations is stated to have been intensified, partly owing to "a revamping of the property tax law", which requires land-holders to file details of forest reserves maintained (which are exempt from property

tax).[45] This Forest code was expanded in 1977 resulting in "the eventual creation of a 5,00,000 km^2 network of national forests in the Amazon for managed timber concessions" (*ibid*., p.22), but "despite the availability of… fiscal incentives, investor interest was low", probably because cattle ranching had even more attractive fiscal incentives. In 1988, an environmental policy ("Our Nature") was launched to protect the forests, under which fiscal incentives for agro-ranching activities in forested parts of Amazonia were suspended, and efforts to control burning were intensified. In 1996, the government instituted an "ecological package of legislation", modifying the Forest Code to raise the requirements of maintaining natural reserves to 80% of forested area on private lands, as against 50% of total land (smallholders in states with "approved zoning plans" being exempted from this requirement). Decree 1963 imposed a two-year moratorium on new forest plans for exploitation of mahagony and *virola* (*ibid*., p.22).

In reading these accounts of the Brazilian forest governance regimes, what occurs to a forest officer trained in the British-Indian system, is a lack of a clear differentiation of national (public) forests from private properties. The World Bank OED report itself cites an earlier (1994) World Bank study that summarized the principal shortcomings of Brazil's forest regulation policies (World Bank/Lele 2000, p.23): the objectives are often unclear, trying to meet two conflicting purposes, "protection and conservation", at the same time; a regulation may not be equally appropriate in all regions of the country; regulations are seldom targeted at "specific externalities", and are in conflict with economic incentives to the private sector; there are few market-based incentives or rewards that could "help bring private sector actions in line with public objectives". Further, enforcement has been "difficult historically", and the lumber industry has been encouraged to exploit the public forest resources through weak management regulations and enforcement. This may be because "local governments" are keen to attract investment and economic activity within their short terms in office[46], which does not lend support to improving logging practices in the interests of the longer term (*ibid*., p.23).

Going deeper into this topic, the World Bank report (*ibid*, p.27 *et seq*.) presents the results from a study on smallholder agriculture (the World Bank itself having been "instrumental in settling" many of them) and its links to deforestation in the Western Amazon (Carpentier *et al* 1999); all the cited reports of this group are labeled as "unpublished manuscripts" of the EMBRAPA (Brazilian Corporation for Agricultural Research) and the OED the World Bank. The study yielded many "important policy messages", chiefly that once they occupy their plots, small-holders resort to clearing

the trees not for some sort of low-input slash and burn, but for other non-forestry alternatives which give better returns and are less demanding of labour, such as livestock production, and that are not likely to preserve the forest cover. The study suggests that it may be possible to induce them to retain forest cover if the social gains from saving forests are transferred to them.[47] Agroforestry systems involving fast-growing perennials or tropical fruits may be unlikely to out-compete more extensive systems like cattle ranching viable, due to their high labour requirements and weak market facilities. Though there are rules that they should retain 50 percent of the land under forest, enforcement is lax and since the policy "prohibits the off-take of timber products (sustainably or otherwise), it dramatically reduces the potential value of timber to smallholders" (World Bank/Lele 2000, p.30); even if the policy were modified to support timber management, it is unlikely that the smallholder will actually maintain timber stands in the long term, and setting up the necessary institutions to ensure this may not be economical. Nevertheless, the report comes out with this somewhat obscure assessment of the possibilities:

> "In the past, most policies aimed at protecting the forest did so via regulation, taking something away from farmers (i.e., effectively removing their right to completely deforest lots and convert them to agriculture) without giving them anything that had income-generating potential in return. The emergence of an active market for fluid milk and the potential for sustainably managing smallholders' legal reserves of forests, for example, may allow policymakers to support such privately profitable activities in exchange for reduction in deforestation, and also to generate the funds necessary to monitor and enforce such activities".[48]

Another major area of discussion centres on the issue of "land tenure" (*op. cit.*, p.34). It appears that historically, clearing forest in the Amazon has been recognized as a basis for claim to land title, which therefore constitutes an in-built incentive to converting forest into open fields. "Deforestation is thus a rational decision for those seeking land ownership" (*ibid.*). The OED report records situations where clearings done in advance of infrastructure (premature settlements) may have been abandoned, other persons may have occupied those lands, and later the original settlers may have returned and conflict may have ensued. In formal INCRA settlements[49] land conflict is rare, even if "many of the landholders do not have formal titles". The report also points out that secure tenure may in practice induce investment in agriculture (not forestry): "Thus,

whether the policies designed to improve land tenure security are good or bad for forest conditions is not clear and is, in any case, somewhat location-specific" (*ibid*., p.34), so the link between tenure and forest conservation may not be as direct as some behavioral economists argue.[50]

Even as the report's Brazilian contributors are quoted as conceding that tenure alone is not sufficient to promote sustainable (forest) management, the accompanying measures they have suggested are again economic incentives, "either by paying for environmental services or promoting sustainable harvests of timber and non-timber products" *(ibid*., p. 34). Obviously, serious computations need to be made of relative returns and values if one has to assess the feasibility and robustness of this sort of arrangement, in the absence of regulations and enforcement. What is striking to a forester from the sub-continent is the absence of any talk of state-led conservation measures such as setting aside of national forest reserves. One last quotation from the OED report (*ibid*., p.133 'Conclusion') is given here to round out the discussion:

> "Given the available evidence concerning both the Atlantic and Amazon forests, the situation seems to be stacked against Brazil's forests. As long as competing land uses remain more profitable than either protected or sustainably managed forests, land managers will opt to deforest. Moreover, the costs of illegal and predatory logging practices will have to become higher than improved forest management in order for more sustainable practices to take hold on a wide scale. This would require an institutional environment favorable to regulatory enforcement of government regulations, and incentives that make conservation profitable and without simultaneously building domestic constituencies and their institutional capacity, which is inherently a long-term process. Brazil's vast forests will continue to be treated essentially as open-access resources or resources with multiple claims".

Indonesia

The next example taken from the World Bank studies is on Indonesia (World Bank/Gautam 2000), which has the second largest expanse of tropical moist forest: officially 147 mha or 78% of its land mass of 189 mha (the actual extent was estimated as between 92 and 112 mha at the time of the report).

The agreed functional land classification system of 1984 (*Tata Guna Hutan Kesepakatan*, or TGHK) reserved 20% of the forest estate as protected forest, another 13% as conservation forest, and 44% of the

remaining (67%) of the forest (or by computation, around 30% of the total forest) was to remain as permanent forest, although it could be used for production forestry (*ibid.*).[51] This accounts for 20+13+30=63% of the forest. By implication, the remaining 37% seems to have been slated for conversion to other uses. Starting from the total forest figure of the 1984 assessment of 152 mha or 80.4% of total land area of 189 mha (Annex A in the OED report, p.95), this implies that Indonesia was planning to retain only around 96 mha (152x 0.63) under forest, and the balance 56 mha was slated to be converted to other land uses. This would by computation, leave the country with 96/189= 50.8% of total land area under forest (down from 80.4%). The OED report, however, makes a best estimate of 112 mha as the area to be administered as "permanent" forest cover not subject to conversion to other uses (World Bank/Gautam 2000, p.12).

Indonesia is a treasure house of biodiversity, both along the coasts and in the forests. With just 1.3% of the earth's land surface, the Indonesian archipelago still harbours some 25% of the world's fish species, 17% of birds, 16% of reptiles and amphibians, 12% of mammals, 10% of plants, and countless other phyla (*ibid*., p.16). As evidence of the country's "strong commitment to protecting its invaluable heritage" (*ibid.,* p.16), Indonesia had, as of 1997, a protected area network of 35 national parks and 339 other reserves (including coastal reserves). The OED report feels that despite this importance given to biodiversity conservation, "the management of the designated protected areas is well beyond the means of the responsible government agency", the MOFEC (*ibid*., p.16); while the government sees local communities as the primary threat to protected areas and biodiversity, the OED report feels that the "major threats are from large scale operations such as road construction, mining, logging concessions and sponsored migration", and efforts to provide incentives to local communities "are frustrated by inadequate law enforcement and expropriation of natural resources by powerful non-local interests" (*ibid*., p.17).

The OED report has some interesting information about the "Land Conversion Policy" (*ibid*., p.26). Licenses to convert forest land to "estate crops" were freely given to both large and small operations, and although by law restricted to the "conversion forest" areas, "the existing rules of land allocation and forest classification are widely ignored", and the confusion is compounded by vague boundaries, variable definitions, etc. Since the late 1960s, conversion into oil palm estates had been promoted as a top priority from the export angle, contribution to domestic cooking oil supply and rural labour absorption. Incentives for oil palm cultivation have only increased after the financial crisis of 1997 (*ibid*., p.26-27). The other

major use of forest land is for the transmigration program, from Java to the outer islands. Conflicts regarding local communities' rights have added to the damage to the natural resources themselves (p.27).

Despite a "weak financial sector, a fragile social sector and governance, and corruption" (*ibid*., p.xv), Indonesia recorded an impressive run of increasing GDP and reducing poverty, over nearly three decades between 1970 and 1996, to which the forest sector contributed substantially, especially in terms of 20% of exports. This development, however, has "come at a significant environmental cost: sustained and rapid destruction of the natural forests", the annual rate of deforestation being estimated (at that time) at 1.5 mha per year (*ibid*., p.xvi). Commercial logging and use of forests was characterized as "unsustainable", and the distribution of benefits "highly inequitable", especially with respect to the "traditional rights of indigenous forest dwellers and communities dependent on forests for their livelihoods", leading to conflict and serious social problems.

Round logs (raw timber) were exported up to the 1980s, when their export was restricted and the industry shifted to plywood, and later pulp and paper products as the government actively encouraged these industries with a set of incentives like "(u)nderpriced logs, low rent capture, and an officially sanctioned aggressive marketing cartel". Timber and tree crop plantations are reported to have "grown rapidly since the early 1980s" primarily for pulp, encouraged and supported by the government through "subsidies and preferential regulations" such as "permission to clear cut logged-over forests". Because of abundance of illegal logging (which supplies most of the domestic demand), and low log prices, the economic incentive to invest in long-term timber crops is weak, and "natural forests have been degraded, while the area actually planted has been well below the area allocated" (*ibid*., p.xvi-xvii). These "governance problems" have left the "official forest policy de facto ineffective". Unclear and overlapping forest boundaries have resulted in concessions being given "in areas meant to be protected and conserved" (p.xvii).

The report states that community participation in forest management is "just starting", but similar to the experience in China and Brazil, in Indonesia also "devolution and decentralization by themselves are no guarantee for reducing the rate of deforestation", and the report suggests that "(s)ome form of resource transfer or compensation may well be needed to induce local communities and regional governments to retain their forests intact".[52]

Ironically, the report also states that it was many of the World Bank's own projects (prior to 1991) that contributed to deforestation, such as Bank financing of the transmigration program to reduce poverty in the

main islands, but which did not pay attention to the potential impacts in the native forests or the native people of the outlying islands. After 1991, although the Bank had a "reasonably well developed sectoral strategy, calling for wide ranging reforms in the forest sector" (p.xviii), these were not pursued very strongly as the country department (of the Bank) was "not willing to jeopardize its country relations". By 1994, the Indonesian government curtailed many of the components of the ongoing forest sector projects, and terminated preparation of fresh project proposals, ostensibly because they wished to move from loans to grants, but really because of the Bank's call for "far-reaching policy and institutional reforms" in the Bank's economic and sector report discussed with the government in 1993 (p.xix). These policy recommendations include the "removal of policy distortions and the provision of incentives to promote investments for better management of forest resources", to "bring transparency and competitiveness in the timber and processing industries", to bring "greater participation of local communities in the management and protection of forest resources, as a precursor to the satisfactory resolution of titling and user rights issues", proposal for a "consultative process to resolve tenurial conflicts", and "a greater role and improved incentives to provincial and local governments for managing, regenerating, and protecting forests in their jurisdiction" (*ibid.*, p.xx).

The OED report points out "three issues" to be noted about the Bank's advice of 1993, that also relate to the Bank's 1991 Forest Strategy. Firstly, the OED team feels that the interests of the forest-dependent poor have not "been fully integrated into the Bank's poverty reduction strategy". Secondly, "cross-sectoral impacts" have not been adequately considered in the Bank's Economic and Sector Work (ESW) or Country Assistance Strategy (CAS): for example, the impact of expanding exports on the natural forest capital. Thirdly, although it has focused on Sustainable Forest Management (SFM) as its objective, "the Bank has spent relatively little effort on establishing the validity of the underlying assumptions".[53] As a result of inadequate ESW, the Bank's staff are stated to have been unable "to carry out an in-depth analysis of the sector and emerging trends to better inform their policy advice" (p.xxi).

Thus far about the Bank's activities up to 2000, but what does the OED report have to say about the existing legal framework? The report (p.xxii) states that some forest-related conditionalities were imposed when the Bank advanced the structural adjustment funding after 1998, but although several changes in the rules, laws and regulations have been promulgated, "the implementation of the reforms has so far been poor" (p.xxii). There

has not been the requisite political will and commitment to see through these changes. Another issue is the "sequencing of reforms": the "stroke of the pen" type reforms may not succeed unless there is an "institutional capacity", which takes considerable time to develop.

This appears to be an elaborate set of euphemisms to describe a situation where the government is running for private gains rather than the greater common good. In comparison to the situation in India, it appears that rather than discouraging conversion of forest, the Indonesian government was positively encouraging it. Here again the question comes of how much forest a country can maintain; with 78% under forest and a growing population and high poverty levels, the country has obviously opted to draw down its forest stock, and rearrange its land use portfolio toward agriculture and plantations. This obviously has had serious repercussions on the local ecology, wildlife and biodiversity, and on the wellbeing of such local communities as have not been able or prepared to embrace the new environment, and finally on the global interests in carbon-sequestration, climate mitigation, and biodiversity conservation.

Once again, it would suggest that most countries that have high levels of poverty will try to make use of the locked-up natural capital in the initial stages of development, and turn to matters of conservation only when the forest inventory is sufficiently reduced to invoke a sense of impending misbalance. A separate research study would be required to examine this in depth, but perhaps a residual of something like one-third under forest and natural habitats would appear to be a reasonable level before the conservation issue starts getting priority, regardless of the exhortations of the world community or the leverage exercised by funding bodies. Once again, the question arises: what is the rest of the world prepared to pay to keep these (from the country's perspective, excessive) forest resources on the ground, for which the 280 million dollars announced in the COP-19 meeting at Warsaw in November 2013 for financing "REDD Plus" activities in 48 countries, is no panacea.[54]

Malaysia

Malaysia, like Indonesia, is another example of a country with huge legacy of tropical forests, which were used to leverage development and resettlement, with similar conflicts over indigenous rights and environmental sustainability. A good source of information on Malaysia and neighbouring countries in Southeast Asia is afforded by the proceedings of the Sahabat Alam Malaysia conference on 'Forest Resource Crisis in the Third World'

(SAM 1987). Philip Hurst's 1990 book *Rainforest Politics* also contains a fund of information on the forest scenario in Malaysia (with separate chapters on West and East Malaysia).

According to Harrison Ngau, Thomas Jalong Apoi & Chee Yoke Ling (SAM 1987, p.40 onwards), whereas at the beginning of the 20th century the inhabited area in Peninsular Malaysia was "infinitesimal" compared to untouched forest, by the time of the report (1986), only 13.7% of the Peninsula was primary forest, and there was continued pressure to clear even this small area. There was only one national park (Taman Negara) in the peninsula, which itself was under threat from a possible hydro-electric project. The authors feel that this "rapid and large-scale deforestation" in Malaysia was the result of "intense development policies" of the government, that "call for extensive areas to be turned into cash crop plantations, urban and industrial centers, large dams etc. (such as the Batang Ai dam in the Second Division of Sarawak that forcefully displaced and wrecked the livelihood of thousands, the proposed Bakun dam in Ulu Rejang in Sarawak, the gold mining in Bau, proposed coal mining in the Seventh Division and Bintulu area of Sarawak), and infrastructure (e.g., airports and highways) (*op. cit.*, p.44). The "wealth of timber from the rainforest" has also been "an impetus towards massive clearance of the forest", at the rate of 810 sq km (81,000 ha) per annum,[55] which had "plunged that part of the country into a crisis already". They go so far as to say that the "remaining timber reserves have been estimated to last only until the 1990s." The East Malaysian states of Sabah and Sarawak, which have a larger area than the mainland, still had a large cover of forest: Sarawak still was 76% forested, one-third of this being primary forest, with six national parks, and a rate of forest destruction 410 sq km per annum. Sabah, with over 50% area under primary forest, had a rate of forest destruction of 590 sq.km. per annum due to a more aggressive timber industry. In spite of the mainland's experience of the effects of deforestation, "the lessons have not been learnt"; the timber industry in East Malaysia was being "stepped up", cash crop plantation schemes were on the increase, a number of large hydro-electricity projects had been proposed in Sarawak in particular, and the continuing deforestation was having "adverse impacts" not only on the natural environment but also on "the socio-economic and political development of the people, especially the indigenous populations of East Malaysia" (*op. cit.*, p.41).

As regards the provisions of law, the authors state that traditionally, land, forest, rivers etc. are the common property of the community (*op. cit.*, p.48), each of the members having "freedom and equal right to use these resources for his well being", and "about 70% of Malaysia's population

are rural based, living in longhouses or kampongs often situated along rivers and streams within or near forest land areas" and hence highly dependent on the forests (*ibid.*). However, with the establishment of colonial administration in the "early nineteenth century", various laws were passed making the "waste" land the property of Government, while instituting private land ownership in the form of leases issued by the government (*ibid.*, p.48). In 1949, the Land Classification Ordinance was passed, and in 1958, the Land Code was promulgated, classifying all land in the state under five categories, namely, Mixed Zone Land, Native Area Land, Native Customary Right Land, Reserved Land and Interior Area Land. These laws have curtailed the "rights and access" of indigenous communities over the lands, but on the other hand, the Native Court Ordinance gives recognition to the customary law and practice or "adat" of the natives (*op. cit.*). The State Forest Ordinance, however, "considers all forest land as crown land", thus conflicting with the native customary law or practice and discriminating against the natives (*op. cit.*, p.49).[56]

In Malaysia, according to the authors, forests being a state subject, each state looks at it as a source of revenue, and ecological management of forest resources "has been starkly absent" (*op. cit.*, p.41). The Federal government did pass a National Forestry Act in 1984, designed to standardize the development and conservation of forests on a national level, which the authors acknowledge as "an attempt to adopt an integrated approach to forest resource management" although there are shortcomings like the absence of a "clear effective enforcement machinery" and inadequate recognition of rights and role of indigenous communities. However, "(d)ue to lack of support from state governments who regard the Act as undermining their autonomy, the Act is still not enforced yet" (*op. cit.*, p.41).

Thailand

The fate of the forest resources in Thailand is discussed by Philip Hurst in his book *Rainforest Politics* (Hurst 1990, p.208 *et seq.*), and in the SAM proceedings by Thavivongse Sriburi's paper (Sriburi 1987, in SAM, *op. cit.*, p.93 onwards). Thailand's area is around 514,000 sq km (51.4 mha); although one-third of this is "in public domain and classified as forests, most of the valuable trees have been removed" (Sriburi *op. cit.*, p.93). According to Hurst (1990, p.94), although official figures claim that some 115,000 sq. km. of forest (around 22% of the total land area) still remained, FAO estimated that "at least 40% of the country's broad-leaf forests … have been heavily over-cut and are in a poor condition", and Thailand was

losing its forests at the rate of more than 8,000 sq km (0.8 mha) per year" (Hurst *op. cit.*). The problem, according to the FAO, was that logging was followed immediately by people moving in to do shifting cultivation, with implications for the feasibility of a regular logging regime to manage the forests. Since Thailand was never colonized, the responsibility for this deforestation rests squarely within the domestic sphere. Throughout the 20th century, the central government enacted various laws for forestry, but "rural development policy was left in the hands of individual ministries", and the result was "a confusing patchwork of laws, frequently in contradiction with more general development policy" (Hurst *op. cit.*, p.213). The National Forest Policy aimed to replant and expand the forest area until 40% of the land area is once more forested, one-third from conserving existing natural forest, the rest from planting new forest (but at the current rates of planting, Hurst points out that it will require some 200 years to reach the target). Strong measures were taken to control the timber industry, and the "total ban on commercial logging imposed in 1989 was partially due to the lack of progress in trying to 'clean up' the timber industry" (Hurst *op. cit.*, p.215). Development of infrastructure (especially roads) and large dam projects and "resettlement" projects (*ibid.*, p.225) further put pressure on the forests.

The Constitution of October 1974 states in Section 65 that "the State shall maintain the balance of the environment and eliminate pollution" (Hurst *op. cit.*, p.99). In 1975, the Improvement and Conservation of National Environment Quality Act was passed and the National Environment Board was set up, and a National Environment Policy drawn up (*ibid.*). The author states that the forest area has been decreasing rapidly in the preceding decade, due mainly to clearing of forests for cultivation, commercial logging (and poaching), leaving only 22.45% of the total land area under forests by 1985 (as against the prevalent figure of one-third, see paragraph above). While the country "still has well over 1,50,000 sq km of land under forest" (or around 15 mha), good productive forests were estimated to be around 1,20,000 sq km (12 mha), a quarter of which is under teak. Forestry accounted for 1.8% of the GNP in 1984 (*op. cit.*, p.100-1). Rising demand and decreasing wood production has forced the country to increase imports (p.101). Area cleared by shifting cultivation by the hill tribes in 1986 was reportedly 300-400 sq km, against total land under shifting cultivation of 5,180 sq km (*op. cit.*, p.111).

There are four categories of "forest protected areas": the National Parks, the Wildlife Sanctuaries, the Non-hunting areas, and the Forest Parks, and the major conservation legislation includes the National Parks Act (1961), and the Wild Animals Reservation and Protection Act (1960) (*op. cit.*,

p.123-4). The main legislation concerned with forest conservation are the Forest Act (1941) and Forest Act (1960); the author feels that forest legislation in Thailand "is mainly geared to exploitation rather than conservation", which it achieves through a permit system involving government royalties (*op. cit.*, p.126): "The law itself contains an explicit prohibition against the clearing of forest areas without governmental permission and the penalty for contravention is rather severe" (*ibid.*).

Another law, the National Forest Reserves Act (1964) sought to upgrade the protection being afforded Thailand's forests: it provides for the establishment of "forest reserve areas including forest parks (through ministerial regulation)". Many operations are generally forbidden, but some can be done under permit: e.g. to work timber, for temporary dwelling, mining, and research. This Act is "administered by the Minister of Agriculture and Cooperatives, who has again been empowered to issues regulations as appropriate". In addition, "the Director-General of the Royal Forest Department is given wide-ranging powers in regard to the issuance of the permits mentioned above" (for timber working, mining etc.), often "conditional upon the approval of the Minister".[57] A committee is appointed of representatives of the Royal Forest, Administration and Land Departments, along with two other members appointed by the Minister, to advise on the administration of each National Reserved Forest; and "…as with the establishment of the area, declassification of a national reserved forest may be accomplished through simple ministerial regulation" (p.126).

China

The case of China is interesting, as a country that drew down its natural forest to very low levels, and then made a conscious decision to reverse the condition. The following analysis is taken from the report of the Operations Evaluation Department of the World Bank (World Bank/ Rozelle 2000), as for some of the preceding case countries.

The area under forests in China has actually increased by 15% between 1980 (when the tree cover was 12% of total land) and 1993 (tree cover 13.9%), cf. Table A.2 in the OED report, and forest volume "has recovered sharply … after a long, steady decline" (*ibid.*, p.xviii). Obviously this is due to a massive programme of afforestation, much of it done on land that was originally "bare wasteland and highly susceptible to erosion", through artificially raised commercial and timber plantations and shelterbelts. Some regions recorded an astonishing increase: the Southern Collective-run Region increased forest cover from 29.4% in 1980 to 35.2% in 1993, Sichuan from 12.0% in 1980 to 20.4% in 1993.

On the other hand, "natural and old growth forests in other areas appear to be declining", which will have negative effects on some aspects like biodiversity. The report offers the somewhat cryptic comment that the ban on logging instituted in 1998 "may slow this trend, but the substantial tradeoffs between environmental and socioeconomic objectives in the short and medium term could make the economic and socioeconomic costs of the ban very high" (*ibid.*).

According to the OED report, the legal and policy framework for environmental protection seems to have been made quite strong in China, although "in practice little use is made of economic incentives", depending more on tough laws. However, there may be shortfalls in the realm of actually enforcing these laws (this would seem to be similar to the situation in most countries). The report recounts the measures taken, starting with the Environmental Protection Law (EPL) in 1979, which has been since expanded and made "the legal basis for much of China's resource protection work" (*ibid.*, p.33), but the report says that the EPL itself has "few specific regulations", and that the sector-specific rules and regulations have been set up separately.

China's forest laws (passed first in 1984 and modified in 1998) are said to be some of the most strict laws and regulations issued by the State Council, addressing issues such as management practices, property rights, and forest protection, and putting central government controls on the amount of logging in China's forest areas, on forest land issues, and over the disposal of forest products (*ibid.*, p.34). Even the permits for cutting and transportation of wood are aggregated and approved centrally, and as stated, strict bans have been imposed on logging natural forests.

The following guiding principles (*ibid.*, p.35) are of great interest in comparing China's forest law with India's: all forest resources belong to the state, except those owned by collectives;[58] the law protects user rights to forest, wood and forest lands. Forests are classified into five categories, shelter forests, timber forests, economic forests, fuel forests, and forests of national importance for defence, environmental protection, and research. The state provides protection and financial support for farmers' investment in forestry. The state controls the annual cut of forests, and for collectives and individuals it is set by the county. The law requires cutting permits for all trees other than those scattered around houses and on plots "retained by families"; similarly a transport permit is also required; and mining and prospective activities are to be approved by local governments.[59]

While an elaborate set of environmental protection laws are in force, there are doubts about their actual effectiveness in the field as the

production agencies are themselves responsible for their enforcement, and "there is no independent watchdog agency". The report (World Bank/Rozelle 2000, p.38) raises the question of what incentive the local agencies will have to implement strictly the environmental restrictions, as they would have the tendency to maximize production and minimize costs. "If there is a tradeoff between production and the environment, the rational official can be expected to sacrifice environmental goals, or even make decisions that lead to greater environmental degradation" (p.39). In numerous interviews with local officials, the report records that there is very low awareness of (environmental) sustainability issues, and sustainability was equated to rapid growth year after year.[60]

USA

As a counter-point to the foregoing accounts of the forest-rich developing countries, we may take up the example of some developed and advanced countries as well, such as the USA, to see how the competing claims of industrial development and forestry conservation are addressed.

For the USA, the area of forests has been long stabilized since the early 20th century, and was around 33% of the land area or 302 mha in 1997, according to the USDA pamphlet "US Forest Facts and Historical Trends" (www.fia.fs.fed.us/library/briefings-summaries-overviews/docs/ForestFactsMetric.pdf, accessed on 05.Feb.2014). Of this, some 204 mha is characterized as "timber land", 21 mha as "reserved forest", and 77 mha as "other forest". The "reserved forest" category (which has doubled from 11 mha in 1953) includes State and Federal parks and wilderness areas (substantially added to after passing of the Wilderness Act in 1964), but not conservation easements (see below), areas protected by NGOs, and most urban and community parks and reserves (*op. cit*., p.4). Public forest area is only a third of this: some 39 mha of "national forest", 69 mha in "other public" ownership; 27 mha are with "forest industry", and the remaining 147 mha under "other private" ownership (*ibid*., p.6). For a comparison, the total area of 302 mha is more or less the effective reporting area of India, but the forest managed by the US National Forest System (NFS) is comparable to that under the forest services in India: some 78 mha, or 77% of Federal forest lands in 155 national forests and 20 national grasslands (www.fs.fed.us/aboutus/meetfs.shtml, accessed Feb 6, 2014).

Although the area under forests has stabilized at above 300 mha since the early 1900's, the "State of America's Forests" publication of the Society of American Foresters (www.safnet.org/publications/

americanforests/StateOfAmericasForests.pdf p.49 onwards) states that "a recent study estimated that more than 44 million acres[61] of private forestland might be converted to housing development in the next three decades". Much of this will apparently happen on private lands and local bodies. In a related document titled 'Loss of US Forest Land' (document Loss-American=Forests-rsPDF_233.pdf), which is the officially stated position of the Society of American Foresters adopted by the SAF Council on December 5, 2004 and renewed on December 5, 2009, the belief is expressed that much of the last 50 years' permanent loss of forest land to housing and other infrastructure was avoidable, and calls for "an appropriate role for forests, forest management and carbon storage", better "land-use policies that recognize the multiple values of forests", better taxation systems "that encourage long-term investment in sustainable forest management", and so on. It has been difficult to understand how the US laws impinge on such land use conversions, and there does not seem to be an overarching act like the Indian Forest Conservation Act to control forest land diversions. Any attempts to put controls on private actions are, of course, suspect in the American system because they may look like an illegal or high-handed "taking" of private freedoms. The main body of environmental law therefore seems to have been built up out of court judgments, rather than legislative action (passing laws). This is well stated by McGregor (1994) in the opening paragraph of his survey of "Environmental Law and Enforcement":

> Environmental law is not found in just one […] volume of federal or state statutes... It is not found in one set of published court decisions. It is not found in one compilation of local bylaws and ordnances. […] Essentially, environmental law is a body of federal, state, and local legislation, in the form of statutes, bylaws, ordinances, and regulations, plus court-made principles known as the common law […] to minimize the impacts of … activities on people and natural resources. In this respect environmental law encompasses public health as well as conservation, pollution control, and land use control. (McGregor 1994, p.1)

Notwithstanding traditional suspicion of the state, environmental law in the USA, especially as enacted or promulgated "after Earth Day 1970, takes the approach known as 'command and control' " (*ibid.*). Thus the law creates agencies, vests powers in them to issue regulations, pass orders, and enforce them through legal actions (prosecutions and civil suites). The sources of environmental law, according to McGregor, rest in diverse types of government authority: the "commerce power" of the federal government to regulate interstate commerce, and the "police power" of

state and local governments to protect the public health, safety, welfare and morals; the sovereign power and interest ("eminent domain") exercised by the federal and state governments in acquiring or managing land and resources, the special obligation of the sovereign to protect important resources under the principle of "public trust", spending and taxing powers, common law concepts, contract rights and international law (*op. cit.*, p.2-3). The National Environmental Policy Act (NEPA), 1969, charged the federal government with the responsibility to "to serve as trustee … for future generation; to assure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings;… to preserve important historic, cultural, and national aspects of our national heritage…", and to maintain "an environment which supports diversity and variety of individual choice", to achieve "a balance between population and resource use", and "to enhance recycling and renewal of resources" (*op. cit.*, p.7).

A reading of McGregor's book yields the following patchwork picture of environmental and conservation law as applied to forests and forest land use conversions.[62] Most of the law relates to environmental quality issues such as air and water pollution, waste and hazardous substances, effluent treatment, and so on. It appears that forest land conversion comes into consideration mainly in the application of zoning laws to local bodies and municipalities. Controls on using or developing "vegetated wetlands" and "floodplains" (which may by a stretch be related to forests in the sense of special natural habitats), "are protected by an array of federal and state statutes and local bylaws" (*op. cit.*, p.62), based on the various sources of federal and state power discussed above. Before starting on any development which might affect wetlands or floodplains, therefore, it must be ascertained whether any such controls or public programs exist which may require permission. "An understanding of the 'public interests' invoked by these programs will assist anticipating disapprovals or approvals" and the accompanying conditions (McGregor 1994, p.63). Especially in the case of vegetated margins of wetlands (marshes, bogs etc.), and coastal wetlands, these may be considered "critical" for regulating water storage and flows and as habitats, so special care is advised (*ibid.*).

The next body of law which may be relevant to our discussion is the law governing Wildlife/ Wilderness areas (*op. cit.*, p.75 onwards). The Wilderness Act, for example, "establishes the National Wilderness Preservation System" (*op. cit.*, p.77), the lands to be included being designated by Congress, and administrative control to continue to lie with the same agency that had jurisdiction previously. Since the idea is to leave

these areas "unimpaired for future use and enjoyment as wilderness", the agency has to manage them so as to preserve their wilderness character. There are to be "no commercial enterprises or permanent roads in wilderness areas", except as specifically provided in the Act ("and subject to some existing rights") for "temporary roads, motorized vehicles, ongoing mineral surveys, water projects, and livestock grazing" (*op. cit*., p.77-78). Another example is the Endangered Species Act (1973, significantly amended in 1984), which gives the agency concerned (Interior Department for fish and wildlife, Commerce Department for marine mammals and fish, Agriculture Department for the import and export of plants) the power to designate species for protection, issue regulations, and "set aside critical habitats"; the Act gives authority "to acquire lands to protect listed species". Exemptions are available for "national security reasons and for disaster areas", and should an affected agency seek other exemptions, an "Endangered Species Committee" is created, whose activities are subject to review by the Secretary of State "for consistence with international treaty and other obligations". Other Acts related to wildlife and habitats include the Fish and Wildlife Coordination Act (1934, amended 1964) and the Marine Mammals Protection Act (1972, amended 1984).

Land use control is sought to be achieved by Zoning bylaws or ordinances (McGregor 1994, p.79), which "are adopted by town meetings or city councils", or in some states, the counties. This process "divides the community into districts in order to separate inappropriate land uses so as to promote harmony, maintain land values, and protect public interests". McGregor discusses at length the trade-offs between individual liberty to use and enjoy one's property and the "public interest", which may result in the curtailment or even the "taking" of these individual rights (with or without compensation), and the various court orders and judgments that have guided this issue over the years. However, Zoning "is not an unlimited power", it has to be related to the existing "valid police power purposes", it must be applied "with due process and not arbitrarily or capriciously", and "(t)he Zoning Act itself contains an number of exemptions for various situations, for example educational, religious, and agricultural uses" (*ibid.*). Once again, there is special mention of interests like wetlands and floodplains, watershed and aquifer zoning, hazardous wastes, etc., but no special mention of zoning to preserve forests as such. Evidently, these laws and processes are not really concerned with the national forests under the Forest Service or other agencies, but are relevant at the local and county levels.

An interesting category of "private environmental law" is achieved by "agreement" between persons (McGregor, *op. cit.*, p.85). This can be

done by "contracts, easements, covenants, and other types of traditional restrictions, as well as modern tools known as Conservation Restrictions, Conservation Easements, Historic Preservation Restrictions, and Agricultural Preservation Restrictions" (*ibid*.). Conservation easements or restrictions "protect more than 1.7 million acres of natural resources in the United States", for instance to protect scenic views, protect clean drinking water for communities, preserve rural community character, maintain critical wildlife habitats, and conserve farm, forest or grazing lands (*op. cit*., p.87). Hundreds of private organizations and trusts, scores of state agencies, and federal agencies like the Fish and Wildlife Service, Forest Service, and others use these types of restrictions along with private landowners to voluntarily conserve the stated values, with some benefits like tax deductions to the owner.

The US Forest Service Mining Regulations -36 CFR 228, Subpart A (accessed Feb 6, 2014 at www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5356906.pdf) give a "summary of regulations at 228.4(a)". As per this, the "District Ranger's authority to regulate mining activities is triggered by the degree of surface disturbance", and if "Operator reasonably concludes impacts not likely to be significant", "no Forest Service contact (is) required". If the "Operator" is uncertain of the impacts (of proposed or ongoing mineral activities), a "Notice of Intent" has to be submitted. Only if the District Ranger "concludes that impacts will likely be, or are, significant", is an "Approved Plan of Operations required". Thus, mining is apparently allowed in forests as a matter of course. Indeed, according to Steve Bailey's article in the website of American Forests (www.americanforests.org/magazine/article/mining-rights-in-superior-national-forest/), the US Forest Service "often holds only surface rights on its lands — the rights to much of the underground wealth are controlled by mining companies". However, open-pit mining is possible only if the company controls the surface rights, which it could obtain by a "land-swap", giving parcels of land the forest service may think are more desirable in exchange. The environment-versus-development debate is encapsulated in the last paragraph in the above web page (in reference to a particular mining project):

> The Forest Service says, "Orderly exploration, development, and production of mineral and energy resources on national forest lands to help meet the present and future needs of the nation is consistent with the Forest Service mission and with the Superior National Forest plan." Samantha Chadwick, preservation advocate with Environment Minnesota, and environmental advocacy group, says that whatever the decision

> is on Polymet, it will have an impact beyond Hoyt Lakes: "Everyone sees Polymet as the first bulldozer. If they get approval or denial, it'll mean a lot for projects that more directly threaten the Boundary Waters." (Steve Bailey *op. cit.*)

Similarly, the Bureau of Land Management (BLM) document *Mining Claims and Sites on Federal Lands* (BLM 2011, online version) records that the Bureau administers "over 258 million acres of public lands[63] and 700 million acres of subsurface minerals nationwide" (*op. cit.*, p.1). It is obvious that an overall policy is required to inform decisions on where to mine and so on. The guiding principle is "what will best serve the needs of the American people":

> Management is based upon the principle of multiple use and sustained yield – a combination of uses that takes into account the long-term needs of future generations for renewable and nonrenewable resources. These resources include recreation, range, timber, minerals, watershed, fish and wildlife habitat, and natural, scenic, scientific, and cultural values. (BLM 2011, *op. cit.*)

The mining policy, which informs activities undertaken as per the General Mining Law of 1872, as amended, derives from the Federal Land Policy and Management Act (FLPMA) of 1976, which according to the BLM,

> "launched a new era for public land management in America. The Act provides that the public lands remain under the stewardship of the Federal Government, unless disposal is in the national interest, and that their resources be managed under a multiple-use concept that will best meet the present and future needs of the American people" (*op. cit.*).

According to the BLM brochure on mining claims, there are 19 states where mining claims or sites may be located (BLM 2011, p.11); the BLM manages the surface of public lands, while the Forest Service manages the surface of National Forest System lands in these states. However, subsurface minerals on both the public lands and the National Forest System lands are the responsibility of the BLM (*op. cit.*, p.12).

All federal lands not specifically withdrawn from entry under the Mining law, are open to mining: including National Forests and Wilderness Study Areas (but the type of mining in the WSA being at the "managing agency's discretion", see Environmental Working Group at www.ewg.org). The following types of areas "may be closed depending on site-specific

regulations": "Forest Service Recreation Areas" and "Scenic Areas". The following are "generally closed to mining": most Bureau of Reclamation lands, most "Conservation Areas", land otherwise withdrawn from public access such as endangered species habitat, military reservations, National Monuments, National Parks, some National Recreation Areas if administered by the Park Service, most National Wildlife Refuges, wild and scenic rivers within ¼ mile of the bank on each side of the river, and Wilderness. Further, "Indian Trust Lands" (tribal lands) are "generally closed" except that "Native Americans may allow mining on Tribal Lands under privately negotiated agreements with individuals and companies", subject to BLM approval of the leases before mining operations begin, and monitoring of subsequent operations by BLM or BLM-trained "tribe members". The tribes receive a royalty from the mining operations, to be negotiated as part of the lease. Finally, the following "exceptions" are recorded: "Mining can occur on lands otherwise closed to entry under the mining law if an individual or business has a claim that predated the closing of mineral entry to the land. For example, if an individual held a claim on land that later became a National Park, the individual would be allowed to mine the land" (see "Who Owns The West? Mining Claims in America's West", Environmental Working Group (EWG) website, www.ewg.org).

The mining industry holds public lands under a mining claim (which gives the holder the right to mine on federal land). Before starting mining, the company files a "plan" with the Bureau of Land Management (or the US Forest Service or other agency that is holding the land); before prospecting, a "notice" is filed. According to the organization Environmental Working Group (www.ewg.org),

> A mining claim is a parcel of public land defined by posts driven into the ground in the corners of the parcel by a mining company or an individual. It is described in a claim form filed with the appropriate local government and Bureau of Land Management offices. For a total federal fee of $135 on a 20 to 160 acre claimed parcel (not including local filing fees), the claimant holds rights to mine the metals and minerals there. The federal government has interpreted this right to supercede all other potential uses of public land. In addition, the claim holder is not required to return any money to U.S. taxpayers for the value of the minerals extracted.

Generally, "staking a mining claim" requires simply "erecting corner posts or monuments", "posting a notice of location on a post or monument…", and "complying with the requirements of 43 CFR" (BLM 2011, p.13),

including filing the claim with the appropriate designated offices within prescribed time limits (30 to 90 days of locating the claim). A company that possesses a claim can apply for a mining patent, which gives "outright ownership of mineral-rich land that belongs to the federal government", and on patented land no plan or notice needs to be filed with the federal agency, but all other federal, state and local regulations and requirements have to be followed.

The EWG estimates that active claims in 12 western states alone encompass an area of 5.6 million acres (approximately 2.6 mha). According to the web page cited,

> Congress has imposed a moratorium on new mining patents since October 1, 1994. But the federal government continues to consider applications that were pending as of that date and may grant at least some of the pending patents. There are currently 55 patent applications pending and being processed by the federal government. Since 2000, the government has converted 15,600 acres of public property to private ownership, for a price capped at $5 per acre in 1872.

Further, the rate of rejections of mining plans is also vanishingly low:

> Although the federal government is required by law to prevent "unnecessary or undue degradation" of public lands, in practice it has only once denied a mining plan based on risks posed to the public, the environment, or cultural resources, and that decision has been rescinded.

Interestingly, the priority to mining interests is seen in the one so-named Forest Conservation Act found on a web search, pertaining to Maryland: "The Maryland Forest Conservation Act (Natural Resources Article, Section 5-1601 through 5-1613) was enacted to minimize the loss of Marylands forest resources during land development by making the identification and protection of forests and other sensitive areas an integral part of the site planning process" (Maryland State Forest Service website, www.dnr.state.md.us/forests, accessed Feb 4, 2014). Any development involving an area of 40,000 sq ft or more (approximately 1 acre) is required to submit, to the appropriate Forest Service office, an application, a map and a summary of the information collected to delineate "existing forest cover", and a Forest Conservation Plan describing "how the existing forested and sensitive areas will be protected during and after development". Exemptions are provided (there is a list of 11 items in the web page accessed),

such as highway construction, activities in the Chesapeake Bay Critical Area, creation or maintenance of a right-of-way, construction of a house "intended for the use of the owner, child, or grandchild if less than 40,000 square feet of forest is cut, cleared, or graded", and, importantly for our context, "Strip or deep mining of coal (Title 7 subtitle 5 or 5A) and non-coal surface mining (Title 7 subtitle 6A)". Incidentally, it is also provided that "Forest Stand Delineations and Forest Conservation Plans must be prepared by a licensed forester, licensed landscape architect, or other qualified professionals", a list of whom can be found on the Maryland Forest Service website (cited above).

Thus, it appears that American law tends to make competing uses of forest land somewhat easier than of, say, wildlife lands or wilderness, which have more champions. Interestingly, it was precisely the disinclination to freely encourage coal mining in Alaska[64] that brought Gifford Pinchot, the founder (with President Theodore Roosevelt) of the US forest system and first forest chief, into conflict with powerful persons and finally ended in his resignation; however as a fall-out, his chief antagonist, Secretary of the Interior Ballinger, also had to resign, and due to the ensuing split in the Republican party, the President (Taft) himself lost badly in the 1912 elections (Miller 2001, p. 208-9). (Pinchot went on to get his vindication by becoming the elected Governor of Pennsylvania, twice).

Tongass Forest: Logging versus Wilderness

An interesting and contemporary example of the way the conflicts between preservation and commercial exploitation play out in the highly fraught litigational environment of the USA (not very different from the Indian context, which after all is in emulation of the Americans) is afforded by the Tongass National Forest case. From the Wikipedia entry[65], the Tongass in southeastern Alaska is said to be "the largest national forest in the United States" with 6.9 million hectares (mha), the earth's "largest remaining temperate rainforest", and part of the larger Pacific temperate rain forest ecoregion, and "home to many species of endangered and rare flora and fauna". It was created by President Theodore Roosevelt in 1907, and is administered by the Forest Service office in Ketchikan with a number of ranger district offices under it. The Tongass NF is also home to around 75,000 people "who are dependent on the land for their livelihoods", with three "Alaska Native nations", the Tlingit, Haida, and Tsimshian living in Southeast Alaska (*op. cit.*). Although the area is huge, about 40% of the Tongass is composed of "wetlands, snow, ice, rock and non-forest

vegetation", and actual forest cover is only around 4 mha, with around 2 mha considered "productive old-growth", of which 1.8 mha are preserved as "wilderness areas". At present, out of the lower-elevation, bigger-tree areas suitable for logging, some "78% of the land remains intact", i.e. around 0.155 mha out of 0.199 mha original big-tree, low-elevation forest. Close to 70% of the old growth forest is protected in reserves "and will never be eligible for harvest", while no more than 11% of the remaining area will ever be harvested (*ibid.*).

Timber contracts guaranteeing low prices to the logging firms resulted in court cases in 1974 against the pulp companies, threatening to "halt clearcutting in the United States", which was circumvented by the National Forest Management Act, passed by Congress in 1976, as a direct response to the lawsuit. "Over half the old growth timber was removed there by the mid 1990s" (*ibid.*). The Tongass Timber Reform Act, 1990, "significantly reshaped the logging industry's relationship with the Tongass National Forest", cancelling a $40 million annual subsidy, establishing several new wilderness areas, closing others to logging, requiring environmental review and limitation of old long-term (50-year) contracts. The two major pulp companies closed down in 1993 and 1997, respectively, claiming that the restrictions made them uncompetitive, and the remaining 50-year timber contracts were cancelled subsequently. Since 2003, it was required that all timber sales in the Tongass must be "positive sales", meaning that the sale price should recover the 'stumpage' value of the trees "as established by the marketplace", which may preclude logging in the entire area given the high costs of logging. The tendency has been to go for the highest valued timber stands (so-called 'high-grading').

The "most controversial logging" in the Tongass has involved the roadless areas. The road system existing in these remote areas has been based on the extraction (logging) roads of the Forest Service. The wilderness conservation movement opposes further road construction for their negative effect on wildlife habitat, arguing that "existing roads are sufficient". The Tongass forest was included in the "Roadless Initiative" passed in the last days of the Clinton Administration in January 2001, which was repealed by Bush but reinstated by the "landmark court decision" of September 2006 (*ibid.*), but the Tongass forest "remained exempt from that ruling" (i.e., the extra protection to the wilderness from the Roadless legislation was not available there). In June 2007, the US House members added an amendment to the appropriations bill (the federal budget) "to block federally funded road building" in the Tongass forest, on the grounds that it was a "dead loss for taxpayers". In July 2009, the Obama administration approved logging

on 154 ha in the remaining old-growth forest of a Tongass Nationl Forest Roadless Area, which was "permanently stopped by a lawsuit" (*ibid.*).

In March 2011, Judge Sedwick from the Anchorage federal District Court in his ruling[66] reinstated the Roadless Rule on roadless areas in the Tongass, thereby retracting the exemptions given by the Forest Service, but with three of the Forest Service's recent timber projects excluded from that ruling "without prejudice", in deference to the interim directive issued by the Secretary of Agriculture on May 28, 2010, "reserving all decision making on timber sales to the Secretary" (court order dated March 4, 2011). The order found the reasons proffered by the Forest Service for exempting the Tongass forests from operation of the Roadles Rule "implausible, contrary to the evidence in the record", and "arbitrary and capricious" (*ibid.*). The District Court passed another order dated May 24, 2011[67] in the case which confirmed the reinstatement of the Roadless Rule, but expressly exempting from the injunction the "otherwise lawful road construction, road reconstruction, or cutting or removal of timber if and when approved by the US Forest Service to effectuate the following projects" (followed by a listing of 12 projects that include hydro-electric, exploratory drilling, aerial tram, and road projects). Also exempted from operation of the Roadless Rule were the "otherwise lawful cutting or removal of timber authorized by the US Forest Service in inventoried Roadless Areas" for "timber for personal use but not for sale", and "dead and/or down wood for sale as firewood, from within 400 yards of roads now existing…" etc., "microsales" of dead and/or down wood of "no more than 50,000 board feet from within 400 yards of roads now existing…" etc., and an additional list of 6 hydro-electric projects under previously granted permits. In view of the Secretary of Agriculture reserving all timber sales decisions, the order also explicitly withdraws the judgment from operating on certain of the timber sales in the area (*ibid.*).

The matter was obviously not rested there, and was taken on appeal to the higher courts by the state. The order dated March 26, 2014 by Hawkins, McKeown and Bea, Circuit Judges of the United States Court of Appeals, Ninth Circuit[68] set aside the above order of the District Court. Clarifying and amplifying the panel's 'opinion', Judge Bea explains (*op. cit.*) that the appeals court was called upon to determine whether the federal agency's "stated reasons for its change" to the Roadless Rule (in reference to the Tongass) "were sufficient, and the rule change valid, or arbitrary and capricious", and hence invalid. The panel of judges (with dissent by Judge McKeown) held that the Department of Agriculture had "articulated a number of legitimate grounds for temporarily exempting the Tongass from

the Roadless Rule" in its 2003 Record of Decision, and "(t)hese grounds and the USDA's reasoning in reaching its decision were neither arbitrary nor capricious" (Judge Bea, *Opinion*, *op. cit.*). Judge McKeown dissented on the ground that "the administrative record does not support the USDA's decision" to exempt the Tongass from the Roadless Rule (*op. cit.*, Summary prepared by court staff).

Expanding on the panel (majority) view, Judge Bea explains that the criteria used to review an agency's decisions are that an agency must "examine the relevant data and articulate a satisfactory explanation for its action" (US case law quoted by Judge Bea, *op. cit.*). According to Judge Bea, an agency's action is arbitrary and capricious if it "fails to consider an important aspect of a problem, if the agency offers an explanation… that is contrary to the evidence, if the agency's decision is so implausible that it could not be ascribed to a difference in view or be the product of agency expertise, or if the agency's decision is contrary to the governing law" (US case law quoted by Judge Bea, *op. cit.*). An initial agency interpretation is not "carved in stone", and can be subject to change; the agency has to "consider varying interpretations and the wisdom of its policy on a continuing basis" (*op. cit.*). Where the agency is changing a policy (here, exempting the Tongass from the Roadless rules), it must "show awareness that it is changing a policy and give a reasoned explanation for the adoption of the new policy" (*ibid.*). The agency "*does not* always have to 'provide a more detailed justification than what would suffice for a new policy'" (*ibid.*, emphasis in original). The court has only to determine whether the new policy is permissible under the law, and whether the agency "*believes* it to be better", and not comment on whether the reasons for the new policy are better or not (*ibid.*, emphasis in original). An important quotation extracted by Judge Bea from the case cited (*FCC v. Fox* at 513-514)) is that "[a] court is not to substitute its judgment for that of the agency and should uphold a decision of less than ideal clarity if the agency's path may reasonably be discerned" (*ibid.*, p.7). This is also accepted by the dissenting judge McKeown, however with opposite inference.

Judge Bea explains that "contrary to the district court's finding", the panel (the majority) find that the USDA clearly acknowledged that the new orders of 2003 were "inconsistent with its previous Roadless Rule and gave a reasoned explanation for the change". The judge then goes on to quote from the Forest Service's Record of Decision (ROD) on the whys and wherefores of the exemption (notwithstanding that he had, a few sentences earlier, stated that the court is not really supposed to look into the merits of the reasons). To summarize, however, the judge quotes, from the

USDA's ROD, paragraphs referring to the State of Alaska lawsuit that the Roadless Rule violated a number of Federal statutes, including the Alaska National Interest Lands Conservation Act of 1980, which induced the USDA to issue temporary exemption for Tongass in order to settle the lawsuit and "cease litigation" "pursuant to a settlement". This is found by the judge(s) to be a reasonable approach, that does not also "foreclose options regarding future rulemaking", and thus is not "arbitrary or capricious". The judge also makes the point that the agency cannot be expected to predict the future, and hence cannot be faulted if things do not turn out as projected; if the government was acting honestly and in good faith, that is all that can be expected of it, and not that it will always be correct in its predictions.

Other reasons referred to from the forest service's Record of Decision (ROD) are to "meet timber demand", and "decrease socioeconomic hardships on isolated Alaskan communities". Judge Bea holds that the USDA has "recognized expertise and discretion in predicting timber demand", and also finds sufficient data given in the ROD to accept the reasoning. "As the Supreme Court has instructed, we defer to agency expertise and should not 'substitute [our] judgment for that of the agency' *Fox Television*, 556 US at 513". Similarly, the judge finds enough information given on socioeconomic conditions in the ROD to constitute a "reasoned explanation based on observable conditions and the USDA's expertise", to not have to characterize the decision as "arbitrary and capricious". The judge even states that not all the grounds adduced by the agency need to be found reasonable; it is sufficient "if *any* of the reasons given are not arbitrary and capricious" (*ibid.*). Therefore, in conclusion, the appeals panel reverses the district court's findings, and remands the case to the district court for the purpose of deciding "whether a Supplemental Environmental Impact Statement is required in the first instance" (all material taken from *Opinion* by Judge Bea, *op. cit.*).

The dissenting note by Judge McKeown, in the revision order of the Ninth Circuit dated March 26, 2014, remarkably takes the same set of facts and more or less the same case law and comes to the opposite conclusion. For a start, the dissenting note holds, contrary to the majority opinion, quoting from the same case law, that while an agency is not prohibited from changing its policy, where "a new policy rests upon factual findings that contradict those which underlay its prior policy", the agency must "provide a more detailed justification than what would suffice for a new policy created on a blank slate" (quoted from *Fox Television*, 556 US at 515). Dissenting judge McKeown finds that "(t)he reasons the majority does provide—legal uncertainty, timber demand, and socioeconomic

hardships—are unsupported by the record and thus are insufficient to uphold the USDA's decision". The detailed grounds for this finding by the dissent follow: for instance, the agency does not seem to have made any reference to the statute, ANILCA and TTRA, as a basis for the USDA's decision, but has merely stated that it settled the lawsuit by agreeing to publish the proposed rule (exempting Tongass from the Roadless rules). Secondly, the ROD explained that the statute (the ANILCA, as amended by TTRA), should allow for considerations other than timber demand, and that the state should seek to provide a supply of timber meeting market demand consistent with providing for the multiple use and sustained yield of all renewable forest resources etc. (*ibid.*). "The ROD stated that the USDA 'considered carefully' the statutes and that the Exemption was 'consistent' with ANILCA... But significantly, the USDA did not state that the statute mandated an exemption" (*op. cit.*). The dissenting judge goes on to examine each of the four main reasons for the Tongass Exemption: (i) legal uncertainty, (ii) timber demand, (iii) socioeconomic costs, and (iv) roadless values, and finds that the USDA's justifications for the rule change "fall short" (*ibid.*). Even the socioeconomic hardships point is contested, on the grounds that the ROD relied on estimated *long-run* loss (italics in the original) of (900) jobs due to the roadless restrictions, which was "arbitrary and capricious" on the part of the agency, as it "failed to relate it to the short-term duration of the explicitly *temporary* Tongass Exemption", and secondly it "did not consider the dramatic post-2000 decline in timber demand" (dissent, *op. cit.*). As regards the majority finding on the "socioeconomic costs imposed by the isolation of local communities", the dissent finds that "the USDA provides no explanation for how a temporary rule change would alter the economic outlook for these communities" (*ibid.*, p.30-31). In any case, the Roadless Rule still "maintained the Secretary of Agriculture's discretion to approve Federal Aid Highways, if the project was 'in the public interest' or if it maintained the purpose of the land and 'no other reasonable and prudent alternative exist[ed]'" (*op. cit.*, p.31). The dissenting judge did not find any serious road proposals seeking State support, and "none on any approved project lists. The ROD did not identify any new road proposals that suggested a need for the Exemption. The USDA failed to explain why road considerations warranted a temporary exemption given the lack of any potential road construction on the horizon" (*op. cit.*). Of course, as described above, the majority finding did take up the dissent point by point and explained why and how it came to the opposite conclusion.

While many welcomed the appeal court's (split) majority decision reinstating the Tongass exemption from the Roadless rules (such as Republican Senator Murkowski, see www.energy.senate.gov/public/indes.cfm/2014/3/sen-murkowski-welcomes-court-s-affirmation-of-the-tongass-exemption-from-the-roadless-rule), expectedly the conservation organizations were not happy, and can be expected to carry on with the legal battle.

Current world forest status

According to the FAO *Global Forest Resources Assessment 2010 – Main Report*, which was released in October 2010, "the overall rate of deforestation remained alarmingly high, although the rate was slowing" (quoted in FAO, *State of the World's Forests - 2011* report, p. ix). However, there are disparities in the major trends between regions: the highest forest area was in Europe (mainly owing to the Russian Federation), but Latin America and the Caribbean had the "highest net forest loss over the last decade" (*ibid*.). For the Asia and the Pacific region, while there was a net loss of 0.7 mha per year forest area in the 1990s, the situation dramatically improved in the succeeding decade, showing a net increase of 1.4 mha per year in the 2000s. The area of "primary forests" decreased in all Asia and the Pacific, and the area of "productive forests" declined over the 2000s except in the subregions of South Asia and of Oceania. In the case of Latin America and the Caribbean, which was nearly 50% forest in 2010, the forest area declined over both the decades, "with the leading cause of deforestation being the conversion of forest land to agriculture"(*ibid*., p.x).

It is assessed that South Asia registered an increase of 2.21 mha over the decade 2000-2010 (a change rate of 0.28% per annum); India reports an increase of 3 mha over 2000-2010, a rate of 0.5% per annum. East Asia also did well, increasing forest cover by 27.8 mha over the decade, China alone achieving an increase of 29.9 mha (an increase of 1.6% per annum).

Despite this net increase at the regional level in Asia and the Pacific, when looking at the details by country or sub-regions, "deforestation continued at high rates in many countries": Southeast Asia experienced the largest decline in the region, losing more than 0.9 mha annually over the past decade (a change rate of -0.41% per annum), although this was still an improvement over the loss of 2.4 mh per year in the 1990s (*ibid.,* p.9). Our World Bank/OED case study countries all had high rates of forest loss: Indonesia lost 5 mha over the decade 2000-2010 (-0.5% per annum), Malaysia lost 1.14 mha (-0.5% per annum), while Thailand lost much less,

only 30,000 ha over the decade (almost a nil rate of change). This loss is in spite of an annual planting programme of around 0.28 mha per annum in Southeast Asia over 2000-2010 (South Asia did some 0.30 mha per annum, and East Asia over 2.27 mha per annum over the same period).

Among other indicators, the "area of forest designated primarily for conservation of biological diversity" in Asia and the Pacific, which was around 14% of the total forest area, increased by around 14 mha over the period 2000-2010 (Table 9, p.10 in FAO, 2011). South Asia registered the largest part of this increase, at 6.66 mha, while East Asia reported 4.09 mha, and Southeast Asia, 3.18 mha (over the 10-year period). This is significant, as such designation improves the chances of not being diverted for non-biodiversity uses (though this is not, obviously, a bullet-proof guarantee).

In the case of Latin America and the Caribbean, forest area fell by some 4.2 mha per year over 2000-2010, the annual rate of change being around -1.19% per annum in Central America, and -0.45% in South America (*ibid*., Table 19, p.17). This was despite a substantial planting of around 0.4 mha per annum over the 2000s, a change of 3.23% per annum in South America alone. The loss of forest area was ascribed to mainly "the conversion of forest land to agriculture and urbanization" (FAO 2011, p.17). The area designated primarily for biodiversity conservation also happily increased by 31.37 mha over the decade, especially in South America. Our OED case study country, Brazil, lost around 26.42 mha over 2000-2010, a change rate of -0.5% per annum; Argentina had a loss of -0.8% per annum, Bolivia -0.5%; South America as a whole, -0.5% over the decade 2000-2010.

IV

SECTOR CONTEXTS AND CASE STUDIES

The following sections will take up some typical (or perhaps atypical) FC cases and analyze them in the context of the development-versus-conservation debate. We will also traverse some of the major sectors and look at the sector-specific issues, from both sides of the debate. In doing so, we also try to explain the procedures and criteria adopted for the decisions taken, and the aftermath or fallout of these cases on the policy and legal environment.

Coal sector and Forest Conservation Act

We start with one of the most controversial sectors in the context of forest and environmental clearances, that is coal.

Importance of Coal in the Economy

The economic importance of coal is of course too obvious to need much reiteration. The starting point is probably the need for energy in the economy, since India has such a large population. According to the World Energy Outlook 2011, India is the fourth largest consumer of energy in the world after USA, China and Russia (Planning Commission 2012?), 12th Five-Year Plan, 2012-17, Vol.II, Table 14.2, p.131). India's energy intensity of GDP which was 0.191 Kgoe/US$ (measured in terms of 2010 US dollars at Purchasing Power Parity or PPP), is on par with the world average, somewhat higher than many developed countries (USA 0.173, UK 0.102), but substantially lower than China (0.283).[69]

A falling elasticity of total primary energy to GDP indicates that people are moving over to commercial energy from the preponderant dependence on non-commercial forms such as biomass and cow dung cake. The need to provide for this anticipated shift to modern clean energy at affordable prices by the masses is one of the challenges that the Indian planners are contending with. Universal access to electricity, for instance, is one of the most important goals for the five years of the 12th Plan (2012-2017), and will call for increased production of electricity and expansion of the distribution network down to the most remote hamlet. Total energy requirement is projected to grow at over 5% for the next two plan periods, with the growth of commercial energy being higher during the immediate future as it takes up the slack. Significantly, coal (with lignite) remains the "dominant source of primary energy" (*ibid*., p.132), expected to grow from

50% of total consumption of commercial energy in 2000-01 to 57% in 2021-22 (oil, and natural gas and liquefied natural gas or LNG are the other major sources of commercial energy). Renewable energy sources may be expected to grow four-fold, but will still be contributing only a minor share of under 2% by 2021-22. It is also projected that dependence on imports for coal will increase, from 18.8% in 2011-12 to 22.4% by the end of the 12th Plan and 25.9% by the end of the 13th (or even higher, if domestic expansion targets of coal and petroleum production are not fully achieved). This is on top of the import burden of crude oil which will be 78% by the end of the 12th Plan period (*ibid.*, p.133). A consideration here is that (according to the power ministry sources) our power plants cannot take more than 10-15% of imported coal because of the existing boiler designs, so unless domestic production and supply is increased they will be forced to work below capacity levels.

Having thus established the energy demand and consumption scenario of the country and the important position of coal in it, the analysis now moves to the supply and production side. The Eleventh Plan had a target of adding electricity generation capacity of 78,700 MW, but ended up achieving 54,964 MW (which was still more than twice the addition achieved in the Tenth Plan, *op. cit.*, p.136), of which thermal plants contributed 48,540 MW. The Twelfth Plan (2012-2017) now aims at adding some 80,000 to 1,00,000 MW, including the 90,000 MW of generating capacity under construction at the close of the Eleventh Plan. Another significant fact is that power purchase agreements have already been signed for four ultra-mega power projects (UMPP), and the country will be moving increasingly to such massive projects based on "supercritical" technology.

What is worrisome however, is that there has not been a commensurate expansion in assuring a supply of fuel to the developing power plants, and this is due to a bunch of reasons. The 12th Plan document cites, among the "issues" that have come up recently in the programme to step up coal production, the "availability of land, clearances for environment and forest" and implementation of the Forest Rights Act, 2006 (*ibid.*, p.134). The Plan document recognizes that potential investors have to be provided a clear and stable policy regime in such aspects as taxation, costs and revenue sharing, etc., in line with the terms offered in other countries. Unfortunately, some of these projects "are plagued with uncertainties regarding fuel supply because they were based on imported coal and changes in government policies in the countries where the coal mines were located have raised the cost of coal", a contingency not provided for in the power tariff agreements with the private investors (*ibid.*, p.138 and p.149).

While there was a conscious effort to increase domestic coal production in the Eleventh Plan, the output from "captive blocks" fell well short of the target "because only 29 captive blocks could start production out of the 195 blocks allocated so far" (*ibid*., p.159). While the target for coal production at the end of the Eleventh Plan was supposed to be 680 million tones (per annum), revised down to 630, the actual achievement was only around 540 million tones, leaving a gaping shortage of almost 100 million tones in the terminal year 2011-12 which "was only partially met by imports", leaving some 25,000 MW of commissioned capacity under-utilized according to the Plan document (*ibid*., p.159):

> The main impediments in the progress of captive mining are reported to be similar to those in other PSU-held blocks like delays in forest and environmental clearances, problems of land acquisition and R&R, allocation of a block to more than one user and so on… efforts need to be made to ensure that additional captive coal blocks start producing in Twelfth Plan to meet the rising coal demand. It is also necessary to plan for larger imports of coal." (12th Plan, p.159).

To these factors may be added certain others (from the author's personal understanding), such as the unhelpful security position in extremist-affected regions of the coal belt, especially Orissa and Jharkhand, and the difficulty of obtaining railway wagons (rolling stock) at the opportune times (ministry sources). Execution of rail links to transport (evacuate) the coal from various blocks was also delayed by the 'law and order' situation (left-wing extremism). Land acquisition, as always in a highly populated country like India, runs into various problems: defective or outdated land records which do not reflect current ownership, disputes between departments (revenue and forest) on the legal status, large-scale prior encroachments, prior commitment to infrastructure development (which is termed "sterilization" of coal deposits), and of course compliance with various state laws (e.g. to protect tribal lands from alienation) as well as the Forest Rights Act and the Forest Conservation Act even for lands not with the Forest Department, and so on. Title disputes, court cases, and demands for enhanced rehabilitation and compensation, and for assured employment, etc. also add to uncertainties and delays in acquisition. The Forest Rights Act (2006) requirements of ensuring that all proceedings are complete and assessing the value of the rights in the compensation package, apart from getting Gram Sabha resolutions for projects, might also be contributing to delay in coal projects.

The total addition to power generation capacity in the Twelfth Plan (2012-17) is to be 88,537 MW, which includes 69,280 MW of coal-based capacity, of which 40,000 MW is based on supercritical technology. With some slippages in plant loads, the actual demand for coal may be lower, at around 730 million tonnes (Twelfth Plan document, p.165). A realistic scenario pictures a demand growth for coal of 8.9% per annum (*ibid*.) which will take annual demand to a level of 980 million tonnes, compared with 640 at the terminal year of the Eleventh Plan. Some 75% of this coal will be the requirement of the power sector, while steel will take some 6.85% and cement 4.8%, sponge iron sector 5.1%. Production of coal, in the most optimistic scenario, is estimated at 795 million tonnes (*ibid*., p.166), a growth rate of 8% compared to the actually achieved rate of 4.6% in the 11th plan. This will be a formidable task, but one that has to be taken in hand because of the uncertainty of adequate imports.

By February 2010, when a review of ongoing coal mine projects was done in the concerned ministry, the position was that Coal India Ltd. had some 118 projects (of ₹ 20 crore and above) in hand for an ultimate capacity of 384 mty (million tonnes per year), of which 104 projects were "on schedule" and 14 running behind; another 134 projects with a potential of 368 mty were being processed for the Eleventh Plan period itself and some had even started production. CIL was also trying to revive some 18 abandoned underground mines with estimated reserves of 1647 mt with potential foreign collaborators. The other major PSU, SCCL, had 25 projects on hand, of which 4 (costing ₹ 100 crore and above) were on schedule, while out of the other 21 projects (costing between ₹ 20 cr and 100 cr), 14 were on schedule and 7 lagging; another 13 projects were in various stages (ministry sources). By February 2010, it was also learnt that some 208 coal blocks with geological reserves of about 49 billion tonnes had been allocated to government (95 blocks) and private companies (113 blocks), power-generating plants taking around half of them (53 blocks to PSUs and 30 to private companies, plus 10 blocks to Ultra-Mega Power Projects).

Coal Linkages and FC Clearances

The way forward suggested by the 12th Plan document is to open up coal production in large blocks to the private sector, by an amendment of the Coal Mines (Nationalization) Act if needed, even though this may be a politically sensitive subject. It does not make sense, according to them, to keep the private sector out of coal production, when it is allowed in oil and gas (12th Plan document, p.169). They also suggest, among other measures,

a coordination committee at the centre and the State levels, which can serve to expedite environment (and forest) clearances, even if these "statutory clearances can only be given by the relevant agency" (*ibid.*, p.170). There were also various other suggestions, such as streamlining imports well in time by large entities like the NTPC, increasing production from captive mines, setting up a high-level committee to sort out bottlenecks at ports and power plants that the railways were concerned about, swapping of coal linkages, e.g. between Punjab and West Bengal, to decongest railway links.

From the viewpoint of the Ministry of Environment and Forests, there is an exacting procedure to be followed for considering mining applications in forest areas, which cannot be short-circuited, lest the projects run into subsequent complications from public interest litigation or vigilance investigations. There is a certain amount of delegation of powers, as has been described earlier: in summary, cases involving up to 5 hectares of forest land are disposed of by the Regional Offices of the Ministry (of which there were six, and four more are being set up in fulfillment of court directions to strengthen the institutional setup), ***except*** for proposals related to mining and regularization of encroachments, which have perforce to come to the Ministry at Delhi. One small concession is that only cases involving more than 40 hectares forest need to be examined by the Forest Advisory Committee. Smaller cases are examined by the Regional Chiefs through the State Advisory Group (SAG), and then sent directly to the Minister for Environment & Forests at the Centre (through the Additional DG Forests), rather than through the FAC as such or through the DG Forests. Additionally, where so-called "protected areas" are involved (e.g., wildlife sanctuaries and national parks), the cases would have to be cleared by the Standing Committee of the National Board for Wildlife (NBWL) which meets under the chair of the Minister for Environment and Forests (MEF), then by the FAC, and then forwarded to the Supreme Court for final decision. In complicated or large proposals with substantial impact, there would naturally be requirement of site visits by members of ministry committees or outside experts, wider consultations or impact assessments, etc., which extends the time taken to give the final orders.

At the time that the coal and energy ministries were getting worried about the delays in clearing coal mining proposals, a lot of meetings were naturally convened at the ministers' and secretaries' levels to review the situation from time to time and ease the bottlenecks. As previously indicated, mining has taken some 9.73% of the forest released so far (up to February 2010), as compared to 33.14% for encroachment and forest village

regularization, and 9.91% for hydel projects. As far as the speed of disposal is concerned, the ministry review in February 2010 indicated the following position:

Sl.No.	Status of proposals	No. of cases	% of cases
1	Approved	17,060	66
2.	Approved in principle	3,069	12
3.	Rejected	1,701	7
4.	Returned	402	1
5.	Closed	1,807	7
6.	Pending with Central Govt.	270	1
7.	Pending with State Govts.	1,568	6
		25,877	100

As for mining proposals, it was indicated that 2,651 cases had been received so far (February 2010), out of which 1,319 had been approved, 335 approved in principle, and 484 rejected; others were in various intermediate stages. In the coal mining sector in particular, it was assessed (in February 2010) that of current projects, 52 cases (covering 13,479 ha) had been given Stage I clearance and were awaiting report of compliance from the stage governments or user agencies before proceeding to Stage II (final) clearance, 14 cases (4,837 ha) were pending with Central Government, and 38 (1,51,667 ha) with state Governments (for a total of 104 cases or 33,482 ha so accounted for).[70] There is also an interesting by-line in this aspect of utilization of Stage I clearances, as it was found, in February 2010, that 28 proposals having Stage I clearance (cleared in previous years, mainly 2006 to 2009, a few as long back as 2002 or 2003) had not yet been returned for Stage II. Thus not all clearances result in implementation, and the point made by the Ministry is that very few projects were actually pending before the FAC at any point in time.

Reasons for delay in clearing cases were indicated as the delay in identifying lands for compensatory afforestation, delay in compliance with the conditions laid down in Stage I clearances, submission of applications in incomplete form, time taken to reply to queries after scrutiny by the MoEF (or FAC), and in some cases the need to undertake wider and deeper impact studies. It may be added here, that there were also two other factors at play: one, that the FAC had been kept under a cloud for a substantial period from 2004 to 2008 due to the tussle with the Supreme Court over the composition of the FAC and qualifications of the members (see above), and second, the sudden spurt in project proposals during the Eleventh Plan

period as the country ratcheted up the pace of development. This meant that the FAC appointed during 2009 had to deal with a considerable backlog, which may be reflected as a seeming over-achievement of the 2009 committee; and the piling up of the backlog may itself be seen (mistakenly) as a tightening of norms compared to previous regimes, both of these perceptions being probably not a correct view of the actual circumstances.

Concept of 'go' and 'no-go' Areas for FC Clearance

As a consequence of this perception of undue delay on the part of the MoEF and the consequent pressure from industry and the upper echelons of the government, the Ministry tried to formulate some principles in its approach. For example, it would be reasonable not to encourage proposals involving felling of a large number of trees, or clearing of dense forests, or cases where the proposed area is part of a large continuous stretch of forest landscape or wildlife habitat. Attempts were made to define more precisely and numerically the above concepts, as already mentioned in the opening sections. Apart from this, it is obvious that the FAC would not generally consider proposals in protected areas, areas of high heritage value and ecologically sensitive areas, at least not without an in-depth study of possible impacts, especially of additive impacts if a large number of such projects happen to be proposed in the same landscape (what is termed "cumulative" impact assessment).

For the coal mines, specifically, following up on a meeting between the ministers in January 2010, the environment ministry initiated a mapping exercise with the assistance of the Central Mining Plan Design Institute (CMPDI) of the coal ministry, showing the coal block boundaries and the forest cover (from the Forest Survey of India records). It soon became obvious that a substantial portion of the proposed mining leases or whole blocks could be considered as unavailable, if the principles of protecting large stretches of good forest cover were accepted. For example, the exercise in one important coal field, North Karanpura, showed that out of 59 coal mines, 21 would be fit for removing from the list.

This type of exercise led to the concept of '**go' and 'no go'** classification, a terminology reflecting the ministers' aspiration to reduce the uncertainty and improve the speed of the process: it would be understood that project proposals in the 'go' areas would be sent through the fast lane, while one need not waste time on the "no-go" areas at all (at least for the present). Of course, it was also made explicitly clear by the environment ministry that these categories did not (yet) constitute a legal classification

under the FCA or Forest Act, and that mere inclusion in a so-named 'go' category did not mean that it would be mandatory to release such lands for non-forestry purpose; the due process still had to be gone through, and assessment of overall impacts (including the very important aspect of cumulative, or additive, impacts of a number of projects in the same area) would have to be looked at even in 'go' areas. But with such caveats, and within the existing legal and juridical framework, the ministers and their officials in the coal and environment ministries arrived at a broad consensus to identify such 'go' and 'no go' areas in the important coal fields as expeditiously as possible.

Forest Cover Criteria and Cut-off Levels

This is an opportune moment to have a closer look at the way the Ministry officials tried to develop objective criteria for deciding 'no go' areas, based on two types of observations: the quantity of forest cover, and its quality, as mentioned in the opening sections. The issue is that we need some cut-off level for 'go-no go' classification, as well as a way of combining the two measures to give proper representation to both the quantity (surface extent) and the quality (density) of the forest cover.

The first criterion of Gross Forest Cover (GFC) refers to the relative extent or proportion of forest cover in a block. The argument is that a patch of forest may be valuable just because it contains a sizeable stretch of natural cover, even though the canopy density may be not very high. This measure was termed the Gross Forest Cover (GFC), which is simply the area under forest cover in the given block under consideration (whatever be its density) as a proportion of the total area of the block. If the entire block were under forest cover (even if it were to be open forest), the GFC would come out to be 100%.

The second criterion, of quality of the forest, was termed the Weighted Forest Cover (WFC). The method starts with the three broad density classes available from satellite assessment of forest cover done by the Forest Survey of India: very dense forest (VDF, canopy density 70% to 100%, midpoint 85%), moderately dense forest (MDF, 40% to 70%, mid value 55%), and low density open forest (OF, 10% to 40%, mid 25%). From the cover map generated from the FSI interpretation of satellite imagery, area under each band is estimated, and then an aggregate "weighted forest cover" (WFC) is computed, by multiplying each area figure by the mid-point value of density shown above. Thus, if the entire area, say 100 ha, were very dense forest (VDF), the WFC would come out to 0.85 of the

total area, or 85%, obviously the maximum score possible). If the entire area were open forest, the WFC would compute to 35% or 0.35. If 50 ha were VDF and 50 ha OF, the WFC would be 50*0.85 + 50*0.35 = 60, or in terms of weight, 60% or 0.6. These Weighted Forest Cover (WFC) figures indicate the relative value (in terms of cover density) of different blocks, and what is required is to fix some **cut-off** above which the forest is considered 'no go' on the basis of the cover density alone.

The rationale behind the cut-offs chosen was that areas of good total forest crown cover would be having better prospects of sustainability into the future. Isolated patches, even of dense cover, in a surrounding degraded forest may not be amenable to preservation in the long term (so the reasoning would go), so there is not much point in deleting very small isolated patches or pockets of such nature. On the other hand, extensive stretches of even moderately dense forest would stand a better chance of survival, and even improvement, over the years, if proper protection from fire and hacking were ensured; such large stretches would therefore be candidates for preservation ('no go').

It was suggested, accordingly, that a reasonable cut-off for deciding 'no go' status would be that the tract (block) under consideration contained at least one-third or 33% of overall forest area or gross forest cover (GFC), in a way referring to the national Forest Policy aspiration of having at least 33% forest cover in the whole of the country (but a higher desired cover of 60% in the hills, and a less ambitious 20% in the plains). Additionally, as regards the weighted forest cover (WFC), a cut-off of 10% was suggested: a block would be considered for 'go' classification only if the WFC was below this cut-off.

To understand the implications, we may imagine a block of, say, 100 ha total area, with just a small patch of very dense forest (VDF) of, say, 10 ha in one corner. The block's WFC would come out to 10*0.85 = 8.5 ha out of 100 ha, or 8.5% of the total block (instead of the 10% that the VDF occupies). This puts the block in the 'go' category with cut-off level 10% for WFC. If the VDF had been slightly more, say 12 ha, the block would have crossed into the 'no go' categoey based on WFC: 12*0.85= 10.2, or 10.2% in relation to the block area of 100 ha, just above the cut-off suggested of 10%. In other words, just 12 ha of VDF in an otherwise barren block of 100 ha would render the block a 'no go'.

By February 2010, the mapping exercise had been done by CMPDI and FSI for six coal fields (North Karanpura, IB Valley, Singarauli, Talcher, West Bokaro and Wardha). It appeared that about 60% of the area of the coal blocks would lie in the 'go' category (288 coal blocks or 229,302

hectares), and the remaining in the 'no go' (107 coal blocks = 148,625 ha) This was apparently too high a rate of rejection for the coal ministry's comfort, and obviously questions were raised about the basis for classification. The weak link in the environment ministry's formula, of course, is the arbitrary fixing of cut-off levels; while the gross forest cover at least has some rationale in that it corresponds to the national aspiration of 33% forest cover, the second criterion, of 10% weighted forest cover, is more or less arbitrary.[71]

Summary Table (prepared around February 2010) (30% Gross Forest Cover and 10% Weighted Forest Cover cutoffs) of **nine** selected coalfields

Sl. No.	Coal field	Total no. of blocks	Total area, ha	'No go' no. of blocks	'No go' area of blocks	'Go' no. of blocks	'Go' area of blocks
1	N Karanpura	69	60,600	30	27,100	39	33,500
2	Ib Valley	49	51,600	23	28,000	26	23,600
3	Singarauli	46	66,800	26	35,200	20	31,600
4	Talcher	92	80,400	24	1,64,00	68	64,000
5	West Bokaro	39	14,800	11	3,900	28	10,900
6	Wardha	113	82,900	15	37,900	98	45,000
7	Mand-Raigarh	80	1,18,200	51	80,800	29	37,400
8	Hasdeo-Arand	20	45,900	20	45,900	0	0
9	Sohagpur	110	1,27,550	22	28,750	88	98,800
	Total	618	6,48,750	222	3,03,950	396	3,44,800
				36%	47%	64%	53%

Note: Some inconsistencies have been corrected, so figures may be taken as approximate

The criteria adopted at the initial round thus resulted in 47% by area, 36% by number of blocks, going into the 'no go' category. According to the Greenpeace report (Fernandes 2012), it was the coal ministry itself that had suggested to the environment ministry in 2010 to develop the 'go-no go' classification,[72] "in the hope of speeding up the clearance process" (*op. cit.*, p.6), but now they were the ones to demur:

> However, as soon as the analysis of coal blocks revealed a large number in dense forest areas, the Coal Ministry did a turn around and opposed the No Go classification, supported by private industry and the Prime Minister's Office. As a result, the coal industry continues to be plagued by uncertainty, with some allocated coal blocks facing the threat of denial of forest

> clearance on account of their forest impacts. (Fernandes 2012, p.6)

A heroic effort ensued to find ways to soften the impact of such 'objective' criteria.

Clustering and Division of Coal Blocks

One of the modifications suggested was that coal block "clusters" would be taken up for analysis, rather than individual blocks. The rationale for this is understandable: firstly, the blocks are laid out by the concerned mineral ministry without regard to the vegetation cover, and hence might artificially break up a tract of forest, which might leave some isolated forest patches within larger non-forested blocks and make the whole block out of bounds, rather than just the forested part. This may work the other way too: a cluster approach might serve to give higher conservation status to such patches of good forest in a part of an otherwise barren block, if they get clubbed with larger forest patches in adjoining blocks. In such cases, a certain amount of common sense may have to be applied to save what is obviously a valuable patch of forest by excising it from a given large barren block and attaching it to the larger forest in an adjoining block. This would in turn make the remaining, barren portion of the block go below the cut-off threshold and make forest conservation clearance easier for that portion. In other words, since the block boundaries were drawn in more or less arbitrarily fashion by the coal ministry in the past, one need not blindly follow those boundaries when it is agreed that a forest-rich portion may well deserve to be protected, especially if it is adjacent to another forested block. Sometimes a circular reasoning may tend to be adopted, by changing block boundaries so that the forest patches are consolidated in a cluster that gives high forest cover values to the reformulated cluster.[73]

Of course, the reverse situation also may come up, when the coal ministry may ask the forest department to yield up a small patch of forest within a barren stretch for operational convenience. There was especially concern in the coal ministry that certain no-go coal blocks which were considered vital for existing power plants (and which were already perhaps encircled by mined area) would have to be revisited on a case-by-case basis. The coal ministry was also anxious that existing clearances would not be disturbed, and such blocks would be left out of the reckoning. There has to be a certain amount of give-and-take in these matters in the interests of preserving existing stretches of good and medium density forests, especially the valuable mixed forests which can probably never be

regenerated if they are felled (due to the general change in micro-climate and soil conditions once they are cleared).

In order to accommodate the serious concerns of the user ministries, an exercise was done on 8 coal fields (Talcher, North Karanpura, West Bokaro, Mand-Raigarh, Singaurali, IB Valley, Wardha and Sohagpur, i.e., leaving out Hasdeo-Arand) by applying two successive sets of considerations to ease the strict cut-offs: first, allowing 'clustering' of blocks, so that isolated forest patches could be subsumed into the forest-poor neighbours and thus brought into the 'go' category; and secondly, allowing large existing blocks to be divided to separate out the forested portions. On the original criteria (30% GFC and 10% WFC), out of the original 602 coal blocks (6,48,750 ha, including Hasdeo-Arand), 396 blocks (3,44,800 ha) would be available for diversion (amounting to 53% by area, which was not satisfactory to the coal sector). If clustering were allowed, another 29 blocks would be cleared, raising the 'go' level to 56% area-wise. If another 24 blocks falling in 'no go' category but already approved by the ministry were added, the clear blocks would be 59% area-wise. If another 28 large-sized 'no go' blocks were allowed to be split up to separate out the forest areas, the 'go' category would rise to as much as 71% area-wise (ministry sources).

From the environment ministry's point of view, this was a generous package. For the coal ministry, however, it must have been a bit of a hollow gesture, as it did not release the prime blocks which had already been linked to upcoming plants on which thousands of crores had allegedly been already spent. Specially, it did not release even a single block in the Hasdeo-Arand coal field, about which more will be discussed below.

Overlap of Coal, Wildlife Habitats and Tribal Homelands

The expansion of coal (and iron ore) blocks into "virgin" areas often draws in tracts of good forest, that are also the habitat of such rare and endangered wildlife species as the tiger, leopard and other predators, along with their prey base of deer, antelope and other herbivores, and other associated species like bear, elephant etc. Such conflicts are evident in a number of coal fields such as North and South Karanpura in Jharkhand, Hasdeo- Arand in Chhattisgarh, Talcher in Orissa, Singrauli, Sidhi and Chindwara in Madhya Pradesh, etc. Many of the coal blocks are also situated in the connecting "corridors" between centers of wildlife habitat, and such corridors are crucial to maintain genetic viability of populations (by enabling emigration of surplus animals, thereby reducing inbreeding and competition for mates and territory). Animals like elephant are known to undertake

periodic migrations in a time-ordained cycle to avoid over-exploiting a limited home range and finding essential nutrition and water according to the local climate and ecological conditions. All this is disrupted by mining and other development, and makes the task of deciding between 'go' and 'no-go' that much more exacting and arduous. It is not sufficient, in other words, to only go by the density and extent of forest cover, but it is important to also look at the significance of the habitat to wildlife, the existence of rare or endangered life forms or ecological associations (forest types, aquatic habitats, medicinal plants etc.) as well as the aspects of corridors, connectivity and continuity of habitat, "source-sink" relationships of wildlife populations, the need to provide adequate buffer areas of degraded forest and scrub to ameliorate man-animal conflict, etc.

A particularly detailed study of the overlap of coal blocks with tiger and wildlife habitats in the central Indian belt has been done by Greenpeace researchers, and presented in a compelling publication with maps and graphics, as a response to the sudden upswing in coal block permissions (Fernandes 2012). The study was based on the maps of 13 coal fields prepared for the ministry by CMPDI and FSI for the purpose of identifying 'go' and 'no go' areas, parts of which have been cited above. These maps were compared with GIS overlays of presence of tiger, leopard, elephant and other fauna, corridors and spill-over buffer areas (sinks), national parks and sanctuar1ies, and other information collated by specialized institutions like the Wildlife Institute of India, Dehradun (WII) and the Asoka Trust for Ecology and Environment, Bangalore (ATREE). The picture that emerges is "stark" (Fernandes 2012, p.2):

> If India is to continue on its current path of increasing reliance on coal for electricity, it will mean the eventual fragmentation and destruction of large areas of forest habitat, the loss of vital connectivity corridors for the tiger and other species, destruction of important watersheds for peninsular India's major rivers, and the displacement and further impoverishment of large numbers of forest-dependent communities. (Fernandes 2012, p.2)

The Greenpeace study covered the nine coal fields already mentioned above (Talcher and Ib Valley in Odisha, North Karanpura and West Bokaro in Jharkhand, Mand-Raigarh in Chhattisgarh, Singaurali and Sohagpur in MP-Chhattisgarh, Hasdeo-Arand in Chhattisgarh, Wardha in Maharashtra) as well as four more (Sonhat and Tatapani in Chhattisgarh, Aurang in Jharkhand, and Kamptee in Maharashtra) for a total of 13 coal fields. The ATREE analysis of GIS overlays suggested that these 13 coalfields alone would entail the destruction of some 1.1 million hectares of

standing forest, of which over 739,000 ha is dense forest (canopy density 40% and above) (*op. cit*., p.3). Over 3,54,000 ha of these lie within 10 km of a protected (wildlife) area, calling for clearance from the NBWL, and over 1,86,000 ha showed presence of tiger as per official reports, 2,77,600 ha showed leopard presence, and 55,900 ha elephant presence. The 13 coal fields will impact at least 8 tiger reserves, by dissecting the connecting corridors (*op. cit*.).

Cumulative Trend of Coal Block Clearances

While the ministry has a constant stream of proposals in the pipeline for environmental or FC clearance, there is no apparent cap on the capacity to be cleared annually. With the upsurge in project applications during the 11th Plan period (coal mining lease area and production capacity are said to have doubled during the period 2007-11 from the level in 2007, *op. cit*., p.1), the Greenpeace document states that the ministry has already cleared enough projects to maintain a production level of 830 mtpa coal, and 200 GW of power, far in excess of the 100 GW of new power generation capacity targeted in the approach paper for the 12th Plan (2012-17). A similar point had been made by the CSE study (2011), which pointed out that whereas the 11th Plan (2007-12) projects additional thermal capacity of 50,000 MW, and the 12th Plan (2012-17) asks for 1,00,000 MW additional capacity, the MoEF has granted environmental clearance for an astounding 2,10,000 MW, against which actual increase in capacity has been a mere 32,394 MW (up to 2011). This behaviour calls for an explanation, which may be an attempt to 'corner' resources in advance of requirements and serious investment.[74]

Similar patterns of project proponents and state governments scrambling to garner permissions in excess of the planned targets were noticed and investigated by journalists and presspersons as well, such as a series of investigative reports in the *Economic Times* newspaper during 2012. Rajad and Rajshekhar (*ET*, August 2, 2012) suggest that while a number of mines were allotted for 'captive' coal production (for use in the owners' plant), in practice a number of them were transferred to other parties, obviously at a windfall profit in an environment of soaring coal prices, as the state charges only a small royalty on the material as it is extracted, rather than recovering the market value of the reserves. Many of the companies acquiring these 'captive' blocks evidently did not seriously intend to utilize the material for their plants, and hence the development of many of these mines was delayed. Between 2005 and 2009/10, as per the above report, some 150 coal blocks were allotted for captive use (to 178

parties, some of them joint enterprises), but by January 2012, only four of them had started production (and that too below optimal capacity levels). Rajshekhar (report in the *ET*, August 2, 2012) was given to understand that "…undeserving companies were selected, some companies got more blocks than they needed, some deserving ones did not receive any". These coal block allocations are, today, the subject of investigations by various apex agencies, so more cannot be said about this matter here (they may be part of the coal block allocations cancelled by the Supreme Court, which are subsequemtly being put to auction in instalments, a complicated topic that is not being taken on board in this paper).

Case Study: Hasdeo-Arand Forests

It is in this context that the case study of the Hasdeo-Arand coal field is taken up. What is interesting to note here is that whatever be the criteria or principles applied – subjective evaluation by the FAC members and ministry officials, or some objective factor like forest cover, density, large extent of continuous canopy cover, or a weighted index of these, or a biological index, the environment ministry finds it very difficult to actually reject a case if there are big interests involved. Hence in the final analysis, it becomes a decision based on the political economy rather than on objectives facts and criteria, and the expert is easily over-ruled by the political estate. An interesting aftermath of the case is also that at present, it appears that the judiciary has a final say (in the incarnation of the Green Tribunal, rather than the Supreme Court), as it has exercised its powers of review to over-rule the political decision. Who overrules whom, is a question that then goes into the realms of governance and the constitution (see Lele & Menon 2014, or Sahu 2014, in this connection).

Briefly, then, in the H-A coal field, situated in Korba and Sarguja districts of Chhattisgarh state, there are some 49 coal blocks (mine lease areas) identified so far, stretching right across a continuous forested landscape from Hasdeo Reservoir in the west to the boundary of the Mand-Raigarh coalfield in the east (the two coal fields are practically contiguous according to the sketch maps provided in the source cited here), covering some 1,502 sq km and containing proven reserves of 1,369 billion tonnes of coal (Fernandes 2012, p.51 *et seq*.). Fernandes states that according to the National Tiger Conservation Authority (NTCA) data, neither tiger nor elephant presence is recorded, but independent sources do talk of significant elephant presence in Korba and Raigarh districts, which prompted the forest department to propose a Lemru Elephant Reserve in the eastern part, a

huge expanse of 400-500 sq km dense forest. Forest department records cite tiger presence in the vicinity of the Nakia block (again in the east, within the Lemru Elephant Reserve), whereas NTCA's 2011 report shows tiger presence in 2007, but not in 2010. The FAC members saw damaged huts in the Parsa (Barsan) area as witness of elephant incursions in the past, corroborated by WWF-India records of conflict. The authors of the Greenpeace report speculate that there may be a deliberate underplaying of tiger and elephant presence in order to make it less difficult to get forest clearance, and the state government scrapped plans for the Lemru elephant reserve allegedly under pressure from the coal lobby (Fernandes 2012, p.53. see also Supriya Sharma's report, *Times of India* newspaper, January 23, 2011).

Picture 1: View of Chotia Hillside, Hasdeo-Arand Coal Blocks in August 2009

According to coal ministry sources, there is an estimated coal reserve of 5 billion tones in the H-A coalfields (compared to the annual shortfall of say 50 to 100 million tonnes, this reserve could potentially make up the gap for the next 50 to 100 years), which would obviously contribute substantially to meeting increasing demand over the next few decades, and hence from the coal sector's point of view it would be a great sacrifice to forego this resource entirely. According to coal sector sources, 20 of the H-A coal blocks have already been identified as captive mines for supporting

14,000 MW power generation (for which, roughly, 14,000 ha coal block area would be opened up over a period of 30 years) and 4 million tones of sponge iron production. The captive coal block allottees (state-owned power utilities or joint public-private partnerships) have already made substantial investments for developing their end use plans. Therefore the coal sector presses for the issue of FC clearance so that they can be taken up for open cast mining. Another four coal blocks have been earmarked for detailed survey as they are deemed to have good potential.

As regards the choice between open cast and underground mining, the coal sector argues that open-cast is able to realize a high proportion of the mineral, say 85-90%, whereas underground mining is able to extract only 10-25%, apart from being much smaller on average and much costlier to work. Seeing the raw material constraints and the need to conserve our resources over the long term, there is no question of leaving such a large proportion of material in the ground. Moreover, the open cast areas can always be rehabilitated after the mining is over, and if done scientifically and systematically, from one end to the other according to the mining plan, there will be a regular "rollback" of the mining belt over a period of years into restored land, which could be handed back to the forest department (whereas abandoned underground mines would presumably be a permanent environmental hazard which could not be made usable for humans or animals).

The coal ministry, accordingly, makes a persuasive and forceful case for the forest department to refrain from acting like a 'dog in the manger', but to allow these forest areas to be worked over for the coal, to be ultimately restored and returned to the original owners after exhausting the mineral. To further put the environment ministry on the defensive, the coal and power proponents take the moral stance that protection of forest and the development needs of the country should both be taken into consideration, and the decision to close off the H-A forests should be reconsidered so that the availability of coal for the power sector improves, and the huge investments made in the power plants is not wasted. In the bargain, the environment and forest officials tend to be made to look unreasonable, intransigent, even anti-national, and plain wrong in their decision to deny FC clearance.

Of these blocks, the environment ministry had received proposals in 2010 for forest diversion with respect to seven coal mines (blocks), two of them (Parsa and Syang) for prospecting and the rest for mining. Prospecting permission in Parsa had been granted in 2008 itself, and the proponents had not yet come back with formal proposals for diversion of

the forest land, but in the case of Syang, even prospecting was being denied permission as the forest was as dense as 0.7 in parts. Another five blocks (Paturiya-Gidhmuri, Nakiya I, Nakiya II, Madanpur-South, and Tara) were examined and rejected by the Forest Advisory Committee on the ground that these blocks formed part of an extensive forest landscape with continuous, very good sal (*Shorea robusta*) bearing forest of high density, and with a record of elephant movements. An in-depth analysis was subsequently undertaken by the Chhattisgarh forest department, on the request of the environment ministry, to see whether any weakness existed in this rationale or in the basic data. It was confirmed that these are good forests, with tree density ranging from 227 trees per hectare in Madanpur-south to 380 in Paturia and Gidhmuri, with a good proportion of middle aged to mature trees. Using the criteria of Gross Forest Cover (GFC) and Weighted Forest Cover (WFC) explained above, the 45,883 ha comprising the 20 identified coal blocks in the Hasdeo-Arand coal belt would entirely fall in the 'no-go' category.

Faced with this situation, the inter-ministerial group of officials was given the mandate of finding a way out of the impasse (from the point of view of the development ministries) created by the FAC's rejection of the coal blocks in the H-A forests, and a special team of officials of the concerned ministries was sent to see the forests at first hand and confer with the state departments and government. Naturally, the senior officials of the central government and of the state government argued that while the forest needed to be conserved, a huge amount had already been invested in setting up the coal extraction and processing facilities and power plants, and the H-A coal blocks were crucial to the achievement of the energy goals of the nation. They continued to recommend that the coal blocks in the H-A forests should be allowed, with whatever precautionary and ameliorative measures as may be envisaged, coupled with strict monitoring and enforcement of the environmental safeguards and implementation of post-rehabilitative measures. They suggested, as part of what they thought of as suitable mitigative and ameliorative measures, comprehensive reclamation of mined out areas, a long term research project on scientific eco-restoration of mined out areas, a comprehensive wildlife management plan, a credible and independent monitoring system to ensure proper reclamation, reducing the regular felling of trees in the forest department to compensate for the coal blocks, proper soil and water conservation measures to prevent silting of the drainage system, and so on. The same considerations would naturally extend to the other blocks in the whole H-A coal field.

As far as the environment ministry was concerned, the rejection of some of these coal blocks in the H-A coal fields did not really amount to any major change in approach or policy. In fact, it was reiterated time and again that the detailed guidelines in the FCA 'Handbook' of the ministry (Government of India 2004) explicitly addressed such situations with reference to mining projects for coal and other major minerals (*Handbook*, p.25):

> **Regarding Mining proposals:** It has been observed… that a large number of proposals related to mining are submitted which are located deep inside the forest areas. Locating such proposals inside makes entire forest area vulnerable due to ancillary activities like construction of approach road, movement of vehicles and coming up of colonies for the workers. … whatever area has already been opened up for mining … have not been worked and reclaimed systematically… There is a tendency to open up new pits without exhausting the existing ones to its full depth/potential. Therefore…whenever a proposal for fresh mining is submitted, a brief profile of the lessee/company should be submitted giving details of average annual production, location of these pits and the status of reclamation of forest land that are exhausted of minerals. Along with this, the State Government should also submit details of all other mining leases for that particular mineral with their capacity and average annual production and projected future requirements. They should fully justify the necessity of opening new mining leases for that particular mineral. (Government of India 2004: *Handbook of FCA*, p.25, section 2.1 (viii))

The *Handbook* has also addressed another issue that is central to the coal and power ministries' argument, that of pre-emptive investment forcing the hand. Thus, the FCA guidelines clearly lay down that investment should not be undertaken (even in the non-forest area) until the forest land component is fully settled, vide Sec. 4.4 of the FCA Guidelines:

> Some projects involve the use of forest land as well as non-forest land. State Governments/ project authorities sometimes start work on non-forest lands in anticipation of the approval of Central Government for release of the forest lands required for the projects. Though the provisions of the Act may not have technically been violated by starting of work on non-forest lands, expenditure incurred on non-forest lands may prove to be infructuous if diversion of forest land involved is not approved. **It has, therefore, been decided that if a project involves forest as**

> **well as non-forest land, work should not be started on non-forest land till approval of the Central Government for release of forest land under the Act has been given**. (*Op. cit*., p.36/7, sec.4.4)

This position accords well with the Supreme Court's later direction in the Lafarge judgment against creation of a *fait accompli* situation. However, development ministries repeatedly protest that this is a very restrictive and negative stance, and that the environment and forest ministry is overstepping its domain by passing such sweeping dictates on activities that may be far away from the forest realm, and frequently call upon the ministry to relax this clause. Especially for linear projects like roads, the development departments argue that development or improvement is taken up in sections, usually according to the divisional jurisdiction of the engineers, and the resulting infrastructure would be useful to the people of the locality even if not connected throughout. However, FCA guidelines specifically discourage splitting up of proposals in this manner. An attempt was under way in the environment ministry to provide some relief for such works, especially roads, even if some (often small) part situated in the forest area were not to be given FCA clearance. One way to safeguard against *fait accompli* situations may be to make it clear that development departments or project entities should only take up such portions as would be of utility independently of the connecting links lying in the forest areas. It may also be specified that such pre-emptive investment should be made, if at all, only up to a neighbouring market town or intersection of highways, and not up to the boundary of the forest area. More on this will be discussed in the section on roads and linear projects.

As far as the forest ministry was concerned, therefore, the ministry was only implementing the existing guidelines in the interests of conserving the remaining good forest tracts. Development projects cannot claim some sort of dominance or eminent domain over the forest. The foresters feel that the forest does not have to justify its existence against the competing uses (especially in the case of notified forests); on the other hand, it is the development project that has to establish its claim. As discussed above, this may be done by adducing grounds of national security, economic imperatives, national developmental goals that parliament has placed in a pre-eminent position, and so on.

On the other hand, since the FCA 1980 does provide a mechanism to put forests under other uses, it cannot be argued that no forest area can be given; therefore, there has to be some rational basis for accepting or rejecting cases such as the H-A forest tract, for the sake of both

administrative cogency and as a guidance to the officials and Minister and a protection against imputations of arbitrariness (or worse). The FAC and the officials in the environment ministry need to find a way through these conflicting claims and counter-claims in a manner that will be perceived as fair, logical, and consistent.

It is apparent that as long as the ministry docilely cleared each and every project, there were no questions raised about the rationality, scientific underpinning, objectivity, or credibility of the procedures or criteria. The moment the ministry raised any objections, however, there were all these indirect strategies to somehow rescue the rejected cases by stressing the weakness in the data or criteria, calling for so-called "independent" experts to do the job, and so on. The 'go-no go' classification is to be viewed as one such exercise in somehow finding a way out of the impasse created by the ministry, and providing ostensibly scientific, objective grounds to overrule the experts' opinion. In the words of the *Economic Times* newspaper, January 15, 2011:

> Even though it has been pushing for a more liberal policy of mining in forest areas, the present exercise of demarcating 'go' and 'no-go' areas was initiated by the coal ministry and Coal India Ltd.… The idea was to put in place an "objective, informed and transparent" system which would allow for efficient decisions. A senior government official involved in the exercise said that "the study was taken up at the instance of the coal ministry and CIL. The results were unexpected, so the ministry recoiled and backtracked."

But the criticisms of the user ministries notwithstanding, the FAC recommendations were not actually based on totally subjective considerations, and were instead based on a reasonable strategy that sought to protect the really valuable forest blocks and large stretches. Even though such forest tracts may not yet have a high status as national parks and wildlife sanctuaries, they are still important links in the conservation chain, not only as corridors or 'sinks' for animals coming out from protected areas, but also in their own right constituting a precious store of natural habitats harbouring countless organisms, and important as catchment areas of our major river systems. The 'go-no go' classification, not unexpectedly, would not really help the coal and power ministries in the sense that blocks situated in a dense, continuous forested tract like the H-A coal field would not be expected to cross over into 'go' category by any reasonable stretch of the criteria. The only actor to be surprised at the outcome of the 'go-no go' mapping exercise seems to have been the user ministry, and the simple

explanation for this denouement is probably that the coal and energy ministries started with a wrong impression that the environment ministry was being subjective, unpredictable, capricious or worse in rejecting the H-A blocks *en masse*.

A few border cases would, no doubt, be enabled to cross over by tweaking the cut-off levels (or resorting to splitting and clustering, as explained above), but the core areas of dense forests (let alone the wildlife habitats) would very rarely be so transformed. For example, by "clustering" and sub-dividing large blocks, no doubt the coal ministry could improve their position from a 'go' level of 60% to around 75% in the 9 coal fields cited previously, but the core blocks in the H-A forest tract would continue in the 'no go' category unless the cut-offs were reduced to a travesty of the forest officials' suggestion.[75] Nor could the FAC itself do the deed, even if it could be coerced or inveigled into such a self-destructive step, without losing completely its credibility and possibly attracting the ire of the Supreme Court[76] or other regulatory authorities[77] once again.

In a somewhat belated attempt to weaken the stand taken by the environment ministry based on the recommendation of the FAC, questions were raised about the lack of objectivity and legality in the 'go-no go' criteria. According to *The Financial Express* of January 14, 2011, "The coal ministry has questioned (the) legal validity of the environment ministry's claims as it is not mentioned under the Forest Conservation Act". It is not clear whether the environment ministry gave up the 'go- no go' classification as decided by the GoM (see the report by Chetan Chauhan on differences between the ministries on scrapping the classification in *Hindustan Times*, June 20, 2012). However it may be, it was made abundantly clear by the environment ministry that the mere categorization as 'go' or 'no-go' does not, and cannot, amount to settling the issue once and for all, because that would be a unilateral exercise that would in effect render more or less meaningless or redundant the case-by-case process laid down in the statute for considering FC clearance. Therefore, it was made clear in discussions that such an exercise of classifying lands could not be done for the entire country at one go; at best, it could be taken up for certain urgent cases, such as the coal-fields mentioned above, where applications were pending and decisions needed to be taken and communicated early. The due process would have to be undertaken even in 'go' areas; the classification merely indicated to user departments that applications would at least be considered, and not rejected outright as in the case of 'no-go' areas. Even in 'go' areas, therefore, each project would have to assessed in terms of its size, possible impact in the locality and around it, demands it would pose on the resources of the

surrounding areas such as land for workers and R&R, dislocation of populations and protection of forest rights, impact of consequent development activities like roads and power lines, pollution, traffic load, the cumulative or additive effect of successive projects and the question of carrying capacity and the need to draw out the environmental load over time, etc. Especially important from the wildlife point and habitat of view would be the potential impact on continuity of the habitat, on corridors and buffer zones, on migration routes and movement of large mammals, on water courses, and so on. These impacts would have to be examined for each case and locality or region afresh, and a summary exercise undertaken by the ministry at this point in time would not pre-empt such detailed consideration. Indeed, the classification would only lead the way to such detailed appraisal.

Moreover, the user ministries did not seem to realize that whatever the criteria, whether purely based on forest density and cover, or also including biodiversity mapping, surely the problem before the coal ministry could not be addressed without, in effect, over-ruling the FAC, which would therefore obviously have to be decided at the political leadership (possibly the Cabinet) level.[78] The problem appears to be, not so much that the forest criteria are defective, as that the user ministries simply refused to accept any outcome that did not conform to their prior plans.

The political decision was achieved through a series of meetings between the ministers themselves, a process assiduously followed by the media (see, for example, Chetan Chauhan's report in *Hindustan Times*, February 9, 2011). The environment minister offered to relax the "no go" criteria to make available more areas (up to 71%) for coal mining, "but rejected the demand for completely doing away with the classification" (report by Amitabh Sinha and Priyadarshi Siddhanta in the *Indian Express* newspaper, April 8, 2011). All projects that had been conferred Stage I clearance as on December 31, 2009 would not be recalled even if they came within the 'no go' zone. These concessions were still not enough for the coal minister, who was quoted as saying that "it was imperative that all proposals on green clearances be cleared without any reference to 'go' or 'no-go' areas" (*ibid.*). Newspaper reports on the looming coal shortages and consequent power famine put pressure on the GoM (see, for instance, Priyadarshi Siddhanta's article in the *Indian Express*, April 7, 2011).

Ultimately, the environment minister had to give in and in June 2011 issued Stage I FC clearance for the coal mines in the Hasdeo-Arand area that had been stalled by the FAC rejections, Tara, Parsa East and Kente blocks, "on the grounds that they lie 'on the fringes' of the H-A forest (Fernandes, *op. cit.*, p.53). This was in the face of the FAC's

recommendations against mining in the belt, and after the ministry "had reportedly rejected the proposal thrice in 2010" (*ibid.*). One of the justifications or conditions recorded in the minister's order was that the state government would not seek any more blocks, which obviously cannot be expected to be honoured. Final clearance for the Parsa East and Kante Basan blocks was given in March 2012.

However, this is not the end of the story, as this clearance was challenged before the National Green Tribunal "on the grounds that the conditions specifies in Stage I clearance have not been met" (Fernandes 2012, p.53). The NGT gave its orders in March 2014, cancelling the FC clearance to these two blocks (see newspaper reports, e.g., Nitin Sethi in *The Hindu*, March 25, 2014), asking the ministry "to revisit the proposal from scratch based on all factors" (*op. cit.*), and stating further that the Minister when rejecting the recommendation of "such an expert body" as the FAC "must bear in mind that he is countering an expert opinion/ viewpoint and in doing so, he must meet it with such opinion or viewpoint which it would outweigh both by content and quality as aforesaid" (*op. cit.*).

The minister concerned was reported to have reacted "strongly" to the NGT's "censure" (Anupam Chakravarttty in *Down To Earth* magazine, March 26, 2014, accessed online). He is quoted as saying that "after having been pilloried for not allowing projects, now I am attacked for having cleared projects", and that as the minister, he has made his own assessments and given a detailed note explaining the reasons for his decisions (*op. cit.*; see also the minister's detailed account in his recent publication, Ramesh 2015).

The NGT, however, has obviously not been convinced by all the reasons adduced by the minister in overruling the FAC and opening the H-A forest to mining. The NGT order notes that the Minister seemed to have relied on his own "understanding and belief", without any "basis either in authoritative study or experience in the relevant fields", and also that the "anthropocentric" considerations like the linkage to super-critical thermal power plants were not valid reasons to evaluate the forest clearance.[79]

While it may be premature to comment on the final outcome, as the government may appeal against the NGT order, it may be apposite here to point out certain fundamental issues thrown up by the H-A case. However, much the NGT judgment may please and gratify us (as conservation-oriented people, on the side of virtue and good sense), it would not be correct to exult in a decision just because we like it, because the authority may tend to the other side in the next case based on the same facts but with an opposite slant of reasoning. One question is, whether the elected government can be

bound by the advice of an official committee, even though it may be comprised of leading experts or eminent citizens (apart from the senior government servants, who in most cases are severely circumscribed in the extent to which they can exercise or express their independent judgment). A small group of nominated persons may, in this dispensation, thwart the collective will of the government and the elected representatives. In stark terms, we have to face the question: does the right of self-governance extend to what some persons may think of as mal-governance? In cases like H-A, after a considerable exercise, if the political establishment finally decides that the decision simply is too costly in political or economic terms, what justification is there for a body of professionals or experts to sit in judgment on the merits of the case? In the classical approach to law, our understanding was that we can only enquire if due process was followed, if all parties have been given a hearing. The actual decision, involving a social or political weighting of conflicting interests, would appear to be the province of the political leadership, who after all are the legitimate expressers of the general will of the people.

The H-A case seems to have made a deep impact on the government machinery, especially on the officials and elected representatives concerned with the user ministries involved. It seemed to raise all sorts of questions on the jurisdiction and powers of different wings of the bureaucracy. There were murmurings about the inordinate powers vested with the environment ministry to make or mar the national development plans of the government, based on the environmental and forest laws. The legislators and administrators, obviously, were incensed at the seeming autonomy of the environment ministry, which after all was supposed to function under the orders of the ministers and the cabinet in general and the PMO in particular.

The coal interests and the chambers of industry repeatedly stress that forests are renewable, and can hence be regrown at 25 trees to each tree felled, whereas coal left locked up in the ground is a dead loss to the nation. The answer to that is, of course, that sizeable areas of coal have already been released in less dense forest tracts, and that the old natural dense mixed sal forests that have gone into the 'no go' category are a precious heritage that may not be possible to regenerate once the area has been opened up and soil and water devastated by open cast mining on such a large scale, especially given the prospect of a general drying as a consequence of global warming. Moreover, there is no compulsion that all these coal reserves should be thrown open at this instant; some resources have to be left for future generations as well. The record of rehabilitation of the existing coal fields is dubious, at best; perhaps these 'virgin' areas[80]

could be kept for future decades after the coal mines already in operation have been mined out and the forests regenerated as claimed so facilely by the coal industry spokespersons. The real compulsion was probably that these coal blocks had each been farmed out to specific parties with big investments already committed, so that it would have been inconvenient to revisit the coal block linkages and find new sources of raw material. Since they were, providentially, located in relatively unpopulated tracts, they could be brought into production with relatively less hassles of land acquisition and R&R of displaced communities.

Pressures for Institutional Innovation

One of the ways in which the ministry (or the FAC) was sought to be brought to heel was to question its competence and the technical inputs and scientific basis of its decisions. As outlined in the introductory sections, one of the initiatives taken to find a way around the FAC and environment ministry included the convening of a 'Group of Ministers' (GoM) under the chair of the Finance Minister to go into these issues. In an ostensible bid to increase transparency and speed up the decision making process, the GoM suggested that there should be "more than one forest advisory committee" to examine proposed projects (Chetan Chauhan in *Hindustan Times*, June 20, 2012).

The options before the high-level GoM appeared to be either to completely give a go-by to the whole forest clearance process itself, or to revert to the original case-by-case basis of appraisal (e.g., Nitin Sethi in *Times of India*, February 6, 2011). In a somewhat surprising move (considering that the main task of the GoM was to find a procedural way out of the impasse imposed by the environment ministry), the GoM urged the environment ministry to identify "inviolate" areas (in lieu of the 'no go' concept) to safeguard such valuable forests which can never be regenerated to the desired quality (which would thus amount to the 'No Go' category under another name). In an attempt to develop a more scientific way of doing things, the GoM reportedly "asked the ministry of environment and forests (MoEF) to constitute a panel to formulate objective parameters to identify such areas" (Priyadarshi Siddhanta, in *Indian Express*, July 23, 2012). The ministry then dutifully set up a seven-member panel "to suggest demarcation of forest to classify them as inviolate patches based on a set of norms" (*ibid.*). The panel in its report of July 2012 had made suggestions to classify inviolate areas (wildlife parks and sanctuaries, tiger reserves, elephant corridors, etc.) based on their biological richness or biodiversity

value by quantitative assessment by ecological experts of the species diversity and population density using ecological standards like Shannon's Index.

From the point of view of the coal minister, when the 600 million tonnes locked up in the 'no-go' blocks had itself been given forest clearance, the fresh attempt at restricting access through 'inviolate areas' did not find much favour: "…let us strike a right balance between coal mining operations and simultaneously caring for the environment. Our coal companies are capable of addressing their (MoEF's) concerns by ensuring total reclamation of the utilized mines" (the then coal minister, quoted by Priyadarshi Siddhanta in *Indian Express*, July 23, 2012).

Another line of advocacy against the existing machinery of the FAC and ministry was launched by the *amicus cureae* before the Supreme Court during the Lafarge case hearings, urging the transfer of these functions to independent bodies under an Authority outside the control of the government. The main contention here was that the make-up of the FAC and its functions were not modified after the 1988 forest policy had been adopted. On the contrary, it was contended, the scope of the FAC's expertise was narrowed in the 2003 Rules, by specifying that the 3 outside members would be "eminent experts in forestry and allied disciplines", in contrast to the generic term "eminent environmentalists" in the earlier versions of the Rules. The 2003 version was further (sought to be) amended in February 2004 to specify that the 3 non-official members would be experts respectively in Mining, Civil Engineering and Development Economics. (The February 2004 amendments were, however, stayed in March 2004 by the Supreme Court, so the ministry is following the 2003 Rules as they stood).

The *amicus cureae* argued that the FAC was working in secrecy, without public hearings, without any obligation to hear from the affected parties except the project executor and the sponsoring state governments, and therefore not providing all the processes and avenues that were available in the Environmental Protection Act 1986, the umbrella act to provide environmental protection. Further, it was argued that all the principles laid down in the National Forest Policy must "necessarily govern" the grant of permission under the FCA 1980. On these grounds, it was urged that only Appropriate Authorities at the Central level and the State levels (if necessary), could satisfy the duties cast upon the state by the Environment Protection Act (EPA) and the Forest Policy. It was also argued that the National Green Tribunal could not provide these functions, as the Tribunal has jurisdiction (only) "over all civil cases where a substantial question relating

to environment including the enforcement of any legal right relating to environment is involved", which may not include an action to enforce the FCA read with the National Forest Policy.

The ministry, of course, contested these views, maintaining that the existing setup had served its purpose, as shown by the fact that only 1.112 mha forest area was released in the 30 years after the FCA 1980 came into force, as against some 4.037 mha of forest lost without any mitigative measures in the 30 years prior to the FCA. Further, implementation of the recommendations in the Forest Policy through the principal instruments of financial allocations, legal framework and enforcement etc. was the central mandate of the ministry of environment and forests at the Centre and the forest departments in the States/UTs; to take away these functions and entrust them to an outside Authority would obviously leave the ministry without a job, which was not in consonance with the institutional setup envisaged in our Constitution.

The Court was inclined to agree, and allowed the existing setup to continue (i.e. no independent Authority was set up to deal with the FC applications), and the ministry continued to pass orders after the FAC (or other competent authority as per the area, type of activity, etc. involved) had given a recommendation, and subject to appellate jurisdiction of the National Green Tribunal. The ministry stated its resolve to deal with the issues raised, however, to make the decision process more objective and transparent; e.g. by using GIS data on forest cover, enlisting the services of more domain experts for monitoring compliance after the permissions were given; and so on.

These measures were reiterated by the Supreme Court with more strength in the final orders in the Lafarge case (July 6, 2011), including the explicit statement that the National Forest Policy is to be understood as part and parcel of the FCA guidelines, and that the state is to set up an Appropriate Authority for ensuring implementation of the National Forest Policy. The ministry also undertook to increase the number of regional offices, induct more experts into the process, conduct more inspections to ensure compliance with the various conditions of forest and environmental clearances, provide all information proactively on the internet, and so on.

The above points are brought up only to illustrate that there has been a constant engagement between different contenders including NGOs and civil society, over the decidedly enormous power and influence conferred on the environment ministry and the FAC, and one of the tactics used would obviously be to depreciate the effectiveness of the ministry and the

FAC, if not directly, at least indirectly, by suggestion and innuendo, to which of course the often dramatic and impactful headlines in the media also contributed.

Identifying Alternative Energy Strategies and Conservation Priorities

Thus far, we have described the outlines of the H-A case and the claims and counter-claims of the environment and forest department vis-à-vis the coal, power and other development departments and industry. At the end of the day, however, we need to also see whether there is a possibility of a meeting ground between the two.

The Greenpeace study (Fernandes 2012) takes the position that the very model of development adopted by the country is defective: they quote "expert" opinions that India's coal reserves may not suffice for more than 40 years' demand at this rate of expansion of coal-based power (*op. cit.*, p.104 onward). They advocate a much greater thrust to renewable energy sources and technologies (solar thermal and PVC, wind and biomass), which they say can meet 90% of energy demands, a tightening up of electricity distribution systems to minimize transmission losses and leakage (illegal tapping) which some observers claim takes up to 30% of the energy produced (*Times of India*, August 1, 2012), and finally replacement of old, power-hungry devices and machinery with modern and efficient ones (CFL lamps, energy-efficient ceiling fans, etc.). They also contend that providing off-grid, localized, non-conventional and renewable sources of electricity to the thousands of villages that are not connected to the grid will cost one-tenth of what a conventional coal-based, centralized electricity generation and distribution system would require (*ibid.*). They therefore make the following recommendations (demands) to the government:

- An immediate moratorium on forest clearances for coal mining (seeing that the areas already released more than suffice to meet the 12th Plan targets)
- In the meantime, assessment of the actual quantity of coal reserves available and the requirement for the future, given an increase in renewable sources
- Exclusion of all corridors and areas inhabited by endangered species from the coal fields/blocks
- Initiation of a public consultative process to develop criteria for exclusion/inclusion in coal blocks

The following advice is given by Fernandes (2012) to the coal and power companies:

- Commit to follow the legal process of the FCA and FRA, EPA etc.
- Exclude areas of high biodiversity value from future operations
- Support the development of criteria as suggested above.

These suggestions appear on the whole to be worth a serious look, and the ministries concerned need to look into the actual requirements of coal block releases during the next couple of plan periods in more detail, so as to avoid too rapid a commitment of massive areas to private entities (although in the garb of joint venture companies, JVCs). The first priority would be for the coal ministry to accept, at least in principle, the justification for keeping aside ecologically rich and sensitive areas in a 'no go' category, at least for the time being.

The main problem in this appears to be, not so much that the dense forest areas like the H-A coal blocks are absolutely crucial for the country's energy security, but that the coal and power ministries have locked themselves into a dependence on these coal blocks because of past strategic decisions, taken on the assumption that the environment & forest ministry would never dream of coming in the way. The coal and power ministries need to understand that if the forest authorities do not exercise diligence in identifying some, at least, of the forest areas for protection, then the whole idea of the FCA would be effectively nullified, and the forest officials would rightly be castigated for completely abandoning their charge, probably through a public interest litigation that may even result in transfer of these functions to a Court sponsored or supported authority. The first requirement from the side of the coal and power ministries, therefore, is to accept with good grace the decisions in respect of the 'no go' areas, especially in vast unbroken expanses of forests like the H-A and similar tracts, and find alternative coal linkages from the abundant coal blocks already released.

On the other hand, rejection of FC applications has to be done judiciously, as thousands of crores of public funds and private investments are riding on these resources. A hostile political leadership could well develop a public opinion against too restrictive a forest conservation regime, and the auditor-general's office could well lay the blame for any consequential losses on the environment ministry and its officials. One of the weaknesses of the legal position is that the FAC works on broad impressions and opinions, but where rejection is done, it would appear to be prudent to build up a stronger case, including an analysis of alternatives. In other words, it may well be that the development aspirations are so strong that forests, and their

defending authorities, are put in the dock rather than the other way round. This is compounded by the seemingly reasonable and cogent arguments of the industry proponents that a dog-in-the-manger policy of sitting on these resources will benefit no one, whereas if mining or other developmental uses are allowed, not only will the country benefit enormously, but also the forests themselves will be regenerated to a far better state than they are at present (according to the industry).

To grapple with this seemingly sensible argument, the ministry will have to hold the industry to these exacting standards by addressing the issue of rehabilitation of existing mined-out areas effectively. A task-force would have to created to review the old leases, and fix responsibilities and devise funding and implementation mechanisms to rehabilitate them to the standards required (and claimed by the mining sector), keeping in mind always that local ecological diversity has to be reinstated (not just monocultures of exotics, in particular). Since the country is now committed to the greening of the countryside through the Green India Mission, it is hoped that a suitable mechanism can be devised to achieve this in respect of the mining areas.

The development of criteria and cut-offs is a more involved question, which has the danger of creating many Trojan horses to weaken the existing systems. From the point of view of the FAC, whilst mapping biodiversity indexes and hydrological values may be an interesting exercise and may even shore up the case for preserving good forests, it would be time-consuming, suitable scientific personnel would be hard to arrange for all the areas, and it would hardly add much value to the decision making process; it would amount to 'gilding the lily', as there is already sufficient information in existing sources like the working plans, wildlife surveys and reviews, satellite data, and academic papers to substantiate the claim of biodiversity and ecological value of most of the remaining large forest blocks like the Himalayas, the Western Ghats, the central highlands, the coastal mangroves, etc. (perhaps H-A, being a predominantly managed sal forest without, apparently, a resident population of either tiger or elephant, is not so well covered). In any case, even if there were only a few tree species as in uniform sal or conifer forest, that would be no justification to sacrifice large stretches of intact forest at the present instance.

The situation is complicated by the Supreme Court's order to create an independent environmental regulator that will take many of the decisions hitherto the province of the ministry under the EPA (1986), although it appears that exercise of powers under Section 2 of the FCA (1980) is not

to be a part of the authority's mandate (report in *The Hindu*, January 7, 2014)[81].

As regards the claim that renewable energy sources can substantially replace coal, the question remains of the practicality and financial feasibility of such a proposition. India is the world's seventh-largest energy producer and fifth-largest energy consumer, accounting for more than 4 per cent of total global annual energy consumption, but its per capita consumption is one of the lowest, at only 20 per cent of the world average, according to the World Bank (cited in Neil and Thomas 2012). The experts point out that India was one of the fastest growing world economies, with a growth rate of 8% over the past five years (prior to 2012), and thus required to ramp up its primary energy supplies by 4 to 5 times, and its electricity generation 6 to 7 fold, from the 2003 levels, to sustain such a growth over the next 25 years in order to eradicate poverty and meet its human development goals. This requires proper strategy on three fronts: finance, skills, and energy infrastructure (*ibid.*).

Unflatteringly, India was ranked 84 out of 93 countries according to the annual global energy sustainability index in 2011, down from 58 in 2010 (*op. cit.*). One reason is that government likes to keep electricity rates down, so that according to the authors there is that much less incentive to private entrepreneurs to invest in power production. On the other hand, Rajshekhar, writing in the foreground of the electricity blackouts that plagued north India in 2012, reported that out of some 60 coal-based power plants planned in Chhattisgarh during the years following the liberal credit and coal block policy after 2005, barely 15 are expected to be seriously developed finally, as a number of non-professional or non-serious actors had entered the race in the expectation of cashing in on the captive coal rather than on setting up the power plants to use the allotted coal (Rajshekhar, *Economic Times*, October 25, 2012). For example, Rajshekhar learnt from Prayas Energy Group, a Pune-based think tank, that "as many as 700 thermal plants across India applied for an environmental clearance between 2006 and 2010. Between them, they were looking to add 7,01,820 MW of capacity – about six times India's overall power capacity in 2011 and seven times the target for the 12th Five-Year Plan (2012-17)". However, most of these projects became unviable as electricity companies were not prepared to pay more that ₹ 3 per unit, against the anticipated ₹ 6 to 12 that was common during the preceding years between 2006 and 2009 (*ibid.*), while Coal India Ltd. reduced the assured coal supply from 100% to 65%, leaving those without captive blocks in the lurch. This pattern of over-estimating power capacity was repeated all over the country (*ibid.*).

The bulk of India's installed power generation capacity has been based on coal (55%) and hydro (21%), which is natural since India has the fifth largest coal deposits in the world and "among the largest hydropower potentials" (Neil and Thomas *op. cit.*), but India is also trying to diversify its power production sources. It may be difficult in the dynamic world with constantly changing energy situations, to "achieve the right balance". Neil and Thomas conclude that to do so, "governments need to establish coherent, predictable and transparent energy policies that adopt a holistic view". Policies will have to "complement and interact with the needs of transportation, industry, environment and agriculture". It is not clear what the authors are trying to convey through these tag-lines, but what we can take away is that India will continue to depend to a large extent on the conventional sources like coal and hydro, rather than non-conventionals and renewables, so it is clear that interim solutions have to be found in this middle ground, while we continue to plan for a long-term scenario where renewable sources will step up to satisfy a large portion of the requirements.

In other words, the interests of forest and environmental conservation will require an identification of priority areas and 'no go' scenarios, rather than a blanket ban or an 'all-or-nothing' position that some environmental activists demand. This is what the Forest Advisory Committee had striven to do, and where the industry and governance leadership fell short, with the consequences outlined above.

The Lafarge Judgment: Preventing *Fait Accompli* Situations

It is observed that in many cases, the project proponent initiates work on various components on the facile assumption that the environmental and forest clearance will come through in due course. A very interesting case is that of the Lafarge company's limestone mine in Meghalaya state, which was utilized by the Supreme Court in its order dated July 6, 2011 to provide comprehensive guidance on a whole set of issues, among which was the need to prevent *fait accompli* situations, which would in the ultimate analysis lead to grant of *ex-facto* clearances.

The facts of the case are simple enough. Based on the information provided by the applicant, the state government of Meghalaya and the Khasi Hills Autonomous District Council (KHADC), the ministry of environment & forests (MoEF) granted site clearance in June 1999 and environmental clearance in August 2001 for a 2 million tonnes per annum (mtpa) capacity limestone mining project of the Lafarge Umiam Mining Private Limited (LUMPL) in East Khasi Hills district of Meghalaya state on the assumption

that it does not involve any forest land. During inspections in 2006 and 2007, ministry officials observed that it was a 'deemed' forest land, whereas the local forest department officials had considered it a non-forest land. Accordingly, in 2007, the regional officer of the MoEF advised the state government to initiate application under the FCA (1980), and suspend operations, which was complied with by the company. Simultaneously, the company filed an Interlocutory Application (IA No.1868) in the Supreme Court, under the umbrella of the Godavarman hearings (Writ Petition (Civil) No. 202 of 1995), with the following prayers:

a) To allow the company to operate crushers, and lift the already stocked ore to its cement factory in Bangladesh;
b) To direct the respondents (authorities of the state) to expeditiously process and grant the application for forest clearance submitted by the company; and
c) To direct the respondents to expeditiously grant temporary working permit (TWP) within the time limit (30 days).

The Supreme Court (SC) issued its final judgment on July 6, 2011. In the first part of the judgment, the SC found in order the site clearance (dated June 18, 1999), environmental clearance (August 9, 2001), and the Stage I forest clearance (the last issued on April 22, 2010). Invoking the principle of sustainable development, inter-generational equity, and the doctrine of proportionality, the Court stated that:

> The word "development" is a relative term. One cannot assume that the tribals are not aware of principles of conservation of forest. In the present case, we are satisfied that limestone mining has been going on for centuries in the area and that it is an activity which is intertwined with the culture and unique land holding and tenure system of the Nongtrai Village. On the facts of this case, we are satisfied with (the) due diligence exercise undertaken by MoEF in the matter of forest diversion. (Supreme Court order dated July 6, 2011)

The second part of the order goes on to consider some broader issues, and provide guidelines on long term and short term measures to be taken by the central government, state governments and various authorities under the FCA (1980) and EPA (1986) to prevent recurrence of such *fait accompli* situations. Prominent among these is the importance given to the National Forest Policy (1988):

> Time has come for this Court to declare and we hereby declare that the National Forest Policy, 1988 which lays down far-reaching principles must necessarily govern grant of permission under

> Section 2 of the Forest (Conservation) Act, 1980, as the same provides the road map to ecological protection and improvement under the Environmental (Protection) Act, 1986. The principles/ guidelines mentioned in the National Forest Policy, 1988 should be read as part of the provisions of the Environmental (Protection) Act, 1986 read together with the Forest (Conservation) Act, 1980.

How will the application of the National Forest Policy influence or instruct the operation of the FCA 1980? A hint on this is provided in the Supreme Court order itself:

> The basic objectives of the National Forest Policy, 1988 include positive and pro-active steps to be taken. These include maintenance of environmental stability through preservation, restoration of ecological balance that has been adversely disturbed by serious depletion of forest, conservation of natural heritage of the country by preserving the remaining natural forests with the vast variety of flora and fauna, checking soil erosion and denudation in catchment areas, checking the extension of sand dunes, increasing the forest/tree cover in the country and encouraging efficient utilization of forest produce and maximizing substitution of wood.

To ensure appropriate follow up action on its direction to accord primacy to the National Forest Policy, the Court directed that certain "positive and pro-active steps" should be taken. To these ends, the Supreme Court

> are of the view that under Section 3 (3) of the Environment (Protection) Act, 1986, the Central Government should appoint a National Regulator for appraising projects, enforcing conditions for approvals and to impose penalties on polluters.

The SC was especially concerned with the absence of crucial information at the right time in the appraisal process, which often resulted in the government being handed a *fait accompli* situation, which called for a pro-active and independent Regulator apart from the government departments and the courts:

> The project proponent under the existing dispensation is required to undertake EIA by an expert body/ institution… Consequently, the MoEF/ State Government acts on the report (Rapid EIA) undertaken by the institutions who though accredited submit answers according to the Terms of Reference propounded by the project proponent. We do not wish to cast any doubt on the credibility of these Institutions. However, at times the court is faced with conflicting reports. Similarly, the government is also faced with a *fait accompli* kind of situation

> which in the ultimate analysis leads to grant of ex facto clearance. To obviate these difficulties, we are of the view that a regulatory mechanism should be put in place… (SC Order dated July 06, 2011 in Lafarge forest/mining case)

The Supreme Court added a number of guidelines to strengthen the existing process of grant of clearances under the FCA 1980 and the EPA 1986, till a regulatory mechanism is put in place:

- MoEF to prepare a panel of accredited institutions, from which alone the project proponents should obtain the Rapid EIA on terms of reference to be formulated by the MoEF;
- constitution of Regional Empowered Committees, under the chair of the concerned Regional CCF (Central), with three non-official members from forestry and allied disciplines, to facilitate in-depth scrutiny of the proposals involving diversion of forest land more than 5 hectares and up to 40 hectares and all proposals relating to mining and encroachments up to 40 ha;[82]
- documents specified in the MoEF Office Memorandum dated 26.04.2011 to be mandatorily submitted to MoEF for all mining proposals and all other proposals for land above 40 ha;
- in case of any doubt regarding the non-forest status of the land, the site to be inspected by the State Forest Department along with the Regional Forest Office of the MoEF, each to be provided with a Standing Site Inspection Committee with at least one non-official member who is an expert in forestry, to certify the forest or non-forest status of the lands;
- increasing the number of Regional Offices to ten from the present six (*the MoEF has taken steps to do this*);
- development and use of GIS-based decision support database system (*see below*);
- following the ministry's decision to give priority to FCA clearance (process) wherever forest land is involved, as laid down in the MoEF OM dated 31.03.2011;
- following the OM dated 26.04.2011 regarding Corporate Social Responsibility which lays down the need for PSUs and other corporate entities to evolve a Corporate Environment Policy to ensure greater compliance with the environmental and forestry clearances granted to them;
- putting out of all information on the internet;

- carrying through the exercise of listing and mapping the "deemed" forest areas under the terms of Supreme Court order dated 12.12.1996;
- incorporating procedural safeguards to eliminate any chance of mistaking a forest land as non-forest in giving the Environmental clearance (EC);
- MoEF to prepare a comprehensive policy for inspection, verification and monitoring and the overall procedure relating to grant of forest clearance and identification of forests in consultation with the states.

Some of these issues have been discussed above in the previous sections.

Iron ore and forest conservation: Saranda forests of Jharkhand

The Saranda forests, last remnant of a moist sal edaphic post-climax formation and rich in wildlife, as well as home to traditional tribal groups, is also the location of India's richest iron ore deposits, and therefore also has some of the oldest iron ore workings. The Chiria iron ore mine complex in West Singhbhum district, which was abandoned at some point in the past, was taken over by the private sector Indian Iron and Steel Company (IISCO) in 1936, and then by the public sector Steel Authority of India Ltd (SAIL) in 1978 when IISCO was made a subsidiary, followed by complete merger of IISCO into SAIL in 2006.

In the final analysis, the demands of development took the upper hand and the competent authority (the Minister for Environment andForests) took upon himself the onus of issuing the forest conservation clearance for SAIL's Chiria mines, overruling the advice of the FAC.[83] The rationale and arguments adduced in this decision are very similar to those in the Hasdeo-Arand coal case. The mitigatory circumstancs are that SAIL is a "maharatna" (five-star) PSU, and hence deserving of "special treatment" (the unstated presumption being that a public sector undertaking also represents the public interest in general). A huge investment is in the balance, hence a decision has to be arrived at urgently without waiting for "perfect" information (presumably, the detailed biodiversity impact assessment or a management plan as called for by the FAC). The issue is only of renewal of mining lease, that too only for a small part (194 ha or 8% of the total Chiria mine complex of 2,376 ha), and moreover forest clearances had already been given for two leases in 1998. The clinching argument is one of necessity, as the Chiria ore is "essential" for the future of SAIL. But mere renewal of the old lease being insufficient on management and technical grounds, the

additional new area being proposed of another 410 ha would have to be agreed to keep the industry running.

To mitigate ecological effects, as many as 13 special conditions were attached to the forest clearance, among them a wildlife-related management programme to be supported by the company with contribution of ₹ 20 crore over the next 5 years, a wildlife management team to be stationed at the mines, soil conservation and prevention of river pollution, and the condition that only 25% of the 595 ha would be worked in the next 20 years (presumably to limit the adverse impact at any stage). A comprehensive programme of corporate social responsibility (CSR) would be instituted to give training to the local people and enable their employment. The Wildlife Institute of India would draw up a comprehensive wildlife and biodiversity management plan and also identify areas that should be kept inviolate. A multi-disciplinary monitoring team would keep an eye on the project from the ministry itself. Finally, the Minister recognizes that the FAC would continue to render its advice based on forest and biodiversity related issues, but the Minister would "have necessarily to take a broader view but placing on public record in a complete manner the reasons for taking that view" (Order dated February 9, 2011 of the Minister for Environment & Forests, see Ramesh 2015).

A brief analysis of the above case is offered here. At the outset, it is apparent that the main argument is that of the overwhelming strength of the greater public interest, i.e. of national needs, which outweigh the ecological values, however laudable they may be. This is compounded by the huge investment that has already gone into the plant and machinery, which will be starved of raw material if these particular mines are not released. These considerations, of course, render the FC proceedings more or less meaningless, because the whole issue comes close to being a *fait accompli* situation. An added strength of the development argument is that anyway the area was already worked in the past, and FC clearances have been given in the recent past, hence why not in the present case of mere renewal. The added icing is that the renewal lease cannot be sustained unless more areas are tagged on, hence the additional areas also have to be necessarily given.

The argument from a situation of *fait accompli*, of course, is one that has been expressly frowned upon by the Supreme Court in the Lafarge judgment, and hence this particular argument would have to be adduced very circumspectly, especially in view of the NGT's dismissal of such grounds in the Hasdeo-Arand coal block case (see above).

The special considerations are sought to be justified on the ground that SAIL is a PSU, on the understanding that the Chiria mines would be made available to SAIL to compensate for the losses it was absorbing. The test, however, will come when pressure is brought by other firms and agencies that have already been allotted mining blocks in the complex. In the present dispensation, development is extolled as a national endeavour, and it would be disingenuous to make a distinction between public and non-public sector organizations. Many projects are, in any case, being undertaken jointly, perhaps mainly to accommodate the requirement that only the state can exploit mineral reserves in tribal areas as per the 'Samta' judgement.

Given that there are bound to be more and more such instances where overwhelming national (economic) interests overtake all other considerations, it would be patronizing for observers to pass moral judgment from a safe sideline. Conservationists should rather use whatever information or bargaining point is available to mitigate the ill effects of the activity and leverage something for the cause of forest and habitat conservation. In the case of mining, it is perhaps possible to make a stronger case for limiting the spread of mining to a small portion of the landscape at a time, so that wildlife is not pushed to the brink, and corridors and refuges are available even with the (limited) mining activity going on. Since miners are duty-bound (by the mining laws and conditions of grant) to return the land after exhausting the ore in a restored condition, there is a possibility of gradually rolling over the mining area with a sufficient margin for the wildlife habitat and migratory corridors to survive. Other measures that could be insisted upon would include complete stoppage of mining traffic between dusk and dawn (not just on the forest roads, but also on the village roads and the access corridors pushed through the jungle by the mine bulldozers!), prohibiting use of strong flood-lights at night, reducing noise, controlling dust (which destroys both forest vegetation and people's health and crops), and safeguarding streams and springs by proper control of blasting and excavation, ensuring safe disposal and storage of soil, slime, sludge, waste water, etc. Working with the local people, to increase their awareness of and participation in conservation, as well as reducing their dependence on forest (especially where they have been displaced from their own agricultural or homestead land), and accommodating the younger generation, at least, in the livelihood opportunities thrown up by the modern economy, will also probably help save what is left of the natural environment.

The above order states that the Chiria mine complex is only 3% of the entire Saranda forest area, which suggests that the damage could possibly be mitigated if ways could be found and action taken effectively to manage

the existing level of operations in the most environmentally safe and responsible manner available. In the instant case, conservationists should probably insist on the institutionalized participation of the Wildlife Institute of India (and prominent wildlife NGOs like the WTI, WWF etc.) and the monitoring team in the operations, as laid down in the minister's order, and above all quickly move to identifying the areas that should be kept inviolate (even if there is ore there). Of course, seeing the NGT's approach in the Hasdeo-Arand case, it is conceivable that a similar petition could be filed in the case of Saranda as well, at least to forestall other companies pressing for equal favour and getting the entire area opened up like a stack of dominoes within the next few years.

Tribal Rights and International Pressures: Bauxite Mining in Orissa

We cite here another mining example with a twist, the case of the bauxite mines of Vedanta industries. The twist in this tale is that despite already having Stage I clearance and despite getting a green signal from the Supreme Court after considerable back-and-forth in the judicial proceedings, the FAC recommended against granting final clearance, and this was endorsed by the competent authority (i.e., the Minister). As Supreme Court lawyer and amicus curiae Ritwick Dutta states (Dutta & Yadav 2011), this was an "unprecedented" case of the ministry going against the industry "even after the Supreme Court had granted 'clearance'… Given the pivotal role the Supreme Court enjoys under the Constitution, it is rare for the Executive to question a project which has been scrutinized by the Courts". According to Ritwick Dutta, it also raises an "issue of even more serious concern" that there are instances, like the Vedanta case, where "approval from the Supreme Court is sought even before the projects are approved by statutory bodies" (*op. cit.*, p.xi-xii).

As per the summary account in Dutta and Yadav's introductory chapter on mining cases (*op. cit.*, pp. 54-56), the Vedanta Aluminum Ltd. company had been granted an environmental clearance by the ministry, and "approached the Court for diversion of forest land for setting up of the Alumina refinery". The CEC was asked to give its view, and in its "damning" report on the project, came out strongly against it on the grounds that the forest was in an ecologically very sensitive area (Nyamgiri hills), and the "casual approach, the lackadaisical manner and the haste with which the entire issue of forests and environmental clearance for the alumina refinery project have been dealt with smacks of undue favour/ leniency…". The CEC opined that if the environmental and ecological angle had been studied

properly from the start, "in all probability the project would have been abandoned at this site" (*op. cit*., p.54). The Court refused clearance in its order dated 23-11-2007 (*op. cit*., p.55), but then suggested a "Rehabilitation package" and ruled that an "associate company" of Vedanta, that is Sterlite Industries (India) Ltd., could approach the Court again if the conditions were acceptable. These conditions included the setting up of a Special Purpose Vehicle (SPV) for development of the scheduled area, payment of NPV of ₹ 55 crore and ₹ 50.53 crore towards a Wildlife Management Plan around the Lanjigarh bauxite mine and ₹ 12.20 crore towards tribal development, apart from bearing the compensatory afforestation (CA) expenses; rehabilitation of project-affected people as per the Orissa Rehabilitation and Resettlement Policy 2006; and earmarking of 5% of the net profit to be spent on development of health, education, communication, irrigation and agriculture in the said schedule area within a radius of 50 km (*op. cit*., p.55). These conditions being acquiesced to by Sterlite Ltd., the Court accepted the application and granted clearance by order dated 08-08-2008 for the diversion of 660.749 ha forest land for bauxite mining in the Niyamgiri Hills, and further stated that "the next step was for the MoEF to grant its approval in accordance with law" (*ibid*.), while rejecting CEC's proposal for a price fixing mechanism which the Court found to be a "complicated exercise", and unnecessary in view of Sterlite's agreement to place 5% of annual profit before tax or ₹ 10 crore, whichever was higher, for scheduled area development. Subsequently, the ministry granted 'in-principle' or Stage-I forest conservation (FC) clearance to the project in December 2008. Environmental clearance (EC) was granted by the ministry in April 2009 for the mining project (*op. cit*., p.56).

The 'twist in the tale' occurred subsequently, as in November 2009 the minister issued a press statement that a site inspection had revealed that there had been a "violation of the guidelines of the Ministry as construction had begun on the non-forest revenue land without clearance being given to the diversion of forest land" (*op. cit*. p.56). The ministry "directed the State Government of Orissa to explain the violation and also to submit evidence that the provisions of the Scheduled Tribe and Other Forest Dwellers (Recognition of Rights) Act, 2006 had been complied with." On 24-08-2010 the ministry took a final decision "not to grant forest clearance to the project" based on the recommendations of the Forest Advisory Committee (*ibid*., p.56), and also based on the Attorney General's opinion that "the Supreme Court order of 08-08-2008 nowhere prohibits the Ministry of Environment and Forests from rejecting approval to the mining project" (*ibid.*).

The above is a mere bare-bones chronology, but the case suggests again that existing orders and guidelines do not provide sufficient guidance for setting up 'objective' criteria for deciding forest diversion proposals. Although the Vedanta case has been hailed the world over as a milestone in establishing the rights of local communities, the sobering fact is probably that it is an isolated instance, which may not really provide any better objective criteria or yardsticks that would be applicable in general, as evidenced by the apparent lack of consistency in approach mining projects in different forest belts. The inference is difficult to avoid that the Vedanta case went in favour of the tribal community mainly because international interest made it a sensitive media issue, which the government of the day used to show its commitment to the egalitarian cause.

Although this case has become a sort of icon in the media, whether it provides guidance for the forest clearance process is doubtful. It appears that the main grounds for rejection actually revolve around the fact that the hill where the mining lease was laid out is sacred as the Dongria Khond tribals, forming an integral part of their traditional habitat, even though they do not actually reside there. The violation which the state government is charged with is that they have not only just failed to give recognition to these communal rights of the tribals, but that they have actively discouraged them from filing their claims, even ignoring them when they did file claims. Since it appears that "the Orissa government is not likely to implement the FR Act in a fair and impartial manner", the central ministry cannot stand by as an idle spectator in the face of such a violation of the human and legal rights of the primitive tribal groups and dalits of the area and therefore the forest clearance is denied (Minister's order 24-08-2010).[84]

The second major violation is the way the company has proceeded to expand the capacity of the plant from 1 million tones per annum to 6 mtpa, without informing the environment ministry and taking clearance under the EPA as required. There were also some other violations of local community rights, such as the enclosure of some 26 hectares of village forest within the compound wall of the plant, which the ministry interpreted as an intentional land grabbing and a gross violation of the rights of the people. Lastly, the value of the forest as a hydrological resource and a wildlife habitat is adduced (the area was reported to be the habitat of a Schedule I animal, the four-horned antelope, apart from other species, and also already part of the range recognized as an elephant reserve) to revoke the Stage I clearance previously granted, and also to rule out any further consideration (even on the conditions listed by the Supreme Court in its order).

The ministry and the FAC did take a risk in countermanding the SC order, which would have normally been read as the law of the land, taking courage from the fact that they were weighing in on the side of the higher moral position, with a triple slam of tribal rights, environmental protection, and forest/ wildlife values. The minister's order also acknowledges the "enormous interest and concern that has been generated both nationally and internationally" by this case, which has even come into the Supreme Court's ken as seen in the SC order dated 23-11-2007 where they refer to a Reuters report from Oslo that "Norway has dropped British mining and metals group Vedanta Resources from its $350 billion oil fund at the recommendation of the fund's ethics council, which blamed it for environmental damage and human rights violations" according to the finance ministry (of Norway). It may be going too far afield in this limited account to discuss the international interest in the case (a recent account of the aluminum industry and its impact on local populations is exhaustively documented in the volume by Padel and Das 2010), but it is obvious that the issues got sharply delineated and identified because of this international attention.

While the government of the day got plaudits from the environmental lobby for this act of seeming courage and defiance, as a guidance to the Forest Advisory Committee on what grounds would justify rejection or acceptance of a proposal, it probably fell short, as in other similar cases, the same ministry was guided by broad national goals (resulting in grant of forest clearance) rather than narrowly by the forest values alone. Even the Supreme Court, while finally giving clearance to the project in its order dated 8-08-2008, explained that while the environment has to be safeguarded, there is also abject poverty in the region, to alleviate which presumably industrial development also is required. In order to strike a "balance between development and environmental protection", and "to subserve the principle of Sustainable Development", the Court had suggested this rehabilitation package, by which some "2,000 persons (including displaced persons) would get employment…. 2,400 more persons would earn income by support services…" and so on. Thus even the SC orders did not provide guidance to the FAC on what grounds would call for rejection of project proposals, and indeed gave the indication that most environmental concerns could be taken care of by suitable ameliorative measures to deal with the ecological and environmental effects.

Roads, Railways and Other Linear Interventions

The infrastructure problems facing India's development strategy are well laid out in the 12th Five-Year Plan (2102-17) document (Planning Commission 2012, p.195 *et seq*.). The ports are working at 90% capacity with high "dwell time" in spite of expansion to one billion metric tonne capacity by the end of the Eleventh Plan. Capacity needs are expected to double every decade, while transportation of key commodities such as coal, iron ore, and steel and POL could well increase by a factor of four to six over the next 20 years. All this will require considerable planning and execution of infrastructure development and improvement works, which will in turn place heavy demands on the forest lands and natural habitats that the corridors pass through. The efforts to reduce elephant deaths due to trains in different parts of the country – Uttarakhand, Palghat, West Bengal and others – are also an important part of this issue, as chronicled in Ramesh (2015), p.205 *et seq*. The National Highway networks and the rail links along the north-south and east-west corridors are highly overworked. Hardly one-third of the national highways are 2- or 4-lane, and a very large length of these are not able to support the 10.2 tonne permissible load per axle that trucks carry. In this section, we deal with roads and forest conservation.

From the point of view of the development departments, it seems that the forest conservation rules place unreasonable and unjustifiable burdens on the implementing agencies. After all, roads and railways are a national requirement and a priority not just for the heavy industries and commerce, but also for small communities in the country-side, that are even today cut off from the mainstream because of poor communication and transport links. Building of all-weather roads and bridges is often the key to connecting these communities to markets, educational and health facilities, employment and livelihood opportunities, and bringing them out of their present economic and social deprivation. Better roads will also reduce the time spent on transport, reduce the fuel used, and reduce wear and tear on vehicles. Better roads will reduce accidents and loss of life and limb, and (coupled with better warehousing facilities, cold storage and transport, etc.) cut down wastage due to deterioration of produce. Such facilities will also conceivably reduce the distress to farmers from cycles of over-production and price crash, as there will be better possibilities of storing the produce or processing into value-added products (see the 12th Plan document, p.215 onwards).

When the benefits of communications and transport linkages are so overwhelmingly positive and universally welcome, it is indeed mystifying to the user departments and corporations why there is so much controversy over many of these projects, apart from the time-consuming and laborious process of getting clearances from myriad authorities, which appears to be a purely bureaucratic hurdle since the outcome is pre-determined (the clearances have to be given in any case). Even if only a minor portion of the road passes through some forest (often just a small neck of scrubland in the periphery of the forest estate), the whole process has to be gone through, now made even more complicated by the requirement to get a no-objection resolution from each gram sabha on the route. The frustration of the development agencies is all the more understandable as the forest clearance is needed even for them to use their own right-of-way for widening of roads, for instance, just because the road margins were declared as protected forests in some states after planting a belt of roadside trees, even if it were of a fast-growing and short-rotation crop like eucalyptus. To them, the forest department appears an obstructionist, obscurantist, out-dated agency with no role to play except to slow down the developmental process.

To the social ecologist, the matter is not so simple, because roads and other communications infrastructure constitute a two-way conduit that may bring in resources, but may equally drain the locality of its wealth. For instance, it is generally argued that the colonial government had such a high priority for building railways from the interior to the coast, not so much to bring the fruits of modern civilization to the 'natives', but more to enable extraction of various cheap raw materials (both natural, like timber, and cultivated, like indigo, opium, or cotton) to the foreign country. Today, because foreign exchange is needed to purchase petroleum, machines and other priority goods, there is a scramble to export raw materials (especially iron ore), so there is pressure to build roads and railway lines to evacuate the ore from the interior where the minefields are located (such as the central Indian hills or the hills of Bellary in Karnataka). Roads also bring in outside agencies, which may include people who will end up exploiting the relatively simple rural folk and tribals in various ways, by introducing temptations of modern life that leads to addiction and impoverishment, lending money at usurious interest rates to support consumption expenditures, ultimately taking over their land and other precious possessions by the lure of cash, and so on. It is for these reasons that social activists have a slight suspicion of developmental activities that proceed without the volition of the target communities. For isolated ("primitive") groups, such as the indigenous tribes of the Andaman Islands, outsiders bring disease, cash and processed foods,

addictive substances and commercial inducements that are a hazard to their health and culture. So difficult is it for such communities to weather the pressures of modern life, that the tribal groups have had to be isolated to an extent by not building the Andaman Trunk Road through their territory, and contacts with outsiders are supposed to be strictly controlled. In the northeast, there has been an 'inner line' barrier just to insulate the tribal communities from such inroads from the plainspeople, allowing them to adapt to modern life at their own pace and style.

The left-wing extremists, in fact, are actually hostile to road development, for the above socio-economic reasons as well as, of course, the fact that roads will make it easier for security forces to move about and perhaps get in the way of the extremists' activities. Equally, the government is determined to open up roads everywhere, to reduce the isolation of these communities, and to assist in the fight against extremists of all hues and ideological persuasions.

To the wildlife conservationist, roads are an evil in most circumstances where natural habitats are concerned (Shankar Raman 2010). The construction of all-weather roads through a wilderness is considered an act of nothing less than desecration or vandalism, as it causes gross disturbance to the fragile topsoil and leads to soil erosion and landslides, damage to streams and drainage systems (often causing springs to dry up as their underground feeders are cut off), cutting of trees and disruption of the canopy cover (especially deleterious to arboreal creatures like gibbons or squirrels that find their usual routes through the forest fragmented), and other such direct negative effects. Over and above these, there is the permanent damage caused by the influx of population (which is why the road was built, after all), increase in fast-moving vehicles that leads to disruption of the animals' natural movements to and from water bodies, food sources etc., and of course more destruction of the natural habitats, more encroachments, more lights and noise and dust and emissions, and more poaching and more road accidents involving animals of all sizes. Indeed, it has been estimated that the number of animals lost to traffic accidents is more than poaching and hunting itself. Even large mammals like tiger, elephants, and of course deer and others are caught in the vehicles' glaring headlights and get run over or wounded. Elephants, of course, are worst affected by trains in the night, as they are unable to judge the speed and distance of the trains and fail to move off the tracks fast enough.

The effects of development of roads and other infrastructure on wildlife habitats is not often understood or anticipated. This is one of the pitfalls of the otherwise seemingly benign "win-win" strategy of "eco"-

tourism. For preserving the natural values of a natural habitat or remote forest, therefore, the preservationist usually wishes it to be left alone without any development of tourist facilities and road and rail connections, lest the place become so popular as to lead to congestion and loss of wildlife values. The best strategy for protecting wilderness is, in this view, a benign neglect, a view which is like a red rag to a bull to the proponents of eco-tourism, in whose ranks a number of prominent and influential wildlife experts are also counted. More will be said on this later when discussing the eco-tourism policy (see Prerna Singh Bindra's article in Sanctuary Asia, Vol.XXX, June 2010, as well as the same author's report on impact of tourism in Corbett, no date).

From the forester's point of view, some amount of road building is required to get about the forest or wildlife sanctuary or park. These roads, however, are usually restricted to 'fair-weather' roads that are made of mud and gravel, not tar or concrete. They are usually not open to general traffic (they are cordoned off by chain or metal rod-and-lock gates), and the gradients (slopes) are often so steep as to require four-wheeled drive vehicles, which used to be the unique Willys Jeeps in the old days. In general forest areas, the local population is permitted to use the roads for their genuine personal affairs, but traffic is usually prohibited 'between sunset and sunrise', and forest permits are required to carry forest produce. Some stretches of 'pukka' or all-weather roads are also made for moving about in the monsoon. The real problem is caused by the national or state highways or district roads that pass right through the wildlife park, which brings in dawn-to-dusk, often heavy, through traffic and obstructs the movement of animals to and from their foraging, resting and watering places.

Interestingly, many animals tend to congregate on the open grassy verges of roads, where they sit and chew the cud through the night, vanishing into the denser forest as day dawns. Hence good wildlife sightings are made on road margins, and wildlife managers used to keep the road margins clean of weeds and shrubs, and even clear 'view-lines' radiating from the roads, to provide such standing places for the animals, as well as serving as fire-brakes. These practices seem to have been discouraged of late by wildlife biologists on the ground that these clearings attract invasive weeds like eupatorium or lantana. However, the fact that animals are drawn to roadsides is also a cause of greater hazard from traffic hits and poachers.

The forester's bugbear is the road that has public right of way through the forest. On main arterial or 'trunk' roads, the very density of traffic may cause problems for the vegetation and wildlife, especially now that the traffic continues unabated through the night. In areas with a lot of

local traffic, the roads often introduce unwelcome elements who use it to smuggle timber or poach animals. The network of roads makes it easier for persons to occupy pieces of land ('encroachments'), which start off innocently as a wayside resting place, to which may be added a shelter from the sun, a tea-shop in a box which later grows into a café or restaurant, or a flag or a tiny lamp under a tree which may over time grow into a regular religious establishment, and so on. The roads department apparently has no machinery to protect its own right of way, and it is only when the roadside plantings were converted to protected forest (PF) that there was at least this strip of land free from encroachments; absent the trees and the forest law, perhaps there would have been very little of the margins available for road widening, despite the intense irritation in the highways department at the need to obtain FC clearance for roadsides declared as PFs.

The public roads going through a forest are also the place from which forest fires start, as a carelessly thrown cigarette or a small camp fire can build up to a rapidly advancing forest fire in the summer with all the dry leaves and bushes forming a liberal base of fuel. The forest department therefore takes up the sweeping and cleaning of road margins during the late winter months, then applies an 'advance' burn along the roadsides to remove the combustible material; sometimes these ground fires also run off some way into the forest, but this is usually a minor episode compared to the burning of whole hillsides either by natural fires (set off by summer lightning) or by villagers to keep down the thorny bushes and encourage a flush of green grass.[85]

Another significant problem with the widening of roads through the length and breadth of the country is that this has to sacrifice the wonderful avenues of old trees that were raised along the highways and state roads in the past. Right from the emperor Asoka's time, there has been an awareness that trees give travelers shade, and animals both fodder and shelter. In the dry parts of our country, these roadside trees may be the only green corridor for miles around, and used to harbor huge flocks of birds and small animals like monkeys and squirrels. These trees, especially fruit-bearing species like the genus *Ficus* (banyan, peepal, gullar and other figs), mango, jamun, tamarind, neem, etc., nectar-bearers like the silk-cotton (*Bombax*), the famous mahua (*Bassia*) of central India, and a number of others, formed such refuges for the local wildlife; the figs especially came to be known as a 'key-stone' species as they allowed the birds and small animals to live through the 'pinch period' of intense heat and drought before the monsoon every year. Many of the lofty old trees also served as the only structure for miles around where large birds like the herons, storks, and

raptors could build their unwieldy platform nests. All these niches have been decimated under the programme of widening of state and district roads, although efforts are constantly made by the forest department to work with the roads department to save as much of the old trees as possible. Often the concerned engineers do try to expand the road on one side, so that at least one half of the avenue is saved, but often the entire avenue has to be sacrificed for safety reasons. The best case would be to make a second carriageway entirely beyond the existing right of way, converting the avenue trees in-between into a road median (without cutting the trees), but obviously a lot of additional private land would have to be acquired in that case, putting up costs and administrative inconvenience. One wonders whether the country has declared an unwritten war on these old roadside trees, because with the new expressways, they cause obstructions to the line of sight, thereby increasing the chance of accidents, falling leaves and other debris and the water drip during the rains causes excessive damage to the road surface, and so on. Nowadays, therefore, the new roads have only short bushes on the median, and there is reluctance to raise trees even on the road verges, because this may cause difficulties later on if yet more widening is to be done. However, on paper at least, the last rows on the verges are supposed to be of trees, though it is unlikely that the grand old avenues of banyan, tamarind, neem, mango, mahua or jamun (which used to be like a cool green tunnel over many old trunk roads) will ever be recreated.[86]

So important is it to control and limit the opening or improvement of roads to wildlife habitats, that the USA has even enacted a law to keep extensive wilderness areas completely free of roads. According to the website http://wilderness.org/blog/roadless-rule-becomes-law-land (dated March 13, 2012), the "Roadless Area Conservation Rule" that had been enacted over a decade back, had been stayed by a national court injunction, which was finally lifted in early March 2012 by a Wyoming federal district judge. This ruling protects some 58 million acres of national forest roadless areas across the USA from road construction and commercial logging, while they will remain open to "world-class recreation, including hunting, hiking and mountain biking". These acres will apparently be in addition to the 109 million acres already put in the Wilderness Preservation System under the Wilderness Act, passed in 1964 (thus 2014 was its 50th anniversary year). According to the website, "Along with the 1964 Wilderness Act and the 1980 Alaska Lands Act, the Roadless Rule is considered to be one of the most significant conservation actions ever taken by the federal government."[87]

In the following sections, some case studies of linear infrastructure projects will be presented.

An Airport Road for Dehradun

The case discussed below is that of a seemingly innocuous public utility project, a new (or improved) connection from Dehradun town to the airport which is situated in 'Joli Grant', some distance to the southeast of the town, in the vicinity of the Thano reserve Forest. The traffic is routed south and west from the airport, to take a right turn into the main Rishikesh-Hardwar highway (NH72) at Doiwala, which is considered a major bottleneck. After Doiwala, the traffic moves northward on the highway through Lachhiwala and on to Dehradun, through dense traffic and constricted carriageways (part of the reason being the encroachments on to the road verges in the right of way).

The alternative proposed is the route on the eastward side of the airport toward Thano (instead of westward toward Doiwala). The traffic could emerge south from the airport onto the road connecting to Doiwala, as before, but would take aturn eastward into the Thano road (at a place called Bhanlawala). This is not favoured by the state administration, because of the bottleneck which may occur due to the sharp turn at the junction (Bhanlawala). The state authorities, therefore, made a proposal to form a new connecting road from the airport eastward to Thano, by using the old fireline/ inspection path of the forest department through the forest. After bypassing Thano, the traffic would go along the existing state highway to Dehradun, but here also widening and straightening would take off more trees and vegetation.

The proposal, which reached the ministry sometime in 2009, was discussed back and forth, with the state government arguing that it was absolutely essential to route the traffic through the eastern axis (Thano), and that a new connection through the forest was required because of the sharp angle in the existing tar road at Thano. A look at the actual location however will explain the dilemma of the Forest Advisory Committee and the ministry. The new alignment would cut through some excellent sal (*Shorea*) forest, with consequent destruction of the tree crop and habitat fragmentation. Any linear clearing in a forest would obviously invite more incursions and pressures, whatever be the intent and sincerity of the authorities.

Picture 2: Lofty Trees on the Proposed Dehradun Airport Road

The question therefore arises, why should not the existing Doiwala-Thano two-lane highway be used to conduct the traffic around the eastern side? Indeed, there could even be a convention of using the western side for one direction, and the eastern side for the opposite direction, depending on the traffic density on the main NH72. Of course, since even the existing state road goes through Thano forest, there would necessarily be much tree felling for widening the carriage way. The argument of the project proponents in this case seems to be the desirability to straighten out the sharp turnings or kinks in the alignment, such as the one at Bhanlawala to get into the Thano road, or the almost 180 degree turn at Thano itself on the existing roadway. It is conceivable that a few flyovers and underpasses could provide a way round the bottlenecks on the existing highways, such as at Doiwala, but this was apparently not in their plans.

On a broader level, there is the question whether the city, despite being the state capital, will ever require that much of roadway to connect to the airport, seeing that only a handful of flights land or take off at any time of day. The local authorities justify the proposals by referring to the ever increasing visitorship to the kumbh festival at Hardwar, which was counted in lakhs (hundreds of thousands) a few years back but is now crossing into crores (tens of millions), calling for not just this airport road, but also for more roads to get through to Hardwar itself, through the fragile hill slopes above the Ganga river-course. The ecology at Hardwar and Rishikesh is so fragile, that rather than providing facilities for such huge transient crowds

of pilgrims, an environmentally sensitive option would perhaps be to reduce the pressure on the fragile Himalayas by creating equally holy pilgrimages at other sites all over the country (with the compliance of the holy orders). In any case, none of these millions of pilgrims is likely to actually come by air, and those rich tourists who do could be served by luxury airport buses, so it is a moot question whether so many trees should be sacrificed and such precious and unique sal forest should be exposed for a few planeloads every day. The intense rains and floods and landslides that took place in the hills in subsequent years, especially 2012 and 2013, should serve as a clear warning that these hills cannot take the level of development of tourism and infrastructure that an ambitious state government wishes for.

In this instance, forest clearance was denied over a period of years, so that the state government was forced to look at alternatives, using the existing black-topped roads. The case is also a caution to the forest departments against making any further linear clearings inside the forest (such as firelines, inspection roads, internal boundary lines, etc.), unless absolutely necessary, and the need to quickly cover up existing abandoned logging roads, firelines, and other linear intrusions, so that development departments are not tempted to prepare projects to convert them into permanent all-weather roads.

Border Roads of Strategic Importance

Another large group of proposals involves road projects of national security importance. According to the website of the rather creatively named ministry of DONER (Development of North-Eastern Region[88]), there are the following numbers of strategically important roads on the India-China border: 27 in Arunachal Pradesh, 6 in Sikkim. There are 16 strategic roads in Assam linking to Bhutan. Apart from these, there are the roads under the PM's Package for Arunachal Pradesh, (6 listed in the website) totaling to 1044.52 km. Then there are the roads on the Indo-Bangladesh border in Assam, Meghalaya, Mizoram and Tripura totaling to 2656 km that are also of strategic importance. These are mostly neither State nor National highways, hence are exempted from the requirement of environmental clearance for their construction or upgradation under the EIA Notification of September 14, 2006. However, where they involve forest lands, they do require clearance under the Forest Conservation Act. Where no protected areas (PAs, i.e. national parks or wildlife sanctuaries) are involved, the proposals are processed by the central ministry on receipt of proposal from the state government. If a PA is involved, the proposal is dealt with according

to the procedure instituted by the Supreme Court, as per which the user agency has to obtain approval of the State Board for Wildlife, recommendation of the National Board for Wildlife, and clearance of the Supreme Court itself. After this is done, the proposal is again processed under the Forest Conservation Act, 1980.

Recognizing the urgency of developing infrastructure in these vulnerable border reaches, the time limits prescribed for processing such proposals of national security importance are lower than the time given for general projects: in the state government, 30 days (against 90 days for other projects), and in the ministry of environment & forests, 30 days (against the general 60 days). Instructions are also issued to the state governments to facilitate these projects and avoid getting them mired in red tape or departmental procedures. In spite of this, the interested departments and agencies (the defense and home ministries, the armed forces, the Border Roads Organization, ministry of DONER, etc.) usually express their frustration with the long-drawn out processes and the multiple levels at which the proposals have to be examined and verdicts passed.

In the context of border roads clearances, there appeared to be less dissatisfaction with the FAC or the central ministry, but the main locus of delay seems to be in the lower levels of the state government machinery, that is at the level of the field officials in the revenue and forest departments who have to conduct jointly surveys, produce maps and enumeration lists of trees to be felled, titles to be acquired, compensations to be made, and so on. Various methods are being suggested, such as appointing higher officials to coordinate and monitor the processes, both in the state and central ministries, nominating liaison officers at the user agency to confer with the ministry officials and take required actions, etc.

Perhaps one of the most effective ways to expedite the field work would be for the user agencies to take on retired survey, revenue and forest staff to prepare the proposals, as there is usually a scarcity of officials at these levels in the state departments. The preparation of FC proposals, after all, is only a small, and peripheral, part of the field officials' job in the forest departments, and often other exigencies and emergencies take priority. Usually, because of the security importance and sensitivity of these projects, the central ministry does not even demand detailed maps and survey reports (these are all restricted areas, in any case, so map availability is limited), so any action to make the field level process quicker should be of great help.

At any given time, there will obviously be a number of strategic roads pending for forest clearance at various levels in the state governments, with a lesser number pending at the central ministry. Of course, the user

agencies and ministries would like nothing better than being completely exempted from the onerous requirements of the FCA,[89] so it is as well here to recount and explain the environmental and ecological issues involved, which will have to be looked at by whatever agency is entrusted the task, whether forest or the border roads agencies themselves.

Among the environmental and ecological concerns that the environmentalists and forest departments have in considering these border roads is that they will make it easier for outsiders to enter and encroach upon the land, and for poachers and smugglers to operate within and across the border. It will be desirable for the army formations to actively work with the forest department (perhaps by taking up positions of Honorary Wildlife Warden) to tackle this menace and support the cause of wildlife conservation. Similarly, a little sensitivity and forethought is required to mitigate the adverse effects of settlements near ecologically fragile or valuable locations, such as high-altitude habitats (forest, grassland, or water bodies). There is obviously scope for getting the army personnel interested in nature conservation, conducting awareness courses, and even in working with the local communities in improving the conservation status of their own environments, thereby improving fodder, fuel and food plant availability, providing meaningful occupations, reducing the hazard of soil erosion and landslips, river overflow and flooding, etc.

Another major concern of the forest department lies in the varying specifications of the border roads (this is also a concern when state and national highways are pushed through sensitive forest tracts). In general, it is the endeavour of the forest department to see that only the bare minimum specifications (such as road width and maximum permissible speeds) are adopted in roads going through valuable forest or ecologically fragile areas, so as to minimize cutting of roadside trees, minimize the breaks in habitat so that animals can cross more safely, and also to slow down vehicles to reduce road kills. At the same time, the forest departments would like the roads to be of high quality as regards treatment of exposed soils, disposal of muck and building debris (which are usually pushed downhill to clog rivers and streams), avoiding blasting and heavy earth-moving equipment, stabilizing side slopes and restoring vegetation on the shoulders and embankments for aesthetics, erosion control, and habitat considerations, providing excellent side drainage and controlling landslips (these last being also in the interests of the road maintenance agency). In many places, the forest department would like to close the roads to traffic from dusk to dawn, the time when the animals cross over to their watering places or grazing grounds. The suggestion has also been made that defense roads should not become the

conduit to bring in huge floating populations to settle the pristine upland habitats, which could be possibly ensured by permitting access only to authorized personnel and to the local populations (somewhat like the inner line permit arrangement), and not for through commercial traffic, which will have to use the roundabout plains routes to get from place to place (much as is done for forest roads in the country). In other words, the forest department will not grudge giving the forces access to the remote areas through their lands, provided this does not end in public highways through the forests. In general, the forest department would like the defense establishments to suggest alignments that avoid or go around good forest areas, areas of biodiversity richness, sensitive habitats like wetlands, etc. All this requires the defense establishment also to re-examine their proposals in the light of the ecological and wildlife concerns.

When it comes to border roads in high elevations, the forest department and the FAC usually strive to identify alternatives that will cause less damage to the PAs and ecologically sensitive areas, of which there are plenty in the northeast.

One such biodiversity-rich area in the remote fastnesses of the northeast is the Neora Valley National Park to the north of Kalimpong in northern West Bengal (in the Darjeeling Gorkha Hill Council autonomous district, now termed the Gorkhaland Territorial Administration[90]). The proposed road (from Khunia More through Rachella to Aritar in Sikkim) will pass along the Neora valley for some 15 km and cut through the Pangolakha Wildlife Sanctuary in Sikkim. There has been opposition to this proposal from various groups of conservationists, as well as forest officials, in view of the devastating effects the proposed alignment is likely to have on the Neora Valley National Park and the Pangolakha sanctuary.[91] The road will also run along the boundary of the Chapramari Wildlife Sanctuary, cutting off the Chapramari-Gorumara National Park elephant corridor, which also has other rare Schedule I animals like the rhinoceros and gaur. The road is proposed to traverse the high ridges between Neora NP and Pangolakha WLS, disturbing the hitherto unspoilt habitat of Himalayan temperate forest which is home to four of the large cats- snow leopard, clouded leopard, common leopard and tiger,[92] along with such rare and endangered species like the red panda, marbled cat, fishing cat, leopard cat, Himalayan tahr, takin, black bear, a number of pheasants and tragopans, and a number of botanical species including oaks, chestnut, rhododendrons and orchids. The forest department's suggestion is to use an alternate road to connect from Bagrakot on NH 31 in West Bengal to Aritar in Sikkim, as required for strategic concerns, using existing forest roads and tracks that

have a good tree cover (mainly of planted species, *Cryptomeria japonica*), as well as a gentler topography, rather than needlessly opening up and destroying the pristine habitat of Neora and Pangolakha on the West Bengal-Sikkim border (and the adjoining Toorsa Strict Reserve in Bhutan). The existing old forest roads on the Bagrakot route has the advantage (from military movements point of view) of not being in use by general traffic, whereas the other available route a little to its east, from Damdim on NH 31, may be objected to by the army as it is a public road. Both these alternative routes, however, as also the totally fresh alignment proposed by the army close to the Bhutan border and through virgin forest of Neora valley, do converge in Sikkim on to the public highway, so that is a question of relative merits and demerits, rather than an absolute deal-breaker.

Picture 3: View Toward Neora Forests

The proposed new road through the heart of the sanctuary, in fact, passes close to the source of the Neora watercourse, which provides water for the downstream settlements, and the blasting and earthmoving for the road will probably affect the natural water system adversely, to the detriment of the dependent populations downstream, including the Army cantonments themselves, not to speak of the wildlife in the reserve. Interestingly, the Neora Valley has figured earlier in a similar tussle between conservation and development: this was for a hydro project to supply the drinking water

needs of Kalimpong and other centers of population downstream. This issue has been described by Bhaskar Ghose, a well-known IAS officer who served as Commissioner there, in his memoirs *The Service of the State* (Ghose 2011, pp.196-200): "Ecologists were up in arms at the prospect of a water project being set up in this pristine forest", and the environment ministry had asked for an experts' report on its effects on the biodiversity. The officer himself took the trouble of walking through the valley: he describes what would be a prosaic walk to a forester, in glowing poetical terms, so entranced was he by the forest. He sent a report asking that the valley should be spared:

> My report had already formed in my head; if there had to be a facility to withdraw water, it would have to be far lower down, away from the sanctuary; the valley had to be left as it was, as inviolate, tranquil and quiet. There were too few of these places left, and I was not going to be a party to the destruction of one of them" (Ghose, *op. cit.*, p.199).

Thus, the fight to safeguard some of these pristine areas (the 'no go' category) continues over many years and generations, and sometimes find unexpected protagonists in positions of authority or influence.

Eco-tourism and Its Discontents

The question of how much and what types of tourism to permit in forests and especially wildlife protected areas (PAs) is one that has, strangely enough, the potential to inflame passions and inspire trenchant argumentation. This is probably because there are a number of self-professed lovers of wildlife and conservation who have a soft corner for the interests of 'wildlife' lodges and resorts, which are considered necessary to facilitate access to the sanctuaries and national parks. Without these facilities, they would have to depend totally on the forest department facilities, which are often of middling quality and often require a bit of kowtowing to officials. Some wildlife enthusiasts get so deeply committed that they drift into the tourism trade directly or indirectly, sometimes even setting up their own outfits, which is frowned on by other wildlife enthusiasts and conservationists who see a potential conflict of interest between the technical desirability of keeping people out of the PAs and the business interests of commercial enterprises. Some entrepreneurs even engage retired government officials to endorse their so-called eco-tourism projects, hoping thereby to get a foothold in prime natural habitats on favourable terms. Many wildlife enthusiasts, who are endowed with ample spare money and time, travel in

exotic locations like the game ranches and lodges of Africa or America, and come back with bright ideas for high-class tourism in the wildlife sanctuaries in India, much to the chagrin of the forest department, which is staffed to a large extent by persons from very middle-class origins with equally middle-level ideas of elite pastimes. At times these different perceptions and values clash so strongly that it becomes a national issue with loud statements from either side, and the courts have to finally step in.

The negative impacts of unregulated tourism (even if it carries the "eco" tag) are linked to those of uncontrolled expansion of roads and other facilities within forest areas. With tourism comes the demand for better access, which means road networks, higher density of vehicle movement, and better facilities for staying in and around the location, which is now perceived more as a resort for tourism than a resort for nature. This naturally brings in a sizeable population of support staff, cooks and cleaners, drivers, guides and inevitably, petty traders. As the resort gains in popularity, outsiders get in on the show, and there is often a proliferation of private facilities in the surrounding farmlands and villages. All this of course is positive from the economic point of view, and may even be interpreted as a good model of public-private partnership or of collaborative conservation, but with the increase in commercial stake comes a heightened pressure on the PA management to provide more trips for the private vehicles, more entry points, access to core areas, and so on. There are also undesirable practices like taking vehicles off road or into core areas, and commonly of provoking the animals (especially elephants) to get 'action' shots, aggressively pursuing the few sighted animals, and so on. The surrounding resorts also attract the 'wrong' type of clientele, who may be more interested in having a 'good time' than in observing wildlife quietly. The ingress of visitors also increases pollution due to garbage (attracting scavengers and predators), noise (playing music loudly all hours of the day and night), bus and other traffic, floodlights at night, and so on. There are more frequent instances of disturbance of animals at the kill or on the way to their water points, road hits of animals crossing the road between dusk and dawn, and of course occasional poaching by city braves.

An example that has been documented is that of Corbett National Park (Tiger Reserve) in Uttarakhand state (Bindra, no date). Because of successful publicizing of the rich wildlife in Corbett, it has become a favourite destination, supporting a number of lodges and resorts all around it. These resorts not only fight for slots in the safari drives through the reserve, but they have also led to a mushrooming of generalist hotels and tourist huts,

including party and marriage halls, which have effectively taken up all the vacant lands around Corbett and shut off the wildlife corridors.

"Eco" tourism has the edifying underlying principle of leaving nothing but footprints, and taking away nothing but memories. But many project proponents dress up massive hotel and infrastructure projects in the garb of eco-tourism, and the authorities find it very difficult to discourage or reject such proposals because they are usually backed by all the powerful and influential, including the bureaucracy. Tourism is seen as an entirely benign and virtuous undertaking, since it involves so-called 'non-consumptive' use of the natural resource, in contrast to timber or other commercial exploitation. Further, it gives employment to the locals without the need for much training, utilizing their natural talents (based on their knowledge of the locality, which is something about which they are naturally adept from having lived there for decades and generations). Since establishment of a PA results in curtailment of the communities' access to the forest, tourism is seen as one way of making up for these losses and creating a stake for these local communities, who would otherwise be the losers and would be antagonistic to the idea of wildlife conservation.

A certain low level of tourism or of visitor activity has been traditionally facilitated by the forest departments through the forest rest houses that have been developed primarily for touring officials, but which are available also to private visitors at quite low rates with prior notice (and if available, even without reservations in the less popular places). Of course, this is a closely-held resource which is usually controlled by the regional forest officials, and in very popular or prestigious locations by the higher officers, and consequently requires some amount of personal effort to avail of. The demand is met to some extent by public sector undertakings like the Jungle Lodges & Resorts, Karnataka, and its emulators in other states, that charge commercial rates and try to make reservations easier (over the internet, for instance). For the forest departments, these PSUs are a help in that they take over the burden of maintaining the premises (for which almost no funds are made available in the regular budgets), attending to visitors (some of whom are very demanding), and being subject to criticism and bad publicity. With success, however, ambitions grow, and the public obviously would like this facilitation to extend even to the locations not served by the tourism companies. The paradox in the case of wildlife or eco-tourism is that if visitor density increases, the unique charm and value of the natural landscape diminishes.

A vivid picture of what the anti-tourism group anticipates as the negative consequences of allowing such projects is spelt out in many petitions

before the courts, such as the special leave petition in Civil Appeal No.1573/1999 before the Supreme Court against the order of the Karnataka High Court dated 24.06.1998 in WP37067/97 in what was known as the Agumbe resorts case in the wet evergreen forests of the Western Ghats (which was not even a wildlife PA). The 'holiday resort' project envisaged, according to the petitioners, such facilities as a swimming pool, children's park, coffee shop, bar and restaurant barbecue, dance floor, conference hall, health club, mini golf course, indoor and outdoor games, etc. on an acre of private land in the heart of Agumbe's reserve forest tract. The damage that could occur to the last remnant wet evergreen forest habitat in these Western Ghats includes the litter and garbage that would be generated by the resort, the disturbance to the local wildlife due to the increased traffic and road construction that will be demanded to handle it, the temptation to expand the resort by encroaching into the reserve forest, the mushrooming of other resorts if this one runs successfully, the attraction that such resorts will have for the rich who are interested in having a good time and not in nature, and to drug traffickers and the sex trade, and so on. The countless animals and plants, including the numerous medicinal plants which grow only in these specialized micro-habitats of the undisturbed forest will vanish. "Encouraging resort culture amidst such a rich and precious forest will have a devastating impact on the life of flora, fauna in the forest, on the people who depend directly or indirectly on this forest and will cause serious health hazards…Basically the resort culture itself is against the principles of nature and (the) social justice…", according to the petitioners, who want the attempt to introduce this sort of commercial tourism to be "nipped in the bud". The SLP was against the High Court's dismissal of an earlier public interest petition against the resort[93], on the ground that it was a private plot and the forest department had given an undertaking to safeguard the surrounding reserve forest against any deleterious activity emanating from the resort. The point is that even if it were on a private plot of land, "since the entire land is covered by forest area" and is "covered by thick dense forest on all four sides" (according to the petition), it has to be classed as a 'deemed' forest as per the Godavarman judgment, so the proper clearances and permissions under the FCA and other laws ought to be obtained first. This was agreed to and ordered accordingly by the Supreme Court in order dated 5-08-2002, that central government permission was mandatory, and the resort promoters were restrained from carrying out any non-forest activity till the matter was dealt with by the environment ministry. Of course, this puts the ball back in the (Central) government's court, and once again, there is no guidance as to how to consider such applications while being

consistent and fair about the use of forest land for various non-forest uses, especially those like "eco" tourism that are claimed to be non-consumptive and benign uses of the forest.

In order to provide guidance to tour operators and department officials on what is to be permitted under the broad concept of eco-tourism or wilderness tourism, individual states made their own attempts at establishing policy statements and rules and regulations. Karnataka state, for example, had a "wilderness tourism policy" in PAs, reserve forests etc. (GO No.FEE 60 FAP 2003, dated 28-08-2004). It states that the objectives of this type of eco-tourism are that the "cause of conservation of forests and wildlife can be furthered if they are appreciated, respected and enjoyed" by the public, but only those having "interest in the flora and fauna" should be encouraged, and "casual tourists shall be discouraged". The policy lays down the following "permissible" activities: safari in vehicles or elephant back along designated paths, trekking/ nature walks, overnight camping in designated camping sites, bird watching and nature study, boating to view wildlife, and any other activity "as may be specifically permitted".[94] The "facilities" that can be created for wilderness tourism include the following: interpretation centers and guide facilities, a "limited number of nature camps with basic facilities… to serve the student community and the general public to enable them to get the feel of the forest", opening "some of the existing Forest Rest Houses" in a "limited manner to wilderness enthusiasts", with the caveat that "Wilderness areas are sacrosanct, and should continue to sustain themselves in pristine state… the number of tourists permissible shall be kept within limits". The agencies permitted to operate wilderness tourism were limited to the following: JLR Ltd., Adventure groups like Youth Hostels Association of India, and direct entry under departmental watch. Private resorts would "not be permitted to operate within National Parks/ Wildlife Sanctuaries or their enclosures" (which implied that only the authorized state agencies listed above would be allowed to provide facilities for staying, and presumably vehicles for safari drives etc.). Finally, this sort of wilderness tourism is expected to "benefit the local community, especially tribals", to which end, ways and means would have to be worked out by the department. Once the policy was in place, naturally the concerned organizations (like the JLR in Karnataka) expected to be exempted from the requirements of applying for FC clearance under the FCA 1980, which created areas of disagreement and scope for differing interpretations of what constitutes a 'non-forestry activity' in the context of creating and running infrastructure for this type of tourism, and whether the state policy

proclamations would stand the test of scrutiny by higher agencies like the Central Government or the higher Courts.

The views of the conservation organization Wildlife First, Bangalore are presented here as an example (Praveen Bhargav, pers. comm. Dated 25-11-2008; see also the documents on their site, www.wildlifefirst.info/). Bhargav (who was then a member of the National Board for Wildlife) challenges the convention of terming all commercial wildlife tourism projects as "eco" tourism without specifying the set of parameters to qualify for that title. He explains that wildlife areas are just 4% out of the 19% under forest in the country,[95] and cannot cater to the "huge commercial wildlife tourism pressures". Most of the outfits are just commercial, with nothing "eco" about them, based as they are on the African wildlife tourism model of "intensive vehicle borne wildlife safaris". The African wildlife preserves are massive compared to ours, for instance the famous Serengeti-Masai Mara-Ngorongo of 30,000 sq km, whereas our reserves are scattered and comparatively miniscule areas of at the most 500 to 600 sq km each ringed round by villages and having very few corridors for wildlife to range freely between reserves. The number of resorts, visitors, vehicle trips allowed, etc. must be accordingly controlled in Indian reserves based on assessments by independent ecologists (rather than by "consultants or retired officials with links to high-profile tour operators"). The existing guidelines issued by the National Tiger Authority in December 2007 must be followed, including the stipulation that all existing tourism infrastructure including fishing camps must be phased out to locations outside PAs. Bhargav makes the point that resentment builds up among local people who are excluded from the reserves when they see the activity facilitated for rich tourists from outside, and recommends a robust revenue-sharing model to develop a stake for the community. He also calls for the identification of the buffer areas around each reserve, as required by SC orders, and their notification as ecologically sensitive areas, with appropriate regulations to control commercial wildlife tourism resorts around the PAs, to "reduce the potential for land use conflicts and minimize resentment among local communities". He disfavours cutting of too many view-lines to accommodate "hedonistic wildlife viewing demands of high-end tourists", and discourages the introduction of safari elephants which results in over-grazing and introduction of diseases. Even day visits must be limited by requiring advance booking. He is totally opposed to the proposal to hand over 200 forest guest-houses to the JLR, as it will open up inaccessible areas and increase pressures like roads and infrastructure demand, as also the suggestion by the Kudremukh Iron Ore

company (which had been ordered to close down and vacate the entire installation in the Kudremukh National Park) to use its premises in the vacated Kudremukh township for tourism.

Another example of a state attempting to develop a balanced 'eco'-tourism policy is afforded by Himachal Pradesh, which desired to encourage tourists to visit other places apart from the four most popular hill stations, Shimla, Manali, Dharamshala and Dalhousie, at the same time putting in safeguards and systems to preserve the natural resources, and also increasing local communities' benefits from the wilderness.[96] However, in contrast to Karnataka which intended to maintain commercial companies at arm's length, the HP policy actually invites private parties to take up the forest rest houses on payment of an amount to the forest department (this apparently is for FRHs outside the wildlife protected areas). The contract is decided through a procedure involving expression of interest by the party, indicating how they propose to promote conservation and awareness of nature conservation, garbage disposal in the area, and sustainable forest management (SFM). A special purpose vehicle (SPV) named ECOSOC (for Ecotourism Society) at state and district levels was also proposed. The following are the activities proposed to be permitted in the FRHs handed over to the concern: appropriate signage, nature trails/ walks, trekking, rock climbing, nature awareness, planting of trees, etc.; association of local communities and school children in these activities; showing nature movies; effective fire protection and forest protection measures, night patrolling by tourists as an adventure activity; soil and water conservation measures; promotion of alternative energy devices; developing sewage and garbage disposal mechanisms; erecting purely temporary accommodation such as tents/ swiss cottages (removable)/ bamboo huts, no TV/ music systems to be allowed in the tents; effective monitoring proposed for strict adherence to these regulations. [97]

One of the more ambitious examples (and a somewhat bizarre one, in the Indian legal context) was a proposal to take up a whole forest block situated in the corridor between two prominent national parks in Madhya Pradesh (Pench and Kanha) under the PPP mode (Public-Private Partnership), ostensibly to generate income for the local communities and the business through carbon credits trading for tiger (habitat) conservation, making everybody happy. While claiming to be compliant with the FCA 1980, the proposal failed to find much support at the ministry, as it was too close to a privatization of public forest (and prime wildlife habitat) for comfort. Wildlife conservationists also pointed out the incongruity of encouraging high-value tourism for the rich amidst the poverty of the local

population, as a model that may not be suitable for Indian conditions (Nithin Sethi's report in the *Times of India* newspaper, May 11, 2012, has a brief discussion).

Another example of stretching of the eco-system label to extreme lengths under the guise of spreading 'green' awareness is afforded by the proposal of a joint undertaking of the Andhra Pradesh Forest Corporation with some private entities to develop some 110 hectares of notified forest in the city of Hyderabad into an eco-tourism centre with botanical garden, animal safari park, bird park, etc. The ministry had given FCA clearance around 2004 on the condition that no permanent buildings would be put up for boarding and lodging of the visitors, only temporary facilities like tents/ huts/ collapsible structures (which were amenable to dismantling and shifting) would be permissible, and cement/ masonry work would not be allowed above plinth level except in toilets, local materials would be favoured for the (temporary) structures erected, which would be environment-friendly, clean and wholesome. Further, it was also stipulated that the state government would deposit 25% of the revenue generated in CAMPA (the compensatory afforestation fund) to be ploughed back for promotion and development of forest tourism of the area. In 2005, on the plea of the project proponents, the ministry relaxed the conditions to the extent of allowing a maximum of 2 floors (ground plus first floor) for construction, framed structures with cement concrete columns and beams above ground and up to first floor would be permissible, material used would be eco-friendly like bamboos, timber, reconstructed wood, clay etc., and cement flooring (not otherwise allowed above the plinth level) would be permissible only in toilet on the first floor. Five percent of the revenue generated would be utilized by the user agency for activities or works aimed at social development of the local community in consultation with the department.

When the file came up before the ministry again in 2009 for some modification, it was examined afresh and some of the components appeared be more commercial than ecologically sensitive enough to come under the head of 'eco'-tourism. The questionable components, which indicated that the project was conceived on a commercial basis, included not only such concurrent facilities as underground (basement level) parking, underground sumps for water storage, enhanced visitor amenities etc. (the actual components that necessitated the referral back to the ministry), but also peripheral items like shopping mall, entertainment center, 2500-seater convention center, 200-bed accommodation facilities with multiple-screen cinema theater (multiplex), etc. which appeared to be of a predominantly commercial nature, and which were apparently not taken note of under the

impression that the proposal was for a purely low-key nature-friendly interpretation and activity centre for encouraging ecological awareness. Representations were received from local groups also protesting against the project, which amounted to handing over prime forest land to a private developer under the garb of the 'eco-' label. The (belated) realization that the project looked more like a major commercial development in the heart of the city, and hence likely to be of a predominantly urban-oriented, commercial nature, prompted the ministry to keep the project on hold due to some trepidation about the admissibility of such activities in what was, after all, a forest area albeit amidst an urban locality (see the reports in the *Economic Times*, 11 March 2011, and by Amitabh Sinha in the *Indian Express*, March 11, 2011; the actual letter written to the state government is now available in Ramesh 2015, p.142 *et seq*.). The project entities were asked to clarify how the investment would be viable (that is, if the activities were mainly nature-oriented), and there the matter stood for some time. Apparently the permission has since been issued, but there are still some legal entanglements that are slowing it down.

Obviously, in view of the prime location, powerful parties would be behind both sides of this proposition, indicating the need for the ministry to step cautiously in the matter, but the case illustrates well the dangers in accepting blindly the virtue of an 'eco-' label. It also illustrates the powerful incentive to utilize such open spaces for commercial activities, and the inordinate restraint that has to be brought to bear on local actors by the central ministry and civil society forces to keep such spaces as 'green lungs' in an urban environment, just for walking, jogging, sitting, meditating, or observing nature, as against using it for eateries, shopping arcades, entertainment hubs, and the like (not forgetting the exotic animal safari idea, which is ecologically destructive and of course subject to regulations of the Zoo Authority of India based on a different set of principles).

Ministry Policy Proposal on Eco-tourism

There is apparently much uncertainty about what constitutes safe 'eco'-tourism, what activities are to be allowed legitimately in support of eco-tourism, and what operations would amount to non-forestry activities requiring clearance under the Forest Conservation or Wildlife Protection Acts. In view of the disagreements and differences between the state governments and the central ministry, it was felt desirable to achieve some sort of general consensus by drawing up a national policy for tourism in forest and wildlife areas. The need to regulate tourism in core areas and

buffer areas in order to secure adequate 'inviolate' areas for maintaining viable tiger populations informed the 2006 amendments to the Wild Life (Protection) Act, 1972, providing a separate chapter for tiger conservation, in which the core-buffer concept was also elucidated. The Tiger Task Force (Govt. of India 2005) had also recommended phasing out tourism from the core zones and shifting them to the buffer areas of tiger reserves. The environment ministry constituted a committee (under a retired Tourism Secretary) on 28-12-2010 to firm up the guidelines for forest and wildlife tourism. The report of this committee was widely disseminated, and subsequently the ministry placed a draft set of guidelines on ecotourism in and around protected areas (PAs) in the public domain in June 2011(see http://www.indiaenvironmentportal.org.in/files/guidelines%20for%20ecotourism.pdf).

In its preamble, the draft guideline emphasizes the value of developing non-consumptive use of forest and wildlife resources, viewing this as a branch of eco-tourism (implicitly, making a case for special consideration). However, in the Preamble itself, the forthright statement is made that "infrastructure development/ civil works for promoting eco-tourism in forest areas would require clearance under Forest (Conservation) Act, 1980, since they do not amount to forestry activities." This obviously should apply to construction of tourist facilities, but the intention may not be to extend this to management-oriented structures like a park office or interpretation centre. Safeguards for protecting the ecological integrity of the areas immediately surrounding the core areas of PAs have been provided, along with criteria for architectural and landscape development in adjoining revenue areas. The draft guidelines also "strongly recommend phasing out of eco-tourism from national parks and core areas of tiger reserves to surrounding forest (buffer) areas", echoing the Tiger Task Force.

The NTCA-MoEF proposals focus on Tiger Reserves/ National Parks and Wildlife Sanctuaries/ forest area as a prime, star attraction, and aim to bolster the viability and performance of eco-tourism enterprises through "effective marketing, education and training", but also focus on "low impact, high value" tourism (i.e. the South Africa model), involving the local community and promoting livelihoods. Tourism ventures would, of course, be interested in the infrastructure permissible: the guideline provides that "(n)o permanent structure should be constructed in forest areas for eco-tourism", and for accommodation and toilet facilities, "only temporary structures like tents/ huts/ collapsible structures may be used after obtaining due clearance under the Forest (Conservation) Act, 1980 and Wildlife (Protection) Act, 1972". The guidelines thus envisage allowing some modest

facilities in the forest area (including conservation reserves and community reserves), but for national parks/ wildlife sanctuaries and tiger reserves, "(a)ll eco-tourism activities should be promoted and fostered in specially delineated eco-tourism zone outside the National Park/ Wildlife Sanctuary/ core or critical tiger habitat of a Tiger Reserve". To reinforce this, "(n)o permanent or temporary structure should be constructed inside a National Park, Wildlife Sanctuary or the core/ critical tiger habitat for eco-tourism", and any such existing facilities "should be shifted to the outer fringe or buffer area in a phased manner". Even in the eco-tourism area of the buffer zone, facilities should be designed in a way that minimizes construction activity. In the case of tiger reserves, it recommends that eco-tourism should be under the overall supervision of the Tiger Conservation Foundation, and done through community eco-development committees with representatives from the local panchayat. The eco-tourism facilities provided could include "(s)imple, adequate boarding and lodging facilities, in tune with the environment and the general setting of the landscape"; road network within the identified eco-tourism zone; nature trails, transportation options, etc. "Structures with an exotic look causing visual pollution and non-compatible and unaesthetic architecture should be avoided", temporary structures "blending with the surroundings" should be encouraged, and "(e)nvironmental, physical and social carrying capacities should be computed to limit the various developmental activities in the fringe area to be identified for eco-tourism".

The intention and trend of these regulations is easy to understand, although in practice it might be interpreted in different ways (since no physical limits on height, width, or number of rooms or square feet have been prescribed). However, what comes out clearly is that all facilities have to be shifted in time from the core areas to the buffer zone of the PA. It is this clause that obviously poses a major difficulty, because the entire PA is now considered a core zone, whereas in the past each PA used to be divided into a core zone, a buffer zone, and a tourism zone. The present regulations may even imply that no wildlife safari (driving to view animals) can be done within the entire PA. All these activities for tourists would have to be pushed to the area outside the PA (the buffer area). For other forests (that are not wildlife PAs), the ball again lands in the Central Government's court, as it has to decide on each proposal under the FCA 1980.

Thus the NTCA-MoEF proposals came as a rude shock to the wildlife tourism interests (see for instance http://www.sanctuaryasia.com/magazines/conservation/7075-indias-guidelines-for-ecotourism-can-be-

turned-around.html), while once again providing little guidance to the FAC and ministry for the forest conservation angle. The introduction of local bodies and panchayats is another area where conflict can be expected with the strict regulations proposed within and outside the PA, as local commercial interests may take the upper hand in management decisions that impact on the earnings of tour operators. The policy and regulations therefore seem to be trying to satisfy numerous interests and ideologies that may make their implementation problematic.

Of course, there is an alternative to siting tourism facilities within the PA or core forest area, and that is to clean up the neighbouring villages (which will usually be in the buffer zone), providing drainage, sewage treatment, garbage disposal, clean drinking water, paved internal roads and pathways, and developing the infrastructure in these villages rather than in the forest. This would probably achieve the twin objectives of bringing development benefits to the community as well as leaving undisturbed the forest to its natural denizens, but this may not appeal to the aspirations of the "low impact, high value" segment of tourists for exclusivity and privilege in enjoying the natural resource. Existing tourism facilities like the old rest houses within PAs (which often attract large herds of deer and other herbivores for the night, as seen in Bandipur or Anamalai) could have been left undisturbed, and the ban applied only to fresh construction and major refurbishment.

Based on the report of the committee and the comments of the public, the ministry constituted another committee, through the NTCA, in November 2011 to finalise the guidelines relating to ecotourism in and around PAs. This committee had interactions with the *amicus curiae* as well, and finalized the guidelines by its document dated 12-06-2012. The suggestion to phase out tourism from the core areas and shift them to the buffer was retained in this document. However, an area of not more than 20% (and not exceeding current practice) of PAs larger than 500 sq km could be permitted for regular community-based ecotourism access, subject to the condition that 30% of the surrounding buffer/fringe area should be restored as a wildlife habitat in 5 years. The percentage of access area is reduced to 10% in the case of PAs less than 500 sq.km. overall area, and the area of buffer to be restored in 5 years is 20%.

Even the Supreme Court has intervened in the matter of core zones of PAs and tiger reserves. For instance, in their order dated 24-07-2012 in the appeal[98] against an order of the High Court Jabalpur[99], the justices had expressed their concern at the delay of the states in notifying the core and buffer zones of tiger reserves in India in accordance with the NTCA

guidelines of 9-07-2012, and had directed that "till the final directions issued by this Court with reference to the guidelines submitted by the National Tiger Conservation Authority of India, core zone or the core areas in the Tiger Reserved Areas will not be used for tourism." This order elicited vociferous protests from the wildlife tourism lobby and wildlife experts and enthusiasts, who may have had some interests in the cause of the tourism industry, or who foresaw irksome curbs on their own movements in the core areas (see Nitin Sethi, *Times of India*, August 14, 2012: "Tiger tourism: Lobbies fight tooth and nail"). Tiger expert Valmik Thapar, writing in the *Indian Express*, August 29, 2012 (on the eve of the SC session), came out strongly in favour of tourism, as "all my colleagues started their lives as tourists to national parks, irrespective of what they feel about it today", and also made a dig at the forest department as the party responsible for the perceived ills of tourism as practiced, and saw in the SC order a "wake-up call for our bureaucracy, our conservationists and our wildlife scientists." Digvijay Singh, AICC general secretary and former CM of Madhya Pradesh, also weighed in on the side of the tourism industry in the same newspaper, and in so many words, held the forest officials responsible for collusion in the poaching of tigers in Sariska, which he ascribes to the absence of tourism. Digvijay Singh also raised the question of encroachment on the state governments' jurisdiction on protected area regulation by the NTCA's one-sided approach which was felt to be without proper process of consultation.

Subsequently the SC was reported to have "softened its stance" (Bhadra Sinha, *Hindustan Times*, August 30, 2012), expressing its tolerance of regulated tourism but prohibiting any more construction in the core areas. Although the temporary ban on tourism was not lifted at that sitting, the ministry was given a month's time to come up with a revised proposal. By October 2012, there were indications that the SC would lift the two and a half month ban on tourism in core areas (Dhananjay Mahapatra in the *Times of India*, October 10, 2012). The revised guidelines were presented by NTCA on October 15, 2012, and basically provided for the park management to define the eco-tourism zone where visitors would be allowed (even though it may be in the core area) subject to limits of computed carrying capacity. Interestingly, the petitioner who had originally taken the Madhya Pradesh government to the Supreme Court, Ajay Dubey, reiterated his opposition to tourism in the core areas, ascribing the decline of tigers in Madhya Pradesh from 700 in 2000 to 257 in 2011, to "mindless tourism in critical tiger habitats" (Ajay Dubey, in the *Hindustan Times*, October 26, 2012), and vowed to "challenge these new guidelines because… I believe that the law does not permit tourism in the core areas."

The conflict could conceivably be resolved by suitable specification of the real core area of each park, or the 'sanctum sanctorum' as it used to be called in the past, before entire park areas were designated as core and buffer zones were pushed out into the surrounding forest and non-forest territory.

River Bed Quarrying in the Outer Himalayas

The following case refers to the widely prevalent practice of extracting river bed material (boulders, *bajri* and sand/silt) from the beds of the fast-flowing rivers of the sub-Himalayan tract, specifically the rivers or streams that come out from the Siwalik range onto the plains in Uttarakhand state. We have a series of these rivers, from the Kosi in the west (on the eastern boundary of Corbett Park), through the Dabka, Nihal, Gola, etc. to the Sarada, the easternmost river that also forms the border with Nepal. The case portrays the complex ramifications of these seemingly simple situations, especially the major human-welfare issues that are involved, which makes it quite a difficult proposition to clamp down on age-old practices. It also affords an example of how conservation interests can be furthered by the opportunity to leverage the socio-economic compulsions, demonstrating the possibilities of a little creative give-and-take in implementation of the FCA 1980 (and other similar acts and regulations).

These north-south rivers and streams rushing down from the outer Himalayas and the Siwaliks are notorious for causing substantial suffering by their enormous volume and force due to the monsoon rains, exacerbated by the very loose and friable nature of the geological formations they flow through. They bring down a huge load of soil, silt, boulders large and small, and other debris and detritus along with them, leading to an accumulation of the material in their existing courses and often obstructing their flow. As a result, they frequently burst out of their current banks, gouging out new channels and charting completely new courses, in the process taking away the adjoining farmlands and habitations, and at times livestock and human lives as well. The floods of 2012 that wreaked such horrific damage are an extreme and much amplified version of these daily goings-on in these streams. It was in response to the alarming loss of agricultural land and homesteads caused by these fast-flowing Himalayan streams, called 'chho' or 'rai' in the local dialects, that the Punjab Land Preservation Act and Rules were promulgated around 1900, giving power to the district collector to control deforestation in the catchment areas, and prescribe soil and forest conservation measures for the land owners or 'maliks' of these forested

hillsides to implement (see Dilip Kumar 2013, for an interesting case study of these private forests in Haryana).

While the unruly nature of these mountain streams is a cause of worry and loss on one side, on the other, the material that they bring down also offers opportunities for extracting them regularly and preparing various grades of construction material from them that are in great demand throughout the northwestern region, especially with the expansion of the National Capital Region and booming construction activity. Thousands of labourers descend on these river beds after the monsoon season, hundreds of trucks are busy transporting the material to scores of crushers installed all over the belt. These activities naturally have an impact on the natural vegetation, animal movements, ecology and hydro-geology of the concerned stream systems, and have been the subject of much discussion and conflict between conservation activists and business interests.

Gola river came to attract special interest because it is perceived as the broken link in the chain of wildlife ranges from the border of Corbett reserve in the west to the Nepal border in the east (the Terai Arc wildlife landscape, cf. wwfindia.org/about_wwf/critical_regions/terai_arc_landscape, 2000 onwards). Unfortunately over the years, the Gola corridor, as it is known, has been whittled away by giving land to various entities like a railway sleeper plant, an oil depot of ONGC, and resettlement colonies (which are considered unauthorized). There is a very narrow and tenuous corridor that may be just possible to restore, provided the sleeper plant gives up part of its area, the ONGC depot breaks down the perimeter wall or shifts out, the ITBP battalion headquarters (still in its incipient stages in 2009) shifts to some other location, and the unauthorized colonies give up a strip of land to enable animals to pass through and approach the west verge of the Gola river. On the east, there is a broader and more continuous forest block of the East Terai division which connects to forest blocks further east. If the Gola corridor is not restored, the animals will have no way to cross over. At present, there are occasional sightings of elephant, leopard, even tiger using the corridor. It is crucial to maintain this connectivity between the Terai Central and Terai East forest divisions to maintain the genetic health of the wild populations and provide safe avenues for dispersal of surplus animals from the Corbett-Central Terai forest blocks.

The state government, on the other hand, argues that it is desirable and essential to clear the channels of these rivers regularly of accumulated detritus and sediment, in order to prevent obstruction to the flow and consequent cutting of the banks and loss to human settlements. Further, this activity provides livelihood to a few lakh impoverished people from

eastern UP and Bihar, and preventing them from collecting the material will result in a huge human suffering and a law-and-order problem (there was reportedly firing by police to control the crowds during the period the quarrying activity was suspended as the FAC and the ministry examined the situation). The state government contended that it would be better to have an organized manner of extraction, under the control of the state forest corporation, with strict limits to the areas to be worked, permissible depths of excavation, etc., rather than leaving it as a free-for-all which would lead to local mafias developing and all sorts of criminal elements getting an upper hand. It would be impossible to actually impose a prohibition on the activity, as material from the forest and public lands could always be mixed up through back roads with the material that the people anyway had a right to collect from private lands. The state government also contended that if the material was not regularly exported, the rivers would become choked and cause floods that would devour good land on all sides. This was supported by reports of the Central Water and Soil Research Institute at Dehradun, which was asked to also prepare the extraction plan and monitor the removal to keep it within safe limits.

Faced with this situation of extraordinary human and environmental welfare importance, and based on the FAC recommendations, the ministry in its letter dated 8-04-2011 decided that working should be temporarily permitted in the Gola river during the current working season, up to 31-05-2012, subject to a list of conditions such as payment of NPV, compensatory afforestation etc. (as is usual in Stage I clearances), the site-specific conditions being that the state should work with the residents of the Bindukatha settlement to raise awareness of the importance of the corridor and of giving safe passage to the animals crossing the corridor, that the ITBP compound wall should be shifted south of the corridor, the 2.5 km upstream portion be left undisturbed, and importantly, that adjoining forest blocks like Pawalgarh and Nandhor be accorded enhanced conservation status by notifying them as wildlife sanctuaries. Upper limits were put on the quantity that could be extracted (based on the experts' assessment), and 50% of net profits were to be put into a 'special purpose vehicle' under the chairmanship of the chief wildlife warden (CWLW) of the state, to be used for river training, habitat improvement and forest protection.

The wildlife issues were referred to the Wildlife Institute of India (WII), which came up with a plan to preserve some portions as no-go zone to leave space for the wildlife to use (WII, October 2011). The WII study confirmed the presence of large mammals on the eastern side of the Gola river, and confirmed that the 2.5 km-wide stretch of the river that had been

kept free of river mining was being used the wild animals. The WII agreed that mining could be allowed in the stretches downriver of the wildlife corridor, subject to the conditions imposed in the ministry communications dated 9-02-2010, 1-06-2010 and 8-04-2011 (*ibid*., p.14). Although the state government officials had some reservations about leaving this zone unworked as it could lead to accumulation of material into a mound (locally termed 'tibba'), there was final agreement on this compromise, and permission was issued on the basis of FAC recommendations of November 2012, i.e. after a year of suspension.

Picture 4: River Bed Quarrying in Gola River, Uttarakhand

The WII report also gave its findings on river bed material extraction in the other rivers in question. Thus, for Kosi river, downstream of the Kosi barrage (dam), it anticipated little impact on wildlife. Similarly, on the Sarada river, extraction south of the Tanakpur barrage was not expected to have much impact on the wildlife, provided the guidelines issued by the ministry in the above-cited communications were followed and mining was kept within safe limits. Mining north of the respective barrages would seriously affect wildlife. For Dabka river, again mining south of the Dabka bridge would be permissible, but the area to the north (upstream) should be protected as a corridor. Mining in the Nihal river was not advisable as it formed an important part of the Nihal-Bhakra corridor. Similarly the Kiroda nullah was an important corridor, with well-forested islands in the stream, and mining should not be allowed. The WII suggested that the present permissions should be revisited after three years.

The WII also commented on the apprehensions that non-extraction would lead to accumulation of material and uncontrolled changes in the flow etc. The report found that this may be a problem in the rivers systems only of Sharda and Dabka (south of Dabka bridge), but elsewhere this was part of the natural process, but it could be monitored periodically by an appropriate committee of the state government. Labourers should not be allowed to stay in the forest or the river banks, and a portion of the revenues should go to improving the forest condition.

Based on the suggestions provided in the report for mitigating measures, the state forest department could draw up detailed management plans for the entire landscape, with emphasis on identifying suitable areas for conservation as desired by the ministry in its letter dated 8-04-2011 (*ibid*., p.7). Thanks to the groundwork done by conservationists in the region, there were already viable proposals for declaring some remoter blocks as protected areas. As part of the conditions, the state government agreed to issue notification of parts of Nandhor forests as a wildlife sanctuary, and Pawalgarh as a conservation reserve. The conservationists and the state government were also advised to work with the settlers in the eastern part of the Gola corridor (Bindukatha), to increase awareness of the needs of migrating wildlife, so that even if they were not relocated (which seems an unrealistic proposition given the serious political and social complications), there could at least be a strip of land on which natural vegetation could be maintained, fences not erected, and people could be trained to deal with the situation calmly when occasional encounters took place with moving animals like elephants. Based on all these considerations, the FAC recommended that the river bed working be permitted on a regular basis.

Of course, not all the conservationists were satisfied at this outcome, and as late as November 2012 there were accusations that the state government had not fulfilled many of the conditions (shifting of the boundary of the IBP battalion, notifying the Nandhour and Pawalgarh blocks as protected areas, etc.) (cf. representations from eRc, an environmental resource group). There is no doubt that the permission given so far is one borne out of the extreme compulsions of the situation, and is a less than ideal state of affairs (from the wildlife point of view) as it perpetuates the periodic camping of thousands of uprooted people who obviously will be drawing their basic requirements from the surrounding forest. The FC permission, of course, is abundantly hedged with conditions that the labourers should be given proper facilities like housing camps, crèches and schools for the children, fuel for cooking etc. and should not be allowed to wander in the forests collecting firewood and small timber. However, it would call

for constant oversight by the Corporation officials and civil society organizations to ensure that this actually happens, and of course it would require sufficient financial resources from the welfare arms of the state. In the final analysis, such an unsatisfactory state of affairs from both the angles of human welfare and environment, needs to be ameliorated over time by providing alternate livelihoods or by semi-mechanizing the extraction (which would be easier to regulate and control, reduce the burden of people meeting their subsistence needs directly from the forest, apart from being faster and therefore limiting the disturbance in terms of days in the field). Perhaps as rural employment in the home districts of UP and Bihar improves with implementation of NREGA (National Rural Employment Guarantee Act) and other schemes, there will be less out-migration of labour from those regions and a consequent lightening of the burden on the terai forests of Uttarakhand.

V

ANALYSIS AND SUMMING UP: DEVELOPMENT VERSUS REGULATION

We have now covered a substantial mass of material, covering both the legal and judicial base as well as the applications of the law in the practice of forest land use regulation, thereby fulfilling to a great extent our objective of looking at the FCA in theory and in practice. It is time, therefore, for a summing up and recording some comments on the issues we have identified.

The whole controversy on the working of the FCA has hinged on the apparent unpredictability of the process (from the point of view of the user sectors), and on the insensitivity to higher values of ecology (from the point of view of the conservationist) and of human welfare (from the point of view of the social environmentalist). A few comments are in order on these points of view.

Firstly, taking up the complaints of the user sectors, it is apparent that there have been no complaints as long as the environment ministry adopted a fairly 'benign' approach of never saying 'no' to forest clearances. The problems start surfacing at the slightest attempt by the ministry to apply some sort of measuring rod on the relative value of the forest as a forest in comparison to the benefits anticipated from the industry (see Dilip Kumar 2015). Indeed, user agencies would be prepared to tolerate any amount of delay, or worse provided they are sure of getting the clearances at the end of the process, however tortuous. What caused such affront to the user sectors is apparently, not any sudden tightening of process or extraction of higher rents, but the fact that rejection of applications had now become a real option before the ministry. This, rather than any deficiencies in the process by itself, is what has caused a score of ministries, led by the coal and energy ministries, to come down heavily upon the environment ministry and attempt to wrest control of the process and take it to some sort of superior level like a Cabinet-level panel.

The triggering factor seems to have been especially the rejection of the coal blocks in the dense forests of central India, such as the Hasdeo-Arand coal field in Chhattisgarh state. The user ministries have tried various strategies to wrest these coal blocks from the hands of the environment ministry and the FCA set-up, starting with the criticism that the criteria used by the FAC are unpredictable and arbitrary. Initially, the user ministries themselves urged the environment ministry to develop criteria and a process

for a pre-assessment of all the forest areas of the country into 'go' and 'no go' categories like the environment agencies have long done for red, orange and green industries, so that user agencies would be clear from the start where they could fruitfully pursue clearances. The ministry responded by developing some criteria, based on the percentage of 'gross' forest cover and another measure, the weighted average of forest density in the block, and fixed certain cut-off levels to demarcate the 'go' from the 'no go' areas. When the user ministries found a substantial part of the identified coal blocks going into the 'no go' zone, they persuaded the environment ministry to lower the bar, resulting in a revised position with substantially higher number of coal areas crossing over into the 'go' category.

This did not satisfy the user industry, mainly because no amount of tweaking the criteria or the cut-offs could conceivably bring the dense forest belts like Hasdeo into the 'go' category. Unfortunately, the coal and power ministries had banked heavily on these pristine, large and low-population belts for feeding a number of huge, 'ultra-mega' power projects that were now faced with a raw material crisis. In this situation, the user ministries started calling for a wholesale scrapping of the 'go-no go' concept itself. But this only brought the situation back to the status quo ante, which is that the FAC, and the environment ministry, would have to fall back upon the examination of each project on a case-by-case basis. The intense pressure brought the 'competent authority' in the environment ministry (the minister) to take personal responsibility for over-ruling the FAC and passing a few projects on certain grounds that were spelt out in detail in the orders, but even some of these were subsequently challenged in the National Green Tribunal, which ruled against the minister in some cases. The uncertainty facing the user industry remained.

From the FAC's point of view, the situation had become somewhat complicated because they could not be seen as taking pre-determined orders from the ministry, but at the same time there was a grain of truth in the criticism that there were no 'objective' criteria. The FAC, of course, had already been found deficient by the Supreme Court once in the past, and the members of the new FAC could ill afford to have their credibility questioned by seeming to acquiesce to blandishments in the government or in the media (which made exaggerated reports of the so-called 'green terrorism' of the ministry). But once the 'go- no go' categories had been introduced, and once the forest cover criteria had been put on the table, it would have been professionally self-destructive for the FAC to turn its back on these criteria and go back to any arbitrary process based on expediency. Whether or not the ministry continued with the 'go-no go'

categories, the concept of criteria and cut-offs had been brought into the discussion, and the genie could not now be pushed back into the bottle. All subsequent decisions of the FAC and the ministry would perforce be weighed by the media and the hovering environmental activists on the basis of these 'objective' criteria, regardless of the ultimately arbitrary fixing of the cut-offs, whether under the same or some other nomenclature (the ministry adopted the terms 'category A' and 'category B' for the same concept, lest the term 'go' were misinterpreted as a surrender of the ministry's discretion implying a blanket clearance without scrutiny or assessment of potential damage to forest and biodiversity values).

The user ministries complained bitterly and repeatedly that even though the 'go-no go' categories had been given up, the ministry had still not opened up any of the so-called 'no go' areas (see the report by Priyadarshi Siddhanta in the *Indian Express*, March 1, 2012, for example). But the problem here was that under any criteria, even by stretching the definitions and lowering the cut-offs, it was still going to be a difficult proposition to bring a dense and continuous tract of forest like Hasdeo-Arand into the permissible category. In the final analysis, it looked as though the user ministries were asking that forest clearance should be a 'default' position, and that the FAC or the environment ministry should not ever consider a negative decision. The user industry would be prepared to do anything and promise anything (such as creating two or three times the forest sacrificed) to justify the forest clearance. This would obviously imply that the FAC or the ministry had no call to examine any pros and cons, or exercise any sort of discretion, apart from listing out mitigative and ameliorative actions and conditions to be observed (somewhat like the pound of flesh without a drop of blood in Shakespeare's play).

The only result of such an abdication of responsibility would have been the take-over of the functions of the executive by the courts, and obviously the FAC or the ministry could not take this risk to placate the user ministries. Even the high-level panel of the Planning Commission and the GoM did not go to such lengths, as we have seen above, and agreed that rich and dense forests would have to kept out of the clearances, and indeed asked the ministry to identify 'inviolate' areas that could reduce the uncertainty in the process (which, of course, was just another way of saying the same thing as the 'no go' categorization).

The frustration of the user ministries was, firstly, that huge coal reserves would be denied to them, but more urgently, it was that a number of power plants had already been set up with these coal blocks in mind. The minister did make exemptions on various grounds to bail out these

ultra-mega projects, in which thousands of crores had already been invested, but it appears that the uncertainty is not completely removed because even these decisions are subject to challenge in the tribunals and courts.

From the environment ministry's point of view, of course, the fact that power plants had already been erected could not be allowed to influence the decision, a principle already spelt out clearly in the FCA Guidelines, and further reiterated by the Supreme Court on the need to obviate situations of *fait accompli* (in the Lafarge judgment). It obviously was not worth the ministry's while to take the position that the Lafarge judgment would apply only to future proposals, and the previously created *fait accompli* situations were exactly that! Hence, it would have been more advisable for the user ministries to either accept the environment ministry's decisions in the first instance, and search out alternative coal blocks for the committed projects, or to have the decision over-ruled at a higher level. As it is, the FAC's recommendations in some cases were over-ruled within the ministry, leading to adverse comment by the Green Tribunal in at least one case.

At the end of this exercise, what recommendations can be made? Firstly, it appears that the search for 'objective' criteria is a futile one. Adding on a multitude of criteria as suggested by the GoM would only add to the cost and time required, with no relief to the user ministries in cases like Hasdeo, which are the real bone of contention (now the Subramaniam committee has recommended a cut-off of 70% forest cover, in place of the FAC's 30% criterion, which may or may not solve their problem).

Secondly, the 'no go' or 'inviolate area' concept is a useful one to think about, except that its continued validity under all exigencies will be highly uncertain. In other words, the executive must always reserve the right to overrule the expert advice, in situations where some grave national or public interest is involved (or perceived, as there is no objective measure for this). In this context, it is worth quoting Fukuyama, who has explained why public administration has to be informed by a basic common sense to be flexible enough for the real world, rather than being totally bound to the letter of some or other rule or precedent:

> Effective modern states are built around technical expertise, competence, and autonomy… Democracy, on the other hand, demands political control over the state that in turn reflects popular wishes, and indeed ever-higher levels of participation. This control is necessary and legitimate with regard to the political ends that states pursue. But political control can take the form of contradictory and/or overly detailed mandates, and often seeks to use the state itself as a source of rents and employment...

> There is also a tension between a high-quality state and rule of law. Effective states operate through law, but formal law can itself become an obstacle to the exercise of an appropriate level of administrative discretion… Rules need to be clear and impersonal, but every legal system adjusts the application of rules to fit particular circumstances… The best bureaucracies have the autonomy to use judgment in decision making, to take risks, and to innovate. The worst mechanically carry out detailed rules written by other people. Ordinary citizens are driven crazy by bureaucrats who can't use common sense and insist on mindless rule following. Policy makers occasionally need to take risks and try things that haven't been done before. Excessive deference to rules often makes this impossible and reinforces government's status quo bent. (Fukuyama 2014, pp.532-534)

While the 21st century started with a flurry of popular movements to take back citizen power in many parts of the world, the sheltered middle class, with its extreme sensitivity, is not always a good navigator of public decisions because it tends to take too high a moral stance, and loses its grip when it comes to elaborating the alternative strategies or institutions on the ground. This is one of the weaknesses of the current environmental movement, which tends to become anti-developmental without providing viable alternatives. The political class, on the other hand, is more pragmatic, and also more answerable to the mass of society, and will have to be in the forefront of whatever compromise is hammered out between the long-term concerns of environmental conservation and the short-term needs of economic development.

The conclusion from all this is that the Forest Advisory Committee (FAC) and the environment ministry (MoEF) have been doing a reasonable job of balancing environment and development, with the balance perhaps shifting slightly one way or the other depending on the make-up of the FAC, the ministry, or the political economy prevailing at different times. In such matters, it would appear to be a futile quest to establish a fool-proof, completely 'objective' set of criteria or processes. In the ultimate analysis, it has to be left to the common sense and broad understanding of the political executive, subject to the correctives that can be applied by the judiciary, to steer a safe path in between extreme positions taken by partisan advocates of one or the other camp. The media need to play a measured and balanced role, so that the country does not move too far in the direction of a highly litigant, high-cost, adversarial polity such as the USA has become (see Fukuyama 2014).

NOTES

[1] The main source for the Forest Conservation Act and Rules is the 'Handbook' of the Government of India (2004).

[2] Its full title being the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006.

[3] See, e.g., Central Pollution Control Board, New Delhi, April 2010. *Report of the High Powered Committee on Statutory Clearances*. Govt of India, Ministry of Environment & Forests, New Delhi.

[4] Supreme Court WP(C) No.202/95 with WP(C) No.171/96, 'Godavarman' case, Interim Order dated 12.12.1996; see Dutta and Yadav (2011), p.65.

[5] To put this in perspective, it may be noted that the forest cover was estimated at between 65 and 69 million ha over this period.

[6] The phrases in the Act have been paraphrased for vividness in understanding here; readers who are in search of specific legal guidance may please refer always to the original Act and Rules for the actual wording!

[7] Because breaking up natural forest for artificial plantations is now in the negative list, plantation management and replanting, in current practice, are to be confined to the existing plantation areas. Clearing of natural forest for raising plantations has been generally given up. The Ministry, however, may have to exercise constant vigilance to ensure that such activities do not creep into the regular working plans under the guise of forest restoration. The point to be vigilant about is that even normal reafforestation with forestry species (not just rubber and such commercial plantation crops) would come under the ambit of the FCA 1980, if there were any clearing of natural trees involved.

[8] One doubt that could be raised is, whether it comes under the ambit of the FCA even when only at the initial stages of the process, what is called Section 4 notification under the Forest Act, when the enquiry into rights and hearing of objections is still going on; the accepted ruling is that it does.

[9] The reader may please not treat this as a legal opinion or advice, as there may well be further explanatory orders from the courts on the responsibilities of private entities. It is stated merely as part of the thought process in developing one's understanding of the legal ramifications of the FCA and the court orders.

[10] The Western Ghats, for example, have vast stretches of such montane grassland formations (interspersed with trees in the valleys, called sholas).

[11] Forest Survey of India defines "Forest Area" as the area recorded as a forest in the Government records, also referred to as "recorded forest area". See FSI State of Forest reports the latest is SFR 2013 (FSI 2014).

[12] The MEF seems to have taken up the matter of defining the term 'forest' again in 2015 (newspaper reports, June 2015)

[13] The intent to declare a parcel of land as a reserved forest is notified by the State Government under the provisions of Section 4 of the Indian Forest Act or of the respective State forest acts.

[14] Order dated December 3, 2010 in IA Nos.2609-2610, 2009, in WP (Civil) No.202 of 1995 (i.e. the 'Godavarman' case), in Re.: "Construction of Park at NOIDA near Okhla Bird Sanctuary", see http://indiankanoon.org/doc/1062689/ (accessed August 2015)

[15] Contained in the "Handbook of Forest (Conservation) Act, 1980 (With Amendments made in 1988), Forest (Conservation) Rules, 2003 (With Amendments made in 2004), Guidelines & Clarifications (Up to June, 2004)", issued by the Ministry of Environment & Forests in 2004 by the Ministry for Environment & Forests (MoEF), Government of India; generally referred to in our text as the *Handbook* (2014).

[16] There is the problem, of course, that much of the time in the MoEF is actually taken up with examination of the proposal and documents in the office, and usually by the time it comes up to the FAC itself, the time would have run out. Thus the FAC itself gets hardly any time to study the proposal, unless in rare case it decided to have a field visit or further consultations or inputs in subsequent sittings.

[17] These were Madhav Gadgil, Mahesh Rangarajan and Ullas Karanth

[18] The term "protected area", abbreviated PA, has somehow come to be synonymous with wildlife sanctuaries and national parks, but in some countries, *all notified forests* can be viewed as "protected areas" in contrast to natural habitats that do not have any special status (such as, say, revenue *kharab* lands or wastelands in India).

[19] These will necessary involve some paraphrasing of the original text of the *Handbook*, which may be consulted for real-life applications.

[20] This is a somewhat puzzling statement, and presumably refers to situations where the work has not been taken up on the ground prior to 25.10.1980, when the FCA 1980 came into force. If it were to apply to all past cases, it would result in a huge log-jam before the authorities. However, cases of renewal of a time-bound lease (e.g. mining leases) do have to come up before the Central Government under the FCA.

[21] This had become a point of public contention after implementation of the Recognition of Forest Rights Act (2006), with an honorable Minister of the Central Government personally ensuring that the village community was empowered to cut and carry bamboo from state forest in its village vicinity (see Ramesh & Khan 2015, p.92).

[22] We refer to this as "FCA approval" or "FCA clearance" in the rest of the text for simplicity.

[23] In existing mining leases, the FCA approval needs to be applied for only when it is due for renewal (the complete application has to be lodged with the State Government around a year before the existing lease is due to run out).

[24] Of course, as indicated above, the main reason was that certain thickly forested, 'no go', areas had rich coal blocks linked to mega- power projects already in various stages of construction (principally, the Hasdeo-Arand forests which

will be discussed in more detail below). The thought was probably that some scientific sleight-of-hand (such as the lack of species diversity, perhaps in these sal-dominated forests) could overcome the influence of the large tract of dense forest cover that was forcing these coal block into the 'no go' category.

25 This appears to be a somewhat nebulous catch-all concept.

26 It would be advisable for the ministry to test all of this in some practical situations, as it seems to be likely to give rise to a great deal of overlap, conflicting assessments and confusion in the field.

27 It is not clear whether the committee intended to leave this gap between a score of 70 and zero, or whether the sliding scale would continue below 70 as well.

28 Of course, some of these initiatives may have a different objective than expediting clearances. The web-based system termed 'e-Greenwatch', for example, was a response to the demand of NGOs (endorsed by the then environment minister) that real-time data on each compensatory afforestation (CA), and ultimately each FC diversion area, be put on the web for public access, so that they could keep a tab on the activities of project entities. Under this package, which was launched in pilot states including Andhra Pradesh and Karnataka during 2012, satellite images of the CA spots are meant to be posted on the web periodically (see the ministry website, www.mef.nic.in).

29 SC Order dated July 6, 2011 in IA No.1868 of 2007 in Writ Petition (Civil) No.202 of 1995 (the 'Godavarman' case), known as the 'Lafarge' judgment.

30 This seems to be to keep conformity with the cut-off of 'gross forest cover' proposed in the 'go no-go' classification scheme described earlier

31 See, for instance, the report dated July 29, 2015 by Jay Mazoomdaar, at http://indianexpress.com/article/india/india-others/dont-say-diversion-of-forest-land-say-reforestation-prakash-javadekar/

32 Thanks are due to Prerna Bindra, former member of the NBWL, for bringing this to my notice

33 These PLPA lands are actually private or community property, not notified forest. A case study on community management of some of these lands as Common Property Resources (CPRs) is presented by the author in the *Economic & Political Weekly* (Dilip Kumar, 2013).

34 One of the ambiguities in this formulation is the limit of Gram Sabha jurisdiction. The Forest Departments would argue that this is limited to the lands under the Panchayat and Revenue administration, and would exclude the Reserve Forests under the custody of the Forest department, as also other departments' lands such as Cantonments, Mines and so on. This is not acceptable to the Tribal Welfare department.

35 There is already a provision in the Forest Act for a panchayat to transfer a property to the FD for custody for a specified period. See the author's article in the *EPW*, Aug 2013, for an interesting example from the private (community)

forests in Bondshi village, Haryana. This case is an illustration of Ostrom's suggestion of a 'nested' series of institutions for community management of common resources (Ostrom 1990).

[36] It is only at the end of 2013 (i.e. November 2013) that some finances (around USD 480 million from UK, Norway, Germany etc.) have been placed at the disposal of UN-REDD Plus, to serve 48 countries in the global partnership to reduce carbon emissions from Deforestation and forest Degradation (the DD in the acronym REDD). Not only is this a glacially slow progress to commitments, but the amount also is miniscule compared to the needs of any realistic programme (Dilip Kumar, 2014)

[37] It may be noted for the record that the forest cover increased by around 1.3 mha between 1997 and 2007, cf. FSI State of Forest Report 2009 (covering satellite imagery from the years 2006 and 2007).

[38] Institutional memory apparently fades fast, as there does not seem to be such a legislation.

[39] This discouragement to private tree growing could be ascribed not only to the timber transit rules in the Forest Act & Rules, but also to independent Tree Preservation Acts in various states. A number of states have exempted the main farm forestry species like eucalyptus from the requirements of cutting permission and transit permits, but it would probably be fair to state that there are still problems due to lack of uniformity between states (hindering inter-state movements), and also possibly due to lack of clarity or awareness of the latest rules and exemptions among the field staff.

[40] The situation may have changed (for the worse) after the Forest Rights Act (2006), as now the community members can continuously claim rights to forest land on one pretext or another. Some state governments have been liberal with these grants; others have been relatively conservative.

[41] As the World Bank OED review (World Bank / Lele 2000) states, Brazil's "tropical forest endowment and its importance to global biodiversity are unparalleled in the world" (*op. cit.*, p.xix).

[42] Such 'Payment for Environmental Services' or PES, could be considered a form of bribery rather than an economic incentive. It would be interesting to see how much of this promised amount has been actually paid out over the ensuing decades, and to what effect. It is striking, and puzzling at least to a forester trained in the Indian system, that no recourse is mentioned to strengthening of any framework of law or enforcement, which suggests that even at that date (2000), the Bank's tendency was to rely mainly on economic inducements rather than legal disincentives.

[43] Presumably, this would have to be an addition to what is already under state or national forests or other legally protected forest. The OED (World Bank / Lele 2000) states that President Cordosa of Brazil made a "rather sudden pledge" to protect an "additional" 25 million hectares of forest. It would be interesting to find out how much of Brazil's 370 million hectares rainforest

have come under the fold of this economics-informed program (as opposed to seat-of-the-pants notification under forest or biodiversity conservation laws).

44 This sounds like a roundabout way of saying that only part of the forest can be preserved in an unworked, pristine state.

45 This suggests the possibility that compliance is better when the revenue authorities are the enforcers, rather than say the forest or environment department. This would also suggest that conservation regulations are better served by linking them to the revenue interests of the State, which is expected to take things more seriously where State revenue is involved, as against depending only on the innate sense of responsibility or good intentions of the people.

46 According to the World Bank OED report (World Bank/Lele 2000), between 1976 and 1998, timber production in the Amazon increased from 4.5 million cum to 28 million cum, and was expected to continue growing at 5 to 7 per cent yearly.

47 Of course, it is a matter of debate whether there will be enough cash available for such transfers, since the social gains are often in a diffuse and non-market state. There are also problems of actually managing such transfers, as the debate of carbon payments and REDD have shown (see references in Dilip Kumar, *EPW*, May 24, 2014).

48 The amount of heart-searching about the means of monitoring and verification in such contexts as REDD, for instance, is nothing but coming face to face with the reality of ground situations. Though world bodies and international NGOs are constantly searching for ways to use economic incentives to set up self-regulating, self-motivating systems of sustainable activity in place of top-down, law-based regulatory systems for environmental conservation, it is doubtful, given human nature, whether such a system is actually practicable, except perhaps under extremely artificial conditions with massive inputs from outside in terms of personnel, technical consultants, money, and so on. Perhaps this view is conditioned by this author's experience as a forest officer.

49 (Instituto Nacional de Colonizacao e Reforma Agraria)

50 And which many international agencies today have adopted as a *mantra*. This hypothesis is the basis of the Forest Rights Act (2006) in India, and one of the potential troublesome issues in its effect on forest conservation, although the preamble states that it is the people's communities that have been instrumental in conserving the forests.

51 In other words, it appears that one-third (20 + 13= 33%) of the total forest was to be under relatively strict protection, and approximately 30% of the total forest (0.44 of 66%) to be under permanent (production) forestry.

52 No detailed costing or scheme seems to have been worked out, even in principle for such a major responsibility.

53 This, of course, is a pretty basic objection. Indeed, sustainable forestry may simply be unable to compete with complete clearing of the natural forest and

diversion to some other, more remunerative activity, as was seen in the Brazil case.

54 Although the international fora have hailed this as a great breakthrough, it is probably of little import to the cause of forest conservation on the world canvas, especially in the context of large economies like India and China (and presumably Brazil and Indonesia as well), cf. author's article in the *Economic & Political Weekly*, May 24, 2014 (Dilip Kumar 2014).

55 FCA clearance in India stands at around 35,000 ha per year (350 sq km or 0.035 mha, or just around 0.05 % of 70 mha of forest cover).

56 This seems to be the type of situation that in India is now being addressed by the Forest Rights Act (FRA) 2006. Of course, the views expressed in the SAM proceedings are all heavily grounded in the fight for indigenous people's rights over forests and natural resources, while the State is seen as an interloper. It will obviously be interesting to follow the trajectory of similar movements and campaigns in India and other countries, and see how far the empowerment of local communities translates into forest conservation.

57 This contrasts with the Indian model, where *all* the final permissions are given by the Minister for Environment & Forests (except for small permits that are issued by the state governments).

58 Indian legislation seems to have gone ahead toward transferring ownership to communities through the Forest Rights Act, 2006, which gives the village Gram Sabha the power to recognize rights in all forests, including state reserved forests and even national parks and wildlife sanctuaries.

59 In other words, while most of the laws and regulations seem more centralized than in India, the diversion of forest land to mining and other activities seems to be vested with the local administrations, whereas the FCA 1980 in India has done the opposite.

60 The awareness of sustainability issues, hopefully, may have improved over the ensuing years with greater information, high visibility to the climate change conferences, national and international training and awareness building programmes, and so on.

61 (17.6 mha) The report cited is Stein *et al*., 2005.

62 Again, this account is not to be taken as a legal interpretation, but is more of a literary exposition. It seems that forests per se are not given much prominence in the environmental laws, except as the habitats for wildlife and scenic beauty (wildernesses), Obviously the field is still an open one in many respects, and many more court orders are sure to come, expanding on many of the concepts and finer points, so as McGregor himself points out, proper legal advice should always be sought!

63 This amounts to some 100 mha (million hectares) that are not under the jurisdiction of the National Park Service, the U.S. Fish and Wildlife Service, or the U.S. Forest Service. The BLM is under the Interior Department, and is refashioning itself to change the public perception of depending overly on

mining and grazing (fully 4.3 billion dollars of its revenue of 5 billion in 2012 came from onshore oil and gas development), and to reflect the new three R's: Recreation, Range Restoration, and Resource Conservation. See the BLM website (http://www.blm.gov/wo/st/en/info/About_BLM.html and blm.gov/wo/res/Direct_Links_to_Publications.html), which links to the National Geographic Magazine online article "The Big Open", (http://ngm.nationalgeographic.com/ngm/data/2001/08/01/html/ft_20010801.1.html).

64 Pinchot was accused of trying to "Bottle Up" Alaska for the sake of forest conservation; see Miller (2001), p.206 *et seq*. Pinchot's own account is available in his memoirs, *Breaking New Ground*, 1947.

65 Webpage en.wikipedia.org/wiki/Tongass_National_Forest, accessed 30-06-2014

66 Case 1.00-cv-00023-JWS, Document 68, Filed March 4, 2011, Pages 1 to 27. Plaintiffs 'Organized Village of Kake', and Others versus defendants, the US Department of Agriculture (USDA) *et al*. and the State of Alaska and Alaska Forest Association. Website www.earthjustice.org/sites/default/files/Tongassdecision3-4-11.pdf, accessed June 30, 2014.

67 Case 1.00-cv-00023-JWS, Document 85, Filed May 24, 2011, Pages 1 to 5. Plaintiffs 'Organized Village of Kake', and Others versus defendants, the US Department of Agriculture (USDA) *et al*. and the State of Alaska and Alaska Forest Association. John W Sedwick United States District Judge. http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprd3801451.pdf, accessed November 30, 2015.

68 No.11-35517, D.C.No.1:09-cv-00023-JWS, Filed March 26, 2014. Plaintiffs-Appellees 'Organized Village of Kake', and Others versus Defendants, the US Department of Agriculture (USDA), US Forest Service and Others, Intervenor-Defendant Alaska Forest Association, and Intervenor-Defendant-Appellant State of Alaska. 'Opinion' by Judge Bea, Circuit Judge. Webpage cdn.ca9.uscourts.gov/datastore/opinions/2014/03/26/11-35517.pdf, accessed on June 30, 2014.

69 It is not very clear why there is an order of magnitude difference between the World Energy Outlook 2011 figure of 0.191 Kgoe/US$ and the earlier Planning Commission figure (Table 14.1) of 0.62 Kgoe/US$ (for 2011).

70 Interestingly, around the same time the coal ministry estimated that there were 104 cases awaiting Stage-I clearance, 81 pending at the State level, and 23 at the Ministry of E & F (Coal Ministry sources). This indicates that often the position is not updated frequently, leading to differing perceptions.

71 One unstated problem with equating the cut-offs to national forest cover aspirations, may be the 'perverse' or 'counter-incentive' signals it gives to states in fostering forest cover. In effect, it would 'penalize' those states or districts that have preserved the forest cover, by making the whole tract out of bounds, and denying the potential returns from extraction of minerals to such virtuous entities. On the other hand, a careless state that has allowed its

vegetation to fade away, is rewarded by making it easier to get forest clearances as its numbers will be below the cut-off thresholds. Perhaps some obligation to improve forest cover has to be imposed, on the 'delinquent' states as well.

72 As per Ministry sources, this was probably in 2009, and the exercise with CMPDIL to map the coal blocks into the two catrgories started in July 2009

73 In a way, paraphrasing scripture, we render unto nature, what is nature's, and unto the economic Mammon, what is due to Mammon.

74 One rationale behind this is perhaps the uncertainty plaguing the policy on releasing coal blocks due to environmental regulations and the forest clearance procedures, so companies and governments will naturally like to garner clearances in advance to maintaining continuity in operations and rope in more and more players to ensure robust and continuing growth.

75 Something like this is apparently being done under the recommendations of the TSR Subramaniam Committee that suggested that the cut-off should be pegged at 75% (dense forest) in place of the 30% criterion used hitherto.

76 Indeed, the Supreme Court in its order dated April 27, 2007 had already once put figurative shackles on the FAC and the ministry, by requiring the recommendations of the FAC, along with the opinion of the Central Empowered Committee (CEC), to be referred to that Court for re-examination and final orders,. This was one reason for the perception of a pile-up of cases and inordinate delay in giving the FC clearances in the ministry, until the Supreme Court relaxed its hold upon appointment of a fresh FAC under a new minister in mid-2009.

77 What are known in the West as "watchdog" agencies, though one hesitates to use this term in the Indian social and cultural context, as it may tend to be seen as a denigration of their status.

78 See, for instance, the report by Rajeev Deshpande in the *Times of India* newspaper, January 3, 2011: "…meetings have been held at the level of secretaries but have failed to provide any middle ground between the environment ministry on the one side and ministries like coal and power on the other. Sensing that more consultation is likely to prove fruitless, senior officials feel that the matter would be best settled by the collective view of the CCI headed by the PM."

79 The order of the National Green Tribunal in the Hasdeo-Arand coal blocks case is available at their website: www.greentribunal.gov.in/judgement/73_2012(Ap)_24Mar2014_final_order.pdf, accessed on April 22, 2014.

80 The Hasdeo-Arand forests are not virgin in the strict sense, as they are under regular working plans for management on a sustained yield basis. They are a unique massive stretch of continuous forest, however.

81 "Centre has 11 weeks to appoint eco clearance regulator. For independent, transparent appraisal & approval of projects." Legal Correspondent, *The Hindu* newspaper, January 7, 2014.

[82] The present regulations provide that proposals involving lands over 40 ha in each case are sent to the MoEF, to be considered in the Forest Advisory Committee. The Chief Conservator of Forests of the Regional Office is competent to finally dispose of all proposals involving land up to 5 ha, except in respect of mining and regularization of encroachments, which go to the Ministry as do the proposals for land up to 40 ha (without the intervention of the Forest Advisory Committee).

[83] A detailed account has now been published by the then Minister (Ramesh 2015), and is therefore available as a public source for these documents.

[84] It is to be understood that the wording of the ministry documents is being paraphrased a bit here to give the tenor and flavour rather than a verbatim record. Now the minister concerned has himself provided a detailed account of all these cases (Ramesh 2015), which should therefore provide an authentic source for the ministry documents.

[85] During a recent study of village communities and Joint Forest Management (JFM), the author realized that a long period of fire control has converted many of these degraded forests into thickets of thorny undergrowth which neither humans nor animals can penetrate. These become good habitats for wild pig, which has grown into a huge menace to the agricultural lands.

[86] A book has been published recently by the Wildlife Institute of India (Rajvanshi *et al*., 2001, *Roads, Sensitive Habitats and Wildlife*), which also has case studies of roads in wildlife areas as well as expressway development.

[87] Other references that my be of interest in this context:
http://www.wilderness.net/NWPS/legisAct
http://en.wikipedia.org/wiki/Inventoried_roadless_area
http://en.wikipedia.org/wiki/Wilderness_Act

[88] www.mdoner.gov.in/content/border-roads, accessed May 12, 2014.

[89] It appears that border roads and other strategic infrastructure have been exempted from certain of the clearances by the NDA government since this paper was drawn up.

[90] Cf. en.wikipedia.ord/wiki/Darjeeling_Gorkha_Hill_Council, last modified on April 18, 2014, accessed on May 12, 2014

[91] www.sanctuaryasia.com/campaigns/5720-road-through-the-neora-valley-national-park.html, dated April 2011, accessed on May 12, 2014. Also see timesofindia.indiatimes.com/city/kolkata/Army-road-threatens-Neora-Valley-wildlifw/articlesnow/28301052.cms, dated January 3, 2014, accessed May 12, 2014.

[92] Said to be a unique tiger habitat above 10,000 feet altitude

[93] Order passed by the High Court of Karnataka dated 24.06.1998 in WP No.3707/1997

[94] (It is instructive to also note the activities that have not been specifically included, such as river rafting, bungee jumping, rock climbing, and other 'adventure' sports that may be seen to disturb the tranquility of the forest in more vigorous ways).

[95] As per a publication of the ministry, wildlife protected areas (PAs) cover about 20.6% of the forest area or 4.9% of total geographical area of the country, cf. *Forest Sector Report India -2010*, ICFRE and Government of India, 2012, p.46.

[96] Himachal Pradesh Forest Department, Revised Policy on Development of Ecotourism, 2005

[97] Himachal Pradesh FD's idea of putting all its FRHs under a public-private corporation was discouraged by the author as DG Forests, much to the state's discomfiture.

[98] SLP (Civil) No.21339 of 2011

[99] The High Court had dismissed a PIL (No.12351/2010) asking that all kinds of tourism, mining, development of any activity within the core/ critical tiger habitats of Madhya Pradesh be banned, besides seeking directions for notification of core/ buffer and preparation of Tiger Conservation Plans.

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