



# The Footprints of Leviathan: Dwindling Forests of Pakistan

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# **The Footprints of Leviathan: Dwindling Forests of Pakistan**

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Pakistan's forests have been degenerated at the world's highest rate. In its efforts for afforestation and conservation, Pakistani state has done a range of experiments from complete control to community participation to farmers' cooperatives. It has continued to view forest with a timber-lens consistent with colonial legacy whereas it has not achieved its objectives of conservation. This paper considers the efforts of Pakistani state largely inconsequential and somewhat counterproductive. The paper makes the case of liberty in jungles based on private property rights, free trade of timber and market-friendly policies.

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## Uncovering Forests: stock and flow

By the end of 2015, Pakistan will miss its rather modest MDG target of achieving 6% forest cover<sup>1</sup>. It was estimated that an additional 1.051 million hectares of forest area was required to meet this target starting from a baseline of 3.317 million ha of forest cover and 0.781 million ha of farmland under tree cover in 2001<sup>2</sup>. The entire national forestry apparatus accomplishes around 44,000 hectares of new forest cover each year. Thus new plantation on all state land, communal land, farmlands, private lands, and municipal lands, would miss the target by 50%, and in other words, would need another 15 years to meet the 6% forest cover target. The extremely low forest cover implies that each Pakistani theoretically owns 0.033 hectares of natural forest which is just 3% of the world's average, one hectare per capita.

Over 1880 through 1980, Pakistan lost 50% of its forests<sup>3</sup>. The recent estimates of forest degeneration and afforestation vary widely. According to FAO, Pakistan lost 55,000 ha each year in early nineties<sup>4</sup>. The draft National Forest Policy 2015 indicates a loss of 27,000

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<sup>1</sup> It is a modest target, as the IUCN recommended cover is 20 to 25%.

<sup>2</sup> GoP-UNEP, 2013, The Environment and Climate Change Outlook of Pakistan

<sup>3</sup> Hasan, Lubna. 2001. Analysing Institutional Set-up of Forest Management in Pakistan, PIDE

<sup>4</sup> *Ibid.*

hectares each year<sup>5</sup>. The 2013 joint report by Government of Pakistan and United Nations Environment Programme mentions the high rate of loss of 80,000 hectares per annum in the KPK province<sup>6</sup>. This report estimated deforestation rate over the 1990-2005 period at 2.1 percent or 47 thousand ha annually. Forest types in this definition of forests included coniferous, riverine and mangrove forest. It is estimated that the most valuable coniferous forest is declining at the rate of 40 thousand ha annually. The deforestation rate in the country is 0.2 percent to 0.5 percent annually- which is the highest in the world.

The government does undertake afforestation measures each year, however it falls significantly short of forest losses. The Pakistani state has remained sensitive to the issue by its afforestation efforts through tree plantation campaigns twice each year. Over a period of 2000 to 2009, tree plantation equivalent to 85,000 hectares has been done, whereas the need was at least 600,000 hectares. The draft National Forest Policy (NFP) 2015 claims annual afforestation efforts resulting in plantation of 70 to 80 million saplings, equivalent to almost 44,000 ha of regeneration<sup>7</sup>. Even if these numbers are taken on face value, there is an imminent crisis, as regenerated forest through saplings can in no way compensate for loss of thousands of hectares of mature and ripe natural forests. At best, the afforestation measures barely make up for the annual loss, without making any significant incremental gains. As the draft National Forest Policy 2015 admits, 'Pakistan is one of the low forest cover countries' and then myopically states that 'existing forest resources (are) inadequate for meeting domestic demand of wood<sup>8</sup>.'

## Consuming Forests

Where do all forests go after the harvest?

According to the government, in Pakistan, 72% of wood harvest is done for fuel purposes, whereas 28% is for timber used in construction, furniture and other needs. Owing to unreliable and expensive sources of energy, 90% of rural households still depend on wood fuel for cooking purposes<sup>9</sup>. A study on Household Energy Strategy revealed that the country's consumption of fuel wood is high, with about 79% of all the households using fuel wood for cooking (82%), space heating (7.3%), water heating (9.8%) and the remaining is used for other purposes such as ovens etc. Fuel wood is also used in the commercial sector by bakeries, restaurants, in ovens, brick kilns, for tobacco curing, in ceramic products manufacturing and food processing, etc. (GOP, 2009a).

According to IUCN projections, the total wood consumption in Pakistan stood at 60 million m<sup>3</sup>,<sup>10</sup> in 2013, whereas sustainable wood supply from forests was around 20 million m<sup>3</sup>. A conservative estimate suggests that in 2015, the projected wood consumption is 51.72 million

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<sup>5</sup> National Forest Policy 2015 (Draft) [Website]

<sup>6</sup> GoP-UNEP, 2013, The Environment and Climate Change Outlook of Pakistan

<sup>7</sup> It is based on the past average, which corresponds to 85,000 ha for 90 million saplings, and a survival rate of 60%.

<sup>8</sup> Op-cited. National Forest Policy 2015 (Draft)

<sup>9</sup> Ibid

<sup>10</sup> Author's estimates based on IUCN study. It may be noted that IUCN study, in 1998, projected Pakistan's population at 233 million in 2013, whereas as per the World Bank, the estimated population is 185.1 million as of 2014 [World Bank stat website].

m<sup>3</sup>; fuelwood consumption is 37.26 m<sup>3</sup>, and for timber, it is 14.47 m<sup>3</sup>.<sup>11</sup> As per Forest Sector Master Plan 2003, the forest growth (annual yield) was estimated at 14.4 million m<sup>3</sup>. It suggests that the annual shortage is around 35 million m<sup>3</sup>. All accounts agree that the wood shortage is met by theft, farmlands, imported timber, and over harvest<sup>12</sup>.

The pattern of harvest, slow regeneration of forests and wastage during logging process implies unsustainability in forest cover in the country. The government also claims that illegal theft from forests for fuelwood and timber is primary reason for deforestation. However, state forests contribute to only 3.34% of timber requirements, whereas they contribute hardly 1% in making fuelwood needs<sup>13</sup>. Trees on farmlands are the major sources of fuel wood supply for domestic and commercial uses (GoP 2009). Out of the total timber used in the country, 91.4% is coming from farm lands while 99.8% of the total fuel wood requirement is being met from farm lands (GoP 2005)<sup>14</sup>.

Consider one more example. Forest Development Corporation, the sole government company for KPK forest products sales, in 2013-14 sold around 1 million cft of timber, which equates 28,316 m<sup>3</sup>, suggesting it accounts for 0.20% of annual timber consumption of the country. For all practical purposes, it has no market share.

It seems that practically the population does not depend on state forests for either fuelwood or even for timber needs to a large degree. Thus, people, or for that matter, timber 'mafia' should not be held responsible for deforestation. The question that if state forests are not being exploited by the people or the market, then who is responsible for degeneration of these forests? This question can only be answered by forest guards, forest inspectors and forest secretaries.

## Who owns forests?

Theft of forests implies property ownership. Approximately 66% of forests in Pakistan are state-owned and whereas 34% forests are privately owned<sup>15</sup>. However, in 31% 'privately owned' forests, state reserves the right to define the usage of forests. Practically, it means that in 97% of forests, state exhibits formal control rendering the forests in Pakistan as effectively a state property. According to FAO statistics, 85% forests are state owned, and 15% are privately owned<sup>16</sup>.

Public forests are further classified as Reserve Forests and Protected Forests, while Guzara Forests constitute the bulk of private forests. All state owned forests are free of private property rights, though non-commercial usage including passage, grazing, water and fuelwood concessions are allowed in State Forests. In Protected Forests, rights to timber for non-commercial usage are additionally granted to locals. Unlike Reserve Forests, which have been under the state control for one hundred and fifty years, the Protected Forests were

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<sup>11</sup> Zaman, Sumia Bint and Dr. Shahid Ahmad, 2012, Wood Supply and Demand Analysis in Pakistan- Key Issues, PARC

<sup>12</sup> Ahmed, Javed and Fawad Mahmood, 1998. Changing perspectives on Forest Policy. Islamabad: IUCN. Also endorsed by Zaman & Shahid, 2012 (op. cited)

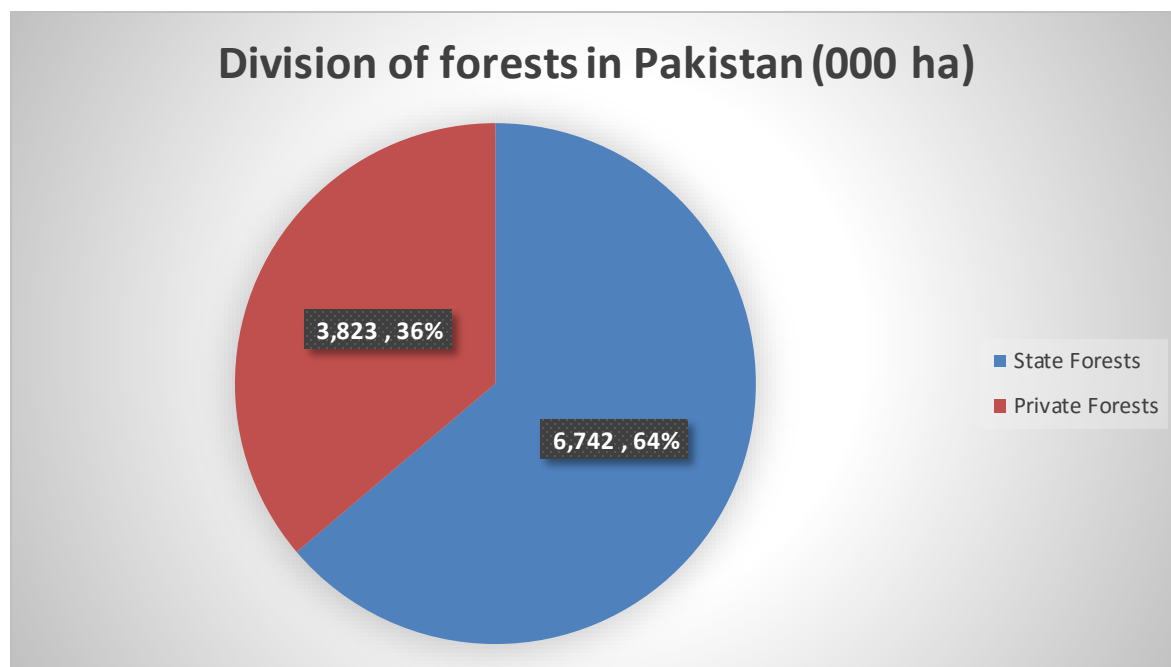
<sup>13</sup> Zaman & Shahid, 2012 (op. cited)

<sup>14</sup> Ibid.

<sup>15</sup> Ahmed, Javed and Fawad Mahmood, 1998. (op. cited)

<sup>16</sup> <http://www.fao.org/docrep/005/ac778e/AC778E15.htm> (Accessed on 31st July 2015)

brought in the state control in sixties and seventies. Historically, Guzara Forests were wastelands, which were deemed of insignificant commercial use and were handed over to local population by the colonial administration.



Source: FAO

State Forests		Private Forests	
Reserved forests	2001	Guzara forests	550
Protected Forests	4547	Communal Forests	2982
Un-Classed forests	147	Section 38 areas	36
Resumed Lands	47	Chos Act areas	1
		Private Plantations	159
		Miscellaneous	95
<b>Total</b>	<b>6,742</b>	<b>Total</b>	<b>3,823</b>

Source: FAO

**Box 1: Classification of Private Property Rights**

*Guzara forest owners:* Most *guzara* forest owners in NWFP are seriously concerned about the management of their forests by the Forest Department which, they allege, has not even been able to protect the forests effectively. They are also averse to the harvesting and marketing of their timber by the Forestry Development Corporation, which they consider to be inefficient.

*Right-holders:* A wide variety of right-holders is recognised by forest laws, ranging from those entitled to shares in timber revenues to those with mere rights of passage through a forest. The former want to obtain regular and high income from forests in which they have a share, and they call for the simplification of the time-consuming and often corrupt bureaucracy that constrains this. The bureaucracy currently compels them to sell their shares, in advance, to influential forest contractors at high discounts.

*Non-right-holding forest users:* This is the most problematic category of stakeholders in forestry, both in terms of their own ability to sustain livelihood benefits from the forests, and in terms of their conflicting relationships with others and the State. They are recognised neither by the Government nor by *guzara* forest owners. Yet they may condemn a forest to extinction by the sheer pressure of their cutting firewood and timber, and by grazing. Since they are generally not organised, it is difficult to engage them in meaningful dialogue or in forest management partnerships.

**Excerpted from: IUCN 1998**

While the state holds *de jure* rights, by ownership and by control, it is rather difficult to assert as these rights also exist with the communities in *de facto*. This is particularly true in the case of privately owned communal and *Guzara* forests, where illicit felling of trees for fuelwood is a norm<sup>17</sup>. However even in the case of Reserved and Protected Forests, the state's *de facto* control is rather limited and illicit felling of trees for non-commercial usage and unrestricted grazing is commonly observed<sup>18</sup>.

The rights are contested, and as one study concludes "state control of forests was never accepted by local population, particularly in those forests where traditional usufructs rights had existed"<sup>19</sup>. As a result, people resorted to clearing forest lands. Clearing forest lands to rid them of the state rights seemed logical on part of the right holders to ascertain their claims on these lands" [Azhar (1993), p. 120]<sup>20</sup>.

## Forest as Interplay between state and market

Pakistani state has performed various experiments to meet its policy goal of conservation and optimal exploitation of forests while meeting the needs of local communities. A detailed account has been provided in the IUCN sponsored study "Changing perspectives on forest policy" published in 1998<sup>21</sup>. Essentially, state has controlled the commercial harvest schedule with royalties to locals and has relied on forest contractors for intermediary functions of tree felling and transportation. However, the organizational form has been changing that has featured direct control by the Forest Department, Forest Contracting, Forest Development Corporation, Forest Cooperatives and state-owned corporations. Until the Contract System was abolished in 1974, forests were managed directly by the department for 26 years, and by contracting system for 50 years.

### Forest Department

Since independence, Pakistani state has continued exploiting local forests especially located in the KPK region to meet the local needs of timber. Initially, the Forest Department directly

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<sup>17</sup> Ahmed, Javed and Fawad Mahmood, 1998. (op. cited)

<sup>18</sup> Ibid. (PP 17)

<sup>19</sup> Hasan, Lubna. 2001. (op. cited)

<sup>20</sup> Ibid.

<sup>21</sup> Ahmed, J. and Mahmood, F. 1998. (op. cited)

managed the harvesting by employing petty labour contractors for felling and transportation of trees. By 1960s, the organizational form changed as the state relied on forest contractors for sales as well. The state awarded contracts to them who could bid for standing trees and once they were successful in bidding, they were responsible for felling and marketing of trees. There was no concept of royalty payment to locals. When the princely states of Swat, Dir and Chitral acceded to Pakistan, the state was forced to pay royalties to locals. The royalty formula allowed 60% of net sale proceeds to owners and right holders in Swat valley, and 80% elsewhere. The royalties were distributed equally among all the male members of the community.

Royalties were initially paid as a “fixed price system” under which the Forest Department used to pay the local concessionaires their royalties as a fixed price per cubic foot of the harvest volume. As timber prices rose sharply, this system did not accommodate rising market prices, and often the fixed price was merely one-fourth of the prevalent market price. This system was replaced with “net sale system”, under which the harvested timber was auctioned at timber markets and sold to the highest bidders. The full percentage was then returned as royalties. However it meant that the cash resided in government accounts long enough to frustrate the right holders and owners. It was this hand holding of the money that allowed the forest contractors to exploit the local right holders.

### Forest Development Corporation and Origin of Timber Mafia

It had been realized that to compensate for over-bidding, which was a normal practice, the forest contractors resorted to over-harvesting of forests. In order to discourage them, the NWFP government established Forest Development Corporation (FDC), in 1976, which limited the role of contractors to cutting and marketing of trees, while retaining the ownership of timber in state's hands. However, FDC was soon exploited by ingenious timber traders. They devised a complex system of advance purchase of royalty rights from locals, under-cutting of bids, identity concealment and later on enjoying windfall gains when timber was sold at market rates. They spotted the huge arbitrage between the official price of timber and its market price. The contractors obtained the logging schedule, contacted royalty owners whose compartment was mature for logging, paid them an upfront cash price higher than the government price, but significantly below market price, and in exchange, obtained royalties through attorneys. Once they owned royalties, these contractors then participated in the bidding for cutting and transportation of trees and were able to under-cut all bids. Once they got the contract, they could then harvest the identified compartment, and mostly over-harvested the forest. Finally, these contractors brought the timber in the market, where Forest Department Corporation sold them at market price. As 60-80 percent of sale proceeds belonged to concessionaires, the contractors received the cash through their attorneys from the concessionaires. Thus this cash did not reach the right holders, who had already sold their rights to contractors. It is these timber traders, who are infamously called ‘timber mafia’.

About FDC, the IUCN report had this verdict: “The FDC, established to replace contractors and introduce scientific forest management, has simply become an agency to award logging contracts to the very contractors it was meant to replace and has failed to invest in forest management<sup>22</sup>.” (PP 70)

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<sup>22</sup> Ahmed, Javed and Fawad Mahmood, 1998. (op. cited) PP.70



Forest Development Corporation continues to exist to date. As per latest available numbers<sup>23</sup>, FDC owned assets of Rs. 1700 million as of 2012-13. Since 1977, FDC has paid around Rs. 6 billion as royalties, and earned Rs. 5 billion for itself paying Rs. 572 million as forest duty. In 2012, its operative profit was Rs. 86 million. FDC also contributes to Annual Development Programme for local forest infrastructure development. Forest management and harvesting operations are divided between Forest Department and FDC. The department is responsible for management and marking of trees and eventually supervision and regulation, whereas FDC is responsible for harvesting, transportation and sales of timber in auction markets.

### Forest Cooperatives

Realizing that FDC was also exploited by timber traders, the state also turned to participatory led management and decided to establish cooperatives. The cooperative societies were set up in Hazara division in 1980, and by 1993, there were 33 operational Forest Cooperatives. They were set up with the explicit purpose to transfer the management and control of forests to locals, however, they were politicized. As IUCN study concluded: "The co-operatives were dominated by a few major owners, belonging to a single family in some cases. There was virtually no egalitarian participation by small owners and right-holders."

By late eighties, it was established that instead of enhancing conservation, these cooperatives had contributed to massive deforestation in the Hazara division. As the 1992 flash floods from Hazara division were attributed to deforestation, it prompted then Prime Minister to announce an immediate ban on logging and all those cooperatives were consequently suspended. Thus an experiment in the name of community participation miserably failed in helping the forest conservation.

In the meanwhile, state also experimented with a vertically integrated state-owned corporation "Dir Forest Complex", a project conceived in late sixties. It was based on a survey by a Swiss team which had predicted presence of huge quantities of mature timber in the Dir valley, which if not harvested rationally, would have been wasted. The estimated timber was to the tune of 3,500,000 cubic feet per annum. Dir Forest Complex was established in 1967 and the state awarded an international contract to a Polish firm and established a state of the art machinery to harvest Dir forests. It was estimated that the timber from Dir forest could serve the needs of entire province. However the political and socio-economic situation was not accounted for. By mid-seventies, local people from Dir, which was originally a princely state, were up in arms against the state. The Dir Forest Complex was only partly operational as huge technical errors had been identified in the survey leading to conclusion that there was not enough timber to meet the minimum operational needs of the imported plant. Eventually Dir Forest Complex was completely abandoned amongst lot of local resistance and technical follies.

IUCN issued this verdict on the state experiments: "The well-intentioned experiments described above failed to fully achieve their objectives."<sup>24</sup>

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<sup>23</sup> <http://fdckpk.com/Ach-assets.php> (Accessed on 27th July 2015)

<sup>24</sup> Ahmed, Javed and Fawad Mahmood, 1998. (op. cited) PP. 69

## End of Policy: Ban on Forest Harvest

In 1992, following extensive flooding, the federal government imposed a moratorium on logging for two years, which was extended in 1997 for indefinite period. In 2010, the federal government unveiled a new National Forest Policy, which made following comments on the ban:

“Ban on commercial harvesting, imposed in 1993 by the Federal Cabinet has disrupted forest management cycle depriving forest owners of their legitimate rights. Consequently the Forest Management Plans have become non-operational and the forest owners have lost interest in protection and management of their forests. Out of sheer frustration many of them have resorted to large scale illicit cutting of forests”. (National Forestry Policy 2010)<sup>25</sup>

Understandably, while the message of draft National Forest Policy 2015 is same, the tone is much softer. The ban is operational to date with exception of couple of temporary relaxations to clear backlog of dead timber or pre-ban harvested timber. As any students of rudimentary economics will suggest, this ban was counter-productive. It led to price hike, encouraging timber traders to strengthen their mafia; and led to an increase in the smuggled in-flow of timber. A study accounting for available timber in the market suggests at least ten times more than what was recorded by the forest department (Fischer et al 2010)<sup>26</sup>. One paper argued clearly that “decline in timber and fuel wood production can be largely attributed to ban on harvesting. Resultantly, rise in timber prices forced private owners of the forests to cut forests illegally and sell the same by all means. In fact the ban has accelerated the pace of deforestation instead of improving the health of the forests. Forest density has also reduced due to ruthless cutting of trees”<sup>27</sup>.

## Joint Forest Management

Encouraged by international donors, the government began to realize what is called “Joint Forest Management” (JFM) under with local communities and private sector groups having clear use rights, and with extensive forest department involvement at each stage. In 1996, an amendment in the Forest Act 1927 was introduced to operationalize JFM. A few pilot projects were conceived to implement JFM in nineties largely with the support of development agencies though supported legally by the government. The IUCN report looks at JFM pilots with some hope. A few years later, leading commentators on sustainable development such as Suleri noted in the wake of promulgation of The Forest Ordinance of NWFP 2002, that discretionary powers of forest officers to revoke a community-based organization (CBO)/Joint Forest Management Committee (JFMC) agreement as suggested in this ordinance would result in uncertainty and insecurity among different JFMCs/CBOs.<sup>28</sup>

JFM attempts to change the centralised, top down, bureaucratic forest management system introduced by the British in the last century to one centered on decentralised, participatory, local need based planning and management. Central to the JFM concept is the premise that local forest dependent woman and men have the greatest stake in sustainable forest

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<sup>25</sup> Government of Pakistan, Ministry of Climate Change, <http://www.mocc.gov.pk/gop/index.php?q=aHR0cDovLzE5Mi4xNjguNzAuMTM2L21vY2xlL2ZybURLdGFpbHMuYXNweD9pZD00JmFtcDtvchQ9cG9saWNpZXM%3D> (Accessed on 27<sup>th</sup> July 2015)

<sup>26</sup> Zaman & Shahid, 2012 (op. cited)

<sup>27</sup> Ibid.

<sup>28</sup> Shehbaz, Ali and Suleri (2006), A Critical Analysis of Forest Policies of Pakistan: Implications for Sustainable Livelihoods

management because of their cultural, economic and environmental dependence on forests<sup>29</sup>.

## Timber Business of State

For the state, forests equate timber. More they focus on timber, greater is their loss.

Timber is called the major forest produce, whereas for the local people, it is the opposite. The forest dependent community seldom needs timber. Timber is essentially used by the modern urban-industrial system. The government control over the forests has definitely meant a reallocation of forest resources away from the needs of local communities, and towards urban and industrial needs. This has resulted in both “increased social conflict and increased destruction of the ecological resource itself<sup>30</sup>”.

Though the quantity restrictions had been imposed on the wood removal by the community, the state itself was involved in excessive timber harvesting for the construction of cantonments and railways and also during the World Wars. Finally, the management system and its system of contracts encouraged ‘collusion’ between contractors, foresters and influential locals, which led to the flourishing business of the ‘timber mafia’. With the result that the local community considered it fair to take their share of the resource. Hasan has also talked about a “Contractor-Forester Alliance” at length (Hasan, ISS PP 16). “Politicians and the “timber mafia” often collude, to gain access to coveted contracts which determine the management, stocking and use of forests; thus they often exercise the most influence on forest policy and decisions” (IUCN- 1998). For some commentators, state management has resulted into marginalization of forest dependent communities and has given rise to timber mafia (Suleri 2006).

The government holds illegal timber trading as a major factor in deforestation. True to its leviathan footprint, the government has decided to set up a ‘Timber Regulatory Authority’ with the grandeur goal of “checking inter-provincial timber movement and trade of timber; international import and export of timber and related forest products”.

In contrast, National Environment Policy 2005 recommended to “eliminate all sorts of import duties on timber products while taking into account the environmental sensitivities of neighbouring Afghanistan”<sup>31</sup>.

Wood imports declined very sharply (from Rs. 17.58 in 2004 to Rs. 4.5 billion in 2005) after the removal of negative list under APTTA in 2005. This resulted in massive dumping of imported wood coming in the name of APTTA and getting absorbed in the local markets. Thus a huge amount of imported wood is there in the Pakistani market that is much higher than the officially reported imports of wood and wood products. This clearly shows that most of the imported wood and wood based products comes through the means other than official means.

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<sup>29</sup> Hazra, Arnab Kumar. 2002. History of Conflict over Forests in India: A Market Based Resolution. New Delhi: Liberty Institute.

<sup>30</sup> Agarwal, quoted in Hazra, Arnab Kumar. 2002 (op. cited.)

<sup>31</sup> GoP-UNEP, 2013, The Environment and Climate Change Outlook of Pakistan

## Cost of government intervention

Since 1977, not only forests are controlled by the state, their complete management, harvesting and marketing to forest products lie firmly in the hands of the state, although forms have varied. As prices are the most convenient form of measuring welfare for all stakeholders, it will be helpful to draw a comparison between the prices of local timber with imported timber. According to a 2011 survey of Islamabad Timber market, the comparative local timber was at least twice as expensive as imported timber. While the nominal prices of imported timber may be slightly low, when losses in refinement of local wood is concerned, the final prices of local wood, even if quality issue is discounted, are usually double than imported timber. For instance, in 2011, imported sawn Kail wood was priced at Rs. 950/cft, compared with un-sawned local Kail wood at Rs. 1,000-1,400/cft. Upon sawning, 30-35% wood is lost, increasing the price to Rs. 1900/cft on average.<sup>32</sup>

An important factor in high local prices is levy of duties and taxes. In the sale value announced at local timber markets, where FDC brings the log-wood for auction, duty is levied at Rs. 30/cft. Further, a Forest Development Fund is calculated at a range of Rs. 4 to Rs. 10/cft. Then, sales tax is imposed at 17% after which a 10% income tax is deducted. Thus, on average, local timber is taxed at 35% *before* it reaches urban markets.

## State vs. Community

As argued earlier, Pakistan's forests are fast dwindling posing threats to livelihood of local communities, creating impending shortage of resources, and causing significant threat to environment due to vanishing natural protection against flash floods. There seem to exist two diagrammatically opposite views on the management of forests in Pakistan. Not unsurprisingly, the state holds the community responsible for illicit and irresponsible harvesting of forest, whereas the community holds state as responsible for failing to meet their livelihoods needs as well as forest conservation.

The historical precedent of the Forest Department is the erstwhile British administration. In 1864, the British took over all forests in India and declared them a state property. The department was given one primary target: supply timber for the northwest railways and construction of cantonment. "The imperatives of colonial forest management were essentially strategic, i.e. to meet the critical imperial need for wood for railways and during the world wars, and commercial, i.e. to assure steadily increasing revenue to the state [Guha (1993), p. 83]<sup>33</sup>.

Since then, the state has stopped constructing railways and cantonments at the same speed, however, the timber-driven forest management continued to drive the policy goals. While reviewing the case of India, Hazra (2002) argues, "The assertion of state monopoly right and the exclusion of forest communities have marked the organising principles of forest administration, since its inception in 1864." A Pakistan-specific study came to remarkably similar conclusion: "In essence the forest departments remain, in mandate and approach, remarkably similar to their colonial progenitors" (Ahmad & Mehmood 1998).

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<sup>32</sup> Zaman & Shahid, 2012 (op. cited)

<sup>33</sup> Hasan, Lubna. 2001. An Anatomy of State Failures in the Forest Management in Pakistan.

The colonial goals of managing forests were captured in the Forest Act 1927, which was in its own words “An Act to consolidate the law relating to forests, the transit of forest-produce and the duty leviable on timber and other forest-produce”. This Act and the associated Hazara Forest Act 1936, with its distinct focus on the wastelands (Guzara forests) are still the governing legal foundations of forest management in Pakistan.

There are several accounts which point out to the state as largely responsible for failure in developing a system that could allow a sustainable exploitation of forests leading to its deforestation. Lubna Hasan (2001) writes that “Unfortunately, the set-up, which should have provided an atmosphere that is conducive for the conservation of forests, worked opposite<sup>34</sup>.

Quoted in an IUCN study, an earlier evaluation of NFWP (KPK) Forest Department also holds the “structure of the organization” as “one of the major causes of failure.” Same study has argued that the forest department has had a “complete monopoly” over the public good aspects of forests, however there was no accompanying transparency and accountability arrangements<sup>35</sup>.

From a different angle, the federal government also considers provincial forest departments unprepared and unsuitable to cope with the overall challenge of maintaining sustainable forests. Its draft National Forest Policy 2015 says “federating units have been following outdated forest management planning that is inconsistent and incapable of meeting requirements of changing world.” Ironically, however, to support its claim, the federal policy document cites one of its own policy blunder of imposing a ban on commercial harvesting and logging in 1992. This policy virtually brought all management plans for forests to a standstill.

The government views the forest communities in ownership of forests as largely responsible for deforestation while attributing it to their livelihood requirements. The draft National Forest Policy 2015 states that “at the national level, the rate of deforestation is estimated at 27,000 hectares per year which mainly occurs in private and community-owned natural forests<sup>36</sup>.” However as argued earlier, this claim cannot be substantiated as in practice communities and markets do not depend on state forests.

The government has shown its clear intention to ‘nationalize’ the private and communal forests to ensure their sustainability by making ‘adequate payments’ to rightful owners and right holders while drawing from the international funds available under the Cancun Agreement. Funds are available to be paid to forest dependent communities to control deforestation and enhance forest carbon stock.

It has been conveniently ignored that historically, forests were under no threat before the modernizing force of colonial administration nationalized them. As the communities reacted and began to harvest freely to exercise their own control, the state resorted to rules and legislation to stop this process of irresponsible harvesting. In a way, the rules also helped in checking the exploitation pace of the state as well by defining a proper schedule of harvesting according to the maturity of different compartments in the forests.

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<sup>34</sup> Ibid.

<sup>35</sup> Ahmed, Javed and Fawad Mahmood, 1998. (op. cited) PP. 105

<sup>36</sup> Op-cited; National Forest Policy 2015 (Draft)

It has been argued that the focus of forest management in Pakistan has been on conservation of forests and livelihood needs of local communities have been ignored<sup>37</sup>. However, if conservation was true goal, then it should have served the local communities by mere preservation alone. We argue that not only real, but also revealed goal of the policy, as clearly captured in the Forest Act 1927 has been self-serving exploitation of natural resources. Exploitation, not conservation, is the real and revealed goal of forest management. Just as a game theorist would predict, the local dwellers have only responded in same coin by competing in exploitation, instead of cooperating for conservation.

As the community holds *de facto* control over most of the forests, they maximize present harvest due to uncertain future. On the other hand, state exerts its control through re-plantation and through timber business. This in turn aggravates the fear among locals of losing their property and they increase their harvest. Thus a vicious cycle has been set up threatening the foundations of ecological system. As Hazra (2002) puts it succinctly, “resources that had been under a *de facto* common property regime enforced by local users were converted to a *de jure* government-property regime, but reverted to a *de facto* open-access regime leading to disastrous consequences”<sup>38</sup>.

## Tragedy of Commons and Property Rights

It has been argued that environmental problems like degradation of forests are property rights problems. In fact, most conflicts in forests arise because of difficulties in clarifying the property regimes. Property right, however, is not just a single right, but also a bundle of rights. It should include (1) right to manage the forests, (2) right to use and sell its products, and (3) right to residual income and its disposal.

“Typically, the process of control of the forests by the government paid little attention to the existing tenurial rights of the local people. The infringement of their rights due to the restrictions imposed on them infuriated the forest dwellers and led to considerable deforestation by them. On the other hand, the state invested little effort in establishing a property regime that could ensure an optimal exploitation of forests, which resulted in a discordant structure of property rights fueling deforestation”<sup>39</sup>.

State is primarily responsible for protecting the life and property of people. While private property is easy to define and demarcate, common property, such as forests, cannot be neatly defined. Where such properties are historically owned by communities, the definition becomes even more complicated. An additional factor is that the way such property is defined has significant consequences for coming generations, thus absolute rights to even communities in the case of natural resources are contested.

What if a community collectively decides to harvest its owned forest completely for its own use in complete disregard to either next generation, or in some cases, to the people living downstream? This concern is used to justify state ownership while invoking the “tragedy of commons” argument. As Hazra (2002) argues, “this notion undermines the concern and the

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<sup>37</sup> Shehbaz, Ali and Suleri (2006), op. cited

<sup>38</sup> Hazra, Arnab Kumar. 2002 (op. cited)

<sup>39</sup> Hasan, Lubna. 2001. Op cited. PP 19

ability of the forest dependent communities to preserve their own natural resource and ecosystem, placing the state forest departments in perpetual conflict with them.”

Hazra has provided several examples in the Indian context, where communities, when empowered, have shown responsibility and ownership thus defying tragedy of commons thesis. Following box illustrates this point.

**Box 2: Community Management of Forests**

Lapanga is a village in Orissa, some 40 kilometers from Sambalpur. The village is a perfect example of Community Management of Forests (CFM), which was started way back in 1936 when some villagers who were landlords and dependent on agriculture for survival, donated 40 ha of land adjacent to the forest so that the forest could grow in size and sustain the people. The village Forest Protection Committee which was formed for the first time then, meets once a year when all the village people participate in the annual meeting, and new office bearers are chosen. Moreover, every two years, one-third of the committee members are changed. Villagers are free to collect NTFP and fuelwood. Once a patch of forest is harvested it is closed for 5-10 years. The forest was harvested in 1953 for the first time. Thereafter, it has been done in a cycle of three to five years.

Another village, Chadayapalli, which protects 1,800 ha of forestland, has a systematic way of collecting and spending the money earned from forest resources. It issues passes for timber and bamboo for fuelwood to villagers twice every week at the rate of Re 1 per piece of bamboo. The village has been earning Rs. 90,000 every year in this way. The village school is run on this money and recently the committee spent three lakh rupees for construction of a road to the village, out of which Rs. 42,000 was given as compensation for acquisition of land to the villagers. Clearly these villages do not depend on *panchayat* grant or government money. [Quoted in Hazra 2002]

Elinor Ostrom was given the Nobel Prize in Economics for her emphatic and convincing case of common pool resources as a preferable method for conserving natural resources. There are conditions for a successful community based organization, as she herself argues:

*“Self-organisation is more likely to occur when forest resources are highly salient to users, when users have a common understanding of the problems they face, when users have a low discount rate, when users trust one another, when users have autonomy to make some of their own rules, and when users have prior organisational experience<sup>40</sup>.”*

Additionally, she writes that, “the growing theoretical consensus does *not* lead to a conclusion that most users utilising common-pool resources will undertake self-governed regulation. Many settings exist where the theoretical expectation should be the opposite. Users will overuse the forest unless efforts are made to change one or more of the variables affecting perceived costs or benefits<sup>41</sup>.”

Many of these conditions are dependent on institutional settings in a society. While knowledge about benefits and skills about community organization can be imparted, and autonomy can be legislated, trust is hard to be fostered through external means. This was also evident in Pakistani experience where forest cooperatives failed to deliver and led to even more exploitation of forests due to politicization of the experiment.

Given the limitations of communal ownership, libertarians recommend private property rights. As Batten has argued: “A responsible private owner of forest resources must maintain the maximum possible present value of his property at all times if he is to earn

<sup>40</sup> Ostrom, Elinor, 1999. Self-Governance and Forest Resources. Jakarta: CIFOR. PP1

<sup>41</sup> Ibid.

maximum returns. He must balance today's production with future productivity, which requires a long-term view. The property must be kept in productive condition, and the owner doesn't do that by destroying his resources<sup>42</sup>".

## Some Solutions Grow on Trees

Incentives matter. The IUCN study extensively quoted above had stressed on the role of incentives as primary driving force for conservation, sustainable exploitation, and ecological balance. It has argued that owners of forests, in contrast to right-holders and tenants as well as landless in the forests have much larger incentive to protect and conserve. Elsewhere, it has been argued that, "(d)ifferent bundles of property rights, whether they are *de facto* or *de jure*, affect the incentives individuals face, the types of actions they take, and the outcomes they can achieve." (Schlager and Ostrom, 1992, p. 256). Thus in any policy framework, incentive structure defined and enforced through a formal legal framework around property rights will be critical.

But then emerges the even more critical question: how to define the property rights of forests? Based on the discussion so far, there are three broad possible policy options. One option is for the state to completely nationalize the forests. This intention has been clearly mentioned in the draft National Forest Policy 2015. The draft provides as a policy measure to purchase forest land to "protect privately owned and communal forests" and to trade-off "rights of forest use" in both federal administered areas and provincial regimes. If this is done even partially, it will mean going back more rigidly on the footsteps of colonial administration, which nationalized Indian forests in 1864. However, this is not only illogical given the failure of state led management of forests, it is also impractical as it will draw on huge financial resources which Pakistani state can ill afford.

Second broad option is to provide elaborate rules for defining forest as commons property, which is "a way of privatising the rights to use a resource without having to divide the resource into individual holdings" (Hazra 2002). Common pool resources is a popular option amongst environmentalists and advocates of Joint Forest Management. Although this option defies the classical "tragedy of commons" case, there are several examples around the world, which indicate the efficacy of this arrangement for protection and conservation of forests. Regardless of its academic subtleties, community based management has been tested and failed here on account of political power relationships at tribal level. The experience with the forest cooperatives is a proof.

Joint Forest Management (JFM) entails a public-private partnership through elaborate agreements on the use of forest land, harvest schedule and marketing of forest products including timber, fuelwood and non-timber forest products. Under JFM, the property rights are not absolute and the state and communities share rights of ownership, control and management. JFM has been tested at pilot scale in different area of the country and enjoys legal support. However, it finds no mention in the draft National Forest Policy 2015. Theoretically, it is also embroiled in power disputes between forest department and forest dependent communities. As Hazra (2002) concludes in the Indian case, the existing JFM

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<sup>42</sup> Batten, Charles R. 1981. Towards a Free Market in Forest Resources. Cato Journal: Vol 1, No. 2. PP 514



process still considers community at periphery and the forest department at the center, while indicating that this process is threatened to be de-railed due to red-tapeism<sup>43</sup>.

A distinctive third option is private property rights, which can be exercised at the level of a private enterprise or at the level of a community. *“Ownership denotes control. When control of a forest property is taken from its owner, conflict is introduced. The owner is forced to do what he would not otherwise have done, or he is prevented from doing what he would have done”*<sup>44</sup>.

Private property implies outright ownership of an entity, tribe, family or an individual over a natural resource. The absolute ownership also implies that the government will have no control on the forest land, forest harvest, and marketing of forest and non-timber forest products. Finally, private property rights implies that the owners are also paid for the environmental and ecological services in terms of protection from floods and carbon sequestration. The value of these functions is generally much greater than any use value that could be derived from direct consumption. A study found that the annual value of these functions in three forest areas in China was between two and ten times the gross output value of timber, wood processing, and orchard production (Hazra 2002). As Hazra recommends, “forest communities could be paid for every hectare they reforest in the interests of flood prevention or carbon sequestration”.

The case of timber market already provides a vivid example of private property rights. Now, 90% of all locally produced timber comes from privately irrigated farm lands and not from natural forests. This has particularly increased in the wake of ban on commercial harvesting imposed by the federal government in 1992 that has continued since then with lapses, at least on papers. In addition, the government needs to abolish all import duties and import taxation on timber, if it is serious in crushing the so called “timber mafia”. As IUCN report recommended long time back, opening up of timber market will breach the ‘mafia’ by lowering their implicit profit margin and will undercut their deals with royalty holders (IUCN 1998: 115). The government also needs to ensure that there exist no arbitrage between open market prices and government announced prices of timber. It is this arbitrage that has encouraged the timber traders to exploit both the owners of forests and the forest departments, and ultimately raising the timber prices in urban market thus also raising construction costs.

The forests and its products, including timber, fuelwood, and ecological services, present a bundle of economically exploitable rights. On the other hand, the poverty and hunger of forest dwellers, and an excessive harvesting by timber traders, will defy all goals of conservation and protection. The punitive nature of state laws by armed enforcements will only deteriorate the level of trust that has been shaken since colonial times. Thus the ownership of forests should go back to where it originally belonged: the locals. This requires that the leviathan footprint should be removed from forests altogether. This also needs legally backed and fully delineated property rights structure. In the absence of private property rights, and faced with the ever expanding urban-industrial and real estate complex in Pakistan, the locals will have no incentive to conserve their habitat, and forest resources will be depleted beyond its regenerative capacity.

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<sup>43</sup> Hazra, Arnab Kumar. 2002 (op. cited)

<sup>44</sup> Batten, Charles R. 1981. Towards a Free Market in Forest Resources. Cato Journal: Vol 1, No. 2. PP 511

