



A Critical Assessment of Forest Legislations in India

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ABSTRACT

In India there is a huge demand for timber that is met largely through imports. State-led forest policies have been lax in meeting this requirement. This policy paper analyses the existing forestry policy of India. The paper explains that intervention of the state to conserve and improve forest coverage has not been successful. It observes that many of the justifications by the states to intervene in forest management curtail individual decision to plant and fell trees.

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Introduction

Forests are a useful resource to people. Commercial forest produce supports construction and other development activities in the economy.ⁱ Production of timber in private property will be profitable not only for economic growth but also as a business venture.

However in India, several other considerations could affect taking up timber production as a business venture in an individual's private property. Free market exchange is interrupted by interventions from the state. In the face of the growing need for timber, the federal state has ventured on a variety of alternative measures to ensure its control over this sector. State-sponsored social forestry, which began during the late 1970s, started as a measure to increase the forest coverage in India.ⁱⁱ Currently there is a serious effort by the federal state to reinvent social forestry to increase production of timber at the level of the private individual. In this context, there are two major questions that surface while considering private timber production in India as an offshoot of state-sponsored social forestry.

- 1) Why should the state interfere/What is the state's logic in interfering with an individual's decision to plant or fell a tree?
- 2) Does the state's logic of increasing forest coverage as a reason for this intervention stand the test of verification?

In India, trees in the federal states are classified by the respective state departments into different categories depending on their commercial value as well as zones which are demarcated based on ecological criteria. Cutting these categorised trees and transiting them requires the permission and presence of state officials at various levels.

Methodology

The report has tried to evaluate the role of the state by comparing state rules and legislations with stakeholder responses. Stakeholder responses were collected through extensive interviews. Planters, traders, furniture units, and forest officials were interviewed to collect responses for this comparison. Secondary data sources are also used in the analysis.

Forest and Forest Produce in India

India has approximately 23 per cent of its geographical area under tree cover. However, between the federal states the area covered under forests differs widely (refer figure 1). Forests in India were notified and recorded much before independence from the British in 1947. The recorded forest areas fall under three categories: Reserved, protected and unclassed.ⁱⁱⁱ

Forest resources are used in India for a variety of purposes: Fuel wood, timber, bamboo, paper and rayon manufacturing.^{iv} Industrial consumption of wood in India is approximately 30 million cubic metre. However, 90 per cent of the consumption comes in the form of fuel wood and small timber.^v

There is a major mismatch between demand and supply of wood in India.^{vi} Studies by Malik (2003) showed that the overall demand for forest products (including wood, fuel wood) was projected to grow over the period 2000-2010. The demand for wood from forest-based industries has also been on the rise.^{vii} Supply projections in the study reveal a glaring gap.

Conservative estimates show that the current forestry programme adopted by the federal government would not be able to cover this gap in 10-15 years.^{viii} Most of the demand-supply gaps estimated by the forest departments are conservative in nature. The gap could be wider.

Many of these studies on forest policies also recommend greater participation of the state to enhance these shortages.^{ix} Several federal state governments have responded to the situation in two ways. The first is to develop a forest policy which aims to give greater decisive powers to the states in planting and cutting of timber-bearing trees. The second is to encourage import of timber.

However, at the individual level, a slew of rules and regulations restrict taking up planting and felling of trees as a business venture in the private property of individuals. This has allowed the federal state to have a monopoly control over trees in private, as well as reserved forest areas; and the continued belief that a free market for timber would lead to degradation of tree cover in the country.

I. Why does the State Interfere in Individual Decision? The State's Justification

Laws and Regulations

Article 48A of the Indian constitution provides the federal state with the obligation to protect and improve the forest resources in the country. The article states that: “The State shall endeavour to protect and improve the environment and to safeguard the forests and wildlife of the country.” In addition Article 51 A (g) makes it the fundamental duty of the citizen “to protect and improve the natural environment including forests, lakes, rivers and wild life, and to have compassion for living creatures”.^x Since the induction of Article 48 A, forests in India were brought under the concurrent list.

The legislative and administrative powers regarding forests are shared by the central (Union) government and the federal state governments. Since forests falls under the concurrent list any dispute in policy between the state and the Central governments would go in favour of the law created by the Centre. However, the constitutional powers vested in the federal states give it ample control over its forest resources.

The Ministry of Environment and Forest was established in 1985 as the nodal ministry to deal with forest resources following the creation of these constitutional provisions. Conservation, afforestation, controlling pollution, regenerating degraded areas and so on form the mandates of the ministry. At the level of the federal states, state forest departments complement the functioning of the Ministry.

The state departments function without deviating or diluting the provisions prescribed by the national legislation on forestry. Important policy interventions by the federal government post-independence which highlighted and defined the role of the state, include the Forest Conservation Act (1980) amended in 1988, The National Forest Policy of 1988,^{xi} and Forest Conservation Rules (2003).^{xii} All these legislations included different clauses which empowered the state's role in governing forests in India.

At the federal state level, a group of civil society organisations function to carry out the states' agenda. Joint forest management, cooperatives, farm and community forestry form the crux of activities at the federal state level. These activities are supported by national as well as international donor agencies.^{xiii} Wildlife wings, social forestry divisions and Forest

Development Corporations, Autonomous District Councils and Joint Forest Management committees across India constitute some of the major administrators of the forests in India.^{xiv}

Logic of State Intervention

It is noted that forest governance in India post-independence under the federal government had distinct phases. During the first phase, forests were considered as an essential support for commercial and industrial development. In the second phase, conservation was the major goal under the forest policy in India. Since the National Forest Policy of 1988 and until now, the state has been constantly attempting to bring together various stakeholders from the community to participate in forest management.

A major problem with these policies is that forest management under state initiative has always been extended to cover trees planted in the private properties of individuals. Although definitions and classifications of forests exists on paper, when it comes to specific trees, there is a thin line separating trees in individual properties from the broader category of forests controlled by the state.

For instance, the following observation in the Forest Conservation Act is worth highlighting: “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.” Our interviews with the different stakeholders also indicate that the state still has complete control over all forest related activities. The seemingly inactive ‘social forestry departments’ in various federal states are also places where much of this power consolidates for the forest department. Individual planters attempting to plant and cut in private land are often unable to do so.

The state intervention on individual rights on trees in private property is based on heterogeneous reasons. The federal laws on forestry are defined with the purpose of increasing forest coverage. Social and ecological concerns are major parameters in the state’s argument. There are also arbitrary reasons which assume that their ‘life, liberty and property’ cannot be controlled by individuals.^{xv} For instance the Citizen’s Charter of the forest department in the federal state of Kerala justifies state intervention in the following manner. “Although people are well aware of what is best for them, it is necessary that regulations should be put in place for some of their acts.^{xvi} Otherwise, it will lead to different problems in

future.” The justification is also based on the logic of ‘majoritarianism’ that although such restrictions can create problems for a small number of individuals, it is essential taking into account the benefits that the community would receive. A combination of these factors is used to justify specific interventions by the state in the business of individual stakeholders.

II. Verifying States Logic of Intervention

One major justification for state intervention on individual rights to fell trees from private property is that it threatens the broader national policy of increasing forest coverage. However, it is noted that not much has changed in the forest coverage in India since the adoption of a national initiative to increase the forest coverage to one-third of the total geographical area of the country.

Another parameter to understand state intervention is to check the number of regulation across federal states with the forest coverage as well as illegal felling and transit of trees in each of these states. What emerges is a major mismatch between these parameters which could justify the necessity of these regulations. It is a possible indicator that many of these regulations need critical re-examination for its validity and role, if they do not directly serve any purpose in society.

A. What has happened to the Forest Coverage in India with Active State Interference?

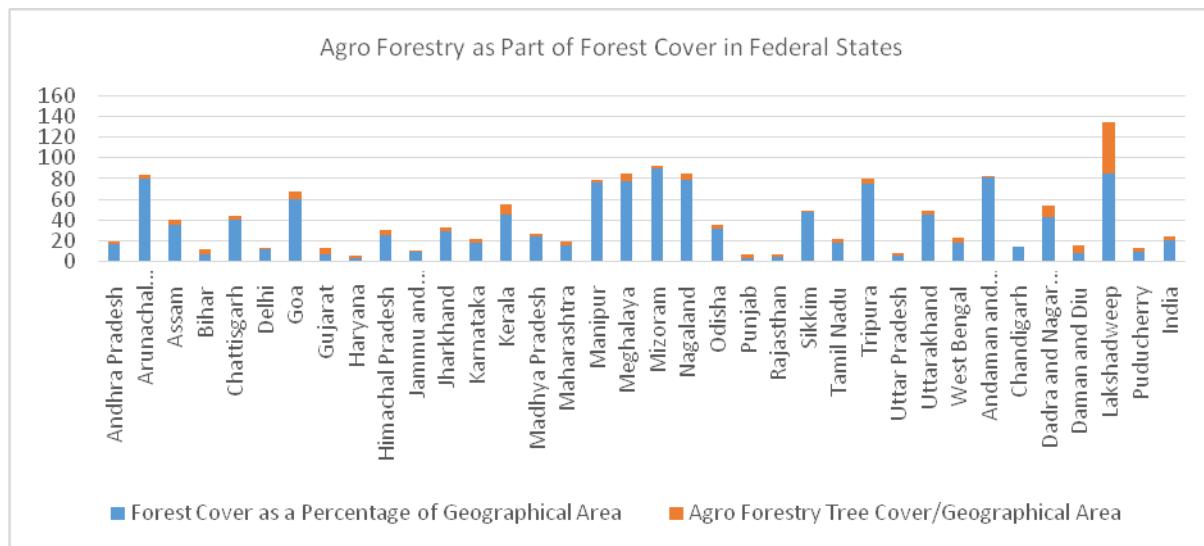
Has state intervention been successful in increasing forest coverage in the three decades following the introducing of the National Forest Policy (1988)? The goal of the policy was to “have a minimum of one-third of the total land area of the country under forest or tree cover”. By 2013, the actual tree coverage in India was 21.3 per cent; a definite indication that the forest policy is yet to reach its target.

Social forestry was a major instrument of the state during this period when it tried to expand its forest activism. The programme of social forestry began with an attempt to utilize fallow but evolved to adopt commercial forestry as a major component.

Farm forestry and agro forestry are two types of social forestry measures in which commercial harvesting is a significant component. In agro-forestry, private ownership and trees in homestead plantations are considered important parameters in estimation.^{xvii} However, it is seen from the Forest Survey (2013) that only 3.39 per cent of the total geographic area is under tree cover from agro forestry. The state with the highest figure in this respect is Kerala with 9.79 per cent of tree cover to total geographical area under agro

forestry. It largely reflects that agro forestry measures of the state departments have contributed very little to the forest cover of the states. Figure (1)

Figure 1: Agro Forestry as a percentage of forest cover in the federal states.



Source: *India State of Forest Report (2013)*^{xviii}

Forest officials claim that social forestry promotes green coverage by extending saplings at very low cost to planters. For instance, in the federal state of Kerala, at a conservative estimate, approximately 8,00,000 saplings have been distributed during the financial year 2012-13. It is noted that verifying the success of the programme is extremely difficult. Interviews with a senior forest official revealed that between 20-40 per cent of the saplings are carefully nurtured and develops into a tree while the remaining are lost.^{xix} This means that much of the human and material resources that the state employs go unaccounted for.

Commercial social forestry promoted by the state also lacks transparency. A list of planters who have been provided with monetary incentives to plant timber bearing trees is maintained by the state. Details of planters who were part of the incentivization scheme in Kerala's capital, Thiruvananthapuram, indicate certain flaws. While all incentives were collected in the name of women, enquiries reveal that most of these women are not actual planters. It was just easier to collect money in their names to subvert certain legal requirements.

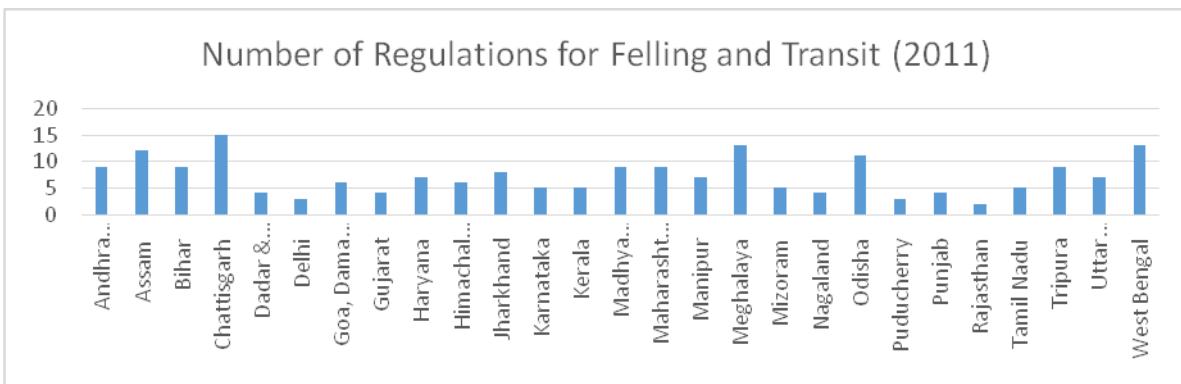
The size of these incentives was also negligible. In one case, it was noted that two people who collected incentives were registered under different names and different addresses, but had provided identical phone/mobile numbers. It thus appears that very little encouragement

exists for private social forestry in government sponsored schemes. Moreover, even this small scale distribution reflects the possibilities of corruption.

B. Analysing Federal State Regulations to Fell and Transit Trees

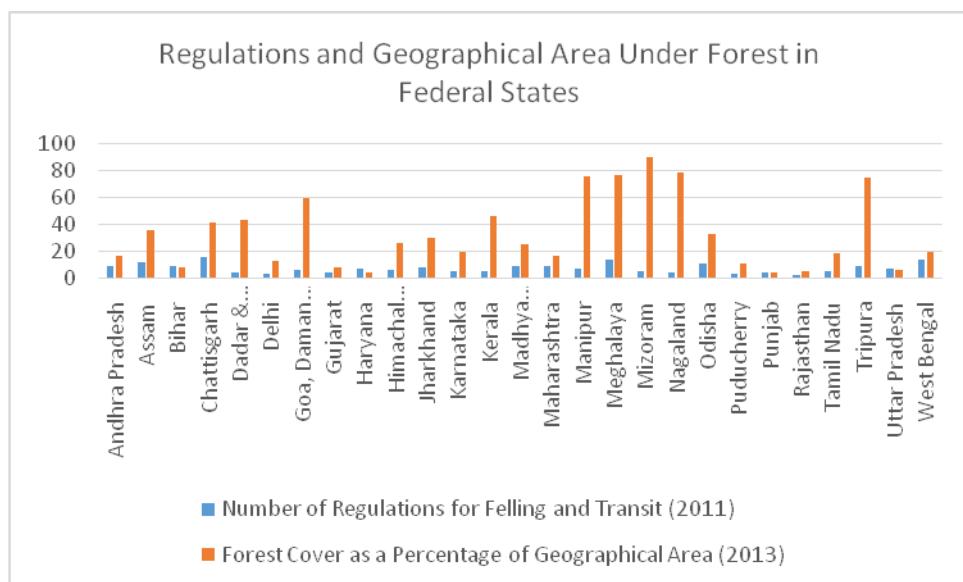
A committee was established by the Ministry of Environment and Forest in July 2011 to study the regulatory regime in felling and transit regulations for tree species grown on non-forest/private lands and to evaluate the experience of different States/UTs.^{xx}The committee reported the number of regulations across federal states in felling and transiting trees. Figure (2). We see that states like Chattisgarh, Meghalaya, Assam, Odisha and West Bengal have the largest number of legislations, while most of the union territories, southern states of Kerala, Karnataka and Tamil Nadu, and a few north eastern states like Nagaland and Mizoram have fewer legislation. Approximately seven regulations exist on an average for India across federal states to fell a tree and transit it.

Figure 2: Number of Legislations for Felling and Transit of Trees in Federal States of India



Source: Ministry of Environment and Forest (2011)

Comparing these regulations with the actual forest area in these respective federal states shows that in most of these states the number of regulations and the forest cover are not proportional. For instance, Mizoram, Nagaland, Meghalaya and Kerala which have relatively higher forest cover has lower number of regulations, while states with lesser forest cover like Andhra or Bihar, Haryana or Punjab has proportionally larger number of legislations. (Figure 3). So, there is a mismatch between forest cover and protective regulations enforced by the states.

Figure 3: Regulations and Geographical Area under Forest in Federal States

Source: Ministry of Environment and Forest, Government of India, 2011 & India State of Forest Report, 2013

There are two questions which arise while comparing the number of regulations to fell and transit trees and the respective forest cover in each state.

- a) What is the real purpose of these legislations? Are they designed to prevent loss of forest in areas with greater or lesser forest coverage?
- b) Do these regulations restrict the actual loss of forest due to illegal felling?

Table 1 reflects the inconsistency in the policy of regulation raised in these questions.^{xxi} States, like Gujarat, which has relatively high incidence of felling, has approximately four regulations to prevent felling. Meghalaya which has a large part of its geographical area under forest and also one of the lowest reported incidences of felling has the second highest number of regulations. There are also states like Rajasthan which has fewer lesser number of legislations and very low forest cover but relatively large incidence of illegal felling.^{xxii}

The data of geographical forest coverage and number cases of illegal felling reported indicate that these regulations might have different objectives which might not be consistent with the National Forest Policy objective of conservation and protection of trees. Article 48 A of the constitution does not logically get support from these

regulations. It raises the need to analyse and carefully evaluate the merits of many of these regulations.

Table 1: State-wise Number of Illegal Felling of Trees in India (2007-08 to 2011-12)

States/UTs	2007-08	2008-09	2009-10	2010-11	2011-12
Andhra Pradesh	24795	38492	28222	-	-
Goa	155	237	207	-	-
Gujarat	5825	39771	38207	29221	16629
Haryana	4545	6317	-	-	-
Jharkhand	307	192	114	-	-
Karnataka	3811	4077	2301	-	-
Madhya Pradesh	-	-	-	16554	-
Maharashtra	-	186189	201144	166359	107228
Odisha	71922	65221	-	-	-
Rajasthan	11217	11662	9879	-	-
Uttarakhand	-	1380	1736	1282	1726
West Bengal	1067	1094	581	-	-
Total	123644	354632	282391	213416	125583
Arunachal Pradesh	-	43	51	94	-
Meghalaya	-	798	614	-	-
Total	0	841	665	94	0
Andaman and Nicobar Islands	3	620	602	357	339
Total	3	620	602	357	339
India	123647	356093	283658	213867	125922

Source: Lok Sabha Unstarred Question No. 70, dated on 01.08.2011 & Lok Sabha Unstarred Question No. 4038, dated on 30.04.2012.

Illegal felling and transit has assumed significant proportions in the country. The Directorate of Revenue Intelligence in India reports several cases of smuggling of sandalwood, which has huge demand in the international market.^{xxiii} Smuggling to international markets takes place from major ports in India.^{xxiv} South Korea, China, the Middle East^{xxv} and Japan are major markets for this smuggled timber.

Most of the captured wood is auctioned to international buyers. For instance, reports indicate that the federal state of Andhra Pradesh was permitted by the federal government to auction approximately 4,159 tonnes of sandal wood in the international market. While a tonne of wood fetches 10-30 lakhs in these auctions smuggling allows sellers to earn as much as Rs 80 lakh per tonne in these markets.

The huge profits earned by smuggled wood in the international markets have led to an increase in such incidents in the federal states. However, the response of the state to crack down this business generally affects the lowest groups (wood cutters) in the value chain. Several instances of such people killed in encounters with the forest officials have been reported.^{xxvi} In addition, several media reports indicate that sandalwood smuggling still continues widely in these states.

III. Consequences of Regulations

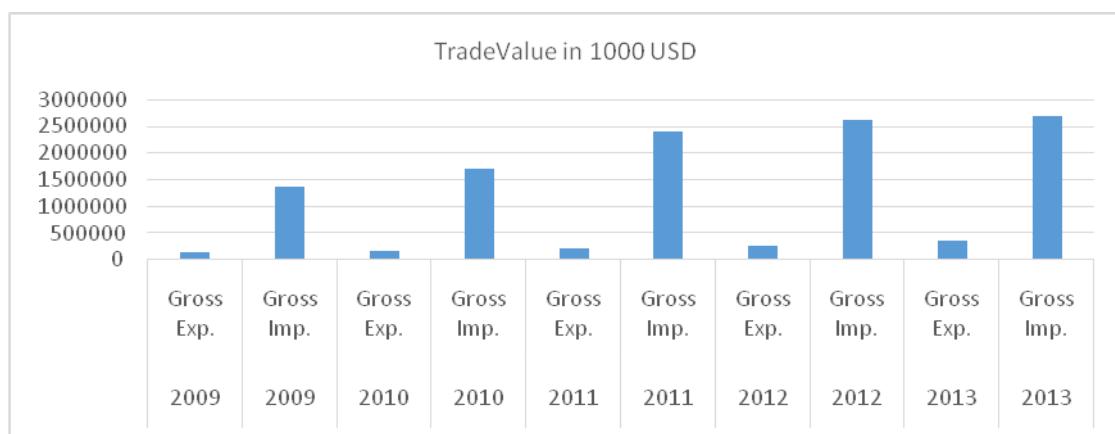
a) Regulations Lead to Supply Gaps

It is seen that state intervention has not met its targets to increase forest/tree cover in the country. This also indicates that demand for wood for various construction and industrial activities remains deficient. This could have serious consequences for economic growth.

Reports indicate that the state owns 58 million hectares of the approximately 69 million hectares of forest land in India. The production of timber in this land during the period 2005-2010 was only 2.38 million cubic metres.^{xxvii} About 85 per cent of this came from the Andhra Pradesh, Chhattisgarh, Haryana, Himachal Pradesh, Madhya Pradesh, Maharashtra, Punjab, Uttar Pradesh, Uttarakhand and West Bengal.

Regulations have reduced the availability of timber in India. This is now increasingly met with imports as seen in Figure 4.

Figure 4: Trade of Wood and Articles of Wood and Wood Charcoal between India and the Rest of the World 2009-2013



Source: World Integrated Trade Solutions

The possibilities in the domestic market are not considered by the state policies. One scheme which has been introduced to increase timber production most often quoted by officials was the “tree growers’ cooperatives”. However, the freedom of the market is crucial to determine success of production.

The price of timber depends on a lot of factors. Since the quality of timber varies across regions, the price too varies. The cost of timber generally includes stumpage fees, logging and transportation costs. Sawmill costs include the cost of energy, operations and maintenance, costs of labour and other costs like depreciation. To calculate the price of timber would require knowing these costs and averaging it. It can also fluctuate depending on the demand for construction or the purpose of use.^{xxviii} State intervention significantly affects market determined pricing mechanisms.

b) Regulations and Possibilities of Prosecution (Case Study of the Federal State of Kerala)

In Kerala there is direct and indirect control of the state in the market for timber and there are two major categories of sellers: the state and private individuals. As far as the state is concerned, it assumes all the rights to sell timber from reserved forests. For the private individual, the freedom to sell is restricted by the monitoring activities of the state. The difficulties imposed by regulations are examined below.

1. Timber from Reserve Forests: The state controls the entire timber that is procured from its reserve forests. The sale/auction of this timber is made through state controlled depots (places where the timber is stored and auctioned under state surveillance).
2. Timber from Private Producers: This requires private planters to identify potential clients and negotiate with them for a competitive price. However, in the case of private individuals certain restrictions are imposed by the state in felling and transporting the wood.

Timber from Reserve Forests

The existing price determination of timber in state depots is not based on the market principles of demand and supply. Prices are determined through arbitrary mark-ups to the auction prices. These auctions take place in state-controlled depots. The state fixes the price in most instances. From the citizen’s charter of the state forest department in Kerala, the

following information on auctions was obtained. Auctions take place in government depots or in territorial ranges. Both timber and firewood are available through auctions. The wood can be examined 4-5 days prior to the auction by potential buyers.

In addition there are specific taxes on the product. Taxes are to be paid by the buyers buying from these depots in the following manner: 12.5 per cent Value Added Tax (VAT), 5 per cent forest development tax, 2.5 per cent income tax, 2 per cent surcharge, and 3 per cent education cess. For firewood there is a 4 per cent VAT apart from the above taxes. Other charges include transportation for the auctioned wood, payment to workers to arrange the wood for transport and so on. This makes the transactions costlier. As per the charter, there are 28 depots owned by the state government. Interviews with buyers indicate that auctions are mostly dominated by large timber merchants. So the so-called market determined prices for timber from the reserved forests are in fact state determined.^{xxix}

Timber from Private Planters

For certain species of trees the state has imposed sanction on felling and transport from private property. These regulations are examined below.

The sandalwood policy of Kerala: Sandalwood can be grown in private individual plots. But it can be cut only under the supervision of the state forest department. The department moves the timber to Maravoor government depot where it is auctioned. The individual who had the tree in his property has to give 30 per cent of the auctioned amount or the amount spent on cutting and auctioning (whichever is highest) to the forest department.

Cutting and transporting trees in Kerala: Trees which are promoted under forestry in non-forest lands including sandal wood and 12 other species require prior permission.^{xxx} These are specified trees. Sandalwood can be cut and sold only through the forest department while the remaining trees require the prior intimation of the range officer in the concerned area and getting a receipt for the process.

It is also noted that there are notified areas which have been classified due to ecological significance. This is published in government gazettes. Specified trees are prevented from being cut and transported from notified areas. Of the 1,453 villages in Kerala, 50 are notified. Cardamom, coffee plantations, coastal and mangrove forests are also covered under notified areas. These 50 villages are spread across 10 districts in the state.^{xxxii} The districts of Palakkad (10) and Idukki (8) have the largest number of villages in the notified areas.

Thiruvananthapuram, Kollam, Kannur and Kasargode do not have notified villages. In addition, there are 60 ecotourism zones across all 14 districts in Kerala and felling trees are regulated in all these areas.

In notified areas, private land owners are divided by the state into two classes, small land owners with under 1 hectare plot and large land owners with more than 1 hectare plot of land. The policy for cutting and transporting trees is different for these groups. For the small land holder, there are 12 specified trees for which permission is required.^{xxxii} For the large land holder, the department lists out 20 trees which can be cut without permission. Any tree other than this 20 in the list would require prior permission to be cut and transported. If these trees (specified) would result in damage to life or property they are exempted from these regulations.

Prosecutions

These regulations and the varying powers given to officials keeps open the possibilities of prosecuting a private individual planter under one or many of them. Sukumaran vs. State of Kerala case (2010), reflects a unique case where the complexities in forest laws are exhibited. It shows the possibilities that an individual could be prosecuted even when he attempts to fell trees from his private property and complies with most of the regulations.^{xxxiii}

State forest officials had different explanations to justify prosecution in this. These explanations in fact reflect the opacity of the entire process.

The first is that many such incidents are trivialised saying that these are isolated cases. Secondly, they point to specific instances in which this could happen. For example, areas classified as food production areas exist from which trees are not allowed to be cut even if they are planted and raised in a private plot. Such acts are punishable under local law (village or gram Panchayat level). People need not be aware of all legislations and hence such asymmetry always makes prosecutions likely.^{xxxiv}

Interviews with the planters confirmed that such prosecutions are the result of complex and opaque laws and regulations in the system.^{xxxv} Three significant points emerged during these interviews

- There is lack of awareness and arbitrary classifications made by the planter on what are the legal limitations of planting and cutting cash generating trees. For instance they make arbitrary classifications (a small planter is someone who has 2-3 teak

trees). Large planters accordingly specialise in teak cultivation on a larger scale. This again logically implied that small planters are exempted from legal restrictions on cutting and transporting.

- Planters resort to middle men (private buyers) to sell their trees. These deals are mostly opaque and do not follow the regulations prescribed by the state including transportation policy for felled trees. In most cases it is seen that buyers volunteer to buy. Prices too are opaque (depends on quality of wood, its demand, labour charge etc.) and its determination remains mostly based on recent trends.
- Planters also perceive the activities of the forest department with scepticism. For them any involvement of the department is rife with delays and lags.

A major consequence of these rigid and complex regulatory systems is that forest departments have become increasingly corrupt. To circumvent the regulations, potential sellers and buyers are forced to bribe state officials.

Timber merchants interviewed during this study also complained about corruption in the forest department. However, they have taken the situation for granted and seems to have accepted it without questioning. Prominent sites of corruption included depots where timber is stored and auctioned, transportation sites, whenever certificates/permits/licenses are required or where procedures require police or forest officials' sanctions.

The lacklustre attitude of forest range officers who unduly use delaying tactics were also reported. One of the interviewed merchants reported having paid Rs 13,000 to the range officer as a one-time payment to obtain licence. Although, this official was suspended, the new official also demanded the same amount. The merchant ended up paying the bribe. Forest officers also collect money in the name of sponsoring their association meetings etc. from these merchants.

Conclusion

A critical way in which we can perceive the federal state law on forestry is to put it to test of ‘legal plunder’ as suggested by Frederic Bastiat. Bastiat notes the following criteria “See if the law benefits one citizen at the expense of another by doing what the citizen himself cannot do without committing a crime.” (Bastiat, 1964, 25). If it does then it is legal plunder.^{xxxvi} The interference of the state can be judged based on the outcomes it generates.

If the costs of these regulations are severe affecting the individual and the growth of the economy, the state needs to reconsider its interference. While at the onset, there is very little logic behind state intervention in controlling commercial use of resources in an individual's private property, it is worthwhile to test if at all whatever logic given by the state holds.

Available data provides a possible route to critically disprove the logic provided by the state. Growing demand for commercial production of timber and the failure of the state to encourage this production calls for an urgent reconsideration of individual freedom to grow and fell trees in his private property.

The federal states control forest resources in India. However, the broad category of forest is used to extent this control over trees planted in the private property of individuals. It is noted that the federal state's logic of intervention in forest management has not stood the test of time. This intervention has neither led to the desired increase in forest coverage nor to a decline in illegal cutting and transit. This has occurred amidst an increasing gap in the demand for wood for industrial purposes. There is a glaring omission in the forest policy of India in accounting for the increasing demand for timber in the country. This demand is now met with imports, illegal felling or smuggling.

State intervention through social forestry measures has not successfully met demands. While there are claims and counter claims across states on the success of social forestry measures, forest department officials themselves claim that it is difficult to verify any actual success in these measures.

Also, there is no major evidence that individual planting and felling of trees in private properties have led to forest or ecological degradation. While encroachment is a major factor leading to loss of tree and forest cover, it is not clearly established that felling trees from private property adds to loss of forest. Approximately 50 per cent of these losses can be directly traced to the state which attempts to facilitate this diversion to accommodate developmental activities. Greater restrictions on the individual have also facilitated corruption in the forest department.

Private commercial forestry would require well-defined individual property rights as a prerequisite. If property rights are well defined, any individual would have the freedom to produce and sell commercially all timber and non-timber products raised in his private property and earn profits from this market exchange.

ⁱ National Commission of Agriculture (1976) defines the aim of commercial forestry to increase “production of timber, fuel wood and other forest products as a business enterprise”.

Refer: My Agriculture Information Bank, <http://www.agriinfo.in/?page=topic&superid=2&topicid=1605>

ⁱⁱ Social forestry has five components: Community, farm, extension, agro and recreational. Commercial forest production forms a component of farm and agro forestry.

Refer: My Agriculture Information Bank, <http://www.agriinfo.in/?page=topic&superid=2&topicid=1605> for definition of social forestry

ⁱⁱⁱ M F Ahmed, “In-Depth Country Study-India”, Asia-Pacific Forestry Sector Outlook Study Working Paper Series, Working Paper No: APFSOS/WP/26, October 1997, <http://www.fao.org/docrep/W7716E/w7716e06.htm>

^{iv} Puja Mondal, “Forest resources in India: Use, over exploitation, causes and effects”, <http://www.yourarticelibrary.com/environment/forest/forest-resources-in-india-use-over-exploitation-causes-and-effects/28196/>

^v Forest and Forestry Sector India, Food and Agriculture Organization of the United Nations, <http://www.fao.org/forestry/country/57478/en/ind/> Food and Agricultural Organization (FAO) notes that consumption of fuel wood in India is 5 per cent above the sustainable level in India

^{vi} K.S. Kavi Kumar, Brinda Viswanathan and Zareena Begum I, “Estimation and Forecast of Wood Demand and Supply in Tamil Nadu”, Monograph 24/2013, Madras School of Economics, January 2013 <http://www.mse.ac.in/pub/Mono-24%20.pdf>; also refer P.G Ganapathy, “Sources of Non Wood Fibre for Paper, Board and Panels Production: Status, Trends and Prospects for India”, Asia-Pacific Forestry Sector Outlook Study Working Paper Series, Working Paper No: APFSOS/WP/10, August 1997 <http://www.fao.org/docrep/w7703e/w7703e05.htm#1.4>

^{vii} Dilip Kumar Jha, “India’s paper demand to rise 53 % by 2020”, Business Standard, April 19, 2014, http://www.business-standard.com/article/markets/indiass-paper-demand-to-rise-53-by2020-114041800784_1.html

^{viii} P.G Ganapathy, “Sources of Non Wood Fibre for Paper, Board and Panels Production: Status, Trends and Prospects for India”, Asia-Pacific Forestry Sector Outlook Study Working Paper Series, Working Paper No: APFSOS/WP/10, August 1997, <http://www.fao.org/docrep/w7703e/w7703e05.htm#1.4>

^{ix} D.P Malik and Sunil Dhanda, “Status, Trends and Demand for Forest Products in India”, Paper Submitted to the XII World Forestry Congress, 2003, Quebec, Canada: <http://www.fao.org/docrep/ARTICLE/WFC/XII/0228-B1.HTM>

^xC.P.R. Environmental Education Centre, “Environmental Laws of India”, <http://www.environmentallawsofindia.com/the-constitution-of-india.html>

^{xi} National Forest Policy (1988), Government of India, Ministry of Environment and Forests, New Delhi, <http://envfor.nic.in/sites/default/files/introduction-nfp.pdf>

^{xii}“Laws Relating to Indian Forest”, <http://www.lexuniverse.com/environment-laws/india/Laws-relating-to-Indian-Forest.html>; A history of these forest legislations can be seen in Archana Vaidya, “A History of Forest Regulations”, August 2011, <http://infochangeindia.org/environment/backgrounder/a-history-of-forest-regulations.html>

^{xiii} Rekha Singhal, “Changing Modes of Forest Governance in India: Evolution or Revolution?”, Indian Institute of Forest Management, pp56-72, http://awsassets.wwfindia.org/downloads/forest_governance.pdf.

^{xiv} Forest Sector Report India (2010), India Council of Forestry Research and Education, Dehradun, Ministry of Environment and Forest, Government of India: www.icfri.org/FSRI-REPORT_English.pdf

^{xv} Frederic Bastiat (1964), *The Law*, Suggested answers to selected clichés of socialism, Constructive Action: California.

^{xvi} Page 27-28 of the Citizens Charter. Translated from Malayalam

^{xvii} Agroforestry (AF) has received a focal attention of NFC. The simplest definition of AF is simultaneous practice of agriculture and forestry on private land. It is believed that AF is capable of meeting the present challenges of resource conservation and improvement of environmental quality. (National Forest Commission Recommendations, 2006)

^{xviii} Ministry of Forest and Environment, Government of India; http://fsi.nic.in/details.php?pgID=mn_93

^{xix} “Suggest Names for Panel to Protect Trees: HC,” New Indian Express, 26 April 2014, <http://www.newindianexpress.com/cities/bangalore/Suggest-Names-for-Panel-to-Protect-Trees-HC/2014/04/26/article2190237.ece>

^{xx} Ministry of Environment and Forest, Government of India, Report of the Committee Headed by Shri A. K Bansal, On the Regulatory Regime Regarding Felling and Transit Regulations for Tree Species Grown on Non Forest/Private Lands, July 2011

^{xxi} Selected states are used due to limitations in the availability of data. There are also possibilities of under reporting in the given data.

^{xxii} Some of the regulations at the state level exists especially to prevent felling of exotic varieties like Sandalwood. In the southern states of Kerala, Karnataka and Tamil Nadu where relative few regulations are reported, there has been no respite in the theft of sandalwood trees from reserved as well as unreserved forest areas. All efforts of these federal state governments have remained largely unsuccessful. (“Kerala Plans to Insert Chips in Sandal Wood Trees”, Z News, June 12, 2012, http://zeenews.india.com/news/kerala/kerala-plans-to-insert-chips-in-sandalwood-trees_781376.html; Pratiksha Ramkumar, Smugglers Cut Sandalwood Tree are Chief Conservator of Forest Residence in Coimbatore” The Times of India, October 26, 2014, <http://timesofindia.indiatimes.com/city/coimbatore/Smugglers-cut-sandalwood-tree-at-chief-conservator-of-forests-residence-in-Coimbatore/articleshow/44940863.cms>)

^{xxiii} “DRI seizes red sander logs worth Rs 9 crore from Nadiad,” Business Standard, July 4, 2004, http://www.business-standard.com/article/current-affairs/dri-seizes-red-sander-logs-worth-rs-9-crore-from-nadiad-114070401001_1.html

^{xxiv} Vithika Salomi, “DRI sleuths seize red sanders wood worth Rs 1.5crore” The Times of India, April 11, 2014 <http://timesofindia.indiatimes.com/city/patna/DRI-sleuths-seize-red-sanders-wood-worth-Rs-1-5crore/articleshow/33576897.cms>

^{xxv} “Dubai blocks smugglers with 253 tonnes of red sandalwood,” gulfnews.com, June 4, 2013 <http://gulfnews.com/news/gulf/uae/environment/dubai-blocks-smugglers-with-253-tonnes-of-red-sandalwood-1.1192721>

^{xxvi} T. E. Narasimhan, “The sad business of smuggling red sanders wood,” Business Standard, August 16, 2014 http://www.business-standard.com/article/beyond-business/the-sad-business-of-smuggling-red-sanders-wood-114081400763_1.html

^{xxvii} Forest Sector Report India (2010), India Council of Forestry Research and Education, Dehradun, Ministry of Environment and Forest, Government of India: www.icfri.org/FSRI-REPORT_English.pdf

^{xxviii} “A Guide to Timber Market”, <http://logging.about.com/od/Log-And-Lumber-Distribution/u/A-Guide-To-The-Timber-Market.htm>

^{xxix} The entire discussion is based on interviews with forest officials in the federal state of Kerala in October and November 2014.

^{xxx} These 12 trees include Sandalwood, Teak, Etti, Erul, Thenbave, Kambakam, Chebakam, Chadachi, Chanavebe, Cheeni, Vellikeel and Ambani

^{xxxi} Kerala has 14 districts

^{xxxii} These are the same trees mentioned above

^{xxxiii} <http://indiankanoon.org/doc/1699449/>

^{xxxiv} Interview with forest officials in October-November 2014

^{xxxv} Interview with Planters October-November 2014

^{xxxvi} Frederic Bastiat (1964). A part of the money earned by a private individual when he fells a tree in his private property is taken by the state when no service is required in response. This extraction of money is justified by creating a law to deter cutting trees. The state can cut trees but the citizen cant. This makes the law partial