

# **Non-Timber Forest Products in India, their Sustainable Management and Trade**

*presented by*

**Dr. Bipin Behari**

Deputy Inspector General of Forests

Ministry of Environment & Forests

Government of India

e-mail: [b.behari@nic.in](mailto:b.behari@nic.in)

[bipinifs@yahoo.com](mailto:bipinifs@yahoo.com)

## Non-Timber Forest Products in India

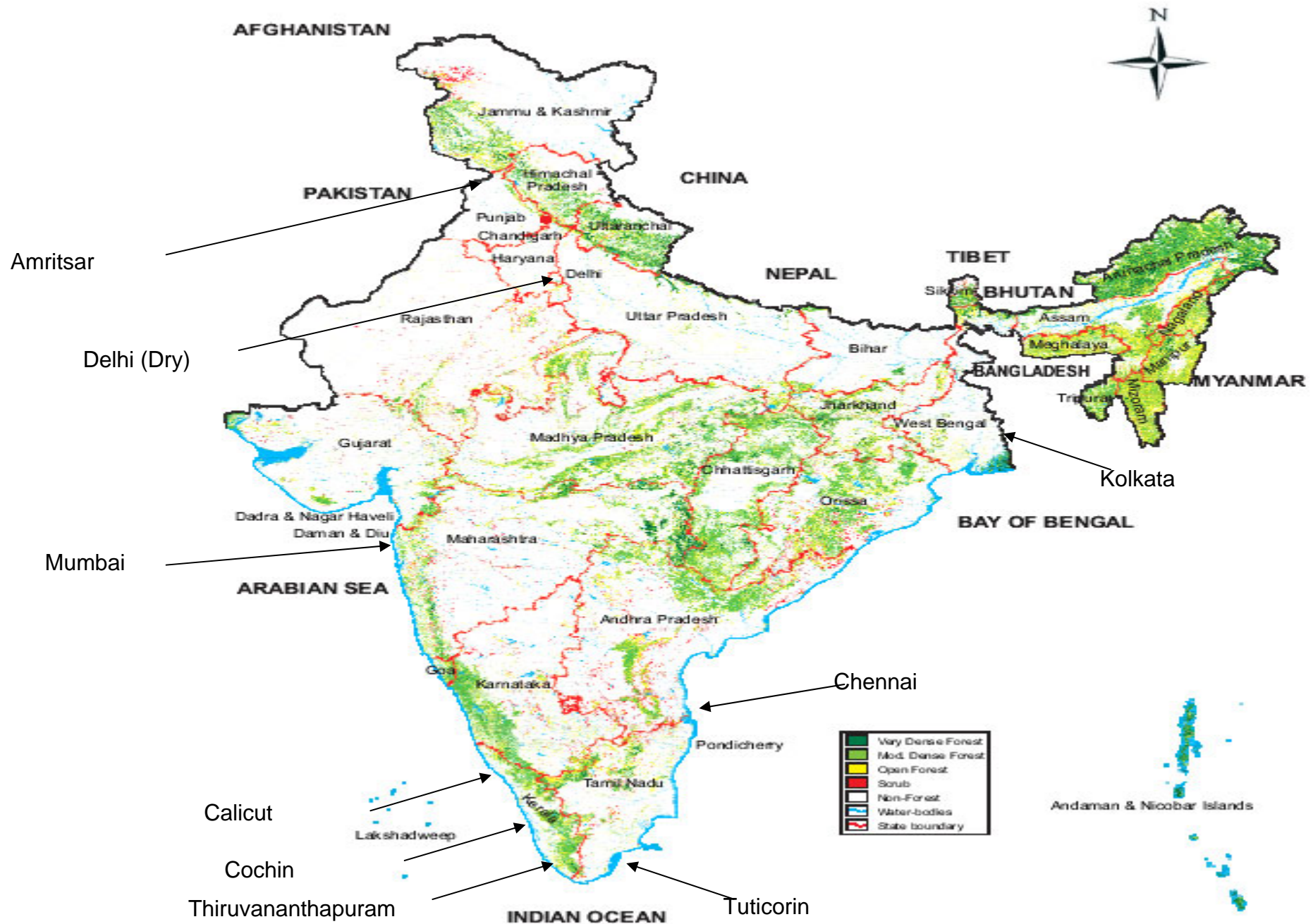
- India has rich heritage of traditional systems and knowledge about the Non-timber forest products including medicinal plants.
- Indian scholars like Charak, Sushriata, Bag Vatta and several others produced remarkable descriptions of Indian medicinal plants.
- NTFPs have provided subsistence to the forest dependent communities in India since time immemorial, but it came into great prominence in the last two decade due to preference for natural product based medicines, cosmetics, dyes and chemicals, pesticides, fodder, fibre etc. and **reduction in the supply of timber and timber products as a result of policy shift for ecological reasons.**

## **NTFPs in India**

- India is one of the 12 mega diversity countries that collectively account for about 65% of the global biodiversity packed in only 1% of the world's forests.
- Indian biodiversity wealth is of the order of more than 80,000 known species of animals and 45,000 species of plants, of which 15,000 are known to be of medicinal value.
- In India, 3000 economic plants species yield one or the other NTFP. They are truly the people's products and their use and trade are integral components not only of economies and culture but also for maintenance of biodiversity and conservation of ecosystem.

## **Contd.**

- India is perhaps only country in the South-Asia with increase in forest cover during 1990s and increasing trend is continuing.
- As per the State of the Forest Report (2003), 6,78,333 sq. km. is under forests constituting together with tree cover, 23.68% of the total geographical area of the country.
- NTFPs are traditionally being collected from these forests by the village poor and tribal people for meeting their household needs and also for generation of cash incomes.
- NTFPs account for about 50% of the total forest revenue to the Government.
- The value of direct contribution of NTFP in India has been estimated to be about US\$ 27 billion compared to US\$ 17 billion of wood products.





# **Non-Timber Forest Products' sources**

NTFPs are derived from various forests species from variety of sources – plant, animal and mineral origin.

## **(i) NTFP of Plant Origin:**

- a) Edible products
- b) Medicinal products
- c) Spices
- d) Essential oils
- e) Oilseeds and fatty oils
- f) Gums, resin and rubber
- g) Tans and dyes.
- h) Fibre and flosses
- i) Bamboo and canes
- j) Miscellaneous / others

## **(ii) NTFP of Animal Origin:**

Lac, Silk, Natural honey, Natural Emery Crude, Waste of Bristle and hair of Pigs, Hogs, Boars, Peacock tail and feathers, Beeswax, snake venom etc.

## **(iii) NTFP of Mineral Origin:**

Garnet, Pumice, Granite, Sandstone crude or roughly Trimmed, Lime stone, Slate, Mica etc.

All India Coordinated Research Project on Ethnobiology (AICRPE – MoEF, 1999) has estimated that 13,725 plants are listed for various purposes.

### **Number of plants species used for various purposes**

<b>Purposes</b>	<b>Number of plant species</b>
Medicinal	7,500
Edible	3,900
Cultural and material use	700
Fibres	525
Fodder	400
Pesticides	300
Gums, resins and dyes	300
Incense and perfumes	100
<b>Total</b>	<b>13,725</b>

# Importance of NTFPs

NTFPs have the potential for poverty alleviation and sustainable development. Their role in conservation and watershed protection is a special aspect of integrated management. NTFPs are important in meeting the needs of mainly three groups of people:-

- a) Rural population and forest dwellers including tribals (the largest group) who have traditionally used these items for livelihood and social & ecological purposes.
- b) Urban consumers (an emerging group at faster rate) who are the consumers as there is one growing tendency to use value added natural products.
- c) Traders and product processors are increasing as urban markets are also growing. Traditional and emerging needs of NTFPs are rising, both in rural and urban areas.



## **Contd.**

The following observations regarding contribution of NTFPs in India further reveal their importance:-

- a) Nearly 400 million people living in and around forests in India depend on NTFPs for their sustenance and supplemental income. NTFPs provide upto 50% of the income to about 30% of rural people.
- b) States of Orissa, Madhya Pradesh, Himachal Pradesh and Bihar indicate that over 80% of forest dwellers depend entirely on NTFPs, 10 % landless depend on daily wage labour, mainly for collection of NTFPs and 30% people are involved in NTFPs collection as a subsidiary occupation.
- c) An estimate made in West Bengal indicated an average return of US\$ 68/hectare/year from NTFPs which is 70% more than from the sal pole harvest which fetches US\$400/hectare after 10 years.
- d) 55% of the employment in forestry sector is attributed to NTFPs.
- e) Processing NTFPs for value added products increases the employment opportunities and income of the people. Forest based small-scale enterprises, based on NTFPs provide upto 50% of the income for 20-30% of the rural labour force in India.

## **Some of the attributes of NTFPs**

- Controlled and regulated exploitation of NTFPs is compatible with hydrologic and other protective functions of watershed forest cover.
- NTFPs are often of high value per unit of weight or volume. They are therefore, highly suitable for production in areas far away from road networks and markets.
- Income from NTFPs provide a strong incentive for forest conservation and offers one of the most important alternatives to shifting cultivation in remote upland areas.

## **Sustainable Management of NTFPs**

- Non-timber forest products exhibit a high degree of heterogeneity in their source, production systems and utilization.
- Under natural condition, NTFP can be managed along with wood in an integrated manner, thus increasing the overall productivity and environmental stability of forests.
- In several situations, the integrated management of forest for wood and NTFPs are much more attractive than managing them only for timber.

## **Contd.**

- The relationship between communities and forests is embedded in the products and services provided by the forests.
- NTFPs, previously used for subsistence purposes and small-scale trading by rural communities, are increasingly in demand by small and medium scale enterprises and large-scale industries.
- The different end-uses of NTFPs including medicinal plants create competing demands for a limited resource base which, if not managed effectively with appropriate institutions and processes, can result in irreversible loss of biodiversity.

## **Contd.**

- Any design for sustainable harvesting and use of biological elements must incorporate the fact that such a system needs to be sustainable in several senses – biologically, ecologically, economically, and in terms of social appropriateness.
- The basic idea behind sustainable harvesting is that a biological resource should be harvesting within the limits of its capacity for self-renewal.
- The manner of its harvesting should be such as not to degrade the environment in other ways.



## **NTFPs and Policies**

**At global level**, the following futuristic policies for Biodiversity Conservation and NTFP oriented Sustainable Forest Management have come into play:

- a) The UNCED Agenda 21 and Forest Principles 1992.
- b) The General Agreement of Tariffs and Trade (GATT).
- c) International Undertaking on Plant Genetic Resources (IUPGR) of the FAO.
- d) Conservation on Biological Diversity (CBD).
- e) Intellectual Property Rights (IPR).
- f) Commonwealth Forestry Association workshop on “India’s Forest Beyond 2000, April, 2000 in collaboration with ICFRE, Planning Commission, DFID and The Ford Foundation.
- g) World Summit on Sustainable Development held in Johannesburg, South Africa, in 2002.

# Forest Policy in India

National Forest Policy, 1988 although addressed the ecological sociocultural and economic dimensions of forests but it has some focused attention on NTFPs:

- a) Consumption and Management of Resources.
- b) For Production and Consumption of Goods and Services from Forests.
- c) For strengthening of social aspects of forests related to NTFPs.
- d) For Institutional strengthening and capacity building.
- e) For Institutional and Regional Corporation and Support.
- f) For Action under Forestry elements related to the other states.

## **Contd.**

- PESA (Panchayat Extension to Scheduled Area Act) declared on 31<sup>st</sup> March 2000, gave ownership rights to the Gram Panchayats (village councils).
- This policy introduced many things for the first time, recognizing the importance of NTFPs in forest dwellers' life as well as demonstrated strong political will to strike a balance between state revenue and protection of livelihood.

## **Bamboo – the most demanding NTFP**

- Bamboo occurs in India in more than 9.57 million hectares which is about 12.8 percent of the total forest area of the country.
- There are 136 species of bamboo belonging to more than 200 genera reported in India.
- Bamboos are used in a myriad ways in the rural sector and are interwoven with the life style of the people . It has over 1500 uses and has tremendous versatility.
- Bamboo is a valuable plant for wind- breaks and very useful for soil stabilization on slopes and for preventing erosion because of its interlaced root system.
- Because of ecological and economic significance of bamboo, these eco-friendly woody grasses, which have annual incremental harvests, may be made use of by planners to increase rural employment, generate raw materials, reduce imports and ensure the socio-economic improvement of rural communities and creation of better economic and environmental conditions.**

# Marketing and Trade

Individually NTFP gatherers are at a disadvantage in the market place because:

- they have practically no information about market prices, margins of profit earned by middlemen and manufacturers.
- they often have limited time to devote to marketing.
- their main product is usually raw and unprocessed which represent the low end of the value chain.
- they are usually isolated geographically from the main stream market place.
- they generally lack knowledge, skills and capacities for effective marketing and sales.
- they are in need of cash to buy daily needs or for emergency expenditure which compels them to go for distress sale.

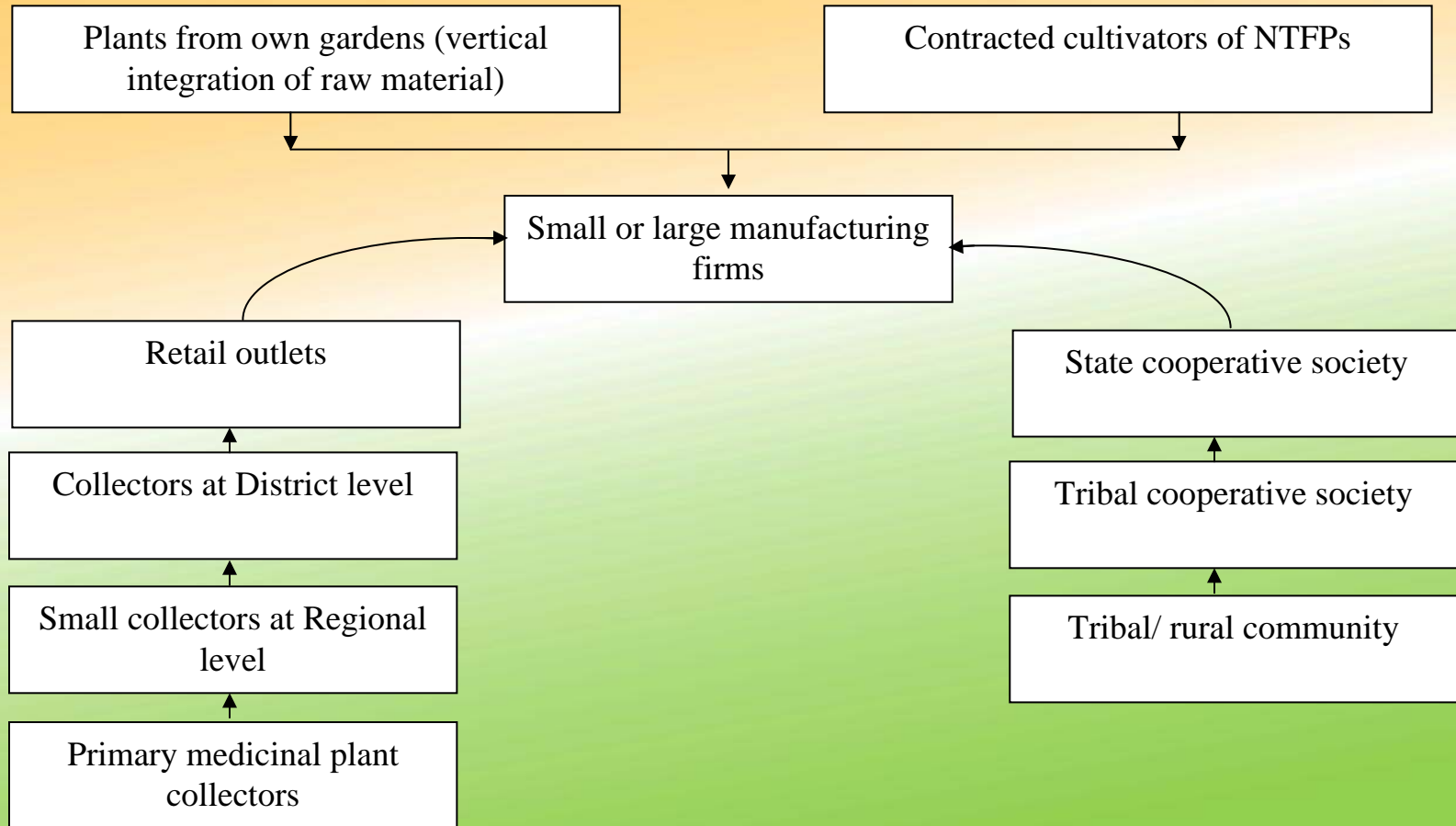


## **Contd.**

- Collectors do not have bargaining power, as they are required to sell the NTFP under distress.
- They are often paid less on the pretext of poor quality of material.
- Many times' arbitrary reduction in weight is done on the pretext of material having excessive moisture and other foreign materials.
- In brief, the non-remunerative returns force the collectors to extract ripe and unripe material through pollarding, lopping and even by felling of trees.
- These unsustainable and destructive practices are impacting the forest ecosystem and its productivity.

- In recent times, trading is being controlled through State institutions such as state forest development corporations, federations, cooperatives and tribal societies.
- A number of State Governments have taken over the control of number of NTFPs and the explicit objectives of their trade are:
  - to prevent unscrupulous intermediaries and their agents from exploiting NTFP collectors
  - to ensure fair wages to collectors
  - to enhance revenue for the state
  - to ensure quality
  - to maximize the collection of produce

## General Supply Chain of NTFPs.



## **Export – import of NTFPs during 2001-02 to 2004-05**

<b>Year</b>	<b>Export</b>		<b>Import</b>	
	<b>Quantity (in Metric Tonnes)</b>	<b>Value (in US\$)</b>	<b>Quantity (in Metric Tonnes)</b>	<b>Value (in US\$)</b>
2001-02	2884.83	25522.23	877.91	6697.50
2002-03	3167.11	21181.40	999.13	7818.91
2003-04	991.57	16169.76	518.81	4993.37
2004-05	4216.83	30085.06	600.52	6767.39

**(Source: Directorate of Commercial Intelligence and Statistics, Kolkata, India)**

## Strategy for Sustainable NTFP Management

- Management of forest plant resources has to be reoriented and NTFP should be **integrated into the main stream of planning and implementation**, while taking into consideration that rich forest resources and multipurpose tree species yielding both timber and NTFP, shrubs and herb species of economic value are of equal and extraordinary importance.
- All the 24 groups of economic plants have to be given equal weightage and importance including medicinal and aromatic plants.
- Sometimes, due to the lack of knowledge regarding all groups of NTFP, plants remain underutilized by various user groups.
- If proper and adequate attention is given for propagation, harvesting, processing, value addition, marketing and trade, most of the NTFP including multipurpose tree species can be good source of employment and income generation, poverty alleviation and boosting revenue earnings.



## **Contd.**

- The challenge for forestry sector is to devise policies that strike correct balance between livelihoods of collectors and sustainability of NTFP harvesting.
- The role of government should be to ensure fair returns to collectors and sustainable development of forests.
- The bargaining position of NTFP collectors may be improved by developing capacities of the local communities through increasing their knowledge and awareness of prices, quality differentials, purchase preferences and possible marketing channels.
- Moreover, research work may also be strengthened to identify potential reform affecting competition and analyse the environmental and economic sustainability of NTFP supplies and harvesting levels.

## Contd.

- The use and significance of NTFP is highly dependent upon local, economic, ecological and sociocultural traditions.
- NTFP offers incentives to local communities in jointly protecting and managing forests.
- The present management practices are not adequate to sustainable development of NTFP. While the NTFP gatherers / collectors is made to suffer on account of non-remunerative returns to his hard works, the biodiversity is impacted due to unsustainable resource use.
- **Sustainable NTFP management is thus an important intervention to sustain community interest in forest protection which in turn, may help in achieving the long term goal of Sustainable Forest Management. In other words, the NTFP management is to ensure social sustainability by ensuring people participation in decision making and benefit sharing, which may ultimately result into their economic well-being leading towards Sustainable Forest Management.**

# **Sustainable Management of NTFP Needs**

- Political will
- The mechanism to strengthen the linkage between the protection and conservation of forests and the livelihood dependency of the people
- Adequate financial support both from national and international bodies / organisations
- Necessary research and development of NTFPs
- Use of indigenous knowledge
- Proper marketing and trade mechanism.

## **Joint Forest Management**

- Joint Forest Management (JFM) was introduced in India in 1990, based on the concept of 'care and share' which aims at the partnerships between the State Forest Departments and the local communities.
- The policy stressed on managing forests for meeting the subsistence needs of rural, tribal population. It also put emphasis on employment generation and income from NTFPs, social forestry, and family oriented schemes for families living in forest fringes.
- About 22 million hectare of forest land is at present managed by more than 1 lakh committees in India.
- One of the important aspects of JFM is its emphasis of creating equity in participation.
- Rights have also been given to the community to collect, store, barter and sell non-nationalized NTFPs free of royalty.
- NTFPs such as wild fruits, gum, honey, barks, flowers, medicinal plants etc. are sold by the villages either to the local traders who visit the villages or at the local markets/haats. Some produces, such as Sal leaves are usually sold after value addition.

## **Contd.**

- There is benefit sharing arrangements between the State and community.
- The involvement of people in the management of forests and NTFPs is leading to regeneration of forests and creation of an efficient institutional framework for the protection of forests, apart from meeting the livelihood needs of the people.
- JFM Committee has been recognized as a vehicle of ensuring Sustainable Forest Management and conservation with local community participation.



## Contd.

- Organizing the communities through Joint Forest Management offers best option to reduce the exploitation of middlemen and ensure better returns from collection of NTFPs.
- **There is a need to strengthen the useful link between NTFP management and Joint Forest Management so that the synergy of their linkage can be profitably channeled for the well-being of the forests and the dependent communities.**
- **Increasing role of communities in the management of forest and NTFP will create greater awareness for the benefit of conserving biodiversity.**

# Forward Marketing

- To take care of the exploitive nature of NTFP trade and other related issues, forward marketing in the NTFP has been introduced.
- This will help in providing a common platform for all traders with price transparency and low transaction cost.
- This is specially advocated as the forward commodity exchanges are increasingly making its presence felt in remote corners with installation of price ticker boards in vicinity of farmer through post offices, Bus stands, Mandis, warehouses, rural bank branches and agriculture-based organizations etc.
- Efforts are being made to establish the linkage between the cooperatives and forward marketing where they can have access to national and international trading platforms even at remote village locations.

## Recommendations

- In view of the socioeconomic and ecological importance of NTFPs, there is a need for a focused management of NTFPs.
- The sustainable management of NTFPs may be integrated with the livelihood of the people dependent on them and mostly living in and in the vicinity of the forests.
- There is need to strengthen the linkage between the NTFP management and the forest management mechanism so that a synergy can be developed for the socio-economic benefit of the dependent communities and the good health of the forests.
- There is need for providing higher allocation of financial support to forestry particularly for sustainable development of NTFPs.
- The application of technology in developing the processing and value addition of NTFPs through various sources and financial support can bring higher benefits to the local people/communities.
- The mass afforestation of Bamboo on degraded and waste lands must be encouraged with necessary financial support.
- There is need for the development of an international NTFP network for up-to-date information on NTFPs, their standards of harvesting methodology, prices, marketing and trade mechanism.

*Thanks*