Non-Timber Forest Products & Forest Governance

A REPORT

FGLG INDIA

Non-Timber Forest Products and Forest Governance

Synthesis Report

Based on three state-level studies carried out during 2006-07:

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Preface

This report synthesises findings of three state-level studies on governance issues related to selected Non-Timber Forest Products (NTFPs), which were carried out in three Indian states. The three state-level studies on which this report is based are:

1. Andhra Pradesh: *Technical Study on Selected NTFP Based Enterprise Governance by* M. Gopinath Reddy, Centre for Economic and Social Studies, Hyderabad.

2. Madhya Pradesh: *Technical Study on Selected NTFP Based Enterprise Development by* Prodyut Bhattacharya, International Centre for Community Forestry, Indian Institute of Forest Management, Bhopal.

3. Orissa: *Study on NTFP Policies, Production and Management with Special Focus on NTFP Enterprises in Orissa by* Sanjoy Patnaik, Regional Centre for Development Cooperation, Bhubaneswar.

These studies were supported by the Forest Governance Learning Group – India (FGLG – India), which is part of a wider international initiative coordinated by the International Institute for Environment and Development (IIED), London. Under the FGLG initiative, different activities to improve forest governance are being carried out in seven African and three Asian countries. The work in Asia is being supported by the Regional Community Forestry Training Center for Asia and the Pacific (RECOFTC), Bangkok, in addition to IIED. The national FGLG groups develop and exchange practical ideas and tactics to promote just and sustainable forest use. The focus is on specific practical action points for implementation rather than adding to the already long list of general prescriptions. The list of members of FGLG – India is provided in the Appendix.

List of Acronyms

APFDC	Andhra Pradesh Forest Development Corporation
CFM	Community Forest Management
DDT	Dichloro-Diphenyl-Trichloroethane
DPIP	District Poverty Initiative Project
FD	Forest Department
FFA	Free Fatty Acid
FGLG	Forest Governance Learning Group
GCC	Girijan Cooperative Corporation
IIED	International Institute for Environment and Development
INBAR	International Network for Bamboo and Rattan
JFM	Joint Forest Management
MoEF	Ministry of Environment and Forests
MPMFPCF	Madhya Pradesh Minor Forest Produce Cooperative Federation
MPRLP	Madhya Pradesh Rural Livelihoods Project
NGOs	Non-Government Organisations
NMBA	National Mission on Bamboo Applications
NMBTTD	National Mission on Bamboo Technology and Trade Development
NTFPs	Non-Timber Forest Products
OFDC	Orissa Forest Development Corporation
PACS	Poorest Areas Civil Society Programme
PRI	Panchayati Raj Institution
RECOFTC	Regional Community Forestry Training Center for Asia and the Pacific
SHG	Self-help Group
TDCC	Tribal Development Cooperative Corporation
TRIFED	Tribal Cooperative Marketing Development Federation of India
VSS	Vana Samarakshana Samithi (Forest Protection Committee)

Executive Summary

Non-Timber Forest Products (NTFPs) play an important role in the life and economy of people living in and around forests. Many NTFPs are important subsistence products while others are a valuable source of income. India presents a compelling case for the study of NTFPs and their governance. Not only are India's forests richly endowed with NTFPs, it also has one of the largest populations of forest-dependent people in the world.

This report synthesises findings of three state-level studies on NTFP governance carried out in Andhra Pradesh, Madhya Pradesh and Orissa. The studies focus on five key NTFPs that are important both economically and ecologically, viz. bamboo (*mainly Dendrocalamus strictus and Bambusa spp.*), tendu leaves (*Diospyros melanoxylon*), mahua flowers (*Madhuca latifolia*), tamarind fruit (*Tamarindus indica*), and sal seeds (*Shorea robusta*).

Product-specific Issues

Bamboo

Bamboo is a versatile NTFP with a wide range of domestic, commercial, and industrial uses. A large number of rural artisans also depend on bamboo for their livelihood. Although there is great demand for bamboo, the production is far below its potential. The constraints faced by private bamboo growers are a major reason for low production. These include mandatory registration with the Forest Department (FD) in some areas and cumbersome procedures for obtaining transit permits for transporting the produce.

Although special provisions have been made by all three state governments to supply bamboo to the traditional bamboo artisans, such artisans still face a number of problems. First, the supply itself is limited. For example, while artisans in Orissa are supplied bamboos from 'protected forests', most bamboo coupes are in the 'reserved forests'. Second, no felling is permitted for several months every year though artisans require bamboo all year round. Most importantly, however, artisans require green bamboo but bamboo felling rules specify that only mature bamboo should be harvested.

In spite of its great potential, bamboo-based enterprises have not developed adequately in the country. There are a number of promising bamboo-based enterprises that could help in tapping the potential of this versatile NTFP to improve income and livelihood security of some of the poorest sections of the society. The practical feasibility of such enterprises at the local level has been shown in Andhra Pradesh where about 500 Vana Samarakshana Samithi (VSS) are involved in producing nearly 150 tonnes of bamboo incense sticks per month. It is hoped that the recent establishment of two national bamboo missions would help in promoting the bamboo sector in the country.

Tendu Leaves

Tendu leaves are used for rolling country cigarettes or beedis. These provide seasonal employment to millions of collectors every year. The trade in tendu leaves has been nationalised in all three study states and only government or its authorised agents can procure these leaves from the collectors or growers.

There are a number of governance issues related to tendu leaves. One of the most important issues is that tendu leaf collection is not a very remunerative activity. At the procurement rate set by the government, the collectors hardly, if ever, manage to get the official minimum wage. In many areas, even this amount is paid to them only after several months.

Although state governments have introduced a number of progressive measures such as establishment of collectors' cooperatives, collectors' group insurance and sharing of net profit with the collectors, the field-level impact of these measures has been diluted due to various reasons.

Mahua Flowers

Mahua flowers are used to brew country liquor and are also consumed as food. Although a large number of people are engaged in mahua collection, they do not even manage to get the official minimum wage. For example, in Andhra Pradesh it has been estimated that at the minimum wage rate, the value of labour input for collecting one kilogram of mahua flower is Rs 7.15. However, the procurement rate is only Rs 6 per kilogram. In many cases, the collectors do not get even these rates as they are exploited by the local traders who use a barter system rather than cash payment and rarely use proper measurements.

Another major issue is storage. Drying and proper storage of flowers requires considerable skill. The quality of improperly stored flowers deteriorates rapidly. Due to their inability to store flowers properly, many collectors sell their produce immediately, though if they are able to hold on to their stock for a few months, they can get a much better price in the off-season period. Apart from technical difficulties in storage, there are several policy restrictions as well. For example, in Orissa each family is allowed to store only up to five quintals of mahua flowers in the season and just one quintal during the off season. The removal of such restrictions can have a positive impact on mahua-based enterprises. Such an impact is evident in Madhya Pradesh, where several restrictions, such as transit permit requirement, on mahua were lifted in 1996.

Another area that needs urgent attention is value addition and product diversification. Although the bulk of mahua is used for making liquor, it can be processed into several other products such as candies, squashes, pickles, and vinegar.

Tamarind Fruit

India is the world's largest producer of tamarind, which is collected from trees growing on all types of lands – forest, common, and private. Tamarind has a huge domestic and overseas market and commands a good price from the end-consumers. However, primary producers and collectors get very low prices and the bulk of the value is captured by the middlemen. Many collectors in Orissa and Madhya Pradesh are forced to sell tamarind at very low rates to petty traders. Some traders barter tamarind with low value items resulting in a major loss for the collectors. Many collectors also have credit linkages with the traders and use tamarind to clear their dues. In this arrangement too, the collectors end up getting a raw deal as the interest rates are usually quite high.

In Andhra Pradesh, the Girijan Cooperative Corporation (GCC) has been granted monopoly over the tamarind trade in the entire state though its operations are focussed on the scheduled (tribal) areas. Therefore, it is able to procure only about 5% of the total tamarind available in the state. Another important issue relates to the transit permit. Although panchayats in Orissa have been empowered to issue transit permits to transport tamarind (and several other NTFPs), transporters still face harassment at the forest check points as FD staff (especially those of other states) refuse to accept permits issued by the *panchayats*.

Although tamarind can be processed into a number of value-added products such as powder, granules, concentrate, blocks, and drinks, it is usually sold in the raw form by the primary collectors. There is great potential to enhance the income of the collectors and producers by setting up tamarind-based enterprises in the areas of production. There has been some effort by GCC in this regard but much more needs to be done.

Sal Seeds

Sal seeds are collected in the sal belt of central, eastern, and northern India. The sal seed trade was nationalised in 1977 in Madhya Pradesh and in 1983 in Orissa. It was subsequently denationalised in Orissa in 2006. The main issue in the case of sal seeds, like many other NTFPs, is the extremely low price obtained by the collectors. It is estimated that a collector earns less than half the official minimum wage.

Sal seed has many uses in the food industry. It is a natural product grown without using any fertilisers or pesticides. This could have been its unique selling point. However, due to improper collection and storage this advantage is usually lost. The collectors put the seeds in used fertiliser or chemical bags, thus contaminating them. More seriously, pesticides are used during storage by the traders. Due to this reason, export market of sal seeds has been adversely affected.

The quality of sal seeds also depends on their moisture and Free Fatty Acid (FFA) content. The price of the seeds depends on these parameters as well on the extent of contaminants. Although these aspects can be easily tested, neither collectors nor *panchayats* have much awareness of these issues. Unscrupulous traders often take advantage of their ignorance and pay low rates for their produce, citing poor quality on these parameters. The FFA content should ideally be below 5%. In order to keep sal seeds' FFA percentage low, they should be processed within 72 hours. However, due to various bottlenecks, this period is often as long as five months. This reduces the quality of the product and affects its market.

Sal fat is a good substitute for cocoa butter and it could potentially have a huge market in the chocolate industry. However, the Indian Prevention of Food Adulteration Act forbids use of substitutes such as sal butter.

The collection of sal seeds is presently (March 2008) suspended in Madhya Pradesh due to problems of sal borer attack and regeneration. This has resulted in the loss of livelihood for millions of poor people who used to get employment for up to 80 days a year.

Overarching Issues

The potential of NTFPs to address poverty

Although a very large number of people are engaged in NTFP collection, it is actually not a very remunerative activity for them. The daily income from collecting NTFPs is usually below the official minimum wage rate. Most people collect NTFPs for sale or barter simply because of lack of alternative employment opportunities. Unless this issue of low remuneration is tackled, it will be difficult to address poverty through the NTFP route.

Opportunities to increase value addition

A related issue is value addition. An attempt needs to be made to capture as much value addition as possible at the level of the primary collectors. The NTFP supply chains are unduly long and primary collectors get only a fraction of the price paid by the end-consumers. For example, collectors in Andhra Pradesh get only about 10% of the price paid by end-consumers in major cities. The current product base is narrow and there is a need to look for various alternative uses of NTFPs to improve collectors' returns and reduce future uncertainty (e.g. in case of tendu leaves). While there is scope for value addition in all NTFPs, bamboo in particular seems to have vast untapped potential.

Over-regulation impedes enterprise development

There is over-regulation in the case of several NTFPs, especially those that are commercially

important. One of the biggest bottlenecks for the development of NTFP-based enterprises is the requirement of transit permit for many products. A permit is required each time the produce is transported and each permit is valid for only a few days. Although a number of steps have been taken by different state governments in recent years to reduce bureaucratic hurdles, a lot more needs to be done.

Need for holistic planning along the supply chain

Many primary collectors and local traders are unaware about the end-use and quality requirements of NTFPs that they collect and trade in. Due to this reason, they do not follow correct collection and storage methods and consequently marketability of their products suffers. There is a need for holistic planning across the entire supply chain.

How can nationalisation best meet its original objectives?

Several NTFPs have been nationalised with the twin objectives of (1) preventing over-exploitation of the resource and (2) safeguarding the interests of primary collectors and local communities. These are no doubt laudable objectives. Unfortunately, nationalisation has not always met them. As considerable field experience is now available, it is important to assess the efficacy of nationalisation to meet its original objectives.

Commercial-industrial focus favoured over artisans

The National Forest Policy (1988) clearly states that the local communities' subsistence needs have a much higher priority than commercial-industrial production on forest lands. Although it has been nearly two decades since the issuance of the policy statement, the commercial-industrial focus continues in the case of many NTFPs. This is clearly seen in the case of bamboo, which is used by both local artisans and industries.

Devolution needs to be complemented with capacity building

In the past few years, Panchayati Raj Institutions (PRIs) have been devolved greater powers over NTFPs. For example, in Orissa control over 69 NTFPs has been transferred to PRIs. In Madhya Pradesh, PRIs have been authorised to issue transit permits for transporting certain NTFPs. However, the impact of such progressive measures has been rather limited so far. The two major reasons for this are (1) lack of an enabling environment and (2) inadequate focus on capacity development.

Opportunities for mutual benefits through inter-state coordination

There is a need to enhance inter-state coordination on issues related to NTFPs. There is not only considerable movement of NTFPs across states but policies adopted in one state often affect collectors and enterprises in other states as well. A mechanism should be developed for regular dialogue and sharing of experience between states at regional and national levels.

Sustainable NTFP management critical for livelihoods

Considering that many NTFPs are critical for livelihoods of millions of people and also play an important role in forest ecosystems, it is important that these are sustainably managed. There is a need to assess production potential as well as current extraction levels of various NTFPs. Similarly, there is a need to assess current collection and management techniques, especially extensive use of fire to encourage regeneration (e.g. tendu leaves) and collection (e.g. mahua flowers and sal seeds). The focus of these assessments should be broader than NTFPs under consideration. One option that could be examined to promote sustainable production is certification.

1. Introduction

Non-Timber Forest Products (NTFPs) play an important role in the life and economy of people living in and around forests. Many NTFPs are important subsistence products while others are a valuable source of income for these people. The dependence on NTFPs is greatest among the poor for whom these products often serve the safety net function during periods of stress.

India presents a compelling case for the study of NTFPs and their governance. India's diverse forests – ranging from alpine forests in the Himalayas to rain forests in the Western Ghats – are richly endowed with NTFPs. India also has one of the largest populations of forest-dependent people in the world. Different estimates put the number of people living in and around India's forests between 100 million (NFC, 2006) and 147 million (FSI, 1999). India is also home to the world's largest population of the poor (UN Millennium Project, 2005), many of whom depend directly or indirectly on forests for a living (Kumar *et al.,* 2000). NTFPs are also important for state revenue. According to an estimate made some time back, over 40% of state forest revenues and 75% of net forest export income comes from NTFPs (World Bank, 1993, in Saigal *et al.* 1996). However, the bulk of revenue comes from a handful of NTFPs, with tendu leaves being the most important product in many states.

This report presents key findings of three studies carried out on the governance of selected NTFPs in the Indian states of Andhra Pradesh, Madhya Pradesh, and Orissa. These states were selected for the study as they all have large tracts of forests and significant proportion of forest-dependent poor and indigenous people (Scheduled Tribes) in their population. Furthermore, new and promising approaches for NTFP management are being tried in all three states. Thus, they all have great potential for poverty reduction through improved NTFP governance.

The studies focussed on five key NTFPs that are important both economically and ecologically. These are:

- **Bamboo** *(*mainly *Dendrocalamus strictus and Bambusa spp.):* Bamboo is used inter alia for making paper, handicrafts, furniture, incense sticks, and food products. It is also used extensively in the construction industry.
- **Tendu leaves** (*Diospyros melanoxylon*): Tendu leaves are used for rolling country cigarettes or beedis.
- **Mahua flowers** (*Madhuca latifolia*): Mahua flowers are mainly used for brewing country liquor but are also consumed as food.
- **Tamarind fruit** (*Tamarindus indica*): The most important product from the tamarind tree is its fruit pulp that is used as a flavouring agent. The tree also yields several other products having a range of domestic and industrial uses.
- **Sal seeds** (*Shorea robusta*): Sal seeds yield edible oil that is used as a cooking medium and for making chocolates. It is also used in soap manufacture and tanning.

The rest of this report is divided into four sections. The context of the three states where the studies were conducted is presented in the first section. In the second section, major governance issues related to the five selected NTFPs and enterprises based on them are examined. In the third section, the key overarching issues and strategies for improving NTFP governance are discussed. Finally, key action points for immediate implementation are listed.

2. Context

Forestry is the second major land use in India after agriculture. Around 23% of the country's area is officially classified as forest lands (FSI, 2003). Although almost all forest lands are under state control (ICFRE, 1996), forest management differs somewhat across different states. Each state in India has its own Forest Department (FD). The Ministry of Environment and Forests (MoEF) at the central government level decides the policy framework and broad guidelines for all the states.[1]

In this section, we briefly discuss the policy and institutional environment of NTFPs in the three study states, as well as the methodology used to conduct the research.

2.1 Andhra Pradesh

Andhra Pradesh, located in peninsular India, accounts for roughly 7.4% of the country's population and 8% of its area.[2] The recorded forest area in the state is approximately 6.38 million hectares, which is about 23% of the state's geographical area. Based on satellite data, actual forest cover has been estimated to be about 16.15% of the total geographical area (FSI, 2003). Andhra Pradesh has a significant presence of Scheduled Tribes, who are highly dependent on the forests for their livelihood needs.

NTFPs are not only an important source of income for many rural households (Reddy *et al.,* 2004) but also generate significant revenue for the state. The annual revenue from tendu leaves traded by the Andhra Pradesh Forest Development Corporation (APFDC; see below) and other NTFPs traded by the Girijan Cooperative Corporation (GCC; see below) is estimated to be Rs 620 million (Rao, 2002).[3] In terms of financial value, bamboo, tendu leaves, mahua, and tamarind are the most important NTFPs. Together, these selected products account for over 75% of the total value of NTFPs (in terms of revenue) in the state.

Bamboo forests are spread over approximately 10,000 square kilometres. There are two major bamboo species in the state *viz. Dendrocalamus strictus* (Sadanam or solid bamboo) spread over 9,125 square kilometres and *Bambusa bambos* (Mullem or hollow bamboo) spread over 755 square kilometres. In addition, there are small patches of *Dendrocalamus hamiltonii* in a couple of districts. The total annual production of bamboo is estimated to be 300,000 metric tonnes out of which about 200,000 metric tonnes is consumed by the paper and pulp industry and the remaining 100,000 metric tonnes by the domestic sector.

Andhra Pradesh is the fourth largest producer of tendu leaves in the country[4] and accounts for 10% of the national output. Tendu leaf collection generates about eight million person days of employment every year for which about Rs 400 million is paid as wages. In addition, about 50 million person days of employment is generated for rolling *beedis*.

Mahua trees occur on both forest and private lands. In 2005-06, 13,706 quintals of mahua flowers (worth Rs 8.4 million) and 6,188 quintals of mahua seeds (worth Rs 6.5 million) were procured by GCC, the official procurement agency. The bulk of mahua flowers and seeds, however, are directly used for domestic/ home consumption (TERI, 2004).

Andhra Pradesh produces about 700,000 quintals of tamarind, out of which the bulk comes from the farm sector. The Scheduled Tribes collect only about 40,000 quintals. It is estimated that around 110,000 families are involved in retail sale of tamarind through GCC distribution network and auction cum tender process. About 20,000 families are getting benefit through bulk sale of tamarind seed. Sal seed is not an important NTFP in Andhra Pradesh.

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[1] India is a federal country consisting of twenty-eight states and seven union territories. The allocation of responsibilities between the centre and the states for different subjects is listed in the Constitution of India (Seventh Schedule) in the form of Union List, State List, and Concurrent List. Forestry is on the Concurrent List meaning that both the centre and the states have responsibility for it.

[2] Source: http://www.censusofindia.gov.in (accessed 16.08.2007) and FSI, 2003.

[3] 1 US$ = Rs. 40 approximately (September 2007 rate).

[4] After Madhya Pradesh, Orissa, and Maharashtra.

The three key agencies involved in the management and trade of these NTFPs are FD, GCC and APFDC. The FD is responsible for the management of forests, including NTFPs, in the state. The GCC was established by the state government in 1956 to promote the welfare of Scheduled Tribes. It has been granted monopoly rights to collect, process, and market 25 NTFPs. The list includes mahua (flower and seed) and tamarind. APFDC was established in 1975 to raise institutional finance for forestry. APFDC has raised bamboo plantations over 12,000 hectares. It also acts as an agent of the government for collecting tendu leaves.

Andhra Pradesh started its Joint Forest Management (JFM) programme in 1992 through which the state government sought to involve local communities in the management of state forests. Under this programme, community-based forest protection committees known locally as *Vana Samarakshana Samithis* (VSS) were established to protect and manage the forest resources. The involvement and powers of the communities were increased in 2002 when the Community Forest Management (CFM) programme was launched. Both JFM and CFM programmes have received support through large World Bank-funded projects. A number of efforts to improve NTFP governance in the state have been initiated under these programmes.

For the purpose of the study, one district was selected – on the basis of level of production – for analysing production and management issues related to each of the selected NTFPs, *viz.* (1) Adilabad (tendu and mahua), (2) East Godavari (bamboo) and (3) Visakhapatnam (tamarind). In addition, information was also collected from enterprises processing these NTFPs. Two enterprises were selected per product.

2.2 Madhya Pradesh

Madhya Pradesh in central India accounts for about 7.8% of the country's population and 10.75% of its forest and tree cover. It is the state with the highest forest and tree cover in the country, which is 83,629 square kilometres or 27.14% of the state's geographical area (FSI, 2003). It is also the largest producer of both timber and NTFPs. It is estimated that around a quarter of the state's population, mainly Scheduled Tribes and other weaker sections of the society, depends on NTFPs for at least part of their livelihood (Kumar, 2003). In the forest fringe areas, NTFPs contribute up to 70% of household income (ICCF, 2005).

Large quantities of NTFPs are traded in *mandis* (markets) in different parts of the state. Estimates available for one *mandi* (Katni) indicate that 60,000 tonnes of NTFPs worth Rs 66.8 million are traded annually in only that mandi. The annual value of top ten commercial NTFPs in the state is estimated to be Rs 3.13 billion (Bhattacharya, 2004). In Madhya Pradesh, tendu leaves and sal seeds are nationalised whereas bamboo is treated as a special category of timber.[5]

Madhya Pradesh has about 12% of the country's growing stock of bamboo. *Dendrocalamus strictus* is the most common bamboo species in the state. Twelve districts have been identified as bamboo growing areas. In these districts, farmers growing bamboo on their fields have to register with FD. Such registration is not required in other districts.

Madhya Pradesh is the largest producer of tendu leaves in the country, accounting for 58.01% of the country's total production. The production of leaves between 2003 and 2005 was 2.225 million, 2.576 million and 1.68 million standard bags, respectively.[6] Tendu leaves are the most important NTFP in the state from the commercial as well as rural income perspective. Six million people are involved in tendu leaf collection in the state. The total turnover of the tendu trade (collection and rolling) in the state is estimated to be around Rs 1.845 billion. Initially, the leaves were sold un-plucked to the contractors, who got these

[5] Through nationalisation, the state gains a monopoly over the trade of particular NTFPs. After nationalisation, only the state or its appointed agents can procure the product from collectors or producers.

[6] There are 50,000 leaves in one standard bag.

collected by employing local people (usually Scheduled Tribes) as labourers. The government felt that the contractors were cheating both the government (by over harvesting) and the labourers (by under paying). Therefore, in 1964 the state government nationalised the trade in tendu leaves (Lal and Dave, 1991). After nationalisation, government appointed agents collected and delivered the produce to buyers. However, there was often collusion between the two resulting in underreporting of produce collected and consequent loss of revenue to the government. Therefore, the government shifted to the lump-sum payment system in 1980 (Lal and Dave, 1991). This addressed the issue of government's revenue loss to some extent but the problem of exploitation of the leaf collectors by the agents still remained. In order to address this issue, government decided to promote cooperatives of leaf collectors. It created the Madhya Pradesh Minor Forest Produce Cooperative Federation (MPMFPCF) in 1984 and developed a three-tier structure consisting of the federation at the state level, district unions at the forest division level, and primary cooperatives at the field level (Prasad, 2004).

The total production of mahua flowers and seeds in the state is estimated to be 53,600 quintals. Mahua was nationalised in 1969 but control on mahua trade was soon removed (Marothia, 1996). There has been a major spurt in mahua liquor production after the state government allowed brewing of up to five litres of mahua liquor. Chindwara, Chattarpur, and Siddhi are important mahua producing districts of the state.

The total production of tamarind in the state is around 1,200 quintals. Siddhi and Chindwara are important tamarind producing districts.

Sal forests occupy about 16.5 % of the total forest area of the state and are mainly confined to the districts of Jabalpur, Mandla, Dindori, Shahdol, Sidhi, Rewa, Chhindwara, Balaghat and Hoshangabad. Sal seeds are a nationalised NTFP and their procurement and disposal is handled by MPMFPCF. Before the division of the state[7], the annual sal seed production was 347,645 quintals.[8] It fell to 12,060 quintals in 2001 after the division of the state. It further fell to 6,273 quintals in 2002. The collection fell drastically in 2003 (709 quintals) and 2004 (570 quintals) before picking up somewhat in 2005 (3,834 quintals). In 2007, the collection of sal seeds was banned for five years. In 2000, over Rs 111 million were paid as collection wages to the collectors. This amount had come down to just over Rs 1 million in 2005.

Like Andhra Pradesh, Madhya Pradesh has also initiated a JFM programme. However, unlike most other states that have restricted JFM to degraded forests, it has extended JFM programme to dense forests as well. Several activities under JFM, including those related to NTFPs, were initially supported through a World Bank-funded project. Apart from the World Bank project, FD invested about Rs 150 million in the development of bamboo resources and bamboo handicrafts through *Swarna Jayanti Gramin Swarojgar Yojna*, a national rural self-employment scheme. Efforts regarding NTFP enterprise development are also being made through DFID's Poorest Areas Civil Society Programme (PACS) and Madhya Pradesh Rural Livelihoods Project (MPRLP), and the World Bank's District Poverty Initiative Project (DPIP).

The field sites for study were selected based on the potential for development of different NTFP-based enterprises. These included Sheopur in the north, Mandla and Seoni in the east, Betul in the south and Bhopal in the central region of the state. The study was conducted through interviews with key informants in FD, MPMFPCF, Madhya Pradesh Rural Livelihoods Project, Panchayati Raj Institutions (PRIs)[9], State Forest Research Institute, Non-Government Organisations (NGOs) involved in NTFP enterprises, NTFP traders, primary NTFP collectors and other community members. These interviews were supplemented through an analysis of different NTFP-related policies, review of secondary literature and perusal of official records.

[7] Madhya Pradesh was divided into two states – Madhya Pradesh and a new state, Chhattisgarh – in November 1999.

[8] 2000 figure. Source: MPMFPCF

[9] Democratically elected local self government bodies at the village (or a group of villages), block, and district levels.

2.3 Orissa

Orissa, located in eastern India, is a forest-rich state with forest cover over 31% of its geographical area (FSI, 2003). It is also among the poorest states with 47.15% percent of the population living below the poverty line (GoI, 2002). It is estimated that almost half the population of the state is dependent on forests (FSI, 2005). Studies conducted by RCDC and other organisations indicate that as much as 30-40% of the income of people in forest-fringe villages comes from NTFPs. Of the five NTFPs covered under this study, tendu leaves and bamboo are nationalised while sal seed, mahua and tamarind can be traded freely.[10]

Orissa has about 375 square kilometres of pure bamboo and 17,795 square kilometres of mixed bamboo forests (Swain, 2005). Both Dendrocalamus strictus (solid bamboo) and Bambusa spp. (hollow bamboo) are found in the state. It is estimated that more than a million people are directly or indirectly dependent on the bamboo trade. The total production potential is estimated to be a million tonnes per annum.

Orissa is a major producer of tendu leaves, which are collected from around 600,000 hectares. The collection of tendu leaves generates employment of about 16 million person days per season and the total turnover of tendu leaf trade is around Rs 1.5 billion. Orissa is the second largest producer of processed tendu leaves in the country after Madhya Pradesh and accounts for around 15% of the total production. It is estimated that two million people are involved in the tendu leaf trade in the state.

Mahua is an important NTFP for the people of the state, especially the Scheduled Tribes. It is very common in the western and south-western parts of the state. On an average, each family collects about five to six quintals of mahua flowers per season, which can contribute up to 30% of their annual cash income. It is estimated that over five million people are dependent on mahua for a significant proportion of their income.

Tamarind is collected mainly from revenue lands[11] and most of the collection is made from the southern districts of the state, such as Gajapati and Rayagada. A large proportion of the collected tamarind is exported to Andhra Pradesh.

Orissa has about 19,269 square kilometres of good sal forests, which cover about a third of the total forest area. About two million people are estimated to be involved in the collection of sal seeds, an activity that provides them employment for about 80 days in a year. Orissa contributes a quarter of the country's production of sal seeds.

The NTFPs in the state were initially leased out to private traders and industries through long-term agreements. As this arrangement proved unsatisfactory, the state government decided to take over the NTFP trade. It first nationalised tendu leaves in 1973. Subsequently, in 1981 it established state monopoly over several other NTFPs as well. This policy continued until the end of 1990s when the state government decided to end its monopoly. It identified 85 NTFPs and made a distinction between "minor forest produce" and "other NTFP items".[12] The control over 67 items of "minor forest produce" was handed over to the panchayats in March 2000. The remaining "other NTFP items" were further sub-classified into (1) "nationalised produce" and (2) "lease bar produce", whose control was kept with the government.[13]

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[10] Sal seed was denationalised in 2006. While mahua is not nationalised, there are several restrictions on its trade imposed by the Excise Department.

[11] Non-forest government land under the control of the Revenue Department.

[12] The government, however, did not define either.

[13] In August 2000, one more item was added to the list and in March, 2006 sal seed was also added to the list taking the total to 69.

The 2000 NTFP policy of Orissa is an important step towards granting greater control over NTFP resources to the local communities.[14] Like Andhra Pradesh and Madhya Pradesh, Orissa has also started a JFM programme. Orissa is among the pioneering states regarding JFM. In fact, it issued its JFM resolution even before the issuance of the guidelines by the central government.

In order to conduct the study, key districts for each of the five products were identified based on criteria such as traditional dependence of the local communities on NTFPs, volume of production, quality of produce, presence of cooperatives, NGO involvement, proximity to markets, and support of FD. The focus districts were as under:

- Bamboo: Boudh, Angul, and Ganjam
- Tendu leaves: Bolangir, Angul, and Nuapada
- Mahua flowers: Deogarh, Nabarangpur, and Nuapada
- Tamarind fruit: Gajapati and Rayagada
- Sal seeds: Nabarangpur and Kalahandi

The data was collected through a questionnaire survey, checklist-aided interviews, and focus group discussions.

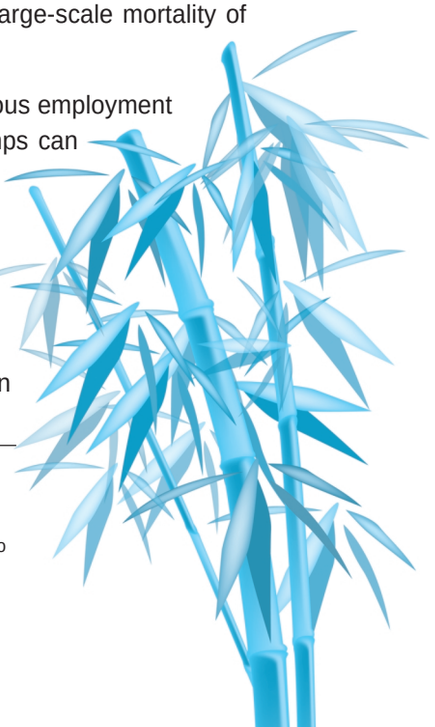
3. Product-specific Issues

The major governance issues related to production and management as well as enterprise development that emerged from the three state-level studies are discussed in this section. Considering that the nature of products and the issues involved are quite different for different NTFPs, these are discussed product-wise.

3.1 Bamboo

Bamboo is a very versatile NTFP with a wide range of domestic, commercial, and industrial uses.[15] A large number of rural artisans also depend on bamboo for their livelihood.[16] Although there is great demand for bamboo, the production is far below its potential. For example, total domestic requirement of bamboo in Madhya Pradesh is estimated to be 150 million culms per annum. However, average annual production is just 38 million – 33 million from forests and 5 million from farms.[17] Large-scale mortality of bamboo following gregarious flowering has exacerbated the problem.

The low production of bamboo is particularly unfortunate as it has tremendous employment potential. It is estimated that a single hectare of bamboo plantation with 500 clumps can generate 384 days of unskilled labour work and 48 days of supervisory work over a period of 30 days (Tiwari, 1992). A major reason for low production is the constraints faced by the private bamboo growers. For example, bamboo farmers in Madhya Pradesh have to register themselves with FD if they are growing bamboo in areas that are classified as natural bamboo areas. They also need to inform FD at the time of felling. Although *panchayats* in several districts of the state have been empowered to issue transit passes to transport privately grown bamboo within the district or to the neighbouring districts,[18] they rarely do so due to procedural



[14] Orissa Minor Forest Produce Administration Rules were notified in November 2002 and empowered the Gram Panchayat to regulate procurement and trading of certain NTFPs on both revenue and forest lands.

[15] However, it is classified as a "tree" for the purposes of the Indian Forest Act, 1927.

[16] In all the three study states, special provisions have been made by the state governments to supply bamboo at concessional rates to the traditional bamboo artisans.

[17] Source: MPMFPCF

[18] Except for *Bambusa arundinaceae*.

hassles and a lack of interest. The requirement of transit permit often results in the harassment of the person transporting bamboo at various forest check posts. Another problem regarding transporting bamboo is its long length. As per transport rules, only goods up to 18 feet in length can be transported on six-wheeled vehicles. Many bamboos are 30-35 feet in length. Consequently, transporters are forced to bribe road transport officials to transport bamboo. All this adds to the cost of the bamboo for the end user. Thus, while paper mills in Orissa obtain bamboo at an average cost of Rs 0.83 per metre, other users have to pay up to Rs 5 per metre.

The National Forest Policy of 1988 clearly states that the requirements of local communities have a higher priority than those of the industry. Although a number of initiatives have been taken by different state governments with the ostensible aim of meeting this national objective, the field reality is often somewhat different. Bamboo, which is used by both traditional artisans and paper industry, illustrates this point well. Orissa nationalised bamboo in 1988 and the Orissa Forest Development Corporation (OFDC) was appointed as the agent. The idea was to reduce over-exploitation of the bamboo resource as well as to safeguard the interest of the local communities. However, in 1993 OFDC appointed various paper mills as their sub-agents (termed as 'raw material procurers'). Therefore, in spite of 'nationalisation', field operations are being carried out by the private sector. Further, royalty paid by the mills *reduces* with amount of bamboo harvested by them. They have to pay Rs 750 per metric tonne up to 75,000 metric tonnes but the rate falls to Rs 650 per metric tonne beyond 125,000 metric tonnes.[19] This royalty structure is clearly designed to encourage mills to harvest more rather than less bamboo. There is nothing wrong with encouraging more production so long as it is within the ecologically sustainable limit. The main issue is that of who benefits most from this increased production. While the rate for commercial bamboo supplied to artisans is Rs 8 per piece, the rate for industrial bamboo is half that amount at Rs 4. Further, while mills acting as sub-agents of OFDC have to supply 5% of their production as 'commercial bamboo' for artisans and other local users, this provision has been largely ignored in practice. It is ironic that while the private sector has continued to operate in bamboo forests even after nationalisation, several licences for the supply of bamboo to artisans were cancelled in spite of a clear provision in the law to protect the local communities' customary rights.

While the artisans do get bamboo at present, the supply is insufficient. One reason for this is that supply is made only from 'protected forests', which have limited bamboo production. Most bamboo coupes and depots are in the 'reserved forests' but no supply is made from these forests as these are outside the purview of the bamboo supply rules. Apart from the issue of quantum of supply, there are two other critical issues as far as bamboo artisans are concerned. The first is regarding the timing of supply. No felling is permitted between 1st July and 30th October but bamboo-based enterprises including individual artisans need bamboo all year round. Second, the bamboo felling rules specify that only mature bamboo (about four years old) should be harvested whereas artisans need green bamboo that is between one and two years old. In Andhra Pradesh and Madhya Pradesh too, bamboo artisans (*buroods/medaras and basods*) are facing similar problems. They are unable to get adequate supply of bamboo from the government and the bamboo supplied is often too dry and unfit for their use. Therefore, they are forced to either illegally harvest bamboo from the forests or to buy it at higher rates from private suppliers. Some artisans have even quit their profession. There is also misuse of the subsidy provided by the state, harming the interest of the genuine artisans. For example, in Andhra Pradesh most of the bamboo provided to artisans (*buroods*) is cornered by city-based artisan societies. A significant proportion of this bamboo is sold on for profit for other uses (e.g. in the construction industry) for which there is heavy market demand.

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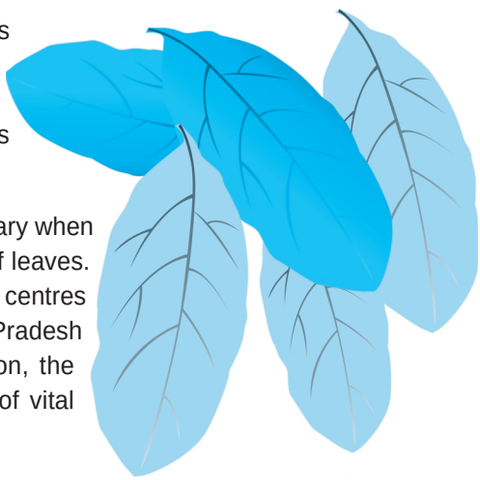
[19] The royalty for production between 75,001 and 100,000 metric tonnes and 100,001 and 125,000 metric tonnes is Rs 715 and Rs 680, respectively.

In spite of its great potential, bamboo-based enterprises have not developed adequately in the country. The traditional bamboo artisans by and large continue to work individually in an unorganised manner. There are some examples of successful artisan cooperatives but these are few and far between. While the pulp and paper industry is a major consumer of bamboo, it is slowly shifting towards alternative raw materials (e.g. *Eucalyptus, Leucaena* and *Casuarina*), whose supplies from private sources are more certain. This is especially true for Andhra Pradesh. There are a number of promising bamboo-based enterprises that could help in tapping the potential of this versatile NTFP for improving income and livelihood security of some of the poorest sections of the society. These include handicrafts, incense sticks, match sticks, mats, furniture, and construction material.[20] Many such bamboo-based enterprises can flourish if the governance issues discussed above are addressed. A study by the International Network for Bamboo and Rattan (INBAR) indicated that there is potential for 300 bamboo-based matchstick units in Orissa alone.[21] There is hardly any at the moment. The practical feasibility of such enterprises at the local level has been shown in Andhra Pradesh where about 500 VSS are involved in producing nearly 150 tonnes of bamboo incense sticks per month. It is hoped that the recent establishment of two national bamboo missions would help in promoting the bamboo sector in the country.[22]

3.2 Tendu Leaves



Tendu leaf is an important NTFP in all the three study states and provides seasonal employment to millions of tendu leaf collectors every year. The trade in tendu leaves has been nationalised in all three states, which means that only state government or its authorised agents can procure these leaves from the collectors or growers.[23]

The annual process of tendu leaf collection starts during February when tendu trees or bushes are pruned to improve the quality and quantity of leaves. The leaves are generally plucked during April-May. Temporary collection centres – called *phad* in Madhya Pradesh, *phadi* in Orissa and *kallam* in Andhra Pradesh – are opened to collect leaves. As this is the lean agricultural season, the employment opportunity available through tendu leaves collection is of vital importance to many poor households.

Tree pruning or bush cutting is an important operation in the tendu leaf production process. This operation is executed directly by FD or its agents. However, it has not been getting the attention it deserves. The local level staff and agents often select areas for this operation based on their convenience (e.g. near a village) rather than from the perspective of enhancing production. It has been argued by the *Kendu Patra Talali Mancha* (Orissa Tendu Leaves Collectors' Forum) that repeated bush cutting in the same area over the years (rather than on a rotational basis) has resulted in reduction in both quantity and quality of leaves. Further, in order to save on bush cutting cost, the area is often burnt. The implications of this practice for tendu production as well as local biodiversity have not been adequately investigated. The amount earmarked for bush cutting has also remained constant over the past few years though cost of operations has risen

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[20] This is an illustrative rather than an exhaustive list.

[21] Source: INBAR Working Paper # 20 titled "Natural Forest based Bamboo Production-to-consumption system: a case study from central India".

[22] The two missions are: (1) National Mission on Bamboo Applications (NMBA) and (2) National Mission on Bamboo Technology and Trade Development (NMBTTD). While the former is a technology mission under the Department of Science & Technology, the latter was formed based on a report by the Planning Commission and its activities are coordinated by the Ministry of Agriculture. NMBA has been tasked with creating the basis for enlarging the bamboo sector, and with supporting the efforts of the Government of India towards augmenting economic opportunity, income and employment. NMBTTD has been structured to address critical areas of bamboo development covering research, development, post-harvest management, product development and marketing by adopting a mission mode approach comprising of four Micro-missions, *viz*., (a) Micro-mission for Bamboo Research; (b) Micro-mission for Plantation Development; (c) Micro-mission for Post Felling Management and Bamboo Trade; and (d) Micro-mission on Product Development, Processing and Value-addition of finished products.

[23] Year of nationalisation: Madhya Pradesh – 1964; Andhra Pradesh – 1971; Orissa – 1973.

due to the increase in wage rate. This has resulted in reduction of the bush cutting area by nearly a fifth over the past few years, and consequently production as well as number of people engaged in tendu leaves collection has also been declining (see Table 1).

Table 1: Trend in bush cutting, production, and number of tendu leaf collectors in Orissa

Year	Bush cutting operation (million person days)	Production (hundred thousand quintals)	Number of pluckers' cards issued (hundred thousand)
2003	1.16	4.77	9.33
2004	1.13	4.76	9.06
2005	1.00	3.70	7.13
2006	1.04	3.84	7.57

Source: PCCF Office, Bhubaneswar

The collection of tendu leaves is hardly a remunerative activity. The collection price is fixed by the government or a committee appointed by it. In the case of Orissa, the rate has been revised only ten times during the past 35 years and the collectors get less than Rs 0.01 for every leaf collected. The situation is not much different in other states. A collector can at best collect 10,000 leaves in a day and earn around Rs 80 but this is possible only during the peak season that lasts for just a few days. The collectors can generally expect to make up to Rs 50 per day from this activity, which is less than the official minimum wage.[24] In reality, the collectors' income is even lower. The collectors are often cheated by under-recording the amount of leaves collected by them. Further, the collection centres accept leaves only for a certain period decided by the government. The collectors, however, are generally unaware of this and often end up investing time in collecting leaves beyond the collection period. These leaves are not accepted by the official collection centres and they are forced to sell them illegally to the private agents. Due to all these reasons, people collect tendu leaves only as a last resort if no alternative employment opportunities are available. In fact, it is mostly women and adolescent girls who collect leaves even though the collectors' cards are generally issued in the name of male 'heads' of the households.[25]

The woes of the collectors do not end even after depositing the leaves at the designated collection centre. They do not get paid immediately. In Orissa, the payment is usually made after two to three months and can sometimes take even six months. As tendu leaves are collected during the lean agricultural season, many poor collectors are forced to mortgage their collectors' cards to money lenders for obtaining paltry sums of money to survive. The delayed payment also affects their capacity to invest in the *kharif* (rainy season) crop, thereby affecting their agriculture and livelihood. Another important issue relates to issuance of the transit permit for transporting tendu leaves. In Madhya Pradesh, it can take up to 30 days to issue the permit to transport leaves. This period is unduly long.

To be fair to the state governments, all three states have introduced a number of welfare measures for the collectors. For example, the Orissa government recently provided footwear to all tendu leaf collectors at a cost of Rs 20 million.[26] The Andhra Pradesh government launched a group insurance scheme for all tendu leaf collectors between the ages of 18 and 59 years in 1991. Since 1992, half the premium has been

[24] The government sets minimum (floor) wage rates for employment many sectors (scheduled employment) as per the provisions of the Minimum Wages Act, 1948.

[25] There seems to be considerable involvement of children in collection and processing of various NTFPs, especially tamarind. This is in spite of the fact that employment of children in processing units is against child labour laws.

[26] This distribution was done just before an election.

paid by the FD. The remaining half is covered by the Life Insurance Corporation of India from its social security fund. Similarly, the Madhya Pradesh government has also started a group insurance scheme for all tendu collectors between 18 and 60 years of age. Half of the premium is paid by MPMFPCF and the balance by the central government. Madhya Pradesh has also introduced a three-tier cooperative structure for collection and disposal of tendu leaves. There are 1,066 primary cooperatives, 60 district unions, and an apex federation at the state level – MPMFPCF.

All three state governments have also decided to share net profit from the tendu trade with the collectors. The Madhya Pradesh government shares the entire net profit from the tendu trade with the collectors.[27] The Orissa government shares 50% of the net profit from tendu trade. The Andhra Pradesh government started 50% sharing profits from tendu leaves with VSS in 2002, and in 2006, it was decided to share 100% profit with all the collectors directly.

These are no doubt progressive measures that have benefited the collectors. However, the actual field-level impact of such measures gets considerably diluted due to various reasons.

For example, the full potential of cooperativisation of the tendu trade in Madhya Pradesh has not been realised as primary cooperatives do not play a significant role in the government's tendu-related decision-making process.

Similarly, the actual benefit from profit sharing is reduced due to poor implementation and bureaucratic bottlenecks. In the case of Orissa, the government even deducts expenditure on protection and management of forests while calculating net profit, thereby reducing the amount available for distribution. In any case, even this amount has not been shared with the collectors due to procedural delays. It is estimated that the collectors' dues up to 1995-96 amounted to Rs 2.35 billion but only Rs 713 million were distributed. The accounts have not been finalised after that period so it is difficult to estimate net profit and collectors' dues. The government has been sanctioning an ad hoc payment every year without clearing the past dues or estimating the current profit.[28] The actual amount disbursed is even less than the amount sanctioned. Further, this amount is distributed to the PRIs in all districts of the state (including those that do not even produce tendu leaves) who use it for administrative expenses or general development work. This money should ideally be given to actual collectors, who are often the poorest sections of the society.

In the case of Andhra Pradesh, while profit sharing with the collectors has pushed up the collectors' income by Rs 1,000 to 1,500 per head, the VSS profit sharing arrangement has been less successful. The money is deposited in the joint account of the VSS, which is controlled by government officials; decisions regarding its utilisation are also made by the officials rather than VSS members. Further, there is corruption at the collection centre level and in many cases the tendu (*beedi*) units are left unsold depriving the VSS of potential income.[29] These problems can only be addressed through granting greater powers to the VSS and increasing their role in monitoring and record keeping.

Apart from the above issues, another major factor concerning tendu leaves is the uncertain future of the market. Due to increasing awareness about the harmful effects of smoking, it is quite likely that the demand for tendu leaves will fall in the future. Therefore, it is important to either develop alternate uses of tendu leaves (e.g. for leaf plates) or to focus on other NTFPs so that the income of the poor tendu leaves collectors as well as *beedi* rollers is protected.

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[27] 60% of the net profit is shared with the primary collectors as bonus, 20% is used for regeneration of forests and 20% is used for general village development.

[28] The *ad hoc* grant was Rs 200 million in 1996-97 and 1997-98 and more than Rs 200 million in subsequent years.

[29] Many units are left unsold due to problems of extremism/ naxalism in those areas. The contractors are hesitant to work in areas affected by extremism/ naxalism. In some cases, the contractors form a cartel and do not bid for some units to reduce their royalty payment.

3.3 Mahua Flowers[30]

Mahua has a special status among NTFPs as its flowers are used to brew country liquor. Naturally fallen flowers are collected in large numbers during the season (generally March to May). One major issue related to mahua flower collection is the use of fire. Some collectors burn the forest floor under mahua trees to facilitate flower collection. This practice increases the danger of forest fires. In some cases (e.g. Panarikheda village, Mandla District, Madhya Pradesh), allocation of mahua trees on forest and common lands to individual families has addressed this problem to a large extent. Similar initiatives should be taken in other areas as well.

Although a large number of people are engaged in mahua collection, in reality it is not a very remunerative activity. In Andhra Pradesh, it is estimated that at minimum wage rate, the value of labour input for collecting one kilogram of mahua flower is Rs 7.15. However, GCC procures it at only Rs 6 per kilogram.[31] Thus, the amount earned by a collector from a day's effort is less than the minimum wage stipulated by the government. In many cases, collectors do not get even these rates as they are exploited by the local traders who use a barter system rather than cash payment and rarely use proper measurements. For example, payment is sometimes made in salt, which is a much cheaper commodity. Collectors are often unable to grade their produce properly and mix all grades together. This further lowers the price they get. The traders in Orissa often make advance payment to the collectors and subsequently take their produce at an abysmally low rate of Rs 40-50 per quintal.

Another major issue in case of mahua flowers is their storage. Drying and proper storage of flowers requires considerable skill. The quality of improperly stored flowers deteriorates rapidly. Due to their inability to store flowers properly, many collectors sell their produce immediately, though if they are able to hold on to their stock for a few months, they can get a much better price in the off-season period. For example, Laxmishree women's self-help group (SHG) in the Khariar district of Orissa waited for about two months and made a profit of Rs 4,000 by trading 20 quintals of mahua flowers. Similar initiatives have also been reported from Madhya Pradesh e.g. in Tamia village in Patalcote and areas where Udyogini (an NGO) has been working with SHGs.

While such storage and trading by community groups can enhance their income, it is not possible to upscale this activity in states such as Andhra Pradesh and Orissa due to various government restrictions. For example, in Orissa mahua flowers are classified as an intoxicant under the Excise Act.[32] Therefore, in addition to the FD, the state Excise Department also plays a regulatory role. Although the trade has been handed over to panchayats as per the new NTFP policy of 2000, the Excise Department has not given up its control. For example, while the transit permit requirement has been withdrawn by FD, the Excise Department continues to levy a transit fee. Similarly, each family is allowed to store only up to five quintals of mahua flowers in the season and just one quintal during the off season. The reluctance of the Excise Department to give up its control is not surprising considering that as much as 15% of the excise revenue comes from the mahua trade.[33]

The removal of such restrictions can have a positive impact on mahua-based enterprises. Such an impact is evident in Madhya Pradesh, where several restrictions on mahua, such as transit permit requirements, were lifted in 1996. The removal of restrictions promoted legal trade in mahua.[34] This resulted

[30] Apart from the flowers, mahua seeds are also collected. These yield oil, which is classified into two grades (I and II) based on its FFA content. The grade I oil is edible and is used as a cooking medium. The grade II oil is used for manufacturing soaps. At the local level, oil is used for cooking, as hair oil and for medicinal purposes. The oil cake left after extraction of oil is used as fish food.

[31] Similarly, while labour effort spent for collecting one kilogram of mahua seed is worth Rs 13.4, GCC procures it at Rs 11 per kilogram.

[32] It is pertinent to mention here that not all mahua flowers are used for making liquor. Some are consumed as a food item or used as cow feed. However, the restrictions are placed on mahua flowers rather than just on the liquor.

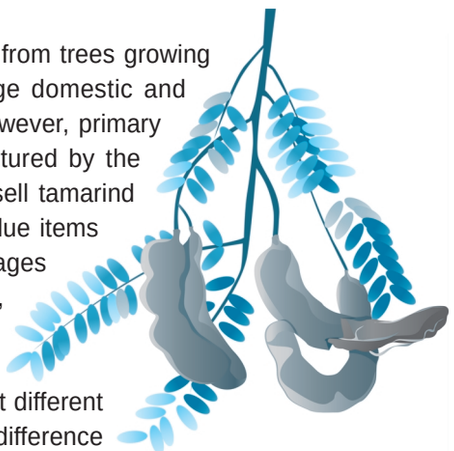
[33] 2004-05 figure.

[34] However, traders involved in inter-state trade haven't benefited as a transit permit is still required in other states. Another unresolved issue is that of the Mandi (Market) Tax. Although very little mahua is traded in the *mandis*, 2% Mandi Tax is imposed on it.

in increased competition among the traders, which, in turn, benefited the collectors in the form of better rates for their produce. The result of another initiative in the state, however, has been less encouraging. When the state government decided to provide a minimum support price through cooperatives, all the poor quality mahua was deposited with the cooperatives while the good quality mahua was sold to the private traders at higher rates (Choudhari and Bhatnagar, 1996).

An area that needs urgent attention is value addition and product diversification. Although the bulk of mahua is used for making liquor, it can be processed into several other products such as candies, squashes, pickles, and vinegar. It is also a good cow-feed. There has been little effort in this direction. Even agencies like GCC of Andhra Pradesh, which should have taken a lead in this direction, are merely operating as middlemen.

3.4 Tamarind Fruit



India is the world's largest producer of tamarind, which is collected from trees growing on all types of lands – forest, common, and private. Tamarind has a huge domestic and overseas market and commands a good price from the end-consumers. However, primary producers and collectors get very low prices and bulk of the value is captured by the middlemen. Many collectors in Orissa and Madhya Pradesh are forced to sell tamarind at very low rates to petty traders. Some traders barter tamarind with low value items resulting in a major loss for the collectors. Many collectors also have credit linkages with the traders and use tamarind to clear their dues. In this arrangement too, the collectors end up getting a raw deal as the interest rates are usually quite high. Even in Andhra Pradesh, where GCC procures tamarind from the collectors at specified rates, the situation is no better. The prices prevalent at different points in the tamarind marketing chain in Andhra Pradesh illustrate the huge difference between the price paid by the end-consumers and the price obtained by the primary producers or collectors.

Table 2: Prices prevalent at different points in the marketing chain of tamarind

Sale/Purchase point	Price (Rs /kg)
Farmer selling his tamarind at flowering stage	1
Collectors selling to GCC (seeded, improperly graded, un-processed, un-dried and black in colour)	6-8
Collectors selling to private traders (seeded, graded/ processed, and dried)	16
Consumers buying from fair price shops	30
Consumers buying from Raytu Bazar[35]	45
High street grocery shops	45-50
Super markets in major cities	70

Source: Eenadu newspaper dated 10 February, 2007

[35] The "Raytu Bazaars" were started in major towns by the Government of Andhra Pradesh in 1999 to help the farmers to directly sell their produce bypassing the middlemen.

In Andhra Pradesh, GCC has been granted monopoly over the tamarind trade in the entire state though its operations are focussed on the scheduled (tribal) areas.[36] It sets a procurement price and collects tamarind from the collectors. This measure has been taken to help the tribal collectors. Although GCC staff members are considered more honest than private traders, tribal collectors often prefer to sell to the traders as they are able to offer a better price. They sell their produce to GCC only when the market price falls below the GCC procurement rate. In any case, GCC is unable to purchase all the available tamarind, especially in the good crop years due to financial and storage constraints. The main benefit of this policy is that it helps in setting a floor price for the tribals. However, as is evident from the above table, the price obtained by the producers and collectors is only a fraction of the price paid by the end-consumers. GCC is also unable to influence the wider tamarind market in the state as it procures only about 5% of the total tamarind available in the state.[37]

Another important issue relates to the transit permit. Although panchayats in Orissa have been empowered to issue transit permits to transport tamarind (and several other NTFPs), transporters still face harassment at the forest check points as FD staff (especially of other states) refuse to accept permits issued by those panchayats.

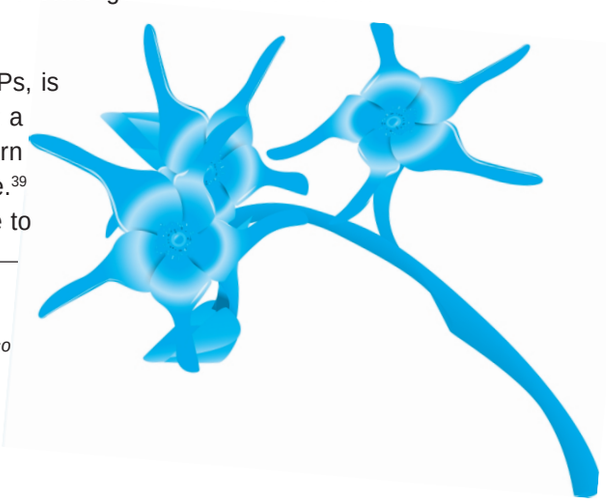
Although tamarind can be processed into a number of value-added products such as powder, granules, concentrate, blocks, and drinks, it is usually sold in the raw form by the primary collectors. There is great potential to enhance the income of the collectors and producers by setting up tamarind-based enterprises in the areas of production. There has been some effort by GCC in this regard but much more needs to be done.

3.5 Sal Seeds

Sal forests cover 16.7% of the total forest area in the country (Anonymous, 1972). Sal trees begin to fruit when they are about 20-25 years old. Sal seeds are collected in the sal belt of central, eastern, and northern India. The sal seed trade was nationalised in 1977 in Madhya Pradesh and in 1983 in Orissa. In Madhya Pradesh, the collection was initially made through FD but after the creation of MPMFPCF, it was entrusted with this task from 1990 onwards. Long-term agreements for the sale of sal seeds were also made with some industrial units. However, collection of sal seeds is presently suspended (2007-11) due to problems of sal borer attack and regeneration.[38] This has resulted in the loss of livelihood for about 11 million poor people who used to get employment for up to 80 days a year through sal seed collection.

In Orissa, OFDC and Tribal Development Cooperative Corporation (TDCC) were appointed as government agents after nationalisation. However, as in the case of bamboo, OFDC and TDCC appointed sal seed-based industries as their 'raw material procurers'. These agencies simply earned a commission by lending their name. The collectors were not getting a remunerative price for their produce from the industries. This system was changed in 2001 and finally in 2006 the state government decided to denationalise sal seed trade and handed it over to panchayats.

The main issue in the case of sal seeds, like many other NTFPs, is the extremely low price obtained by the collectors. It is estimated that a collector can collect between six to eight kilograms in a day and earn between Rs 25-30, which is less than half the official minimum wage.[39] Another issue is the method of collection. Sometimes collectors use fire to



[36] These are listed in the Schedule VI of the Constitution of India.

[37] 40,000 metric tonnes out of 800,000 metric tonnes.

[38] Vide notification number AP- 31/1/2006/10-3. The last major sal borer (*Hoplocerambyx spinico* attack took place during 1997-98 when 7,83,720 trees had to be removed.

[39] The real income is even less as sal seeds require a round of processing before sale.

clear the forest floor and to de-wing the seeds. The fire intended to clear the forest floor sometimes spreads, and de-winging through fire often damages the kernels and reduces the value of the produce.

In Orissa, after the denationalisation of sal seeds the price is supposed to be set by the panchayat[40] but in reality the price continues to be dictated by the private traders. In any case by the time the official rate is decided and communicated to the collectors, nearly half the collection season is already over. Although panchayats are authorised to issue transit permits to the registered traders to transport sal seeds, these permits are often not considered to be valid at forest check points, especially in other states. In Madhya Pradesh, there are restrictions on the quantity of produce that can be transported as well as on production and retail. The ceiling is just 50 kilograms. Further, produce can only be transported during daytime. These restrictions hamper the growth of sal seed-based enterprises.

Sal seed has many uses in the food industry. It is a natural product grown without using any fertilisers or pesticides. This could have been its unique selling point. However, due to improper collection and storage this advantage is usually lost. The collectors put the seeds in used fertiliser or chemical bags, thus contaminating them. More seriously, pesticides such as Aluminium Phosphide and Dichloro-Diphenyl-Trichloroethane (DDT) are used during storage by the traders. Due to this reason, the export market of sal seeds has been adversely affected. The quality of sal seeds also depends on their moisture and Free Fatty Acid (FFA) content. The price of the seeds depends on these parameters as well on the extent of contaminants. Although these aspects can be easily tested, neither collectors nor panchayats have much awareness of these issues. Unscrupulous traders often take advantage of their ignorance and pay low rates for their produce, citing poor quality on these parameters. The FFA content should ideally be below 5%. In order to keep sal seeds' FFA percentage low, they should be processed within 72 hours. However, due to various bottlenecks related to procurement and storage this period is often as long as five months. This reduces the quality of the product and affects its market (Sharma and Jain, 1981).

Sal fat is a good substitute for cocoa butter and it could potentially have a huge market in the chocolate industry. However, the Indian Prevention of Food Adulteration Act forbids use of substitutes such as sal butter. This anomaly needs to be rectified. Some estimates suggest that India has the potential to produce 180,000 tonnes of sal fat annually against current annual production of 6,000 to 9,000 tonnes (3.33% to 5% of potential).[41] Thus, there seems to be vast untapped potential. However, before any large-scale increase in sal seed procurement, its ecological impact, especially on regeneration, should be carefully studied.

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[40] The price is now set by the block-level *Panchayat Samiti*. Earlier it was set every year by a government-appointed committee.

[41] Source: TRIFED, New Delhi.

Table 3: SWOT analysis of different NTFPs from collectors'/producers' and entrepreneurs' perspective

NTFP	Strengths	Weaknesses	Opportunities	Threats
Bamboo	• Versatile NTFP with a range of domestic, commercial, and industrial uses. • Used for making traditional handicrafts by bamboo artisans.	• Production is far below potential. • Cumbersome procedures, especially transit rules. • Supply of green bamboo to artisans is still a problem.	• Tremendous employment generation potential – on forest lands as well as farms. • Several value addition possibilities. • Renewed state focus through National Bamboo Mission.	• Periodic gregarious flowering and mortality. • Increased availability of substitutes.
Tendu leaves	• High demand Over half the tobacco consumption in India is through beedis (country cigarettes) made from tendu leaves. • Collection and marketing through cooperatives.	• Collectors earn below the official minimum wage. • Bush-cutting/pruning not done properly resulting in loss of production (quantity as well as quality). • Procedural issues reduce impact of various welfare measures.	• Many state governments share net profit from tendu trade with the collectors. • Welfare measures such as insurance for collectors have been introduced in many states.	• Uncertain future due to growing awareness about harmful effects of smoking.
Mahua flowers	• Widespread traditional use (liquor/food) • Easy availability in close proximity to end-use markets.	• Storage of flowers is difficult. • Wide fluctuation in price.	• Mahua trade liberalised in some states (Madhya Pradesh). • Various alternative uses possible.	• Considered as an intoxicant and therefore storage and transport regulated. Many bureaucratic procedures involved. • Unsustainable harvesting.
Tamarind	• Large-scale production. • Huge market – domestic as well as overseas.	• Collectors/producers get very low price.	• Several value addition possibilities. • Export potential.	• Unsustainable harvesting.
Sal seeds	• Widespread availability. • Several traditional and industrial uses.	• Collectors get very low price. • Improper processing and storage methods reduce value of the produce.	• Denationalised in Orissa. • Potential use in chocolate and vanaspati (vegetable cooking oil) industries.	• Use of banned pesticides for storage has affected its export market. • Ban on sal seed collection in Madhya Pradesh. • Legislative hurdles for use of sal fat in domestic food processing industries.

4. Overarching Issues

In the previous section, product-specific issues were discussed. There are, however, a number of overarching issues in the NTFP sector that cut across different states and products. Some of the major overarching issues are discussed in this section.

4.1 The potential of NTFPs to address poverty

Box 1: Infrequent revision of procurement rates

In Orissa, the rate for tendu leaves was revised only 10 times in 35 years and for sal seeds only four times after its nationalisation in 1983. Similarly, in Madhya Pradesh the collection rate per standard bag remained stagnant at Rs 400 for five years before it was revised to Rs 450 for the 2007 season.

Although a very large number of people are engaged in NTFP collection, it is actually not a very remunerative activity for them. The daily income from collecting NTFPs is usually below the official minimum wage rate. This is true for both types of NTFPs – (1) those whose procurement rate is set by an agency and (2) those whose price is set through market forces. Therefore, most people collect NTFPs for sale or barter simply because of lack of alternative employment opportunities, especially during the lean agriculture season.[42] Unless this issue of low remuneration is tackled, it will be difficult to address poverty through the NTFP route. A number of steps are needed to address this issue.

- First, the agency setting the procurement rate should ensure that the collectors can at least earn the official minimum wage. This price should be revised every season to adjust for inflation and other market changes. The agencies have been very lax on this front so far (see Box 1).
- Second, the profit sharing arrangement introduced in the case of tendu leaves should be extended to all nationalised NTFPs.
- Third, the collectors need to be trained in proper collection, grading, and storage techniques. They often lose a significant proportion of potential income due to poor techniques employed.
- Finally, an attempt should be made to end the exploitative credit linkages, barter, and measurement systems in NTFP trade through education of primary collectors and provision of alternatives, e.g. easy access to credit.

4.2 Opportunities to increase value addition

A related issue is value addition. An attempt needs to be made to capture as much value addition as possible at the level of the primary collectors. The NTFP supply chains are unduly long and primary collectors get only a fraction of the price paid by the end-consumers. For example, collectors in Andhra Pradesh get only about 10% of the price paid by end-consumers in major cities. The current product base is narrow and there is a need to look for various alternative uses of NTFPs to improve collectors' returns and reduce future uncertainty (e.g. in the case of tendu leaves). While there is scope for value addition in all NTFPs, bamboo in particular seems to have a vast untapped potential. It is estimated that the current value addition in India is only 7% compared to 23% in China and 180% in the United Kingdom (APFD, 2006). Bamboo could in fact serve as a trigger for economic growth in several parts of the country. Another promising area is medicinal plants. The success of MPMFPCF in promoting medicinal plant value addition through dedicated processing centres (e.g. at Barkheda Pathani and Rehti) and sale outlet (Sanjeevani, Bhopal) indicates considerable potential of this activity. However, large-scale enhancement in value addition would not be possible without improvement in the rural infrastructure, which is the major bottleneck in many areas. Similarly, policy and procedural bottlenecks at the collector, producer, and enterprise level also need to be removed. This is discussed further below.

[42] A large quantity of NTFPs is, of course, collected for self consumption.

4.3 Over-regulation impedes enterprise development

There is over-regulation in case of several NTFPs, especially those that are commercially important. For example, in Orissa there is a limit on the amount of mahua flowers that can be stored or transported. In Madhya Pradesh, all farmers growing bamboo in natural bamboo districts have to register themselves with the FD and also inform it at the time of felling. One of the biggest bottlenecks for the development of NTFP-based enterprises is the transit permit requirement for many products. Permits are required each time the produce is transported and each permit is valid for only a few days. The issuance of a transit permit can take up to 30 days, as in the case of tendu leaves in Madhya Pradesh. Although a number of steps have been taken by different state governments in recent years to reduce bureaucracy, a lot more needs to be done to promote NTFP-based enterprises.

4.4 Need for holistic planning along the supply chain

Many primary collectors and local traders are unaware about the end-use and quality requirements of NTFPs that they collect and trade in. Due to this reason, they do not follow correct collection and storage methods and consequently marketability of their products suffers. For example, sal fat (from sal seeds) can be a good substitute for cocoa butter used for making chocolates. Sal seeds could have good export potential as these are organic products grown without use of fertilisers or pesticides. However, this tremendous advantage is frittered away during the collection, storage and primary processing stages. The seeds are often collected and stored in old sacks of fertilisers and chemicals. Worse still, various pesticides are added to protect kernels from fungal attack. There is also undue delay in processing the kernels that lowers their quality. Due to all these reasons, the export market of sal seeds has been all but destroyed. There is an urgent need to raise awareness regarding end-use and quality requirements among collectors and traders. There is a need for holistic planning across the entire supply chain.

4.5 How can nationalisation best meet its original objectives?

Several NTFPs have been nationalised with the twin objectives of (1) preventing over-exploitation of the resource and (2) safeguarding the interests of primary collectors and local communities. These are no doubt laudable objectives. Unfortunately, the field experience shows that nationalisation has not always met them. The case of bamboo nationalisation in Orissa discussed earlier illustrates this point well. Similarly, granting of a monopoly over tamarind purchase to GCC in Andhra Pradesh has failed to benefit the primary collectors in the state.[43] The experience of rate fixation has also been somewhat mixed. While the government procurement rate assures a minimum price to the collectors/producers, the information regarding price often reaches the field level after half the season is over. The traders often buy better quality produce at higher rates and it is poor quality produce that comes to the state procurement agencies. In the case of the administered sale price, fixing it too high often results in loss of market. For example, it is estimated that the annual production potential from Andhra Pradesh forests is over 200,000 metric tonnes. However, actual annual sale by the government agencies (FD and APFDC) in the past three years has been just over a quarter of this potential.

Even impact of positive measures such as sharing of net profit from tendu trade with the primary collectors is considerably reduced due to various procedural issues discussed earlier. As considerable field experience is now available, it is important to assess the efficacy of nationalisation to meet its original objectives. Although the nationalisation decision should only be based on these objectives, it is often government revenue considerations that influence it. It is mainly due to lack of revenue that the sal seed trade has been denationalised in Orissa while government continues with its monopoly over more profitable tendu leaf and bamboo trade.[44]

[43] Granting of monopoly rights over so many NTFPs has not benefited GCC either. It makes a profit on only 8 out of 25 items over which it has monopoly.

[44] The reason for denationalisation becomes clear if one considers that in early 2006, the Orissa Finance Department had suggested that OFDC and TDCC should not be compelled to procure sal seeds for which there is not much demand, as this operation is likely to create liability for these corporations.

4.6 Commercial-industrial focus favoured over artisans

The National Forest Policy (1988) clearly states that the local communities' subsistence needs have a much higher priority than commercial-industrial production on forest lands. Although it has been nearly two decades since the issuance of the policy statement, the commercial-industrial focus continues in the case of many NTFPs. This is clearly seen in case of bamboo, which is used by both local artisans and industries. Although bamboo artisans require green bamboo that is up to two years old, the felling cycle adopted in the working plans is usually four years.[45] No felling is permitted for several months each year even though artisans require bamboo all year round. Further, there is also considerable delay between harvesting and supply of bamboo that makes it dry and unsuitable for artisans. Most importantly, however, artisans have to pay considerably more than the amount paid by industries for procuring bamboo.

4.7 Devolution needs to be complemented with capacity building

In the past few years, PRIs have been devolved greater powers over NTFPs.[46] For example, in Orissa control over 69 NTFPs (termed as Minor Forest Produce) has been transferred to PRIs. The Panchayat Samiti (Block-level PRI) has been authorised to set procurement price for these NTFPs, which, in turn, has to be ratified by the Gram Sabha (village general body). All NTFP traders operating within the jurisdiction of the Gram Panchayat (village-level PRI) have to register with it and pay a registration fee. In Madhya Pradesh, PRIs have been authorised to issue transit permits for transporting certain NTFPs. However, the impact of such progressive measures has been rather limited so far. The two major reasons for this are (1) lack of an enabling environment and (2) inadequate focus on capacity development. Although it has been over seven years since the devolution of powers to PRIs in Orissa, there has been no attempt to amend various laws to create an enabling environment. For example, while control over mahua has been nominally devolved to PRIs, the real control is still with the Excise Department as the Excise Act has not been amended after devolution. Similarly, while PRIs have been authorised to set procurement prices, in reality prices continue to be dictated to by the traders.[47] Lack of capacity within PRIs is a major constraint. For example, the price of sal seeds depends on its moisture and FFA content but most PRIs do not have the awareness or the capacity to assess these. This allows the traders to cheat primary collectors on the pretext of poor quality of kernels.

It is important to create an enabling environment and enhance PRIs' regulatory powers and capacity (including adequate human resource) for devolution to be meaningful. Further, accountability should go hand in hand with authority. It has been seen that PRIs too have been quite lax in declaring procurement rates. In many cases, conflict between the role of PRIs and Forest Protection Committees created under the JFM programme also needs to be resolved.[48] The need to address these issues has become even more urgent due to the passage of the new forest rights law.[49]

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[45] Orissa Supply of Bamboo to Artisans including Co-operative Societies Rules, 1980 stipulate that no bamboo removed should be less than two years old, defeating the very purpose of these rules. As per these rules, the supply is to be made from 'protected forests' even though most bamboo coupes of OFDC are located in 'reserved forests'. Due to this reason, there is perpetual shortage of bamboo for supply to the artisans.

[46] Many of these powers have been devolved as a direct consequence of the Provisions of the Panchayats (Extension to Scheduled Areas) Act, 1996 (PESA). However, PRIs in many states had been given responsibility for NTFPs even before promulgation of PESA.

[47] For some years after the issuance of the new NTFP policy, even TDCC used to have its own separate procurement rate rather than procuring at the rate decided by the *Panchayat Samiti.*

[48] Such conflict has also been reported between SHGs and Forest Protection Committees. For example, CARD (an NGO working in Madhya Pradesh) has trained 18 SHGs in Mandla district to scientifically collect and process honey. Although SHGs have been permitted to collect honey by the Divisional Forest Officer, Forest Protection Committees do not allow them to collect honey from their area unless they are given half the collection.

[49] Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006.

4.8 Opportunities for mutual benefits through inter-state coordination

There is a need to enhance inter-state coordination on issues related to NTFPs. There is not only considerable movement of NTFPs across states but policies adopted in one state often affect collectors and enterprises in other states as well. The need for such coordination is well-illustrated through the experience of sal seed pricing in Chhattisgarh. In 2003, the Chhattisgarh state government increased the procurement price of sal seed by over 40%. However, as buyers could get the seeds at much cheaper rates in other states, they refused to buy at a higher rate. This resulted in a loss of about Rs 300 million to the state minor forest produce federation as it bought sal seeds at higher rate and sold at a loss to the traders. Similarly, while PRIs in Orissa have been authorised to regulate trade of 69 NTFPs, certificates/ permits issued by them are often not recognised by the officials in other states leading to considerable harassment of persons transporting NTFPs. The states could also learn from each other's experience. For example, while the mahua trade has been liberalised in Madhya Pradesh, it is still regulated by the Excise Department in Orissa. On the other hand, while the sal seed trade has been liberalised in Orissa, it is still nationalised (and its collection banned until 2011) in Madhya Pradesh. A mechanism should be developed for regular dialogue and sharing of experience between states at regional and national levels.

4.9 Sustainable NTFP management critical for livelihoods

Considering that many NTFPs are critical for livelihoods of millions of people and also play an important role in forest ecosystems, it is important that these are sustainably managed. There is a need to assess production potential as well as current extraction levels of various NTFPs. Similarly, there is a need to assess current collection and management techniques, especially extensive use of fire to encourage regeneration (e.g. tendu leaves) and collection (e.g. mahua flowers and sal seeds). Information on all these aspects is currently lacking.[50] The focus of these assessments should be broader than NTFPs under consideration. For example, the impact of fire should be assessed not only on tendu leaves' quality and quantity but also on the wider ecosystem. The NTFP management decisions should be based on scientific studies. Blanket bans – such as the one imposed on sal seed collection in Madhya Pradesh – should be avoided as these can have serious implications for the livelihoods of persons dependent on those NTFPs. One option that could be examined to promote sustainable production is certification. It could also help in gaining access to international markets.

5. Key Action Points

A number of product-specific and general issues have been identified in this report. These have been discussed in the previous two sections. In this concluding section, the key action points for policy makers and relevant authorities that emerge from this study are listed.

5.1 Bamboo

- Ensure timely and adequate supply of green bamboo at reasonable rates to artisans by appropriate changes in the bamboo felling and supply rules.
- Reduce regulatory burden on bamboo producers. Facilitate production on farms by simplifying transit permit rules. Remove transit permit requirement for products made from bamboo.

5.2 Tendu leaves

- Ensure primary collectors' involvement in decisions regarding procurement price, especially in states like Madhya Pradesh where a three-tier cooperative system is already in existence.
- Adopt rotational bush-cutting/ pruning and increase budgetary provision for it, especially in Orissa.

[50] Except a few studies carried out on selected NTFPs.

- Ensure timely payment of wages and profit to the collectors. In Orissa, ensure timely finalisation of the tendu leaf trade accounts. The profit should be shared with the collectors rather than PRIs. In Andhra Pradesh, deposit profit in VSS rather than joint account.

5.3 Mahua flowers

- Review storage and transport restrictions on mahua flowers, especially on SHGs.
- Remove mahua flowers from the Excise Department's purview.

5.4 Tamarind fruit

- Review monopoly granted to GCC in Andhra Pradesh.
- Focus on price stabilisation and value addition.

5.5 Sal seeds

- Review decision to ban sal seed collection in Madhya Pradesh.
- Amend Prevention of Food Adulteration Rules (1954) to allow use of sal fat in food items such as chocolates and ice creams.
- Ensure timely processing of the seeds to maintain their quality.
- Increase awareness among the collectors to reduce use of contaminated sacks and pesticides for storing kernels. Focus on its 'organic' nature to access new markets.

5.6 General

- Set procurement rates at a level that allows at least minimum wage to the NTFP collectors.
- Extend profit sharing to all nationalised NTFPs (on the lines of tendu leaves trade).
- Assess sustainable harvesting levels and practices for various NTFPs.
- Create an enabling environment and enhance capacity of PRIs for meaningful devolution. Remove monopoly of state agencies where necessary to give effect to progressive legislations such as PESA.
- Strengthen the three-tier system of NTFP cooperatives (primary/district/state) in Madhya Pradesh and replicate it elsewhere.
- Set up a mechanism for inter-state coordination and regular cross-learning.

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