India is a developing nation. The majority of its population lives in rural areas. Forests play a vital role in the rural economy. In many areas, forests and trees are among the few resources that are available to rural dwellers. These provide different kinds of benefits: jobs and incomes often needed to supplement inadequate returns from agriculture; produce such as fuelwood, food, fodder and building poles for the home and a range of environmental benefits, without which other activities, such as agriculture might be impossible.

Traditionally, forest management practices aimed at developing and understanding the protective and productive aspects of natural forests. Biological, technical and macro-economic considerations received overriding priority. In the process, people's livelihood issues were relegated to the secondary position and people's role in safeguarding the resources and their active participation were relegated to a secondary place. Only recently the social role of forests and forestry together with their protection and production roles have received attention.

After all, forestry is about people. It is about trees only in so far as trees can serve the needs of the people (Westoby, 1989). Forestry and Forest Policy should concern itself in every conceivable way in which, forests, wood loots and trees can contribute to livelihood of people in particular and human welfare in general. In fact, future of human society is intrinsically linked to the future of the forest.
To arrest further degradation and to rehabilitate the degraded forestlands, social forestry, in mid 1970s, provided the most challenging area for social analysis in rural livelihood scenario and development. However, the major drawbacks of the implementation of the social forestry programme were lack of transparency and accountability, exaggeration of physical target achievements and unsustainable investments. It did not help in institutional reforms. The economic benefit to the landless poor people came through wage employment. Beyond this, the community participation was not very significant.

Relative to forest management for the production of timber, non-timber forest products (NTFPs) and environmental services received only scant attention by forest departments until recently. Interest in NTFPs grew slowly during the 1980s, in response to calls for using forests sustainably for the benefit of the wider society and particularly the rural population. Today's interest in NTFPs is based on the argument that in order to conserve the world's tropical forests we have to find new products, develop markets and improve marketing systems for NTFPs, so that the forests will become far too valuable to destroy (Byron and Ruiz-Pérez, 1996). Shiva (1995a) called NTFPs the "potential pillars of sustainable forestry". The current and potential value of NTFPs for local communities is being utilized in integrated conservation and development projects (ICDPs). An underlying assumption is that communities will conserve and protect forest resources if they receive tangible benefits from sustainable forest utilization (RECOFTC, 1995). While this assumption still needs to be tested, currently local people appear to have only very limited rights to forests, despite the recognized importance of NTFPs for income generation and food security (Lynch, 1995).
Ever since the emergence of this planet, human beings have been dependent on forest resources for their requirements, ranging from food, fuel to shelter. Sustainable extraction of forest resources has been promoted by conservationists and development agencies as a feasible strategy for forest dwellers that does not diminish the resource base. Yet surveys of actual resource use suggest that for poorer resource-dependent communities without access to markets, non-timber forest products (NTFPs) can only act as a safety net and a supplementary income source. In state like Chhattishgarh, India, NTFPs and medicinal and aromatic plants (MAPs) have become an important source of cash and subsistence income for poor people living in or near forests. People particularly tribals in this region have traditionally been collecting different forest products from private forests as well as community conserved forests. The study reveals that NTFPs contribute significantly towards the annual cash income of the local population. The contribution of NTFPs to their income was 24%. Our household survey revealed that 78% of the population studied directly or indirectly dependent on NTFPs. Household response indicates diversity in both the types and uses of products collected.

It cannot be over-emphasized that NTFPs are an extremely heterogeneous group. They are collected for different reasons by different people. Some are consumed without any further processing and play no role in the market place. Others go through a long chain of traders and processes before reaching a highly competitive international market. Some come from the natural forests, while others have been domesticated for centuries. The domestication and cultivation of NTFPs is carried out so that people can produce
them in larger quantities and also to protect these species from over exploitation in their natural habitat (Tynsong and Tiwari, 2010).

It has been argued that NTFP extraction can contribute positively to sustainable forestry management because it provides tangible economic benefits to poor rural communities while simultaneously conserving biodiversity (Kaushal and Melkani, 2005; Mahapatra et al., 2005). In India for example, sustainable harvesting and management of NTFPs, together with improved market structures, have been endorsed as a strategy to help in improving the economy and nutrition of the rural poor (Mahapatra and Mitchell, 1997; Hiremath, 2004; Shankar et al., 2004; Mahapatra et al., 2005). It has been assumed that the extraction of non-timber forest products from natural forests could serve as the goal of biodiversity conservation and poverty alleviation (Ros-Tonen et al., 1995). It is estimated that roughly 80% of the developing world, including nearly 60 million indigenous people, depend on wild fruits, seeds, poles for construction and medicinal plants to meet subsistence and supplemental income needs and they play a significant role in providing subsistence and cash income to local populations of the world (FAO, 2005; Belcher et al., 2005; Belcher and Schreckenberg, 2007; Wunder, 2001). Because of the low entry barriers to trade, in terms of skills and capital requirements, and open or semi-open access to NTFP resources, increased trade in NTFPs seemingly opens a window of opportunity for livelihood improvement and poverty alleviation (Neumann and Hirsch, 2000; Sunderlin et al., 2005). Commercial use of non-timber forest products is thus seen as one way to poverty alleviation of the rural poor (Neumann and Hirsch, 2000; Sunderlin et al., 2005). There are also macro-economic projections/estimations showing contribution/share of NTFP to the GDP, e.g. in India, the contribution of NTFP
and eco-tourism to the Forestry Sector’s gross value (of Rs 259.85 billion) is 16% (MOEF); the traditional NTFP industry contributes $1 billion to the Canadian economy (Duchesne and Wetzel, 2002).

This indicator has been most widely used to reiterate the economic potential of NTFP. For example, it is claimed that 1.6 million persons employment per year in India are from NTFP while the forestry sector in total provides 2.3 million person years of employment. (Shiva and Mathur, 1998) As per another study NTFP collection accounts for 1062.7 million person days (2.9 million person years) of employment in India, while a similar figure applied to Madhya Pradesh would amount to 233.8 million person days (Khare and Rao, 1993). Studies in Indian states of Orissa, Madhya Pradesh, Himachal Pradesh and Bihar have also indicated that over 80% of forest dwellers depend entirely on NTFP, 17% landless depend on daily wage labour mainly on collection of NTFP and 39% people are involved in NTFP collection as a subsidiary occupation (Negi, 1993). Another estimate put that the forest-based small scale enterprises, many of them based on NTFP, provide upto 50% of income for 20 to 30% of the rural labour force in India (Campbell, 1993). Some other substantiations around NTFP dependence are based on indirect assumptions like the ‘dependence of nearly five hundred million people living in and around forests in India on NTFP for their sustenance and supplemental income’ (Tewari, 1994) or the ‘receiving of substantial proportion of their cash and in-kind income from NTFPs by most of India’s 50 million tribal people’. It is also estimated that in tribal areas of Orissa, India, more than 60 percent of the households depend on forests for income ranging from 15% to 50% every year (Vasundhara, 2005).
NTFPs are a heterogeneous bundle providing a range of benefits to rural households who use a variety of products and species for both direct household consumption and sale (Cavendish, 2000; Shackleton et al., 2001; Dovie, 2003). This study found households from two Blocks of Achanakmar-Amarkantak Biosphere Reserve in Chhattisgarh, India using NTFPs for food, shelter, construction, fencing, medicinal purposes, energy, tools and functional items and cultural and decorative items. Most households use these resources for direct household consumption however there are households involved in the trade of various products, either on temporal or full-time basis. Across the sample the use of NTFPs is a common feature with all of the households using at least one product. This supports findings from elsewhere in India where a high proportion of households have been found to be relying on and utilizing a range of products and species to meet a variety of household needs (Cavendish, 2000; Shackleton and Shackleton, 2000; Dovie, 2001; Campbell et al., 2002; Shackleton et al., 2002; Twine et al., 2003). The proportion of households using NTFPs can be high particularly for key resources such as fuelwood and wild foods (Cavendish, 2000; Dovie, 2003; Twine et al., 2003).

In India, for example, local-level trade is important particularly to forest dwellers, including tribals, some of whom still depend entirely on the forests. About 60 percent of production of NWFPs in India is consumed by about 8.4 Crore tribal people. NWFPs are estimated to constitute about 10 to 40 percent of tribal household earnings. Collection of a single NWFP from existing resources is, however, not able to provide enough income to sustain people. Hence different NWFPs in different seasons are collected and marketed to ensure sustained income (Sekhar, et al., 1993).
The lack of an appropriate institutional environment, including free access to forest; restriction on domestication of selected NTFP species; lack of extension services for disseminating technical expertise on NTFP propagation as well as for helping farmers to develop NTFP-based goods making skills; and the absence of a well-managed marketing system are the most serious constraints for promoting NTFP domestication. Any institutional reform programme for promoting NTFP domestication should aim at removal of these constraints. In this regard, the use and management responsibilities of national forests should be transferred to local communities in line with the national community forestry policy. Following the national leasehold forestry policy, the DFO may also transfer some of the national forests to the most economically disadvantaged groups of people as their leasehold forest. This will help to end the open access status of forests, thereby significantly reducing NTFPs collection from forests and encouraging their domestication. Simultaneously, opportunities should be provided to local people to learn about propagation and management of different species of NTFPs and for developing NTFP-based goods making skills through the provision of effective extension services. Training on knowledge and skill development should be organized in villages where farmers have expressed interest in NTFPs domestication, and all interested individuals, including women, should have access to such training. Especially, the techniques and methods for NTFP propagation and management should be imparted to farmers through Farmers Field Schools to allow farmers to develop as extension workers. All efforts made to promote the domestication of NTFPs will not have any effect if farmers are not allowed to sell their produce because of legal barriers or they cannot earn satisfactory income from the sales of NTFPs. Legal provision should be made to allow
the sale of all kinds of NTFPs available from private farmlands. To prevent the possible abuse of this provision, a simple village based certification system has to be established, which will allow village leaders to inspect and issue certification to farmers who have produced NTFPs on their private farms. Equally important is the promotion of a group marketing system to enable farmers to establish a market information dissemination system and to earn satisfactory income from NTFPs. Farmers will gradually shift from cereal crop cultivation to NTFP production when they are convinced that they can get attractive income from this activity.

In NTFP commercialisation research, studies focusing on valuations of standing forest are important for assessing alternative forest uses and for identifying the possibilities for conservation and development initiatives based on extraction. In fact, a fundamental assumption of the conservation rationale for commercialisation is that the sustainable extraction of NTFPs will produce more value than will logging. The picture that emerges of ‘potential value’, however, is somewhat inconsistent and inconclusive, as a lack of extensive data and theoretically sound methodology renders findings speculative and idiosyncratic. These data caution us to use care when drawing conclusions from estimates of potential value. On the other hand, the significance of NTFP related income, particularly to rural households, is well demonstrated. At the same time, there is a great deal of social variation in income distribution –within regions, villages, households and complex trade networks. While the data on NTFP enterprise profitability is also rather sketchy, there do appear to be clear and consistent patterns of enterprise costs. Most of the analysis presented here is generalised over many studies, the majority of which do not
address economic questions primarily. Where appropriate, studies with a central economic focus presenting significant findings are described in detail.

Researchers from many fields and in many contexts have argued for the potential value of NTFPs, relative to other resources, other forms of labour, the costs of production and other forms of production. A consideration of value in NTFP production is not at all straightforward, however. This is well demonstrated by Chopra (1993), who identifies two primary issues in his assessment of the value of the non-timber products of India’s tropical deciduous forests:

1. To what does value refer? ‘Value’ may account for value in exchange, value in use, option value (new options for use may emerge in the future if resources are maintained now), and perhaps existence value (the ‘deep ecology’ view that the natural habitat and its sustainability have ‘value’ independent of the human agent). Forests also provide positive externalities, such as preventing soil erosion and helping to conserve biodiversity. Should these externalities be considered in value assessment?

2. How is value to be measured? Market price, the cost of an alternative, the cost of labour time in collection, and the loss of productivity in alternative use may all be used to approximate value. The question of value for NTFPs is particularly complicated because not all non-timber forest resources that have use potential are actually used, and many products that are used are not marketed. Therefore, the relationship between value and price is problematic. Not surprisingly, there is little consistency in the literature as to how value is understood, evaluated or theorised. Godoy and Lubowski (1992) undertook a
comprehensive review of studies that estimated the economic value of nontimber tropical-forest products and made a number of important observations:

- Chronic problems of incompatibility in design and methods among studies has resulted in widely varying results, even for research conducted at the same time and place.

- Efforts to estimate value rarely make a comprehensive assessment of all NTFP resources, e.g. they found no study that measured the combined economic value of both plants and animals.

- The degree to which studies are based on representative samples of ecosystems or human populations is either low or indeterminate. Thus the ability to generalise from study findings with confidence is limited.

- Assigning prices to NTFPs in the absence of an existing market can be highly speculative. A commonly used tool, contingent valuation, is of little use in the nonmonetised economies where many studies take place.

Nothing in his review would contradict Godoy and Lubowski’s conclusions. Keeping in mind all the complexities of valuing NTFPs implied, this studies examined some of the research dealing specifically with commercial NTFPs. The most general investigations into the potential value of NTFP resources are those that broadly calculate ranges of value for entire forest areas. Chopra (1993) estimated the total present value of non-timber goods and services available from tropical deciduous forests in India to vary from a minimum of $219 to a maximum of $357 per hectare annually. Whatever the
potential value of NTFPs, researchers have documented significant actual subsistence and
cash income generated for a large number of households in many areas. Often these
studies investigate particular villages or regions, using a combination of interviews,
questionnaires and observation. While not every village or even region has been covered
comprehensively, the literature generally suggests similar income-related phenomena
over widespread and varied areas. The estimation of the value of subsistence income is
complicated in ways that are similar to the estimation of the potential value of resources:
not all NTFPs used for subsistence are also marketed, and some have no obvious market
substitutes. The estimation of cash income is more straightforward, although problems
with the quality and accuracy of interview and questionnaire data remain. Often,
researchers do not attempt to estimate income directly, but use other data to demonstrate
the importance of NTFP income to household life.

Villagers were found to use a wide variety of NTFPs for many purposes in a study
of 12 forest protection committees in Midnapore District, India – over 75 species were
used regularly for subsistence needs (Malhotra, 1993). Since many NTFPs are seasonal,
they are important to household subsistence because of when they appear in the diet. In
Benin, NTFPs are available during the dry and early rainy season or ‘hungry period’
when cultivated crops are in short supply (Schreckenberg, 1996). Some researchers
simply note the importance of NTFPs to subsistence without further elaboration (Rao and

While NTFPs contribute to household income in many places, this contribution is
uneven geographically and socially. Income earned from the collection of medicinal and
aromatic plants is higher in the north than the central regions of Nepal (Olsen, 1997). A comparison of south Bihar and southwest Bengal, indicates the geographical difference in incomes from NTFPs (Rao and Singh, 1996). In Bihar about 17% of total revenues from forest production is received from NTFPs, while in southwest Bengal it is only 1.7%. At a biosphere reserve in southern India, villages within the interior are more dependent on NTFPs than less isolated villages (Ganesan, 1995).

In summary, the importance of NTFPs income to total household income is apparent across many regions, particularly in rural households. NTFP products may be critical to overall subsistence, and can supply a high percentage of household cash income. Householders may rely on NTFPs during particular seasons when other income is low. However, income is not evenly distributed. Control over labour, product and income may vary across regions, within villages and within households. For example, NTFP income is especially important to the rural poor, and in some regions it is of particular importance to women’s livelihoods. The NTFP production and marketing can be successful is widely demonstrated, but attention must be given to who gains and how sales revenue if controlled and distributed. These questions require more precise quantification of incomes and more elaboration of dynamics within households, villages and trade networks in order to understand better the control and management of NTFP enterprises.

To make up the revenue loss from timber, Non-Timber Forest Products (NTFP) has been globally considered as an alternative source of earnings from the forests. FAO also recommends that NTFP should be integrated into the main stream of forest
management planning and execution (Shiva and Verma, 2002). As per the provisions of National Forest Policy, 1988, Government of India, JFM activities should concentrate on NTFP management i.e. regeneration, development and sustainable harvesting of NTFP which can be given free or concessional rates, as per the existing practice in degraded areas under JFM.

Traditional forest-related knowledge falls under the larger umbrella of traditional knowledge, and includes knowledge associated with the use and management of forest species, and the broader understanding and management of forest ecosystems. Our study revealed that there were strong relationship between indigenous knowledge of these indigenous communities and sustainable development of NTFPs, tribes like Gond and Baiga possessed fairly good indigenous knowledge of ethno-forestry with having a higher indigenous knowledge of NTFPs belongings to the families of Rutaceae, Euphorbiaceae, Caesalpiniaceae and Combretaceae but least knowledge of about conservation practices. Age group of 60-80 years were found having good indigenous knowledge as compared to other two age groups 20-40 and 40-60 years, this indicates that IK is decreasing among the new age groups. This way traditional knowledge is linked to biological and cultural diversity in AABR but is diminishing with the young generations. Thus our findings draws attention and seek to protect and respect the role of traditional knowledge.

Historically, traditional knowledge has played a central role in the development of commercial products, including those from the pharmaceutical, seed, herbal medicine, cosmetic and horticultural industries. In some industries, the role of traditional knowledge in research and development programmes has declined in recent decades, but
in others it remains strong; in all sectors, products derived from traditional knowledge continue to be marketed (Laird and Wynberg, 2008; Petersen and Kuhn, 2007). Despite the economic downturn, sales continue to grow around the world of herbal medicines, nutraceutical, functional food and beverage, personal care and cosmetic products with a traditional knowledge component (Gruenwald, 2008; Cavaliere et al., 2010).

In context of regeneration, this study revealed that as development of NTFPs increases, unsustainable extraction practices has also increased for many reasons. Increasing demand of NTFPs in the state has lead people to disregard traditional harvesting techniques. For example, prices of chironji seeds (*Buchanania lanzan, B. latifolia*) or Cuddapah almond, used as a substitute for almond in various delicacies, have increased more than 150 times or so within a span of five years in India. Many tribal people prematurely harvest chironji fruits and overexploit them to the extent that natural regeneration is now being hampered, especially in AABR of Chhattisgarh.

In West Bengal, faulty techniques of collecting mahua flowers (the collectors break the apical twigs which affects flowering in the following year) were found to do considerable damage to the natural stock (Rama Krishna Mission Lokashiksha Parishad, 1992). In Central India, mahua forests are burnt repeatedly to simplify collection of the yellow flowers from the forest floor, damaging regeneration. As a result, young mahua trees are becoming scarce and some experts suggest that the species will be extinct by AD 2200.
Similarly, the indiscriminate collection of raw materials from forests for the incense stick (agarbatti) industry in Karnataka state in southern India has created large environmental losses in some areas. Two examples out of many in the state are the extensive loss of gulmavu (*Machilus macarantha*) trees in Coorg and Malanad districts resulting from debarking of the trees, and of species such as *Ailanthus malabarica* (halmaddi) and *Borewellia serrota* owing to unsustainable exploitation (Parameswarappa, 1992). Similarly, the indiscriminate felling and collection of NTFPs from uppage (*Garcinia cambogia*) trees in Karnataka has resulted in widespread losses. Our study found that regeneration status of *Buchanania lanzan* Spreng and *Madhuca indica* J. F. Gmel were adversely affected due to heavy NTFPs extraction than the two other species i.e. *Diospyros melanoxylon* Roxb and *Shorea robusta* Gaertn. F. The poor regeneration of *Buchanania lanzan* Spreng and *Madhuca indica* J. F. Gmel is because the harvesters not only harvest its fruits and flowers but plunge its branches affecting the seedling of the species adversely.

6.1 Shaping Institutions and Policies for NTFPs sustainability

6.1.1 Forest Right act 2006

Across India's forest area, people are fighting for democracy, livelihood and dignity. The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006, is one instrument in that struggle. One Million of people live in and near India's forest lands, but have no legal right to their homes, lands or livelihoods. A few government officials have all power over forests and forest dwellers. The result both forests and people die. This Act recognizes forest dweller’s rights and makes
conservation more accountable. Recognition of forest rights - and, more importantly, making conservation democratic is the only way forward. The more power the forest bureaucracy retains, the more it will harm both wildlife and people.

Across the country, thousands of communities are protecting their local forests and wildlife, often in the teeth of opposition from the Forest Department. The government, meanwhile, is using its total control over forests to hand over more and more resources to large projects and private companies. The state of the forest rights struggle, based on reports from our member organisations and friendly groups. Though the State government claims to have recognised more than one lakh individual land holdings under the Forest Rights Act, the process has been implemented in an illegal and highly undemocratic manner.

FRCs were formed hurriedly in late February/early March 2008 without any dissemination of information about the Act to the people. In almost all areas, FRCs were constituted at the panchayat level, though in a few Scheduled Areas hamlet level gram sabhas were allowed to function after they applied for recognition. In many areas existing JFM Committees - the Van Suraksha Samitis - were converted to Forest Rights Committees in total violation of the law. The FRC’s were never given clear information on what their task is and in many areas have been simply bypassed by the Forest Department. The State Level Monitoring Committee is essentially non-functional.

Despite the Tribal Department being the nodal agency, FRA implementation seems to have been largely controlled by the Forest Department in the initial months. Prior to June 2008, only those living on forest land were considered eligible, and forms were only provided for those recorded under previous Forest Department surveys as
living on forest land (only numbered official forms were being accepted for claims). After June 2008, this was changed, but the FD continued to dominate the process at the local levels.

Only claims for individual rights were accepted; in most areas forms for claiming community rights were not even distributed. The government had earlier announced that community rights would be recognised through a process during and after the monsoon, but this never took place. Organisations attempted to map community forest resources in six districts in order to bring any move by the government to reduce or distort community resource rights. Reports suggested that FRCs had been made to sign on statements that they were not interested in claiming community forest rights without being aware of the law’s provisions.

Much of this is not surprising, given that the orders issued by the State Government (originally on February 8, 2008) were themselves in violation of the Act and the Rules. Thus, the first gram sabha meetings (called between February 25 and 29, 2008), were called by the Panchayat Secretary and not the Panchayat. Although claims for community forest rights are to be prepared by the Forest Rights Committees, the order asks the panchayat secretary to seek the assistance of forest and revenue officials, effectively making it a process controlled and managed by officials instead of the gram sabha, as provided for in the law. Gram sabha resolutions based on FRC recommendations were to be passed after giving an opportunity to officers/staff of concerned departments to be heard before forwarding them to the SDLCs. The gram sabhas were also expected to pass resolutions on relocation packages from critical wildlife habitats of sanctuaries and national parks even before these had been identified.
The Panchayat secretary is to be the secretary of every FRC despite the rules providing that a villager is to be elected secretary. Claimants are asked to deposit their claims in the Panchayat office instead of to the FRC. Verification of claims was to start straight after their receipt by the panchayat secretary (instead of the FRC) after intimating revenue and forest officials. After verification of claims, survey teams for forest land are to be constituted by the DFO and for revenue land by the Collector. The SDO is to direct the FRC and Gram Sabha when to have their meetings.

Overall officials have tried to control the process from start to finish - in violation of both the spirit and letter of the Act. Chhattisgarh has seen numerous protests against this, including a mass cycle rally in Raipur in which more than 2,000 people participated, as well as numerous dharnas, morchas and smaller protests in the districts. Dharnas were held in most districts between August 9th and 15th, 2008 and a large morcha in Raipur on August 15th, as well as subsequent protests in December, January, May and August 2009.

In October and November 2008 plans were announced to first grant titles to those who were on lists drawn up based on a prior survey to identify those in occupation of land prior to 1980. As this would create confusion and result in the Forest Department further controlling the process, this move was opposed by the local organisations through protests in all districts in the state, resulting finally in the order being withdrawn and the Act process being allowed to continue.
In tiger reserves in the State, illegal efforts at relocating people prior to the recognition of their rights are underway. Protests had taken place on this in the third week of December, 2008. Implementation of the Act in all three tiger reserves had not even begun. There have been some positive developments in 2009. Three state level meetings organized by activists created an improved environment. The focus has shifted to claiming rights over community forest resources. This has generated a positive and unifying community spirit and the villagers have got excited about defining their customary community forest boundaries. 108 CFR claims have already been filed in the state. Jhudpi, Bade jhar ke jungle and nistari jungles falling within revenue village boundaries are marked by boundary pillars on the ground and in revenue maps from Rajwada times. 50 to 55 stones normally mark the boundary of each village. The villagers have got very involved in re-identifying their village boundaries and the information about the importance of doing so is spreading from village to village. About 35 CFR claims have been filed from Mungla and Chownki blocks of Rajnandgaon district.

Details about the 1,90,000 approved individual claims (area applied for, area approved, total area, etc) were sought from the tribal welfare department. Their reply was that they didn’t have the information and had asked the forest department for the information, requesting a copy to be sent to the tribal dept as well! A Forest official had stated that the department was approving claims of only those who could provide offense reports, i.e. reports from forest officials saying they had "encroached" the land prior to 2005.
6.1.2 Joint Forest Management

Simultaneously with social forestry, other forestry projects made attempts to check further degradation of forests to alleviate miseries of rural poor and to provide livelihood options. The policy makers realized that along with the Government, the people and the people's institutions are the real stakeholders in forest management. It was increasingly realized that unless the opportunities for rural livelihoods are created, development of forest would be an extremely difficult task.

In 1972 at Arabari in Midnapore district of West Bengal the Village Forest Committees were formed and in turn, provided with usufructs of all NTFP, first preference for employment, plus 25% of net cash benefit from the sale of Sal (*Shorea robusta*) poles. The material benefits which are potentially sustainable were the clear motivation. This kind of joint efforts/collaboration between Govt. and people led to evolution of Joint Forest Management (JFM) programme in India, which essentially is a participatory management tool or strategy.

Coupled with such experience, genesis of JFM is rooted in the National Forest Policy (NFP), 1988. Though the NFP 1988 has main thrust on conservation of flora and fauna diversity, it clearly recognizes that "the life of tribals and other communities living within and near forests revolves around forests". The rights and concessions enjoyed by them should be fully protected. Their domestic requirements of fuelwood, fodder, minor forest produce and construction timber should be the first charge on forest products (NFP, 1988). Conservation and people's livelihood are integral part of the forest development and development of the rural poor.
It was further strengthened by the 1st June, 1990 circular of Ministry of Environment and Forests (MoEF), Govt. of India. It highlighted both the need and process for involving village communities and non-governmental organizations (NGOs) in the protection, development and rehabilitation of degraded forests. It encouraged to form village level institutions for forest management. Formally, the NGO was identified to provide interface between forest department and rural communities. The benefit sharing mechanism also has been outlined to enable rural communities to develop an equity-based stake in the protection, development and rehabilitation of the degraded forests. Rural households, particularly in the developing world, are vulnerable to adversity arising from changes in the social, economic, bio-physical and political environments in which they exist (DFID, 1999; Wood, 2003). These changes include either short-term shocks or long-term trends. Poverty is the driving cause of the susceptibility of rural households to these crisis events and is now considered to be more than just an economic concept, but includes social and geographic dimensions (Reardon and Vosti, 1995; Sen, 2003). The risks to which households are vulnerable are inextricably linked to chronic poverty and whilst households might cope with these, chronic poverty is often beyond the control of individual households and requires responses at the broader scale. Households may be able to recover and move out of transient poverty because of the assets (human, social, natural, physical or financial) at their disposal (Sen, 2003). Poverty is not homogenous nor is it purely a function of low income (Angelsen and Wunder, 2003). Internationally, goals (MDGs) are now in place to significantly reduce global poverty by 2015, however the challenge is considerable. Distinctions are made between poverty prevention and poverty reduction with poverty
prevention implying the maintenance of a minimum standard of living and survival whilst poverty reduction implies moving out of poverty over time (Angelsen and Wunder, 2003). Means to achieve these may differ depending on the objective with poverty reduction as the ultimate goal and poverty prevention, a more immediate need.

In light of these goals to significantly reduce global poverty within the next decade, increased focus is being placed on examining how rural households manage and secure their livelihoods both on a daily basis and during times of increased vulnerability. Commentators suggest that rural households are adept managers of vulnerability and, invest in a variety of livelihood and coping strategies to minimize the impact of crises as well as to achieve their livelihood outcomes (Moser, 1998; Block and Webb, 2001). Although rural households may be able to cope with idiosyncratic risks, there is evidence that in the face of larger, covariate risks, many of the informal insurance mechanisms households have at their disposal fail. Covariate shocks that impact at multiple levels often leave households in a vulnerable position that can result in a downward spiral of increasing poverty and vulnerability particularly when household’s efforts to feed and educate their children are constrained (Skoufias, 2003). Despite this there is the need to take household’s own attempts/means of securing their livelihoods into account (Kepe, 2002). Poverty, vulnerability as well as rural livelihoods are all complex and dynamic themes making it difficult to achieve a “one size fits all” solution – with a better understanding of the nature of rural livelihoods, the pressures rural households face and how they go about coping with these, efforts to reduce poverty and assist these household’s in overcoming vulnerability can be effectively targeted and geared to take into account household’s own capabilities and efforts. Indeed, it is the dynamic and
complex nature of rural livelihoods that is considered by many to be rural households’ key means of reducing their susceptibility to vulnerability (Block and Webb, 2001; Niehof, 2004; Bryceson and Fonseca, 2006). According to Pattanayak and Sills (2001) there is the need to acknowledge that households may respond differently to risk depending on factors such as the household’s socio-economic class, its lifecycle stage, its exposure to risk, its asset base and the coping strategies at its disposal. Rural households invest in a diversity of livelihood strategies and assets in order to spread potential risk and provide a buffer against vulnerability. Whilst some see this diversity as an inevitable poverty trap, households diversify as a means of coping as well as in response to changing opportunities and constraints in the surrounding environment (Ellis, 1999). The strategies in which households engage include both off farm and land-based strategies (Shackleton et al., 2001). Many previous assessments of rural livelihoods have focused on select strategies but have often failed to take the complete livelihood portfolio into account. In addition to this, there is a degree of interconnectedness between and within the strategies (Smith et al., 2001). By investing in these various strategies households spread the risk across their entire asset base in the hope that shocks will not impact on all aspects simultaneously (Dekker, 2004). By diversifying households allow for various fall-back options, making livelihood diversification a preemptive means of coping. Shocks that impact off-farm activities drive households to an increased reliance on land-based activities, whilst shocks to land-based strategies can be minimized by a reliance on off-farm strategies. In recent years both research and policy debate have increasingly considered reliance on NTFPs as a livelihood strategy, with many commentators highlighting a high dependence on forests and NTFPs especially amongst asset-poor
households (Shackleton et al., 2001; Fisher, 2004). Rural households throughout the
developing world rely to varying degrees on a range of products and species collected
from the surrounding ecosystems (Shackleton et al., 2002; Angelsen and Wunder, 2003).
These are used either for direct household consumption or sold in local, regional and
national markets and when included into rural livelihood strategies, help reduce peoples’
vulnerability to risks (Neumann and Hirsch, 2000). The products and species used can be
diverse. In certain cases the income from these products (as both a direct costsaving and
through their sale) has been found to be more than or on a par with other sources of
income (Cavendish, 2000; Shackleton and Shackleton, 2000; Dovie, 2001). Additionally,
the potential income from NTFPs has been seen to be comparable with other land-use
options motivating proponents to consider whether or not transformative land-use options
(e.g. agriculture) make long-term economic sense. The commercialization of NTFPs may
potentially make both economic sense and offer an incentive to biodiversity conservation
although the sustainability of the resource base is of concern, if the harvesting and
commercialization of products is not effectively monitored and managed (Ticktin, 2004;
Emanuel et al., 2005).

Additionally there is the risk that if products assume a high commercial value,
local residents and traders may lose out to elite groups with access to transport, markets
and credit (Cavendish, 2000). With growing concerns that the contribution of the
commercialization of NTFPs (both to poverty alleviation and biodiversity conservation)
may not, in all cases, be as considerable as desired focus has shifted somewhat to the
potential safety-net role of NTFPs (Crook and Clapp, 1998; Byron and Arnold, 1999;
Godoy et al., 2000; Pattanayak and Sills, 2001). This safety-net role is argued, in certain
cases, to be of greater value to rural households than the direct use of these products (Shackleton and Shackleton, 2004a). Although there is considerable reference to and appreciation of the safety-net role of NTFPs, the empirical data on this function and its potential contribution is limited particularly with respect to the prevalence of use and the determinants of reliance on NTFPs as a rural safety-net, both as an ex-ante and ex-post strategy (Pattanayak and Sills, 2001; Skoufias, 2003; Shackleton and Shackleton, 2004a). There are still critical questions regarding the motivating factors for NTFPs as a safety-net including whether household characteristics and capabilities, as well as the nature, frequency and duration of risk determine reliance on this strategy (McSweeney, 2003).

According to Shackleton and Shackleton (2006) the sale from NTFPs is particularly important to poor households with no other cash incomes. The poor rely more on the income from the sale of NTFPs as input for other activities especially as the entry barriers to arable agriculture and animal husbandry can be high (Cavendish, 2000). Commentators differentiate between the sale of NTFPs in response to opportunity and need (Arnold and Townson, 1998; Shackleton et al., 2001). In Both Blocks both poor and wealthy are involved in the sale although the poor sell more resources per household. Wealthy households are predominantly involved in the sale of curios suggesting these households have responded to opportunities in higher return products whilst the poor have diversified into the sale of various products in response to vulnerability and to provide cash income. Ellis (1999) observed that poor households diversify into less advantageous markets.
The labour and profits are shared between the family members who reside in different households. Poor households trade opportunistically in low-return products with low-skill requirements as a livelihood stabiliser and a means to cope whilst wealthy households are involved in the more lucrative trade of high-return products (Cavendish, 2000; Fisher, 2004; Shackleton and Shackleton, 2006). According to Shackleton et al. (2000) the incomes from NTFP sales are generally higher where there is an external market, as is the case in Block I. This therefore makes the trade a more attractive option to wealthy households.

According to Shackleton and Shackleton (2004) resource commercialisation offers both opportunities and constraints to poor households however the lack of alternative income sources suggests poor households benefit more than their wealthier counterparts. It should be noted that number of resources used as well as the trade in NTFPs is not necessarily indicative of reliance on those resources or the significance of contribution made: as Cavendish (2000) highlights, although wealthy households dominate the use of NTFPs, in terms of income share, the poor depend more on the contribution made from both use and sale. According to Shackleton and Shackleton (2004) more poor households commercialise, sell a greater variety of products and the income made constitutes a greater proportion of the total household income. This study substantiates this in terms of the variety of products sold by poor households. With respect to gender of the de jure household head, this study found that this household’s characteristic does not influence the overall proportion of households selling or the average number of resources sold per household in either village. Both male- and female-headed households were trading in resources and there were examples from both groups
of households trading full-time whilst others only traded on occasion to supplement household income or cover unexpected expenses. Taking individual resources into account also shows no significant influence of gender of the de jure household head although there are some gender related patterns.

The income from the trade in NTFPs often contributes significantly more to the total household income of female-headed households than male-headed households (Clarke et al., 1996; Cavendish, 2000; Shackleton and Shackleton, 2006). With respect to the overall use of NTFPs, the results indicate that households, irrespective of wealth or gender of the de jure household head make use of a variety of NTFPs. Findings on the high proportion of households using NTFPs, the resources used most prevalently as well as the procurement and trade in NTFPs support findings from elsewhere in South Africa (Dovie, 2001; Shackleton and Shackleton, 2000, Shackleton et al., 2002). The use of NTFPs by all households in both communities suggests the potential safety-net option is available to them all and not constrained by issues such as availability, although this may depend on the resource in question. Further research would be required on abundance, re-growth rates and so forth to establish the strength of the resource base and the impact of these factors on the rural safetynet function of NTFPs.

According to Pattanayak and Sills (2001) the risks involved in NTFP collection as a livelihood strategy are less than those of strategies such as arable agriculture. Furthermore, the use of NTFPs as part of the greater livelihood portfolio reduces future risk by allowing for investments in other livelihood and coping strategies (Pattanayak and Sills, 2001). This study found that although the use of NTFPs is spatially diverse there is
little indication in either site that household wealth or gender of the de jure household head influence the proportion of households relying on NTFPs, suggesting that the poor collect NTFPs out of necessity whilst the wealthy maximize on the cost-saving offered by free and “risk free” NTFP extraction. There is some evidence of wealth and gender of the de jure household head influencing the frequency with which households consume/use NTFPs and the number average number of NTFPs consumed/owned, however these aspects would require more detailed analysis. A clearer pattern emerges however with respect to the procurement of NTFPs and, to some extent in the trade of NTFPs, with wealth being a greater influencing factor than gender of the de jure household head.

Whilst most households buy at least one NTFP, wealthy households buy a greater variety of products supporting findings by Shackleton and Shackleton (2006). Shackleton and Shackleton (2006) argue that this suggests that poor households depend more on these resources than their wealthy counterparts. There is mixed evidence in the literature on the relationship between household wealth and gender (including gender of the household head – de jure or de facto) and NTFP use (Clarke et al., 1996; Cavendish, 2000; Takasaki et al., 2001; Shackleton and Shackleton, 2006) and whilst the poor, women and de jure female-headed households are generally seen as the most dependent on these resources, the better-off and male-headed households (and men) often use greater quantities and benefit more particularly in terms of income earned from the trade in these products.

Additionally as there are no differences in the overall use of NTFPs as determined by wealth or gender of the de jure household, dependence cannot be gauged this way. However, according to Shackleton and Shackleton (2006) the greater average number of resources bought by wealthy households suggests the poor are more dependent on the
resources and continued accessibility. The findings of this study support this statement. The greater number of resources bought by wealthy households suggests that the opportunity costs of collecting are too high and that these households would rather purchase what is essentially a free resource, allowing time and labour for other options.

According to Belcher et al., (2005) wealthy households are better placed to respond to new markets however the reason many NTFPs are available to poor households is because they have low commercial value. Numerous observers have found that wealthy households are involved in more lucrative trade, whilst poor households are involved in low-skill, low-return products (Ellis, 1999; Cavendish, 2000; Fisher, 2004; Shackleton and Shackleton, 2006). Those trading in high return NTFPs have been predominantly identified as younger men whilst those involved in the sale of low return products are women, the elderly, the asset poor and those with few alternative livelihood choices (Fisher, 2004). Fisher (2004) also identified location as an influencing factor. For example, wealthy households may use and sell NTFPs not out of necessity but because this use/sale allows for investments in other livelihood strategies and in the accumulation of assets and saving schemes therefore ultimately contributing towards their ability to weather misfortune.
6.1.3 : NTFP Certification in AABR: A Tool to Achieve Sustainable NTFP Management

In context of NTFPs certification, Chhattisgarh state has also taken some initiatives by conducting some state level workshops since April 9, 2003 in the state of Chhattisgarh by the Chhattisgarh State Forest Department and the Chhattisgarh State Minor Forest Produce (Trading and Development) Cooperative Federation Limited, Raipur.

Photoplate 7: Field-level NWFP certification workshop and NTFP processing in Chhattisgarh.

The state of Chhattisgarh formed the Chhattisgarh Certification Society, which covers a range of NTFPs but gives priority to richness of MAPs and their economic potential for the state (CG MFP Federation and Chhattisgarh Forest Department, 2003). A recent project sponsored by the National Medicinal Plant Board and the International Development Research Centre (IDRC) in one district of Chhattisgarh devised a set of generic standards covering good collection and other practices, as well as a set of species-specific standards for 10 species (Katiyar, 2007). The state of Chhattisgarh is unique in many respects. The state has around 20,000 villages of which 9,500 villages have more than half of the population belonging to tribal groups. Gonds form the largest proportion (55%) of the tribal population. But the most important aspect is that Chhattisgarh has 59,772 sq. kms of forests, which accounts for 44% of the total geographic area of the state. Apart from timber, these forests provide many non-wood forest products (NTFPs)
like tendu (*Diospyros melanoxylon*), Mahul (*Bauhinia vahlii*) leaves Sal (*Shorea robusta*) seeds, Mahua (*Madhuca indica*) flower and seeds, Aonla (*Emblica officinalis*), Harra (*Terminalia chebula*), Tamarind (*Tamarindus indica*) gums, lac, etc. Besides these, several important medicinal plants are also found in the state. More than 50% of the people living in and around forest area depend for subsistence on forests. The state has 6412 Joint Forest Management (JFM) committees managing around 3.4 m ha forest areas.

Countries, including India, that are signatories to the IITO objective 2000, have an obligation to ensure that every product in the international market comes from sustainable forest management areas by the year 2000. To have a firm foot in the global market, it is obvious that Indian products have to match international standards. Considering the fact that India gets considerable foreign exchange from NWFP trade, it has to equip itself well to consolidate and expand its position in the global market. Besides, certification is also an essential tool to meet the social and economic goals of ensuring sustainable livelihood to the millions of forest dependent poor people.

India supplies 12% of the world’s requirements of medicinal plants. Today, 90% of the medicinal plants consumed domestically and exported are collected from the wild, and only 70 out of around 700 species in the trade are obtained from cultivation. While, some high value herbal plants are internationally traded, others are used for critical subsistence resource in most part of India. These wild herbal plants are collectively categorized under Non timber Forests Produce (NTFP). The management and monitoring of NTFPs are being considered at national and international level to ensure its long-term sustainability and to minimize adverse social and ecological impact.
NTFP Certification is a voluntary market tool, which attracts “green consumerism” by ensuring principles of sustainable forest management (SFM). However, it is still very recent and largely untested except few cases but it has great potential for global business. NTFP availability, utilization, commercialization, exploitation, management practices, policies and tenure system between different parts of India has high diversity and variability, which imposes even greater challenge for development of any generic standards for certification, even though many of the principle, criteria, indicators and verifiers are universally applicable for certification. The harvest of NTFP is coming under increasing scrutiny from certification programmes, as it plays a key role in the sustainable forest management and community benefit worldwide. NTFPs are presenting many new challenges and opportunities in certification due to the wide range of management practices and difficulty in monitoring their harvest and processing. India is a net importer of timbers and its 70% of the forest export revenue is generated from NTFPs. Thus, the sustainable management of NTFPs and vis-a-vis its certification becomes priority for India. Owing to its importance the government of India is giving due consideration for incorporation of the NTFPs in National Forest Working Plan Code so that adequate management inputs are provided.

Globally wild or natural resources meet 70 to 90 percent of market demand for medicinal and aromatic plants (MAPs), also ensuring the livelihood of millions of rural poor (Prasad and Bhattacharya, 2003). This demand is continuing unabated and as a result, the depletion of these resources is quite visible in the wild areas (forests). Cultivation and domestication of some of these plants have not been able to offset the supplies from the wild areas as the demand growing many times the availability of these
resources. Another reason as to why the efforts of domestication and cultivation could not keep pace with market demand was that consumers and industry often believed biochemical superiority of natural products collected from wild areas than the cultivated ones. Traditional users have emphasized good collection and storage to ensure the quality of medicine prepared from the medicinal plants. However with the growing preference for herbal and natural products and consequent expansion of pharmaceutical industry there has been pressure on local gatherers to collect more and more even at the cost of their natural sustainability. It is now being realized by the national government and forest service that there is a need for a voluntary regulatory measures to ensure sustainable management and use of these resources. Due to continuing depletion of resources in wild areas the gatherers are required to travel long distances and spend more time in collecting the same amount of material they used to collect earlier. Women and children are the main stakeholders (over 70% of all gatherers) collecting NTFPs for their subsistence use and for sale to get cash income. Thus, the depletion of resources is causing drudgery to this class of gatherer, which requires an immediate attention of all concern to ensure availability of resources closer to gatherers. MAP/NTFP certification could have potential for addressing some of the above problems. Certification can be broadly defined as a market based incentive for good management practices involving all key stakeholders. In other words it should lead to democratization of forest management governance. Direct benefits of MAP/NTFP certification include secured future availability, improved and reliable quality parameters, leading to price premium wherever possible and to ensure equitable benefit to gatherers at large.
Despite awareness of the importance of sustainable harvesting many collectors adopt destructive harvesting practices, compelled to do so by poor economic conditions, population pressure, consequent resource use competition and market demand for MAPs. Research organizations (e.g. the Tropical Forest Research Institute and State Forest Research Institute, Jabalpur; the Foundation for Revitalising Local Health Tradition, Bangalore; and the Indian Institute of Forest Management, Bhopal) and local agencies are working to systematize sustainable harvesting techniques and methods through field research and capacity building programmes for collectors, traders and forestry field staff, but their research findings are poorly disseminated and therefore not widely implemented (Prasad et al., 2002; Bhattacharya and Hayat, 2004; Lawrence, 2006). Although governmental and nongovernmental organizations regularly conduct awareness and training workshops on sustainable harvesting of MAPs, these efforts do not appear to have translated into sustainable harvesting practices in the field. Collectors pay little attention to quality and continue to collect prematurely since the currently used grading system (mostly controlled by traders) and market demand put a price even on inferior material (Durst et al., 2006). Quality control in local and regional markets is weak, relying mainly on personal experience, and often fails to exclude adulteration. Although chemical analysis of raw material is gaining wider acceptance, lack of local facilities restricts its implementation at the field level. Manuals or standardized rules for quality control are generally lacking. Lack of nearby storage facilities often compels primary collectors to sell their materials directly to local agents or traders, and improper maintenance practices during storage shortens shelf life and may diminish the quality of the material. However, in some areas of Chhattisgarh and Madhya Pradesh local MAP
storage facilities have been established and have improved economic returns for the collectors. Documentation related to collection, storage and traceability of MAP materials is still rare.

NTFP certification is a new and still emerging concept in India. Despite the rich tradition of NTFP use, it is necessary to improve practices in line with well-defined environmental and social parameters as well as international norms. Drug manufacturers and exporters are the major consumers of wild raw materials. Government initiatives are necessary to encourage them to use certified raw materials, which may lead to a reputation for good resource management. Considering the varied interests of multiple stakeholders, institutions that have been established to organize the NTFP sector need to take a multidimensional approach to planning and management, competitive marketing strategies and flexible policies. Legal collection, resource management, raw material quality, market facilitation, traceability and transparency, should be the thrust areas for future research and development. Traditional practices have key importance in the setting and acceptance of standards.

Certification is a participatory process and so is standard setting. Both primary collectors and end users have responsibilities in developing standards and complying with them. The development of standards and their application for certification are quite different matters. Group or phased certification is recommended to help stakeholders eventually meet certification requirements and provide the detailed documentation needed. The gap between existing practices and the use of standard parameters may seem wide, but a phased adoption of good practices or "good steps" will help to narrow it.
Certification program will need to train a new cadre of NTFP professionals in certification procedure. NTFP operation will also require specialized personnel to conduct certification assessment. Ideally such personnel should be competent in NTFP management, the target species managed, social science and various certification systems. Government of India should create a working group combination of scientist, certifier, conservationist, foresters, industrial representatives, academicians and NGO representative and develop a forum, which should be an independent network to support certification initiative.

6.1.4 Empowering Tribals

The government of India is expected to announce minimum support prices for 12 types of NTFP for state governments to follow, and a mechanism to ensure that even non-profitable forest produce is procured. These are bamboo (declared NTFP recently), tendu leaves, mahua flower and seed, sal leaf and seed, chironji, wild honey, tamarind, myrobalan, gums and gum karanj.

The decision was taken at a meeting called by Prime Minister Manmohan Singh last year 2011. “The consensus view on this subject has emerged, the then Environment Minister Jairam Ramesh sent a letter to Planning Commission deputy chairperson Montek Singh Ahluwalia. Ramesh said it was decided that the state governments would have to give higher MSP than the Centre. A committee headed by T Haque of the panchayati raj ministry will decide on the MSP for each NTFP that could range between ₹ 500 and ₹ 2000 per kg. “Tribals in the North-East get five to ten paisa for a tendu leaf”, said Nandan Saxena, who made a documentary on exploitation of tribals resulting from
unfair price for NTFP. Over 10 crore people are said to be dependent on NTFP for livelihood, but they have to sell their collection at throwaway prices.

The government has also decided that monopoly of any agency in procuring NTFP, including state agencies, will be removed. “A level-playing field for all will have to be provided to ensure tribals get maximum money for forest products they collect”, a plan panel official said. The Centre will also tell states they will have to improve the marketing and distribution network. Another decision taken was that gram sabhas should be involved in management and regeneration of NTFP.

“Forest regeneration plans should be prepared in consultation with the gram sabhas, Ramesh said, adding the issue has already been discussed with member secretary Planning Commission Sudha Pillai. The government will also be preparing a plan to set up NTFP processing units at the local levels with the help of gram sabhas. A recent notification making bamboo a minor forest produce can only be the first step. The Union Ministry of Environment and Forests (MoEF) has written to states to include bamboo in the list of minor forest produce (NTFP) and to take steps to facilitate its use, sale and engagement by communities. The letter, dated March 21, 2011 is addressed to all chief ministers. It acknowledges the provisions of the Forest Rights Act (FRA), giving communities the right to collect, use and dispose bamboo as an MFP.

Will this letter have the effect that seems intended: to free bamboo from the state’s stranglehold. Bamboo (comprising about 130 species) is spread over nine million hectares (ha) of forests in India, with heavy concentration in central and north-eastern
states. Several million forest-dwelling households depend on it for housing, household and agricultural implements, handicrafts and for employment.

About 1,500 different uses have been documented, earning bamboo the nickname “green gold”. Bamboo also forms a crucial ecological part of many forest types, providing shelter and food to many wildlife species.

As in the case of many other common pool resources, the state since colonial times has had firm control over bamboo. Ignoring the fact that it is a grass, the Indian Forest Act (1927) classified bamboo as “timber”. Trade and commercial use in particular have been monopolised, rendering communities subject to the whims of official policy.

This policy has for the most part been heavily weighed in favour of industry, providing heavy subsidies—for many decades, for instance, paper mills were given bamboo at ridiculous prices like Rs 1 per tonne. In many parts of India bamboo has been wiped out by industrial use, causing severe distress to adivasi and other forest-dwelling communities, not to mention loss of wildlife. Even after the promulgation of FRA, state policies continued to monopolise bamboo.

The committee on FRA set up by MoEF and the Ministry of Tribal Affairs (MoTA) found, for instance, that in Gujarat the Central Pulp Mill continued to be given bamboo from forests over which communities were making claims under FRA. Partly due to this, the Kotwalia, a Particularly Vulnerable Tribal Group specialising in bamboo products, found it difficult to access the raw material. The state government had even taken an “in-principle” decision to renew the company’s lease, in violation of FRA.
Bamboo-based industry has been coveting India’s vast bamboo resources for major commercial gains, with innovative products ranging from furniture and flooring to housing and food. One estimate puts the value of this industry at Rs 26,000 crore by 2015. A change in governance to community-based management is essential to ensure that local people have rights to first use of bamboo, a say in and benefits from other uses, and power to conserve it against depredations of industrial use. Community rights just on paper. One aspect of the legal straitjacketing that bamboo has faced so far is the forest department’s control over transit permits. So pervasive is such control that even communities that have been given full community rights under FRA are unable to use their right to sell bamboo. For instance, Mendha-Lekha village in Gadchiroli district of Maharashtra got a title to community forest resources under FRA in August 2009.

But it has not been able to sell a single pole of bamboo since then because the department is refusing to issue transit permits. The MoEF letter directs states to ensure that in areas where community rights are obtained, or for bamboo grown on non-forest lands, such permits would be issued by the gram sabha. Whether this will be honoured by the department in situations such as that of Mendha- Lekha, remains to be seen.

The bigger problem, of course, is that community rights have hardly been exercised. Data collated by MoTA up to the end of February 2011 show that about 51,500 community claims have been filed and 3,669 titles given. But an analysis by the MoEF-MoTA committee on FRA showed that many or most of these are claims to development facilities, not to forest resources. Information on the extent of these claims is scantier; the five states (Chhattisgarh, Maharashtra, Rajasthan, Uttar Pradesh and West
Bengal) from where data are available of community titles given collectively make up 21,258 acres (about 8,400 hectares). Compare these figures with the following: there are at least 1,70,000 villages in the country that have forests within their boundaries, covering about 32 million hectares (half of India’s total forest cover).

6.1.5: The need for NTFPS Farming

In many parts of the world, local people are losing access to valued plant and animal species either through overexploitation and habitat destruction or loss of access as former harvesting areas are included within national parks or forest reserves. Achieving sustainable NTFPs harvest and forest conservation relies entirely on the ability to reconcile ecosystem productivity with human exploitation (Marshall et al., 2005). Higher demand increases pressure on the resource and as resources become depleted, three main strategies are employed to militate against shortfalls in supply: travel further to find the product, substituting the particular product with a similar product or to develop a more intensive or cultivated sources of supply (Cunningham, 2000; Ahenkan and Boon, 2010).

As a result of the recognition that the extraction of NTFPs from natural forests has limited potential for improving household economies, several scholars began to question whether the objective of enhancing forest-based livelihoods through NTFPs could not be better fulfilled by optimizing NTFPs production through domestication (Kusters et al., 2001; Arnold and Ruiz Pérez, 2001; De Jong, 2002). Ros Tonen, (1999) and Ahenkan and Boon, (2008) state that it is incorrect to suggest that NTFPs can be harvested indefinitely without proper management practices and domestication to sustain their yield and therefore call for the need for intensification of management and semi-domestication
of these products of forest origin, including honey, mushrooms, snails, grass-cutters, medicinal and aromatic plants and fruits. The contribution of NTFPs to improving livelihoods can best be assured through a process of gradual domestication of NTFPs in human-modified (agro) forest types. Rajesh Rajchal (2006) notes that intensified management and domestication of NTFPs may be an important means of improving livelihood of poor through higher yields, improved and more consistent quality and control over the timing of harvests and reduce pressure on wild and presumably endangered resources. The study by De Jong (2000) of forest products and local forest management in three Bidayuh villages in West Kalimantan also confirms the coexistence of several NTFP exploitation systems involving various types of managed natural forests and domestication types.

The present study recognize, that there is a need of hour now to put some collective and sincere efforts in order to realize the real potential of NTFPs and extract them in sustainable manner. Therefore, the present study put some suggestion here for the interests of NTFPs.

- Zonation with strict control in protected areas and prioritizing areas for NTFP extraction as the study has revealed that the quantum of extractions differ in different zone. This would enable better organization thereby preventing losses during storage and transport.

- Integration of traditional ecological knowledge systems with scientific principles and adaptive management approaches should be the method to follow in project
interventions. Without these, achieving biodiversity conservation outcomes is not possible.

- Consolidation and clear demarcation of PA and RF boundaries are important for smooth functioning of the project and to avoid future conflict situations. This should be done prior to the implementation of planned interventions.
- A participatory approach in the extraction and marketing of these NTFPs would help in a more judicious use of these resources.
- There is a need to strengthen the existing market mechanism as it was found on many occasions that NTFPs, the common ones and of commercial importance, were destroyed on account of poor marketing decisions. Rendering financial and marketing assistance would help increase incomes at all levels.
- The problem of value addition is something that requires further research especially pricing and valuation of NTFPs. This is important to alleviate the exploitation of NTFP collectors by intermediaries, thereby increasing extraction management efficiency.
- Develop national plans for improving awareness of NTFPs development in general and medicinal plants in specific towards the sustainable management and utilisation of forest resources.
- Develop national as well as state policies on NTFPs development and marketing in order to protect, preserve, harvest and utilize this resource sustainably.
- To empower the existing institutions which are directly or indirectly concern with NTFP.
- To enhance market linkages for NTFP products.
• To empower and encourage the women’s institutions like SHGs for the collection of NTFP in sustainable manner.

• To enhance infrastructure for storage of NTFP.

• To provide infrastructural support for livelihood opportunities.

• To conduct workshops and provide trainings in concern of NTFPs collection in a sustainable manner.