CHAPTER - V
FOREST RESOURCE AND FOREST MANAGEMENT POLICY

Though forestry sector in Orissa contributes very meagre revenue of 0.27 (Q) per cent (2000-01) to the Net State Domestic Product (NSDP), the livelihood support in terms of Non-Timber Forest Products (NTFPs), fuelwood, small timber, bamboo, other housing materials, fodder etc is immense in sustaining large number of forest-dependent people and tribals in particular. But, there has been a progressive decline in the forest cover in Orissa during the last few decades: from 43.5 per cent (1971) to 38.0 per cent (1981), to 35.2 per cent (1991) and at present (1999), with a marginal increase to 37.3 percent. Though this satisfies the official recommended norm of one-third forest cover, there is the problem of uneven distribution. The north, north-eastern, western and southern districts of Mayurbhanj, Sundargarh, Sambalpur, Deogarh, Kendujhar Angul, Boudh, Malakangiri, Nabarangpur, Rayagada, Gajapati and Nayagarh (Annexure-5.1) have good forest cover, while the eastern coastal part of the State in this respect is poor.

Forest areas of the State by different categories (Annexure-5.2) computed on the basis of legal status, crown density, composition and management provide very valuable information on the rich resource base as well as management of forests in the State. Evidently, while 45.3 per cent (of total forest area) of R.F is exclusively controlled by the Forest Department, the remaining DPF and UDPF are controlled by the Revenue Department. This dual authority over such precious natural, but renewable resource possibly is the major cause of poor management of forests. Gram Jungles (within revenue village boundaries) however, are managed by the local Panchayats under the OGP Act 1968. The crown density of forest area computed by the Satellite Survey constitutes around 81.0 per cent (47033 sq km) of the Statutory Forest Area (58135) declared by the Forest Department, Government of Orissa in 1997 (Table–5.1). According to the crown density estimate, while DF constitutes 55.4 per cent, the OF is 44.1 per cent (Annexure-5.2). Though, forest area by composition and management roughly provides some basic ideas about the types of forests, and also types of management,

in both, the computation of forest area underscores/overscores the computed Statutory Forest Area (due to overlapping estimates of area in most cases).

Table - 5.1

Forest Coverage in Orissa: differences between Statutory Forests and Forest Area Assessed by Satellite Survey

(In sq . km.)

Year	Statutory Forests (Govt Records)	Forest Survey of India Report (Satellite Survey)	Differences	Percentage of Forest Area as FSI to Statutory Forest
1	2	3	4	5
1981	59963.30	53163	-6800.3	88.66
1987	58052.38	47137	-10915.38	81.20
1991	57183.57	47145	10038.57	82.45
1993	57183.57	47107	10076.75	82.38
1995	56059.52	46941	9118.52	82.70
1997	58135.47	47033	11102.47	80.90

Source: Col-2 Office of the Chief Conservator of Forests, Orissa, BBSR.
Col-3 Forest Survey of India 1999 (Published by Ministry of Forest and Environment, Govt. of India).

Forest coverage in Orissa according to Statutory Area estimates and Satellite Survey shows distinct variations during 1981-1997. Though a phenomenal decline in both is noticed, the percentage of forest area as FSI to Statutory Forests registers a distinct fall from 88.7 in 1981 to around 81.0 in 1997. The change matrix given in Table-5.2 reveals that there has been an overall decrease of dense forest by 11247sq km., from (77.13% to 55.44%) between 1972-75 and Nov-Dec 1997. This is the result of an improvement of 9916 sq km (from 22.38% to 44.11%) in open forest area, though mangrove registers a marginal decline from 234 sq km to 215 sq km during the same period.

Table - 5.2

Forest Cover in Orissa according to FAO/NRSA/FSI Survey

(In sq. km.)

Year	Dense	Open	Man-grove	Total	Total Forest Area as % of Total Geographical Area	Dense Forest Area as % of Total Geographical Area	Reference:
1	2	3	4	5	6	7	8
1972-75	37320 (77.13)	10829 (22.38)	234 (0.49)	48383 (100.0)	31.07	23.97	NRSA, 1983 (Satellite Survey)
1975-77	34350 (61.46)	20850 (38.54)	-	55890 (100.0)	35.89	22.06	FAO 1981 (Food & Agl. Orgn)
1980-82	28812 (73.08)	10386 (26.34)	227 (0.58)	39425 (100.0)	25.32	18.50	NRSA 1983
Oct-Dec 1981	28573 (53.75)	24391 (45.88)	199 (0.37)	53163 (100.0)	34.14	18.35	FSI1987
Oct-Dec 1987	27561 (58.46)	19384 (41.63)	192 (0.41)	47137 (100.0)	30.27	17.70	FSI 1989
1991	27349 (57.94)	19661 (41.65)	195 (0.41)	47205 (100.0)	30.32	17.56	FSI 1991
Nov-Dec 1991	27151 (57.60)	19799 (41.99)	195 (0.41)	47145 (100.0)	30.28	17.44	FSI 1993
Nov-Dec1993	27163 (57.66)	19749 (41.92)	195 (0.41)	47107 (100.0)	30.25	17.44	FSI 1995
Nov-Dec1995	26101 (55.60)	20629 (43.95)	211 (0.45)	46941 (100.0)	30.15	16.76	FSI 1997
Nov-Dec1997	26073 (55.44)	20745 (44.11)	215 (0.45)	47033 (100.0)	30.21	16.74	FSI 1999

(Figures in parentheses represent per cent to total).
Source: Office of the Principal Chief Conservator of Forests, Orissa, Bhubaneswar.

A substantial fall in the dense forest coverage from 77.1 to 44.3 per cent (of total forest area) between 1972-75 and 1997 bears testimony to the critical situation of the effective forest cover. A similar fall also in the dense forest area as percentage of total geographical area from around 24.0 to 17.0 provides a dismal picture of the degradation of such precious renewable resource. In such a critical situation, the official statistics of 37.3 per cent (Statutory Forest data)/30.2 per cent (Satellite Survey data) with respect to forest cover in the State (that remains close to the official norm of one-third) does not really reflect on the rapid deterioration of closed forest resource. According to the Statutory Forest Area, though an improvement in R.F (by 1342.5 sq km) during 1981 and 1997-98 (from 41.7% to 45.3%) is noticed, sharp degradation by 6643.7 sq km in case of DPF and 13393.4 sq km in UDPF during the same period, has created other forests to increase to the extent of 16261.3 sq km in UCF (from 15.1 to 20.6 per cent). Quite evidently, R.F area of around 17.0 per cent of the total geographical area in 1997-98 with no change during two decades provides a dismal picture of the effective forest cover in the State. This appears to have crucial significance in the context of an increase in drought-prone areas of the State (Annexure-5.3).

DEFORESTATION

Of late, the fast depletion of forest resources both in terms of quality and quantity has begun to receive serious attention of development planners, policy makers and the government. Because, in recent years, the wasteful exploitation of such natural resource is posing potential danger to economy and environment, besides threats to livelihood and security of millions of forest-dependent poor. However, massive deforestation is primarily caused by the increase in biotic pressure, and also due to non-response of forest resources to the increased needs of the people. There seems to be a breakdown of old harmony between the forest and the people. The increased livestock population and uninterrupted human pressure on forests have indeed accentuated the problem. Among various major factors causing deforestation are the following : (i) diversion of vast amount of forest area; 25,249.2 hectares for non-forest purposes; (such as irrigation, mining, industries, railways, defence etc presented in Annexure-5.4); (ii) low priority to the forestry sector development in the State budget compared to agriculture and allied sectors (despite substantial forest revenue); (iii) faulty and inadequate/ obsolete forest laws, regulations, absence of people- friendly forest policies and welfare strategies; oppressive forest legislations and acts; (iv) growing degradation of forest lands which have a nebulous legal status; (forest lands meant for 'nistar' needs, incompatibility of rights and privileges with the village communities vis-a vis the village forest lands with respect to regeneration) ; (v) the control and domain of State Government exercised through Forest Department over forests, and even on reserved lands, free access of the people for legitimate as well as illegitimate uses, inability of the State to enforce its property rights; (vi) meagre real public investment for development of the forestry sector, (Annexure-5.5) so also restricted central and central sponsored expenditure (though forestry sector contributes 95.4 crores of rupees in terms of revenue in 1999-00 over 37.2 crores in 1980-81); (vii) increased demands for fuelwood and grazing - a wide gap between demand and supply has put excessive pressure on the forests.

Forests are managed from the State budgetary funds supported by external donors. Admittedly, the total expenditure (both plan and non-plan) on the forestry sector of the State Government constitute little more than one percent (1.32%) of the total revenue expenditure (1995-96 to 1997-98). In real sense, there is no investment on the development of this sector, since the bulk of the budget is drained out in terms of salary and wages. Also, due to lack of

adequate private investment (on sustainable basis), and absence of adequate externally – funded forestry development programmes for the State, (to supplement state resources) forestry sector has remained largely unattended by the State Government over years resulting in very dismal growth in the effective forest cover, meagre forest revenue, threats to livelihood sustenance of forest-dependant people and more importantly, ecological/environmental threats caused by massive deforestation. Further, the funds received from the Ministry of Forest and Environment in terms of centrally sponsored schemes being meagre, external funding being remote (due to ban imposed by many developed countries, besides conditionalities imposed by the World Bank, DFID, SIDA etc) the forestry sector is likely to face a worse situation in near future, unless special efforts are taken to start new projects.

In view of fast degradation/depletion of forest cover, a number of measures in recent years through afforestation of waste forest lands, and restoration of degradation of forests have been initiated by enlisting involvement of people who are ultimate stakeholders. Several important afforestation schemes are:

* Economic Plantation
* Integrated Afforestation and Economic Development Projects.
* Development of City Forests.
*Area-Oriented Fuel Wood and Fodder Project.
* Development of NTFP Species including Medicinal Plants
* River Valley Projects.
* Afforestation in KBK Districts

As counter measures to the State of deforestation/degradation of forestland, and so also for restoration of forest coverage in the State, the policy strategies in vogue are:

* Liberalised Timber and Pulp Imports.
* Success of Farm Forestry Programme.
* Protective Measures for Restoration of R.F and P.R.
* Rehabilitation of Degraded Forest.
* Moratorium has been Imposed on Felling (Green trees) since Nov.1992.
* Success of Community Forest Management Organisations for Protecting around 6.46 Lakh Hectares of Forest Land (11.0 per cent of total forestland in Orissa.

NON-TIMBER FOREST PRODUCTS (NTFPS) IN THE STATE ECONOMY

Historically, the trend of using forests as a source of revenue was a part of colonial policy. When land tax could not be raised any further, forest was taken as an alternate source for exploitation with impunity. As a result, the revenue exploitation policy measure led to deforestation. Unfortunately today, depletion of forest cover is attributable to relentless pressures arising from ever-increasing demand for fuelwood, fodder, small timber etc, inadequacy of protection measures, diversion of forestland to non-forest uses without ensuring

complementary afforestation and essential environmental safeguards, and more importantly, the tendency to look upon forests as a revenue earning resource instead of a livelihood resource of the forest-dependent poor.

Table-5.3

Percentage of Revenue from NTFPs (including Sal Seed) Bamboo and Kendu leaf to total Forest Revenue and percentage of Forest Revenue to net State Domestic Product of Orissa (NSDPO)

Years	Timber revenue to Forest Revenue	Fuel wood revenue to Forest Revenue	NTFPs revenue to Forest Revenue	Kendu leaf Revenue to Forest Revenue	Bamboo Revenue to Forest Revenue	Revenue from Forest Products to NSDPO
1	2	3	4	5	6	7
1985-86	42.44	9.04	7.8	26.8	7.9	0.86
1986-87	38.37	9.42	9.1	31.4	5.8	0.84
1987-88	34.55	9.23	5.1	44.2	4.4	1.0
1988-89	34.25	7.78	4.0	39.9	9.1	0.7
1989-90	12.49	2.87	7.6	61.2	6.0	1.02
1990-91	15.25	4.09	4.3	70.5	5.9	1.13
1991-92	16.64	4.81	9.4	60.9	8.3	0.68
1992-93	8.79	1.22	5.1	75.3	9.6	0.78
1993-94	6.81	1.58	6.1	75.9	9.7	0.64
1994-95	14.21	0.45	6.8	70.9	7.5	0.63
1995-96	10.33	1.29	9.8	63.8	14.7	0.29(R)
1996-97	12.89	1.88	10.8	62.5	11.4	0.27(R)
1997-98	13.51	0.50	18.1	55.5	12.4	0.29(R)
1998-99	7.04	0.41	9.6	73.2	9.8	0.32(R)
1999-2000	5.23	0.23	3.0	78.1	5.1	0.31(P)
2000-01	15.03	1.90	2.49	63.38	6.07	0.27(Q)
2001-02*	10.31	0.46	2.47	85.10	1.66	-

Source: Various Economic Survey Reports, Government of Orissa till 2001-2002,

* Office of the Principal Chief Conservator of Forests, Orissa, BBSR.

Col. No:4: Excluding Kendu leaves and including value of salseeds.

Col. No. 7: R – Revised Estimates, P- Provisional Estimates, Q- Quick Estimates

REVENUE RECEIPTS FROM FOREST PRODUCTS

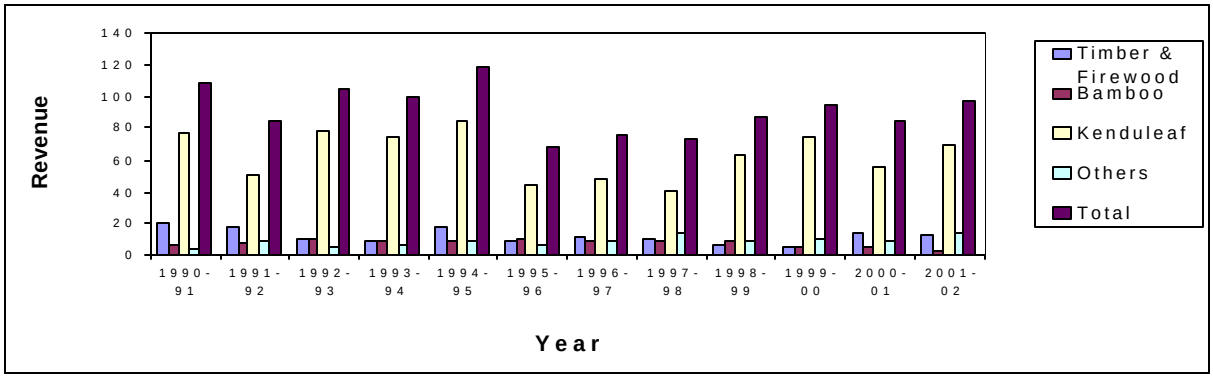


FIGURE - 5.1

PERCENTAGE OF REVENUE FROM NTFPs…….

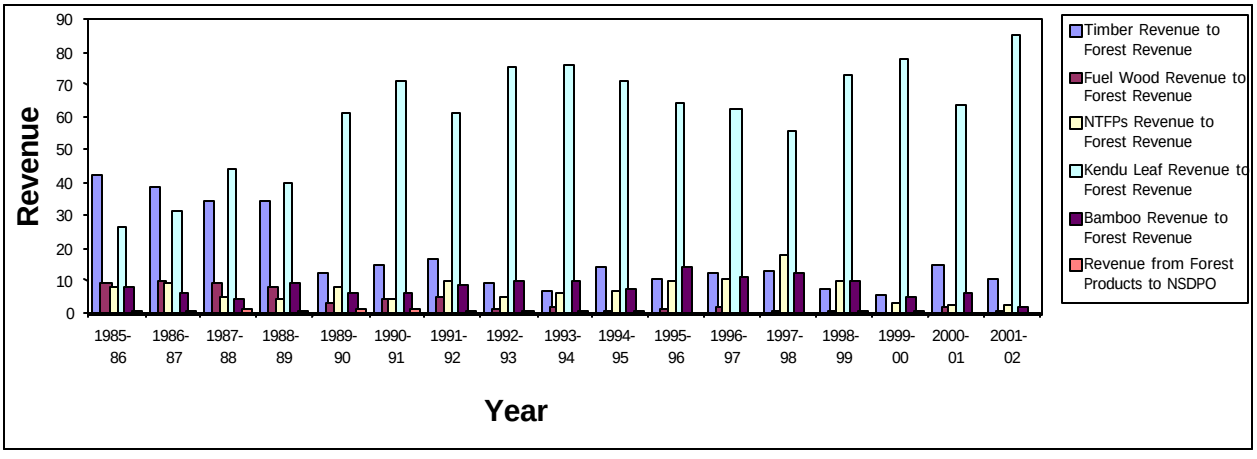


FIGURE - 5.2

Orissa has rich potential of various NTFPs, besides timber. Therefore, Orissa forests are important source of non-tax revenue. An overview of the annual revenue incurred from timber and fuelwood, varieties of NTFPs (including sal seed) bamboo, kendu leaf suggests that revenue earnings from timber has registered a sharp decline from 42.4 percent in 1985-86 to 5.23 per cent (of total forest revenue) in 1999-2000. This is how our timber – oriented forest management policy strategy performed during last one and half decades. A similar decline also in fuelwood, NTFPs and bamboo does not exclusively attribute to fast depletion of forest cover over years (Table-5.3). Because, bulk of fuelwood, various NTFPs, small timber, fodder etc are used/ consumed by the forest dwellers, and some are sold in the local markets, which are not computed in the state's revenue income. Faulty NTFP policy on collection, trade and disposal, processing and value addition, stringent forest laws, State control over trade, obsolete forest Acts and regulations, lack of pluckers friendly policies, revenue friendly policy strategy as well as sustainable management strategy, disorganised trade, informal as well as unstructured market conditions, the recent emerging community management restrictions etc prevent the primary gatherers in varieties of ways, resulting in forest potentials to remain un-exploited both from the accessible as well as inaccessible areas.

Of all, forest products, kendu leaf trade appears to be very lucrative, and registers a steady increase in terms of revenue from 26.8 per cent in 1985-86 to 78.1 per cent in 1999-2000 of the total forest revenue (Annexure - 5.10). Though kendu leaf production potential in the State is around 7 lakh quintals, its production over years has not increased substantially (not

exceeded 5 lakh quintals) due to lack of an aggressive trade policy, lack of investible funds, restricted market avenues in and outside the State, and possibly due to the State control over kendu leaf trade.

Apart from this, factors which are responsible for meagre revenue from forest products are:

* Changes in weather and climatic conditions.
* Exploitation of primary gatherers/ Tribals in various forms
* Unauthorised as well as exploitative trade practices of middlemen, private traders and businessmen in Procurement network.
* Adverse natural & Environmental factors.
* Apathetic attitude of state-sponsored agencies like TDCC and OFDC, Co-operatives, joint-ventures, Private auction Holders and contractors.
* Lack of managerial skills and capital at the right time for processing/value addition.
* Non-availability of labour and capital at the right time for procurement.
* Continuing decline in forest cover.
* Meagre production/ and inadequate generation of precious plant species.
* Systematic delaying procedures by the Government agencies resulting in leakage, enabling private middleman to appropriate benefits owing to distress sale by the primary gatherers.
* Inadequate/obsolete Forest Law and Regulations.

As regards all **nationalised products**; such as, kendu leaf, bamboo and sal seed, the meagre revenue are specifically on account of:

- Hindrances to volume of trade with the reduction in the number of legal buyers that prevents free flow of goods, and delays payments to the gatherers.
- Non-payment of legitimate dues to the primary kendu leaf collectors in time and wages to the labourers in bush-cutting areas.
- State monopoly control through OFDC and TDCC, the government has created private monopolies (which seem to be illegal and arbitrary, since no tenders were invited before bestowing monopolistic rights on UFP Ltd)
- Un-remunerative piece meal basis wages to labourers engaged in drying and storing and also to the binders,
- As compared to Andhra Pradesh, Orissa leaves are of better quality, - yet pluckers get lower wages.
- Lack of adequate competition among the auction holders (insiders and outsiders forming secret cartel) at the sales centre resulting in lower auction price, - thus, meagre revenue from such trade, and also stocks get piled up for years due to timely non-disposal.

- Absence of value addition activities/processing due to limited beedi manufacturing companies in the state at the private level (not any at the initiative of the government), and also absence of beedi manufacturing industries.
- Lack of regular market studies before market strategies are drawn, and also no aggressive trade practice followed so far.
- Absence of a policy strategy that could make kendu leaf trade commercially viable
- lack of pluckers' friendly strategy for ensuring lesser harassment, mandatory purchases against instant payments at the phadi houses, insurance cover of the pluckers and grant of bonus like Madhya Pradesh – no sharing of royalty with pluckers – no group insurance scheme etc.
- Major institutions like OFDC and TDCC (confronted with growing liabilities, overstaff,) have been massive failures in trading activities.

Kendu leaf (KL) in Orissa

- 18 lakh poorest people – mostly women get 10% to 40% of their annual income from KL
- As compared to A.P and M.P, Orissa leaves are of a better quality, yet pluckers get lower wages.
- Orissa Government gets Rs.69.0 crores (2001-02) as royality – for every rupee paid to plucker, State appropriates royalty ranging from Rs.2.50 in 1993-94, Rs.3.00 in 1999-00 to Rs.9.00 in 1989-90.
- Orissa produces 13% of total K.L Production next to M.P (60%) – Maharastra (11%) and A.P (10%).
- Bush-cutting activity provides around 15.1 lakh mandays of employment with an investment of Rs five crores only (1999-00)
- K.L revenue has been almost more than double (214%) in 1999-00 over 1973 at current prices.
- More than two lakh people secure engagement in K.L processing, binding and bagging and earn Rs 42 crores during lean season.
- Against K.L production potential of seven lakh quintals in the State, only 4 lakh quintals are produced during 1998-99 due to shrinkage of markets (both inside the State and outside of it and so also ban on smoking.)
- Often payments are delayed by 3 to 4 months forcing the pluckers to mortgage their cards.
- Around 18 thousand binders have been brought under WFP at present and have been distributed with five thousand metric tonnes of rice and dal.

- Exploitation of bamboo cutters by OFDC as well as Paper Mills.
- Migration of bamboo cutters to neighbouring States in search of jobs
- Apathetic attitudes of Paper Mill owners towards the bamboo cutters
- Absence of welfare measures in favour of bamboo cutters, and also non-provision of bamboos to local artisans at the concessional rates.
- Frequent changes in the policy concerning sal seed with respect to procuring agencies, and lack of availability of investible funds in time for procurement.
- Lack of transport facilities, timely purchase, dissemination of government declared price of the nationalised products to the grassroots level at the right time.

Procurement of Industrial Bamboo by OFDC from 1988-89 to 1999-00

- Commercial Bamboo Procurement in Orissa shows divisional concentration in the divisions such as: Athgarh, Nayagarh, Jaipur, Kalahandi and Phulbani,
  - Industrial bamboo procuremnt is concentrated in Jaipur, Phulabani, Kalahandi, Baliguda and Rayagada.
  - Procurement of Industrial bamboo shows a decline from 2.5 lakh sale units in 1988-89 to 1.1 lakh sale units in 1999-00.
  - Rate of Royalty on sale units however shows an upward trend over years from Rs.320/- in 1988-89 to Rs.647/- in 1999-00.
  - Royalty paid to the government shows marginal increase from Rs.7.6 crores to Rs.8.5 crores during 1988-89 and 1998-99.
  - However, royalty due to government from bamboo is Rs.7.1 crores in 1999-00. Such dues of the OFDC to the government remains more or less equal to the actual payment of royalty over the years. (Refer to Annexure: 5.13 and 5.14).

Indeed, a number of forest laws and regulations in Orissa have been identified as major hurdles in NTFP trade. Some of these pertain to issues related to ownership rights over forestlands and produce, accessibility, forms of disposal, processing and value addition, marketing arrangements as well as procurement and price fixation etc. Absence of adequate attention to marketing infrastructure also has resulted in the under utilisation of existing forest potential in the State. Precisely, some of the existing forest laws and provision in the Acts that have influenced the efficiency of procurement, marketing and processing/value addition are:

- Schedule of Rate for Forest Produce in Orissa, 1977
- Supply of bamboo to artisans including Co-operative Societies, Orissa Rules, 1980
- Orissa Timber and Other Forest Produce Transit Rules 1980
- Orissa Forest (Control and Trade) Product Act 1981, and
- Orissa Forest (Control and Trade) Rules 1983

The following are some of the factors responsible for the failure of NTFP trade in Orissa to contribute substantial revenue to the State exchequer :

- Procurement prices declared by the Price Fixation Committee at the State/district level are not in tune with market conditions.
- Non-recognition and non-inclusion of labour costs pertaining to identifying, drying, sorting, grading and chain of other economic activities including primary processing result in lower collections from inaccessible and difficult terrains.

- Absence of Women Tribal-Co-operative Societies or large number of women organisations undermine the role of tribal women in NTFP collection, processing as well as marketing jeopardising revenue to the State.
- The Orissa Kendu Leaf (control and Trade) Act and the Orissa Forest Produce (Control and Trade) Act 1981 and so also, OFC (Control and Trade) Rules 1983 pose threats to livelihood sustenance of primary gatherers in varieties of ways.

  Stringent restrictions on the marketability of certain products like kendu leaf, mahua flower on the private lands (as per provisions in the Act) have created and encouraged illegal and unfair trade practices.
- Certain provisions in the Forest Acts (1981, 1983) and the subsequent amendments to these in 1987 are not only contradictory, but also confusing. However, due to nationalisation in 1983, the grant of permissions to private parties for sal seed collection have violated the basic norms of nationalisation.
- Provisions in forest laws, and so also the regulations to check marketing of various NTFPs, kendu leaf, mahua flower, salseed etc are inadequate, obsolete and inappropriate, since these do not ensure sustainable management of forest produce, revenue interest of the state exchequer and welfare interests of the primary gatherers.

A close scrutiny of the political economy of NTFP management in Orissa suggests that the economic, ecological/environmental sustainability considerations have not only been undermined, but also have been overshadowed by the political ideology of different political parties in governance over the years resulting in inappropriate and unrealistic policies and actions (Mallik et al 1998). The policy strategies and marketing infrastructure have proved inadequate and inappropriate. Most of the major NTFPs have numerous alternative markets, besides those agencies/institutions recognised by the Government of Orissa by the Forest Acts from time to time. In practice however, the State policy and revenue earning strategy/mechanism have proved suicidal to State's own interest. The best examples of this are mahua seed and tamarind which have monopolistic buyers, who offer lower prices for these products compared to alternative market agencies operating within the State and across the borders. The high prices in the neighbouring States for such products have resulted in significant outflow of these to neighbouring states. Evidently, in Bihar and Madhya Pradesh taxes and levies on mahua flower (*madhuca indica*) and Tamarind (*tamarindus indicus*) are lower. In such a situation, higher taxes and duties in Orissa have not only affected the

livelihood of primary collectors adversely, but have also provided wider scope for smuggling their products in the nearby informal markets across the border. This issue of differential prices of the NTFPs across neighbouring States has proved detrimental to Orissa. Therefore, lower prices and lack of incentives have adversely affected revenue prospects in Orissa despite nationalisation.

In a historic policy resolution on 31st March 2000, (Vide No.5503/F&E) the Government of Orissa decided to grant 68 NTFPs to Gram Panchayats (GPs) in the scheduled areas in terms of ownership and control in order to make procurement, processing and marketing at the Panchayat level so as to benefit the primary gatherers in a big way. But in the non-scheduled areas, the GPs were granted control (ownership is not vested) over procurement, processing and marketing of NTFP, so as to ensure greater benefits to the forest dwellers. But, no GP, whether situated within or outside the scheduled are a will have ownership over NTFP produced in R.F, forest areas under Wildlife Sanctuaries and National Parks, which are outside the limits of revenue villages. Thus, GPs do not have the right to grant lease/license to any individual or agency for collection of NTFPs from RF and National Parks. Such a policy decision is no doubt a legend in the history of management of precious forest resource. More importantly, the provision of control of natural resource by the grassroots level democratic body (GP) could not only effectively ensure sustainability of the resource use, but also could adequately take case of the livelihood interests of the primary gatherers. But, whether GPs (burdened with varieties of rural development activities) with poor infrastructure, scarce investible funds, lack of commercial expertise could really regulate and manage procurement and trade of NTFPs effectively to benefit the poor gatherers is a moot point. However, with a view to empowering the GPs to regulate the procurement and trade of NTFPs effectively and providing a sound and effective legal framework for implementing the scheme of delegation of powers and functions (with respect to NTFPs) to GPs, the Government of Orissa also have proposed to formulate a set of Rules under the Orissa Gram Panchayat Act, besides amending the existing Orissa Timber and Other Forest Produce Transit Rules, 1980. Further, pending such legal changes delegating to the GPs, the Government have also decided to delegate the District Collector of each district to fix the minimum procurement prices of 68 NTFPs (enlisted for regulation by the GPs). The minimum procurement prices fixed at the district level should be given wide publicity and the GPs, Panchayat Samitis and Zilla Parishads are required to be

informed accordingly for ensuring greater benefits to the primary gatherers (Government of Orissa Resolution no 16467/F&E,dt12,Oct 2001)

NTFP MANAGEMENT AND POLICY STRATEGIES

There is wide scope for good forest management to harness NTFPs for improving the economic conditions of the forest dwelling tribals. This needs to bring about changes in the provisions of Forest Acts that limit the scope of procurement, marketings, processing and value addition. Accordingly, the State Policy on NTFPs could be based on the key objectives of sustainable management of precious resources and improvement of livelihood dependency of the forest dwelling communities both quantitatively as well as qualitatively, so that in the long run, they would be empowered as well as be able to carry out activities as primary collectors to procure, process and market the available NTFPs. The State would need to support and facilitate this process. A primary requirement would be towards dissemination of information relating to policy and law as well as action taken, so that the primary collectors could gain from commercialisation, while ensuring revenue maximisation, sustainable use of NTFPs and ecological/environmental sustainability. However, the thrust on the policy strategy should be more on the livelihood objectives of the forest dwelling communities rather than on the revenue interests of the government. In any case, the stake of the forest – dependent people should be the basic tenet of a community-oriented policy.

POLICY REVIEW AND CHANGE

- Government may take up an internal review of the management function relating to collection, processing and marketing of NTFPs, revenue and royalty generated from the trade, institutional arrangements for management etc besides JFM activities in the State. Accordingly, the government would need to make necessary changes in the existing laws and rules.
- There should be clarity in defining NTFPs, coherence in the laws and rules, transparent management operations, compliance with National Forest Policy (NFP) 1988 and other national conservation guidelines etc.
- The Government should develop holistic intervention strategies, and programmes for sustainable management.

- The Government should develop a database on the NTFPs, and the administrative reports of the government should clearly reflect the status of NTFPs in the State.

PRICING OF NTFPS

- State level price fixation for the NTFPs is a difficult proposition. It attracts criticism from various quarters. It is always better for the Government to accommodate variations in prices in different geographical regions in order to take care of the local demand and supply considerations, transport, storage etc. At the State level, a floor price could be fixed, and variations may be allowed at the district level, beyond the floor price. By this, the forest dwellers could appropriate the benefit of price advantage.
- District level price fixation committees could be set up under the chairmanship of the District Collector with DFO as the member secretary. Other members could include the District Horticulture Officer, the District Industries Officer, one representative each of the TDCC and OFDC, two representatives from the local NGOs and a representative from the local industries. There should be at least 30 per cent representation from the primary collectors to include both tribal and non-tribal members (at least one of whom should be a woman) representing all the areas from the district. The total strength of the committee should not exceed 12.
- The committee could meet much before the commencement of NTFPs leasing year i.e. September. Instead of having one meeting in a year, it could have at least one meeting in a quarter.
- Before fixing up minimum support price for the NTFPs for the year, the committee could institute a review on the status of NTFPs in the district, and the problems in marketing network, and the findings of the same could be used to understand the problems and develop strategy to address these by the committee.
- The minimum support price could be fixed, based on the principle of incremental margin, working backwards from the actual market price. It should also take into consideration the prevailing prices in the bordering States. In Andhra Pradesh, the Government through Girijan Co-operative Corporation follows the same procedure for fixing up prices for the NTFPs.

LEASING OF NTFPS

- The Government should gradually discontinue the existing practice of monopoly leases to Joint Sector Company, private parties, Paper Mills, and also to the Government Undertakings. Accordingly, once the royalty, minimum support price etc are properly decided upon and regulated, leases could be given to a number of buyers including co-operatives, non-profit making societies, VFCs, VSSs and their federations etc on competitive basis for ensuring maximum procurement and fair price to primary gatherers.
- In the areas, where CFM/JFM has been in vogue, the responsibility of primary collection, storage, minor processing etc of the forest produce could be entrusted to the JFM institutions.
- In the areas where CFM/JFM has been in vogue, the responsibility of primary collection, storage, the responsibility of primary collection minor processing etc of the forest produce could be entrusted to the committees.

ROYALTY

- Royalty provision in the Forest Acts is a major source of revenue from NTFPs (Kendu leaves, Sal seeds, etc.) which is either paid by private traders or state agencies. The unsustainable commercial extraction of NTFPs in many cases has led to destruction of precious plant species and the consequent environmental imbalances. The Government could constitute a high level committee for preparing guidelines for royalty fixation of different NTFPs and also to review the situation notwithstanding the welfare interests of the primary gatherers. For this, collection of NTFPs, minor level processing etc could be taken up by tribal cooperatives, VSSs and VFCs. However, the royalty has to be reasonably low in order to promote more and more local institutions in managing the NTFPs.

PROCUREMENT OF NTFPS

- The departmental agencies and other leaseholders could open collection centres at least one each in a Gram Panchayat area. A copy of minimum support price fixed by the district price fixation committee, issued by the District Collector could be displayed at the collection centre.
- The price list of NTFPs fixed by the district committee needs to be circulated by the DFO as well as the Assistant Registrar, Co-operatives among the lower level forest officials,

lessees, VFCs/VSSs and other forest protecting communities, NGOs, Gram Panchayats etc.

- Where VSSs have been constituted and traditional CFM groups exist, more freedom should be provided to them for collection, storage and processing of selected NTFPs.
- A joint committee of the forest officials and representatives of primary collectors needs to be constituted at the Forest Range Level to monitor the procurement of NTFPs including the payment of minimum support price by the lessees.
- The Government could plan for setting up permanent collection centres at the Forest Range level along with necessary reserve fund for collection of NTFPs.

MARKETING OF NTFPS

Some degree of freedom needs to be given to the primary collectors and producers to sell NTFPs collected by them in the local markets for the consumption by the local population.

- Trading restrictions need to be relaxed, so that the local people can store NTFPs for longer periods and be provided excise licenses for primary level trading. This needs changes in the forest laws and rules.
- Market network information system needs to be established and monitored regularly. Information pertaining to product profiling, product development, prices, market trends, finance etc. need to be generated on a regular basis and disseminated to the target groups. All this and other relevant information should be disseminated regularly in the meetings of the VFCs/VSSs and Panchayats, and by the field-level extension workers of different Departments.
- Market Promotional Boards (MPB) may be set up at the district level to provide information to the stakeholders regularly, and also to establish linkages with different trading houses to market the produces of the area.
- There is a need for setting up of a State-level apex institution devoted exclusively for the development and management of NTFPs in Orissa. Research and development, capacity building of the local level trading institutions, community institutions involved in processing and marketing of NTFPs, departmental agencies etc., linkages with the industrial houses, lobby with the exporting agencies, organising finances from the financial institutions for processing and marketing both at State and micro level etc. should be part of its functions.

INDIGENOUS KNOWLEDGE

- The current scale of operation of NTFPs collection and the income from sale indicate the potential of forest resources in the JFM areas of the State. The fact that bulk of the products is sold in raw form is a pointer to the vast potential for processing of forest products and the benefits of value addition at the household level. In this respect, it is important that the indigenous skills, knowledge and experiences of the forestdwellers gained over years are fully utilised for maximising benefits. An interface between traditional knowledge and modern concepts needs to be forged for NTFP production, marketing and processing with some amount of value addition. Such a policy strategy could enhance the socio-economic capabilities of the forest-dependent poor in a big way to secure food security on sustainable basis.

PREVENTION OF ILLICIT TRADE

- There is a need to make competitive price available to primary collectors to plug leakages in illicit sales of precious NTFPs resulting in unscrupulous trade practices. Involvement of the people at the grassroots level would be most crucial. Competition among the private traders/businessmen, State Agencies would not only ensure price advantage, but also maximise procurement of NTFPs in the region. Accordingly, forest policies and provisions in the Acts need to be changed and reoriented followed by periodical market surveys as well as market intelligence network to ensure people friendly results.

POLICY CHANGES FOR NATIONALISED NTFPS

The case of nationalised NTFPs needs special attention since State control on specified products has created excellent opportunities for large number of private traders and manufacturing units in Orissa.

The situation could be altered by the following measures:

- Since the Government may not do away with the huge royalty, (especially from kendu leaf) private trading and manufacturing may also be facilitated by the Government, for ensuring better revenue but under close scrutiny.

- Government should not have monopoly over trade of specific products (that squeeze volume of trade) but should allow healthy competition in trading of nationalised products to ensure fair prices to the primary gatherers.
- Promotional Marketing Boards may be set up; distinctly different from commercial operations in order to disseminate information about markets. TDCC and OFDC could emerge supportive at the grassroots level by providing market linkage ensuring minimum support prices and upgrading skill-building capabilities.
- Villages protecting the forests both in JFM and CFP areas be entrusted with the responsibility of maintenance and management of kendu leaf phadies through village committees as part of Common Property Resource (CPR).
- Bamboo working should be done directly by the OFDC engaging the local labour and not by the Paper Mills.

FOREST PRODUCE RIGHTS TO TRIBALS

Government ownership over forests and forest products has alienated the bonafide forest users of NTFPs to secure benefits of subsistence from forests. In this respect, bestowing the right to collection, marketing and processing of NTFPs on them, would in a big way, strengthen the household economy of the forestdwellers. Similarly, formation of local level primary collectors' institutions could widen the scope of forest dwelling activities of the primary collectors and also could empower them in a big way. Provision of adequate infrastructure for storage, processing, transportation and sale would be beneficial to both the government and the primary gatherers. Skill development activities through training programmes could ensure use of sustainable as well as scientific methods of extraction of NTFPs by primary collectors from the forests. Besides, traditional use rights of tribals to forest produce should be restored. Thus, State controls and regulations need to be replaced with resource and people compatible measures.

CAPACITY BUILDING AND SENSITISING THE ROLE OF VFCS AND JFM

Capacity building is needed for regeneration of wasteland/degraded land through training programmes and awareness campaigns. Skills could be imparted to village youth/members of VSSs, VFPCs, FPCs and government officials, who could effectively initiate and conduct land regeneration programmes at the village level. The involvement of the community is important

in land generation though the financial, economic and social needs of the stakeholders have to be taken into account.

Better management of incentive structure could not only improve the performance of JFM programme, but also could promote the goals of livelihoods creation and sustainable management of forest resources. The twin challenges of; (a) maximising gatherers' income from NTFPs; and (b) ensuring sustainable harvesting could be possible by sensitising the role of VFCs/VSSs in NTFP collection and marketing. In this connection, NTFP collection activity could be a powerful strategy for transforming VFCs in to robust, autonomous people's organisations by imparting to them a strong economic drive. This could be possible by; (a) restricting collection with the revenue boundaries; and (b) rationalisation of conflicts between contractors and the VFCs.

Experiences gained over the years suggest that within the current system of NTFP trading and marketing, a great deal of scope and opportunities should be created for VFCs and VSSs in order to strengthen their operational efficiencies. Because, their collective endeavour could gain a strong bargaining position in the market due to an economic scale of operation. Besides, user groups of NTFPs also could be promoted to involve them in forest management along with VFCs wherever they exist. However, the F.D would be required to support these groups in the JFM areas with necessary changes in its policy,

- it should claim no share in NTFP collection by the VFC members,
- VFCs should charge a minor fee from sale proceeds to providing local storage and monitoring over-exploitation,
- the VFCs should be free to sell its collection to any agency, which provides them the best deal.

However, the overall strategies of the VFCs/VSSs and F.D should be directed; (a) to promote the economy of NTFP that remains unexploited due to lack of market arrangements; (b) to control over-incentive to prevent unsustainable extraction level; and (c) to enable the primary gatherers to secure the best deal in disposal of NTFPs. More importantly, appropriate harvesting schedules need to be developed which will promote bio-diversity conservation and sustainable source of livelihood.

PROCESSING AND VALUE ADDITION OF NTFPS

Another crucial dimension relates to limited/restricted value addition or processing units either by the State or by private individuals resulting in sale of unfinished or partly finished products. This situation is a blessing in disguise to the advantage of middlemen and private traders in Orissa to supply NTFPs to entrepreneurs of the small/ large-scale forest-based industries in the neighbouring states at huge profit margins. Indeed, varieties of precious NTFPs are undergoing value addition, and are providing large profits to enterprises, albeit in the neighbouring states, with no benefits to Orissa.

While the State of Orissa has a vast assemblage of NTFPs, and a large tribal population (whose economy is dependent on these), there is vast scope for improvement in the establishment of forest-based industries, markets, marketing channels for NTFPs. Despite partial collection of rich NTFP potential from Orissa forests, a major portion of the current procurement does not enter into the State market, ending up in neighbouring States, and so also other agencies. In addition, paucity of information regarding approximate quantity and types of NTFPs (in the absence of a physical database) in different areas has only added to the inability to locate sites for establishing industries in Orissa. This is possibly a major drawback to visualise any kind of location specific forest-based industries in any place, apart from the other considerations like marketing and infrastructure development in the area. Annexure-5.9 provides a list of small, medium and existing forest-based industries in Orissa (as on 01.04.1999). There are a large number of carpentry units, leaf-plate making units, weaving, traditional and mechanical oil extracting units, Ayurvedic pharmacies, bamboo artisans, cane artisans, saw mills etc spread over the entire state. They use timber, bamboo, lac, sabai grass, tassar cocoons, resins, gums, oilseeds, herbs, shrubs, flower, fruits, barks, seeds etc in making varieties of useful products.

There is no tangible impact of the industrial units on the socio-economic upliftment of the tribals, since they are based neither locally nor at the household level. The limited knowledge of the tribal community with respect to scientific method of extraction, processing, marketing, value addition etc. has never helped them in any way. Further, their poverty, illiteracy, ignorance and impoverishment have accentuated their weak bargaining strength resulting in disproportionately low returns to their labour. In spite of their processing skills and experience

in processing of bamboo, sabai grass, broom sticks etc they are prevented from their legitimate dues partly due to localised markets and weak bargaining power, but mostly due to the restrictions imposed on them by the Forest Department (based on provisions in the Forest Acts). Instances of such cases; kendu leaves grown in private lands, value added products like neem, tooth sticks, brooms, sal and siali leaves are not uncommon. The continuing restrictions on the household economic activities of forest dwelling communities put a great deal of difficulties as far as local processing is concerned.

IMPEDIMENTS

- lack of financial support and incentives to the entrepreneurs
- lack of dissemination of information about the socio-economic benefits of processing
- uncertain supply of raw materials not only due to market fluctuations, but also due to natural disaster
- Inefficient processing techniques leading to low yields, and poor quality products.
- Poor harvesting and post harvest practices
- Lack of R & D on product and process development
- Constraints of local markets for primary processed products
- Lack of down-stream processing facilities
- Lack of trained personnel and equipment.
- Lack of access to latest technological and market information.
- Lack of capacity building activities at the grassroots level.

PROSPECTS OF VALUE ADDITION

- Lifting restrictions on setting up processing units at the village/Panchayat level
- Relaxing controls over marketing of finished products
- Undertaking skill development programmes for the primary gatherers at the village level to impart training in simple processing techniques
- Involving women groups to learn processing and value addition to secure self-employment on sustainable basis
- Allowing local forest resource user groups to set up processing units on a co-operative basis or under the aegis of JFM, where the F.D may act exclusively as facilitator rather than regulator

- Permitting primary collectors to sell a major part of their finished forest products to Orissa Rural Development and Marketing Agency Society (ORMAS), created in 1989 for marketing of rural products.

In order to facilitate the development of local level community enterprise based on limited processing and value addition, there is need for restructuring of the current arrangements. The steps for taking up value addition include:

* Community organisation
* Procurement of equipment and Provision of required services (water, energy, other inputs)
* Technical assistance from experts/ institutional agencies
* Selection of NTFP for processing based on available facilities and marketability.
* Training in processing methods and quality control.
* Packaging and storage
* Marketing outlets (local or for export)

FIGURE – 3
Diagrammatic Representation of Community based Enterprise Structure

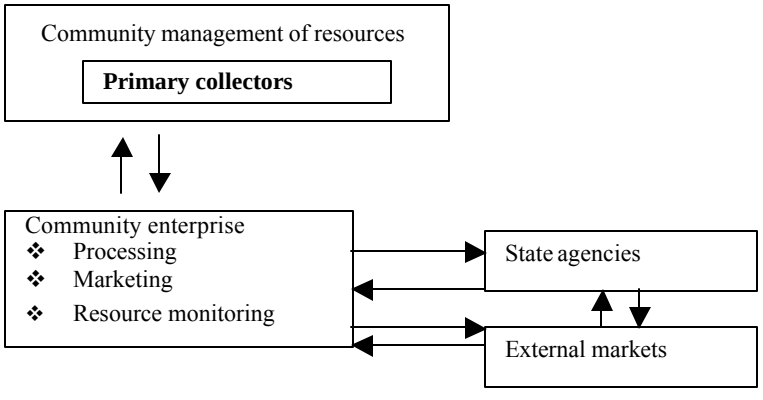


Figure 3 gives a suggested structure for a community enterprise. Here, the basic unit of management is the community consisting of primary collectors. The processing unit however may be located preferably at the household level or at the village level or at the minimum accessible by the communities. Physical location of the unit, distance from the villages, accessibility etc. are equally important.

The processing unit could organise the pooling of the resource either at the level of pre-processing or processing or marketing, depending on the nature of the products and the processing techniques in order to reap the benefits of scale of operation. Products like wild fruits need to be graded before primary processing. Hence, pooling of the products is essential. Products like honey could be processed at the village level due to the capital costs

of the machinery involved. In such cases of complicated processing pooling at the primary processing is necessary.

Making leaf-plates, baskets, etc. could be taken up at the household level. Hence, pooling of such products would be at the stage of marketing. Processing unit can move the products forward to marketing bodies such as State marketing agencies, open markets, national international markets with the involvement of the resource user groups and other stakeholders. It should work in close collaboration with the State agencies in all the functions. The product could move to the external markets directly or through the State agencies depending on the nature of the end product.

The unit should have specific tasks for resource management to ensure sustainable use of the forests, processing-cum-marketing and community organisation for sustainability of involvement of the resource user groups and other stakeholders. It should work in close collaboration with the state agencies in all the functions. The product could move to the external markets directly or through the state agencies depending on the nature of the end product.

MEDICINAL PLANTS AND HERBS

The climate and topography of Orissa is highly congenial for growth of a large number of medicinal plants and also for their cultivation. In the areas of Koraput, Phulbani and Mayurbhanj, large number of medicinal plants naturally occur. Different forest products, parts of the trees, and plants grown in forests such as: roots, tubers, stems, barks, leaves, fruits, seeds and flowers of various medicinal plants are used as curative of different diseases. The important medicinal products plants collected from different parts of Orissa are Amla, Baghanakha, Bahada, Baidanka, Banahaladi, Bana Kulthi, Bana tulsi, Chakunda, Charseeds, Chireita, Dhatukiflower, Gaba, Harida, Indrajaba, Kaincha, Kurchi, Kochila (Nuxvomica), Landa Baguli, Lodhra, Mankadakendu, Mahu (honey), Nageswar flower, Palash, Pita alu, Putrani, R.S Root, Sikakai etc. These products are immensely used by the indigenous people (tribals) in remote areas of forest owing to their exclusive dependence on such precious resource (having no alternative source). Also, the tribals are very keen in using those as medicines in which tribal ethos is involved. However, medicinal plants are in great demand in recent years

for all the indigenous systems of medicines. Collection of medicinal plants is performed either by the specialised collectors, who know the plants or by the herbalists in the rural areas, who grow them in small plots in their gardens.

Some important medicinal plants of Orissa forests are presented in Annexure: 5.12 complied by the Office of the PCCF, Orissa, Bhubaneswar. Though the existence of such precious plants bear testimony to the rich potential of such plants, the procurement of some NTFP items classified as drugs exhibits a dismal picture (Annexure-5.11). Despite the growing importance and use of the various parts of medicinal plants for curing most of the serious diseases in recent years, very little attention of the Government with respect to their production, procurement, processing, marketing etc through suitable policy strategies and mechanisms, seems to have created a great deal of apprehensions about their future existence. Further, though production of medicinal plants seems to have been initiated in some areas under the private initiatives of some promising individuals and Orissa Forest Development Corporation (OFDC) since long, some efforts have also been initiated by the Government of Orissa during last year (2001) for growing medicinal plants in different reserve forest areas of the state.

Evidently, a number of valuable recorded vegetable drugs are obtained from the forests of Orissa. Medicinal plants are by and large available on hill peaks and mountains like 'Megasan' in Mayurbhanj, 'Gandhamardan' in Kendujhar, 'Malayagiri' in Sundargarh, 'Nimragir' in Koraput, 'Bankasham' in Kalahandi and 'Mahendragiri' in Ganjam. Drugs are prepared from fruits, flowers, leaves, roots, shrubs, creepers and herbs. Among the principal medicinal NTFPs, 'Myrobalan' is a trade name of Harida, Bahara and Amla. These fruits contain a good percentage of tannin, and are extremely useful for tanning. The other varieties of vegetable tanning materials are wattle bark, babul, besides, Dhawara leaves, and bark, Karada bark and Sunhari bark. Harida and Bahara have relatively greater importance because of their astringent, fermentative and acidic forming properties. However, a combination of Harida, Bahara and Amla has greater medicinal components. These are mainly exported to outside states, such as: Madhya Pradesh and Andhra Pradesh to feed tannin extraction factories. However, a small part of the forest potential is collected from the forests due to absence of suitable promoting agencies, though collection is not made from the remote as well as inaccessible areas at all.

The fruits of medicinal plants which are more useful for Ayurvedic formulations are plentily available in forests of Orissa. The life span of those medicinal plants varies according to species. These are collected by private persons, physicians and manufacturing industrial units. The tribals and local people living in and around forests have indeed greater access to these items. But, in the absence of suitable and extensive market network of co-operatives formed by tribals and forest dwellers, illicit trading activities of private businessmen are rampant in the tribal areas, who, by and large resort to 'distress sales' to private contractors and traders, and, very often, at a throw away prices.

Similarly, Forest Department of Orissa, collect a small number medicinal plants and their parts. NTFPs; such as: Patalgaruda, Noxvomica and Dhatuki flowers are considered as precious plants. Patalgaruda (Rauwolfia serpentina) is an adorous shrub that thrives under the shade of forest trees in its native habitat. Noxvomica (Strychros nux-vomica) is a native of India. There is wide demand for this product for preparation of homeopathic medicines. This is widely available in areas like Boudh, Baliguda , Rayagada, Parlakhemundi, Kendujhar, Nayagarh, Dasapalla etc. Another shrub called 'Dhatuki' (wood fordia fruticosa) is also available in the forests of Orissa, and its collection is too meagre despite huge potential. A large portion of these plants is collected by ayurvedic doctors, medicine manufacturers, forest dwellers and tribals. But , these are not computed in the States estimates. However, looking at the number of Ayurvedic Colleges (6), Homeopathic Colleges (4), Homeopathic Dispensaries (460), Ayurvedic Dispensaries (519) and large number of private practitioners on the one hand, and growing dependence of the people on ayurvedic and homeopathic drugs on the other, the present process of quantity of collection, plantation and regeneration of these precious species are inadequate to meet the growing needs. It appears that no systematic attempt has been made so far for cultivation of such precious plants. Though 'Genduligum' is widely available in the fruits of Orissa, its meagre collection of 3029 quintals reflects on the follow up of unsystematic collection methods.

However, medicinal plants are precious and very useful for their life-saving contents. Therefore, regeneration of their species assumes crucial significance in the afforestation programme so as to ensure sustainable supply of these NTFPs in future. These products also need a great deal of protection from illicit collection, encroachment, fire damage, grazing and

attacks of insects and diseases in order to save from extinctions. Its sustainable supply indeed requires successful implementation of reforestation programme with involvement of local people in plantation as well as protection of such plants.

Very recently, at the instance of the Government of India in the Ministry of Health and Family Welfare, a scheme called “Vanaspati Vana” is constituted at the State level. Accordingly, the Government of Orissa have constituted a special purpose society called” Orissa State Vanaspati Vana Society” under the Societies Registration Act with the following as members (Government of Orissa Resolution 4315 F & E, March 08.2001).

1. Principal CCF, Orissa, Chairman
2. Special Secretary, F& E
3. Director, Family Welfare, Orissa
4. Director, Indian System of Medicine & Homeopathy, Orissa
5. CCF & Director, S.F.P, Orissa
6. F.A-cum-Joint Secretary, F&E
7. Regional Director, Health and Family Welfare, Government of India, Bhubaneswar.
8. Director, (Commercial) OFDC Ltd
9. One member to be nominated by the Government to represent practitioners of Indian System of Medicine
10. One member to represent NGOs
11. Conservator of Forests, Development Circle Cuttack as Member Secretary

Among the aims and objectives of the society are (a) identification of natural habitats of medicinal plants; (b) conservation and development of the medicinal plant resources; (c) raising of important medicinal plants; (d) development of hi-tech plant resources for ex-situ conservation of medicinal plants; (e) research activities on nursery and plantation techniques; (f) documentation and dissemination of indigenous technical knowledge with respect to conservation, propagation, non-destructive extraction; (g) preparation of project programmes for conservation and use of medicinal pants required by Indian System of Medicine; (h) creation of awareness about the importance of medicinal plants; (i) development of link between the growers of medicinal plants and reputed pharmaceutical houses etc.

Further, as per the Government of Orissa Resolution no-4328 it has been decided to constitute a Medicinal Plants Advisory Board with Minister, Forest and Environment as Chairman, and Minister of State Health & Family Welfare as Vice-Chairman, besides 18 other members drawn from various departments; such as Agriculture, Forest, Health, S.C & ST Development, Agriculture Production Commissioner, CMD, OFDC Ltd, Director, Regional Research Laboratory, Director, Regional Plant Resources Centre, Director Horticulture etc.

The State Medicinal Plant Board have the following functions : (a) to co-ordinate formulation of appropriate policies and strategies for the development of Medicinal Plants Sector; (b) to advise the Government on identification, regeneration, protection, harvesting, cultivation etc. (c) to assign Government Departments and Agencies abut the specific tasks for developing infrastructure and support with respect to cultivation, collection, storage, marketing etc;(d) to identify suitable Government Departments/Agencies, research institutions/universities, NGOs to undertake research and promotional activities; (e) to provide market information, and marketing of medicinal products of the primary collectors and growers through market linkages and building up marketing avenues etc.

However, since Orissa is rich in potential of varieties of NTFPs, there are wide opportunities for setting up a large number of small-scale forest-based enterprises by changing forest laws as and when necessary. The **possibilities** are:

- Medicinal herbs have immense potential, and are available in large quantities in Mayurbhanj, Koraput, Kendujhar, Phulbani, Sambalpur and Baleswar districts. Nuxvomica and Rona Serpentifolia are available in plenty in Nayagarh, Dasapalla, Udala, Muniguda regions of the State.
- Myrobalans extraction in the State is around 0.1 lakh quintals/year against a potential of 0.25 lakh quintals. Due to lack of processing facilities a substantial part of this resource goes out of the State through illegal means.
- Similarly, oil-extracting units for palm rose, citronella and lemon grass, eucalyptus, Mahua seeds, and soapnuts in different parts of the State may prove useful.
- Tamarind has a major potential in the form of powder concentrate and starch. A major part of tamarind collection is sold unprocessed in the markets of the neighbouring States, which causes a lot of loss in revenue, employment opportunities, and so also income to many

poor people in the State. Plenty of tamarind is available in Koraput, Kalahandi, Bolangir and Phulbani areas where processing units at the behest of the State could be set up.

- Other miscellaneous units of rope making, wooden electrical accessories making, agarbati making, matchstick making etc are also potentially viable in the State.
- A number of oil mills on a decentralised basis could be set up owing to greater potential of forest based oil seeds namely Sal, Kusum and Karanja. There is scope for tannin extracting units due to great potential of myrobalans, Sunhari as well as Karada bark. Barks of Arjun and Asan use for extracting oxalic acid have great commercial value.
- Gum is very much under-exploited in the State despite its rich market and income potential. Gum making industries are prosperously existing in the neighbouring States like Andhra Pradesh and Bihar. Activities that have great potential for women include sal resin, leaf plate, gum making etc. Also, honey and wax potential need to be exploited on a large scale by establishing household processing units that could intensively use unemployed as well as underemployed family labour.
- Among the products that have a potential are bamboo as well as cane products, protein extraction from mushroom, broomstick making, rubber products etc.

It is understood that the total area covered by bamboo comes to 13950.12 sq km. There is a big gap between demand and supply of bamboo in the state. Figures for 2001 show that the requirement of bamboo comes to 4.34 lakh MTs whereas the present level of production is 2.5 lakh MTs. The short fall therefore comes to 1.84 lakh MTs Production of bamboo in different forest Divisions of Orissa for the year 1989-90 (crop) is given in Annexure 5.13.

JFM IN ORISSA

Forest is mankind's precious and vulnerable resource. Its increasing vulnerability in recent years has called for a new management strategy to address the problems and constraints of government management of forests. In the emerging situation, the 'Joint Forest Management' (JFM), set up in 1990, is not merely a change in the system of forest management, but a change in human attitudes and perceptions. Admittedly, it has begun a new era in the history of Indian Forestry, when almost four decades after independence, we could at last make a beginning towards democratising our forests. Happily, the polity and bureaucracy of this country saw reason in setting aside the objective of revenue generation, and putting forth

conservation of forests, besides regenerating and managing forests 'with the people' rather than 'from the people'. Evidently, this change in objective and attitude is very much Indian, that facilitates ecological as well as economic sustainability of the forests and the people. The JFM programme has now become the central point of future forest development programme in the State of Orissa.

Forests are basically a local resource. Therefore, the society has to address itself with urgency to the task of regeneration and rehabilitation of the degraded forests (since large chunks of forestland in the State of Orissa have been rendered degraded and unproductive over years). While there has been evidence relating to people's participation in forest protection and management in Orissa, these attempts were recognised by the Government of Orissa (GoO) only in 1988, when they issued a resolution (GoO, 1988). Thus, in Orissa, the village populace took the initiative to protect nearby forests which the Orissa Government merely formalised at a later period. Accordingly, villagers were assigned some specific roles in the protection of R.F adjoining their villages and in turn, were granted certain concessions in the matter of meeting bonafide requirements of firewood and small timber. Forest Protection Committees (FPCs) were constituted in each assigned village. The GoO modified the earlier circular to provide representation to women and minorities in the FPCs (GoO 1990) on the basis of the JFM guidelines issued by the Government of India (GoI) on June 1, 1990.

However, in order to make forest protection drive more effective and transparent through involvement of local villagers, the GoO issued another resolution in 1993, under which Vana Samrakhyan Samitis (VSSs) were constituted under the JFM programme. Apart from the FPCs and VSSs, there are number of unregistered self-initiated groups protecting forests in Orissa. Further, the village Woodlots and Social Forestry plantations raised under SIDA assisted Social Forestry Project (1984-94) have also been declared as village forests, and have been brought under the purview of JFM. Hence, the FPCs created for protecting these forests are now also a part of JFM. In 1996, the GoO issued another resolution conferring right of usufructs to the villagers for protecting these forests in order to provide a sort of encouragement to adjoining villagers. So far, around a quarter of (26.0 per cent) the statutory forestland has been brought under JFM in Orissa, though participation of JFMs and area protected actively under their jurisdiction are somewhat less.

Status of JFM in Orissa as on 1.4.1999		
Type of Committee	**Number**	**Forest Area Protected (ha)**
Village Forest Committees	9055 (*5683)	121460 (**78646)
Van Samrakshyan Samities	6768	645176.64
Village Forest Protection Committees	5520 (*1227)	651545.39 (**180900)
Unregistered Groups	640	89864

Source: Office of PCCF, GoO, Bhubaneswar.

*Active Committees, ** Active Forest Area Protected.

These people's organisations namely, VPCs, VSSs and VFPCs have members both from tribals and non-tribals, but the bulk of them are those who depend on forest for their livelihood. NTFP collection and sale are crucial to their subsistence economy. These well organised groups could be involved very effectively in improving the current management practices of NTFP collection, processing and marketing in order to provide better returns for their labour and time involved in procurement of NTFPs. The best way of meeting the twin challenges of maximising collectors' income from NTFPs and of ensuring sustainable harvesting is to involve VFCs/VSSs in collection and marketing. It becomes evident that participatory management approach is immensely effective in increasing the bio-mass production in the naturally regenerated forests, thereby meeting the fuelwood, fodder, timber and other forest produce needs of the community (Pattnaik and BrahmaChari, 1996). NTFP collection itself could also be a powerful strategy for transforming VFCs into robust, autonomous people's organisations by imparting to them a strong economic drive. What appears to be relevant for their **successful drive** are:

- Restricting collection within revenue boundaries of the village to avoid conflicts between villages and poaching in one another's territory.
- Rationalisation of conflicts between contractors and VFCs.

Though the State Government has issued enabling resolutions permitting partnership with local people for ensuring an effective forest management, JFM seems to have **several problems** that need to be resolved. Precisely, these are:

- The legal framework for joint management remains weak and controversial. First, the existing old rights and privileges of the people in most degraded forests do not match with corresponding responsibility and often more than one village have their rights on the same forest. Second, the new settlers in a village who are deprived of such traditional rights

resort to illegal practices. Third, people remaining far away from forest are keen in enjoining traditional right, but not in participating in management.

- Intra-village conflicts are regular phenomenon, while forest track boundaries are not formally demarcated initially at the degraded stage thus, the conflicts begin to emerge once valuable products are regenerated and green forest cover comes up. Boundary disputes between neighbouring VFCs also are likely to emerge as threats to success of JFM, once harvesting begins to occur.
- The status of VFCs versus village Panchayats also creates a great deal of controversies, since the links between Panchayats and JFM groups are fairly weak. Moreover, such committees do not have legal and statutory basis to manage forest resources on sustainable basis.

Conflicts Over Forest Resources

Conflicts within the F.D:
- Mismatch between JFM philosophy and existing internal culture
- Lack of proper training and orientation
- Problems in institutionalising JFM
- Incompatible policies and procedures
- Linkage of JFM to externally aided projects
- Unsuitable organisational structure

Conflicts within local community institutions:
- Inadequate representation of all sub groups and interests
- Inequitable sharing of costs and benefits among the subgroups.

Stakeholder Conflicts at the local level:
- Overlapping traditional and legal use rights.
- Exclusion of important stakeholders from the JFM process
- Intra-village conflicts in sharing valuable products due to non-demarcation of forest tract boundaries.
- Poorly defined powers of the FPCs – not being statutory bodies.
- Communication gap among different stakeholders
- Intra-Community conflicts over distribution of benefits due to heterogeneous caste and class groups.
- Question of equity in terms of caste and benefits of protection.

REMEDIAL MEASURES

The experience gained over the years indeed has brought home the merits of mainstreaming. But, what is more important in the current situation of peoples' management strategy is to provide space for VFCs in trading and marketing of NTFPs. Especially, in case of nationalised forest products, the government agencies appoint private parties as sub-agents. It would be possible for them to make best use of VFCs as sub-agents, where at least VFCs are operational. Apart from capacity building measures, financial assistance may be essential for

the VFCs to undertake this assignment. In this connection, the instant payments to primary gatherers could be met from government source or could be recovered from the VFCs from the profits they could make from the trading operations. The VFC collectively would definitely have an economic scale of operation to gain a strong bargaining position in the market. With sizeable quantum of NTFPs coming from the VFC areas, they could influence and force changes in the current system.

The other option would be to promote "User Groups Of NTFPs," and involve them in forest management along with VFCs, wherever they exist. In this connection, the F.D would need to lend its support and co-operation to these groups to strengthen them. Especially in the JFM area, the F.D would need to change its policy (Saxena et al 1997):

- It should claim no share in NTFP collection by VFC members.
- VFC should charge a marginal fee from sale proceeds for providing local storage and preventing over-exploitation
- The VFC should be free to sell its collection to an agency, which provides the best deal.
- However, the goal of involving VFCs in NTFP collection should be not to earn revenue for F.D, but to ensure sustainable harvesting and value addition through efficient processing and marketing. In such a changing scenario, the FD could bring in improvements by prevailing upon the collectors to ensure scientific methods of collection, harvesting, storage etc in order to sustain and improve the quality of the product.

ROLE OF VFCS /VSSS/FPCS AND THE F.D

The major tasks/responsibilities of the committees should pertain to all aspects related to collection, marketing under the guidance and supervision of F.D with the **objectives** such as:

- Promote the economy of NTFPs that remain unexploited due to lack of market arrangements.
- Make such arrangements under which the primary gatherers get the best deal.
- Control over-incentive to prevent unsustainable extraction levels.

In such an overall scenario, **free competition might not** be the best alternative due to:

- The revenue of FD from NTFPs could decline

- Large number of tiny operators may not be able to build and sustain linkages with upcountry markets and the entire NTFP economy might shrink.
- High procurement price could create incentives in unsustainable harvesting.

The second option could also be tried out, where a small number, say 6-8 licensed contractors could be promoted in a self-contained territory for a license fee. By this, the revenue interest of the FD may be satisfied and also, could take care of each operator, but it could create incentives for over harvesting. However, this could be avoided by promoting user groups of NTFPs, and then involving them in forest management along with VFCs. This not only eliminates the risk of illegal removals, but also makes monitoring easy. In such a situation, the F.D machinery can lend its support to such groups by preventing smuggling.

Apart from changes in the policy guidelines that need to be formulated with respect to processing, marketing and use of NTFPs; there need to be other changes with respect to management strategies too. Separate working circles should be created in working places for management of NTFPs, so that operational prescriptions could be incorporated for improved silviculture and utilisation practices. In addition to the State Level Steering Group that has been set up as per the guidelines in the JFM resolutions of 1990, 1993 of the Orissa Government, it would be important for the F.D to constitute Working Groups at the State, Division and Range levels. The state level Working Group under the chairmanship of PCCF, the Division-level Working Group under the D.F.O. and the Range-level Working Group under the Range Forest Officer should be constituted with concerned officials, stakeholders and NGOs as members. Such groups (as it appears) would offer greater flexibility to the FD to monitor the progress of JFM more effectively and take quick decisions. Here, a point of caution is in order. That the JFM has often failed in some areas for not paying fair attention to the poorest forest dependent communities, such as: artisans, stake loaders and podu cultivators, since the podu lands are also brought in the ambit of JFM.

SOCIAL FORESTRY DEVELOPMENT

The continuing degradation of village forests and protected forests resulted in increased pressure of the rural people on the reserved forests. The topography in Orissa is also highly dissected with many areas severely degraded. According to a recent estimate the extent of

such degraded forestland in Orissa is around 12 lakh hectares. Such degradation has set in on account of over use of the forests, and ever increasing pressure of human and animal population on the forests. The National Commission on Agriculture (NCA) 1976 observes that free supply of forest produce to the rural population, and so also their rights and privileges have brought destruction to the forests. Such needs should be met by farm forestry, extension forestry and by rehabilitating scrub forest and degraded forests on priority. Therefore, in order to reduce pressure on forestlands (R.F) used for producing timber and pulpwood, peoples' participation on such lands was not at all encouraged. Instead, to keep the people away, it was necessary to make them produce what they consumed free of charge (using community and private lands) to draw off the pressure on forestlands.

The first phase of Social Forestry Project (SFP) was initiated in Orissa in 1983-84 covering nine districts, and was extended to all 13 districts at a later stage. The major objectives of SFP were to create sustainable forest resources for the people to meet the fuelwood, fodder, minor forest produce and small timber requirements with the active involvement of the people as individuals and as members of local communities with government support, and to establish/reintroduce tree cover on degraded forest land. SFP categorically intended to involve women and economically and social weaker sections of the population (specifically those belonging to SC, ST, SF and MF) who continue to be the special interest groups of the project. In the second phase however, the following were explicitly spelt out:

- Market orientation through creation of skill of the community for ensuring common property management with intention of generating cash income from the forestry sector
- Equitable distribution of output/usufruct from the project activity
- Long term interest of environmental orientation through rehabilitation/ regeneration of degraded, but potential renewable resources.

The operational components of the SFP were:

- Creation of village woodlots over common surplus revenue land, degraded barren hills and institutional plantations.
- Reforestation and rehabilitation of degraded protected 'B' class R.F land.
- To assist landless poor families to plant fuel, fodder and fruit bearing species.

- To assist individual small/marginal farmers to plant fuel fodder and fruit bearing trees on individual owned or leased land.

A **cursory review** of the operational functioning of SFP in Orissa over the years suggests: (Mid-term Evaluation of Orissa Social Forestry Project 1991, Volume –I PCCF Office, Bhubaneswar).

- Awareness regarding community's role in protecting plantation in lieu of meeting household level fuelwood and small timber needs is quite high.
- Village Forest Committees (VFCs) are yet to establish themselves as major decision – making units. Though VFCs have been involved in distributing interim harvests, equity in many cases has been overlooked.
- The involvement of women in formation of VFC is not only poor, but also their awareness is unsatisfactory.
- Participation of the people in decision-making on issues like selection of land and species is limited.
- Protection to plantation is more successful where community participation is voluntary.
- Lack of adequate communication/dissemination regarding the rights on community plantations and so also with regard to the arrangements of distribution.
- The response to Farm Forestry is excellent, where strong preference is for high value timber species compared to fodder and fruit - bearing species.

The SFP in Orissa in its first phase was introduced in 1983-84, and the second phase from 1988-89, which was extended to 1995-96 (beyond 1992-93) with assistance from SIDA. During all these years (1983-84 to 1995-96) though 148.35 crores of rupees were spent, only 22.80 crores of seedlings were distributed with coverage of 1.66 lakh hectares of land area (Annexure-5.7). Plantation activities were carried out in all 13 districts of the State through development of nurseries, village woodlots, plantation in barren hills and strip plantations, reforestation of degraded forests and depleted forest, social and institutional plantations, Farm Forestry, FFRP, participatory protection etc (Annexure–5.7). The plantation activities of the State have been funded from the State Plan resource after 1995-96. With such resources, while 3.8 crores of seedlings have been distributed with an investment of 54.65 crores, only

7943 ha. of land have been covered during 1995-96 to 2000-01. However, plantation raised by different wings of FD by 1999-00 is presented in Annexure-5.8.

In the mean time, an agreement has been signed by the State Government with the Government of Sweden to start the proposed project "Capacity Building for Participatory and Sustainable Management of Degraded Forests" in the State. The project is proposed to be implemented in two stages: Stage –I was launched in December 1997 to start with the preliminary preparations of village level organisations, demarcation of degraded forests for handing over to VSSs, trained forest personnel. Selection of 1514 villages encompassing successful JFM areas has been completed, in which 1.28 crores have already been spent (Economic Survey 2000-01, Government Orissa). A project report for Stage-II has been submitted to SIDA with an estimated cost of Rs.70.00 crores. The Government is at present actively negotiating with SIDA for an agreement in terms of MOU, though the conditionalities of restructuring of various wings of the F.D and Capacity Building Training Programmes are yet to be agreed upon.

Besides social forestry, a strategy on land and forest regeneration may be rigorously tried out. Such a programme needs involvement of community, and this may be appropriately planned on a micro watershed basis, with focus on land restoration through plantations and natural regeneration. The proposed strategy might include:

Land and Forest Regeneration Strategy

* Creation of comprehensive land use data base
* Land and forest regeneration programmes with proper planning
* Promotion of stakeholders' participation
* Establishment of a revolving fund
* Inter ministerial co-ordination.
* Monitoring and evaluation of programmes based on physical, financial, economic,social and environmental issues
* Institutional strengthening and reorientation
* Capacity building at all levels

Annexure – 5.1
District- wise Forest Cover

District	Geogra-phical Area (GA)	1999 Assessment (Data No-Dec.95)				Change Comp-ared to 1997	Scrub	% of DF to geogra-phical area	% of(OF) to geogra-phical area	% of TF area to geogra-phical area
		Dense forest (DF)	Open forest (OF)	Man-grove	Total Forest (TF)					
1	2	3	4	5	6	7	8	9	10	11
Angul	6232	1620 (64.52)	891 (35.48)		2511 (100.0)		191	25.99	14.3	40.29
Balangir	6569	413 (47.20)	462 (52.80)		875 (100.0)	+10	119	6.29	7.0	13.32
Baleswar	3634	173 (56.54)	130 (42.48)	3	306 (100.0)		35	4.76	3.6	8.42
Bhadrak	2677	-	-	18	18 (100.0)	+1	-	-	-	0.67
Bargarh	5834	474 (51.35)	449 (48.65)		923 (100.0)	-1	108	8.12	7.7	15.82
Boudh	3444	892 (67.99)	420 (32.01)		1312 (100.0)	+3	104	25.90	12.2	38.10
Cuttack	3733	372 (67.03)	183 (32.97)		555 (100.0)		200	9.97	4.9	14.87
Deogarh	2787	872 (63.14)	509 (36.86)		1381 (100.0)	-18	12	31.29	18.3	49.55
Dhenkanal	4595	632 (59.45)	431 (40.55)		1063 (100.0)	-5	297	13.75	9.4	23.13
Gajpati	3850	680 (27.81)	1765 (72.19)		2445 (100.0)		258	17.66	45.8	63.51
Ganjam	8706	1215 (56.25)	945 (43.75)		2160 (100.0)		690	13.96	10.9	24.81
Jagatsinghpur	1973	-	18 (64.29)	10	28 (100.0)		1	-	0.9	1.42
Jajpur	2888	110 (63.22)	64 (36.78)		174 (100.0)		107	3.81	2.2	6.02
Jharsuguda	2200	124 (43.97)	158 (56.03)		282 (100.0)		69	5.64	7.2	12.82
Kalahandi	8364	1000 (52.22)	915 (47.78)		1915 (100.0)	-4	415	11.96	10.9	22.90
Kendrapara	2548	-	14 (7.07)	184	198 (100.0)	+3	1	-	0.5	7.77
Kendujhar	8303	1379 (49.04)	1807 (50.96)		3546 (100.0)	+3	137	20.94	21.8	42.71
Khurda	2889	137 (43.22)	180 (56.78)		317 (100.0)		200	4.74	6.2	10.97
Koraput	7897	504 (37.50)	840 (62.50)		1344 (100.0)		342	6.38	10.6	17.02
Malkangiri	6190	1019 (44.60)	1266 (55.40)		2285 (100.0)	+90	118	16.46	20.5	36.91
Mayurbhanj	10418	3223 (81.76)	719 (18.24)		3942 (100.0)	+5	31	30.94	6.9	37.84
Nuapada	3708	592 (51.57)	556 (48.43)		1148 (100.0)	-1	107	17.37	16.3	33.69
Nabarangpur	5294	810 (66.28)	412 (33.72)		1222 (100.0)		69	15.30	7.8	23.08
Nayagarh	4242	1031 (62.87)	609 (37.13)		1640 (100.0)	-1	226	24.30	14.4	38.66
Phulbani	7650	2410 (47.11)	2706 (52.89)		5116 (100.0)	+8	354	31.50	35.4	66.88
Puri	3051	63 (50.81)	61 (49.19)		124 (100.0)	-1	-	2.06	2.0	4.06
Rayagada	7580	972 (36.00)	1728 (64.00)		2700 (100.0)		806	12.82	22.8	35.62
Sambalpur	6698	2202 (69.42)	970 (30.58)		3172 (100.0)		141	32.88	14.5	47.36
Sonepur	2344	160 (50.00)	160 (50.00)		320 (100.0)		50	6.83	6.8	13.65
Sundargarh	9712	2634 (65.67)	1377 (34.33)		4011 (100.0)		251	27.12	14.2	41.30
Total	155707	26073 (55.44)	20745 (44.11)	215	47033 (100.0)	+92	5439	16.74	13.3	30.21

Source: Forest Survey of India (FSI) 1999

Annexure – 5.2

Forest in Orissa (In sq kms.)
As on 1997-98

The area covered by forests is 581135 sq. km, which accounts for 37.3 percent of the total land area of the state. The forests are not evenly distributed in the state. The north, north-eastern, western and south districts of Mayurbhanj, Sundargarh, Sambalpur, Kendujhar, Deogarh, Angul, Boudh, Malkanagiri, Nabarangpur, Rayagada, Gajapati, Nayagarh have good forest areas, while the eastern region is poor in forest cover.

The break up of the State's forest areas by different categories is given below.

1.	**FOREST AREA (LEGAL STATUS)**		**sq. km**	
	Reserve Forest (RF)		26329	(45.3)
	Demarcated Protected Forest(DPF)	11685	(20.1)	
	Un-Demarcated Protected Forest(UDPF)	3839	(6.6)	
	Un-Classed Forest.(UCF)	21	(0.04)	
	Other Forest		16261	(28.0)
	Total		**58135**	**(100)**
2.	**FOREST AREA ACCORDING TO CROWN DENSITY**			
	Dense Forest (DF)		26073	(55.4)
	Open Forest (OF)		20745	(44.1)
	Mangrove		215	(0.4)
	Total		**47033**	**(100.0)**
3.	**FOREST AREA BY COMPOSITION**			
	Teak Forests		2031	
	Sal Forests		16938	
	Miscellaneous Forests		21024	
	Bamboo (Pure)		1375	
	Bamboo (Overlapping)		17795	
	Conifer Plantation		4	
	Total		**41372**	
4.	**FOREST AREA BY MANAGEMENT**			
	(i) High Forest		24813	
	(ii) Coppice	2056		
	(iii) MFP overlapping	11165		
	(iv) Miscellaneous industrial overlapping		7794	
	(v) Plantation overlapping		2872	
	(vi) Bamboo overlapping		14927	
	Total		**63627**	

The total area under crop composition and working plans/schemes exceeds the total area under RF and DPF because there are some overlapping areas and UDPFs which have under such management and crop composition.

Source: Sl. No.1,3 & 4 Office of Principal Chief Conservator of Forests, Orissa.
Sl. No. 2 Forest Survey of India, 1999.

Annexure – 5.3

Forest Area in Orissa

(In Sqr. Kms.)

Year	Forest Land under Control of Forest Dept.		Forest Land under Control of Revenue Dept.			Total	% R.F to total Geographical Area
	RF	UCF	DPF	UDPF	Other Forest		
1	2	5	3	4	6	7	8
1981	24986.58 (41.67)	15.13 (0.02)	17729.40 (29.57)	17232.19 (28.74)		59963.30 (100.0)	16.0
1982	25041.79 (41.76)	15.13 (0.03)	18084.27 (30.16)	16822.06 (28.05)		59963.23 (100.0)	16.1
1983	25932.41 (43.64)	15.13 (0.03)	15416.12 (25.94)	18059.18 (30.39)		59422.57 (100.0)	16.7
1984	26096.48 (43.86)	20.43 (0.53)	15284.16 (25.69)	18099.66 (30.42)		59501.89 (100.0)	16.8
1985	26146.49 (47.75)	20.44 (0.54)	15288.69 (25.65)	18142.29 (30.44)		59597.91 (100.0)	16.8
1986	27740.05 (47.75)	20.55 (0.04)	16064.38(27.65)	14268.62 (24.56)		58093.60 (100.0)	17.8
1987	27698.60 (47.71)	20.55 (0.03)	16086.16 (27.71)	14247.07 (24.54)		58052.38 (100.0)	17.8
1988	27630.04 (47.85)	20.55 (0.03)	16087.02 (27.86)	14007.81 (24.26)		57745.42 (100.0)	17.7
1989	27087.34 (47.37)	15.93 (0.03)	16086.87 (28.13)	13993.43 (24.47)		57183.57 (100.0)	17.4
1990	27087.34 (47.37)	15.93 (0.03)	16113.33 (28.18)	13966.97 (24.42)		57183.57 (100.0)	17.4
1991	27087.34 (47.37)	15.93 (0.03)	16113.33 (28.18)	13966.97 (24.42)		57183.57 (100.0)	17.4
1992	27087.34 (47.37)	15.93 (0.03)	16113.33 (28.18)	13966.97 (24.42)		57183.57 (100.0)	17.4
1993	27087.34 (47.37)	15.93 (0.03)	16113.33 (33.18)	13966.97 (24.42)		57183.57 (100.0)	17.4
1994	27087.34 (47.37)	15.93 (0.03)	16113.33 (33.18)	13966.97 (24.42)		57183.57 (100.0)	17.4
1995-96	26331.15 (46.97)	15.18 (0.03)	15432.69 (27.53)	14280.50 (25.47)		56059.52 (100.0)	16.9
1996-97(P)	26329.12 (45.29)	20.55 (0.04)	11685.68 (20.10)	3838.78 (6.60)	16261.34 (27.97)	58135.47 (100.0)	16.9
1997-98(P)	26329.12 (45.29)	20.55 (0.04)	11685.68 (20.10)	3838.78 (6.60)	16261.34 (27.97)	58135.47 (100.0)	16.9
19998-99(P)	26329.12 (45.29)	20.55 (0.04)	11685.68 (20.10)	3838.78 (6.60)	16261.34 (27.97)	58135.47 (100.0)	16.9
1999-00(P)	26329.12 (45.29)	20.55 (0.04)	11685.68 (20.10)	3838.78 (6.60)	16261.34 (27.97)	58135.47 (100.0)	16.9
2000-01(P)	26329.12 (45.29)	20.55 (0.04)	11685.68 (20.10)	3838.78 (6.60)	16261.34 (27.97)	58135.47 (100.0)	16.9

(Figures in parentheses represent per cent total)

Source: Office of the Principal Chief Conservator of Forest, Orissa, Bhubaneswar.

RF: Reserve Forest
DPF: Demarcated Protected Forest
UDPF: Un-Demarcated Protected Forest
UCF: Un-Classed Forest.
P : Provisional

Annexure – 5.4

Forest Area Released for Non-Forest use under Forest (Conservation) Act 1980 upto 01.06.2001

Sl. No.	Name of the Sector	Proposals Finally Approved by Govt.		No. of Proposal in Pipeline at Various Stages of Compliance	Total No. of Proposals
		No. of Proposals	Forest area diverted in Hct.		
1	2	3	4	5	6
1	Irrigation	51	5739.98 (22.64)	59	109
2	Industries	4	2403.09 (9.48)	9	13
3	Mining	74	8228.94 (32.46)	82	155
	(a) O.M.C. Ltd.			9	
	(b) M.C.L.			4	
	(c) Dir. Mining			69	
4	Transmission Line	37	2488.71 (9.82)	13	49
5	Roads & Bridges	21	221.83 (0.87)	9	30
6	Railway Line	4	1909.95 (7.53)	2	6
7	Defence	4	3865.25 (15.25)	Nil	4
8	Miscellaneous	19	163.43 (0.64)	9	28
9	Human Habitations	3	322.09 (1.27)	26(Dists)	29
Total		217	25343.26 (100.00)	25343.26	423

(Figures in parentheses represent per cent to total)

Source: Office of the Principal Chief Conservator of Forests, Orissa, Bhubaneswar.

Annexure-5.5

Forest Expenditure 1980-81 to 1999-2000

(Rupees in Crores)

Years	Items					Total Exp-enditure	Total Forest Revenue
	Forest Non-Plan	B. Forest Plan					
		State	Central	Centrally Sponsored Plan	Total		
2	3	4	5	6	7	8	9
1980-81	5.8	2.4	0.7	0.6	3.7	9.6	37.2
1981-82	6.6	1.9	1.0	0.7	3.6	10.2	47.0
1982-83	78.0	2.6	0.5	0.7	3.7	11.7	47.3
1983-84	88.2	3.1	0.5	0.7	4.3	12.5	55..2
1984-85	9.2	4.3	22.3	1.8	8.3	17.5	50.0
1985-86	10.3	7.5	0.8	1.5	9.7	20.0	48.4
1986-87	12.2	12.7	0.7	1.1	14.5	26.6	50.0
1987-88	13.3	18.6	0.8	3.3	22.7	36.1	64.0
1988-89	14.7	19.3	1.8	2.0	23.0	38.0	59.2
1989-90	14.8	20.8	1.4	2.2	24.5	39.3	109.0
1990-91	15.7	26.4	3.2	3.2	32.8	48.5	109.0
1991-92	18.6	28.1	3.6	2.5	34.2	53.8	84.7
1992-93	24.3	38.3	4.0	2.6	44.9	69.2	103.9
1993-94	22.0	29.3	0.9	0.7	30.8	53.5	99.3
1994-95	24.0	20.4	2.4	6.0	28.9	53.8	118.7
1995-96	33.0	22.3	0.9	1.0	24.3	57.8	68.1
1996-97	34.8	17.1	2.5	4.1	23.9	59.4	76.2
1997-98	36.2	13.1	1.1	2.4	16.6	53.8	73.1
1998-99	43.5	24.0	3.0	2.0	29.0	72.4	86.8
1999-00	52.6	16.2	4.8	1.1	40.5	93.0	95.4
2000-01	55.0	20.4	11.1	2.4	88.9	108.2	84.25
2001-02	50.8	12.7	17.0	2.2	82.7	95.4	87.23

Source: Office of the Principal Chief Conservator of Forest, Orissa, Bhubaneswar.

Annexure – 5.6
Revenue Receipts from Forest Products

(Rs.in crores)

Years	Item				
	Timber & Firewood	Bamboo	Kendu Leaf	Others	Total
1	2	3	4	5	6
1990-91	21.10 (19.34)	6.45 (5.91)	76.85 (70.45)	4.68 (4.29)	109.08 (100.0)
1991-92	18.15 (21.42)	7.00 (8.26)	51.57 (60.87)	8.00 (9.44)	84.72 (100.0)
1992-93	10.40 (10.00)	10.00 (9.62)	78.26 (72.25)	5.34 (5.13)	104.00 (100.0)
1993-94	8.33 (8.39)	9.65 (9.72)	75.35 (75.88)	5.97 (06.01)	99.30 (100.0)
1994-95	17.39 (14.65)	8.91 (7.51)	84.16 (70.92)	8.21 (6.92)	118.67 (100.0)
1995-96	7.95 (11.65)	10.02 (14.68)	43.58 (63.84)	6.71 (9.83)	68.26 (100.0)
1996-97	11.74 (15.32)	8.74 (11.41)	47.86 (62.46)	8.28 (10.81)	76.62 (100.0)
1997-98	10.24 (14.01)	9.06 (12.39)	40.60 (55.53)	13.21 (18.07)	73.11 (100.0)
1998-99	6.47 (7.45)	8.52 (9.81)	63.50 (73.15)	8.32 (9.58)	86.81 (100.0)
1999-00	5.21 (5.46)	5.50 (5.77)	74.50 (78.10)	10.18 (10.67)	95.39 (100.0)
2000-01	14.23 (16.89)	5.11 (6.85)	55.00 (65.28)	9.91 (11.76)	84.25 (100.0)
2001-02*	12.60 (12.98)	2.01 (2.07)	69.00 (71.06)	13.44 (13.89)	97.10 (100.00)

* Provisional

Source: Forest and Environment Department, Bhubaneswar.
Presented in the Economic Survey (Govt of Orissa) of various years.

Annexure – 5.7
Physical and Financial achievement under Social Forestry Project in Orissa

Year	Physical Achievement		Financial Expenditure (Rs. in Lakhs)
	Area (Ha.) (RDF + PL)	Seedlings Distributed (In Lakhs)	
1	2	3	4
A - First Phase			
1983-84	-	-	14.68
1984-85	3553	14.95	159.42
1985-86	9601	67.98	445.53
1986-87	15124	103.69	688.59
1987-88	19498	162.62	1398.26
Total	47776	349.24	2706.48
B - Second Phase			
1988-89	13500.5	167.92	1381.4
1989-90	14967.7	180.06	1512.4
1990-91	15138.7	190.89	1588.4
1991-1992	10521.4	287.64	1659.4
1992-93	15576.5	300.00	1692.9
Total	69704.8	1126.51	7834.5
C -Second Phase Extension			
1993-94	15912	300.00	1388.92
1994-95	13105	300.47	1568.49
1995-96	19353	205.00	1337.88
Total	48370	805.47	4295.29
Grand Total	165850	2280	14835
1996-97	-	151.41	895.00
1997-98	3402.56	23.73	408.87
1998-99	3212.02	3.36	1132.37
1999-00	759.86	7.04	1358.61
2000-01	569.03	191.8	1670.75

Source: Office of the Director, Social Forestry Project, Orissa.

Annexure – 5.8

Plantation Raised by Different Wings of Orissa Forest Department

Year	Name of the Wing	Block Plantation (in Ha.)	R.D.F (in Ha.)	Comn. Affn. (in Ha.)	Avenue Plantation (in km)	Seedling Distribution (in Lakhs)
1	2	3	4	5	6	7
1993-94	Territorial	1607	195	0	0	-
	O.F.D.C.	875214	0	211.92	0	0
	SFP	10370	5542	0	0	300
	Total	20729.14	5737	211.92	0	300
1994-95	Territorial	1844.01	485	11.08	0	-
	O.F.D.C.	12368.43	0	0	59.1	0
	SFP	6085	7020	0	0	300.47
	Total	20297.44	7505	11.08	59.1	300.47
1995-96	Territorial	6924.32	2270	2654.97	0	-
	O.F.D.C.	65432.88	0	0	18	0
	SFP	298	19353	0	0	191
	Total	72655.2	21623	2654.97	18	191
1996-97	Territorial	1883.5	2361.61	839.09	4	-
	O.F.D.C.	10969	60	0	0	0
	SFP	384	0	0	0	151.41
	Total	13236.5	2421.61	839.09	4	151.41
1997-98	Territorial	8852.8	5659	1218.4	351	128.16
	O.F.D.C.	138.14	0	0	22.2	0
	SFP	1554.91	1734	0	113.65	23.73
	Total	10545.85	7393	1218.4	487.15	151.89
1998-99	Territorial	6340.8	8409.169	643.87	533.17	5.31
	O.F.D.C.	0	0	0	0	0
	SFP	680.5	1251.000	0	148.15	3.36
	Total	7021.3	9660.169	643.87	681.32	8.67
1999-00	Territorial	29225.50	18272.00	121.50	43.927	5.79
	O.F.D.C.	0	0	0	0	0
	SFP	608.00	0	0	151.860	7.05
	Total	29833.5	18272.00	121.50	195.787	12.84

OFDC : Orissa Forest Development Corporation

SFP : Social Forestry Project
RDF : Rehabilitation of Degraded Forests

Annexure – 5.9
Important Forest Bsed Industries as on 01.04.1999

Name of Division	Name of Forest Based Industries	Forest Products used as Raw Materials	Finish Product Industry
1	2	3	4
Angul Circle			
Angul	P.I.O Talcher, Bidi	Ply Wood	Wooden Furniture
Athagarh	BILT, Choudwar	Bamboo, Ply Wood	Paper
Athamallik			
Dhenkanal			
Kendujhar			
Berhampur ,(GM)			
Balliguda			
Baudh			
Ghumusar (North)			
Ghumusar (South)			
Nayagarh	M/s Jyoti Plates,	Sal and Siali Leaf	Leaf Plates and Cups
Parlakhemundi	1. Cane Industries, Kanpur 2. 2. Maple Agro Indust.	Cane Tamarind	Cane furniture Tamarind paste for export
Phulbani			
Puri	1. Ramachandrapur Saw Mill Co-operative-cum-Oil Explored Society, Jatni, Khurda 2. Co-operative Soceity, Janla, Khurda	Timber like Sal, Chakunda Mango and others -do-	Shutters door etc -do-
Koraput Circle			
Bolangir	-		
Jeypore	M/s Ballarpur Industries Ltd, Unit of SEWA	Bamboo	Paper
Kalahandi	-		
Khariar	-		
Nabarangpur	M/s. Mangalam Timber Products Ltd, Kusumi	Mango Billet, Cashew Subbal, Eucalyptis, Acacia, Firewood, Bamboo	Medium desity Fibre board in mechanical process
Rayagada	J.K. Corporation, J.K Pur.	Bamboo , Hard Wood	Paper
Sambalpur Circle			
Sambalpur	1. M/s Priti Oil 2. M/s Orissa Oil Industries, Sasan 3. M/s Hanuman Vitamin Food Ltd, Bargarh 4. M/s. O.P. Mill, Brajaraj Nagar.	Salseed Sal Seed Salseed Bamboo	Oil Oil Oil Paper
Rairakhol			
Bamara			
Deogarh			
Bonai			
Badrama (W.L)			
S.T.R			
Baripada			
Karanjia	Orissa Oil Industries , Rairangpur	Sal, Mahua, Kusum, Karana & Neem Seeds	Oil

(Cond..)

Division - Wise Saw Mill and Sawpit

Sl. No.	Name of Division	Total No. of Saw Mills	Total No. of Saw Mills with Valid Licence	No. of Saw Mills for which Licence cancelled in view of Writ Petition No.202/95 but get stayed as per order of High Court.
1	2	3	4	5
Angul Circle				
1.	Angul	1	1(OFDC)	-
2.	Athagarh	71	58 (Panchayat Industry-2	13
3.	Athmallik	-	OFDC-1	-
4.	Dhenkanal	1	-	-
5.	Kendujhar	-	-	-
Berhampur Circle				
1.	Baliguda	-	-	-
2.	Boudh	-	-	-
3.	Ghumusar North	-	-	-
4.	Ghumusar South	2	2	-
5.	Nayagarh	-	-	-
6.	Parlakhemundi	-	-	-
7.	Phulbani	-	-	-
8.	Puri	9	7	2
Koraput Circle				
1.	Balangir	-	-	-
2.	Jeypore	1	1 OFDC	-
3.	Kalahandi	-	-	-
4.	Khariar	-	-	-
5.	Nabarangpur	1	1 OFDC	-
6.	Rayagada	1	1 OFDC	-
Sambalpur Circle				
1.	Bamra	-	-	-
2.	Bonai	-	-	-
3.	Deogarh	-	-	-
4.	Rairakhol	-	-	-
5.	Sambalpur	1	1 OFDC	-
6.	Sundargarh	1	-	-
PD. STR				
1.	Baripada	15	15	2
2.	Karanjia	3	1	-
C.C.F WL				
1.	RajNagar	66	66	-
Total		173	156	17

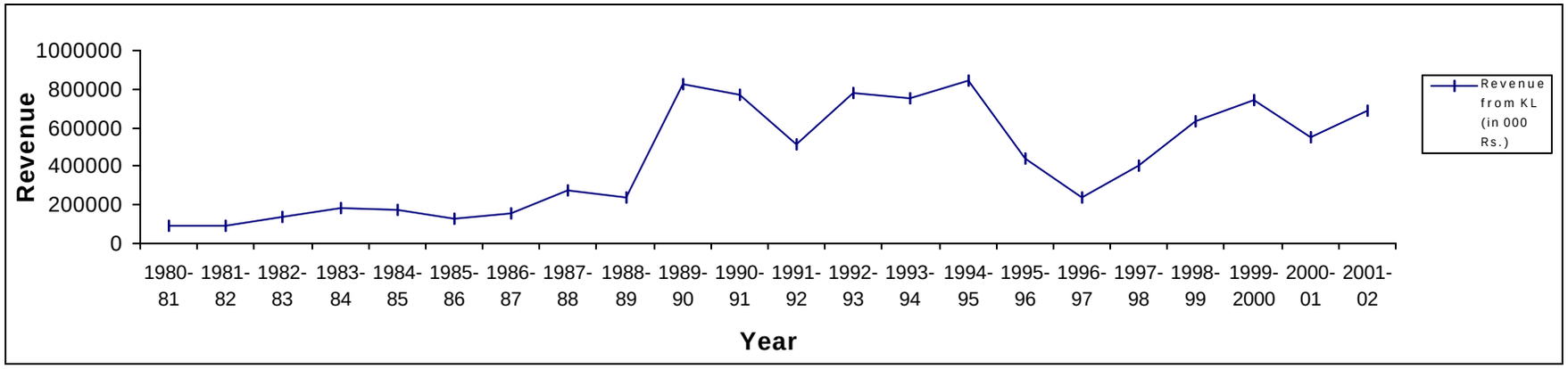
Source: Office of the PCCF, Government of Orissa.

Annexure-5.10
Production and Revenue of Kendu Leafs from 1980-81 onwards in Orissa

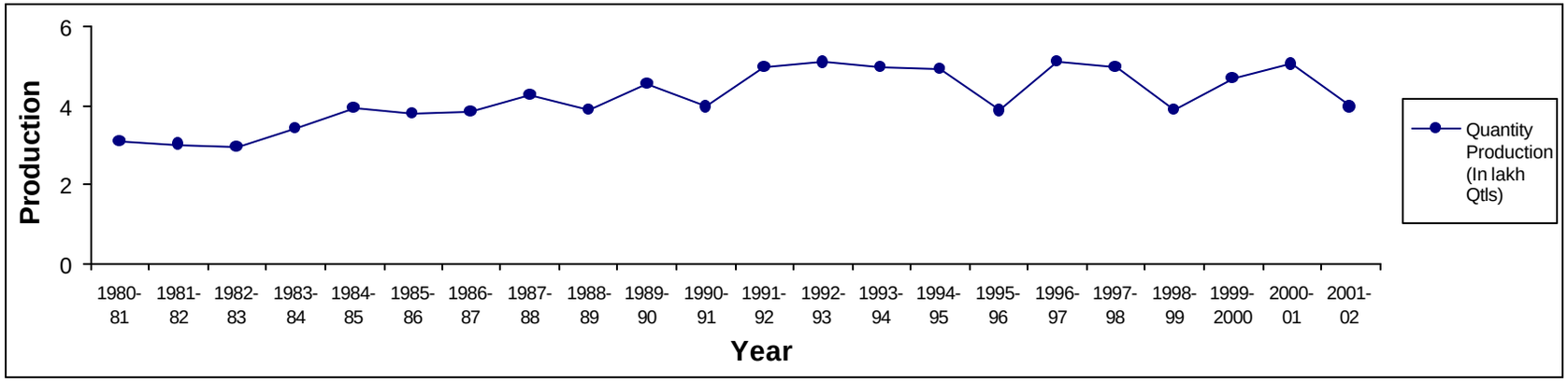
Year	Revenue from Kendu Leafs (In Crore Rs.)	Quantity Production (In Lakh Quintals)
1	2	3
1980-81	8.88	3.08
1981-82	9.00	3.02
1982-83	14.00	2.95
1983-84	18.50	3.42
1984-85	17.00	3.94
1985-86	13.00	3.79
1986-87	15.69	3.84
1987-88	27.48	4.28
1988-89	23.64	3.9
1989-90	82.44	4.55
1990-91	76.85	3.97
1991-92	51.57	4.97
1992-93	78.26	5.09
1993-94	75.35	4.98
1994-95	84.16	4.91
1995-96	43.58	3.86
1996-97	24.10	5.11
1997-98	40.60	4.96
1998-99	63.50	3.9
1999-00	74.50	4.69
2000-01	55.00	5.04
2001-02	69.00	3.97

Source: Office of the PCCF, Government of Orissa.

Annexure-5.10
Revenue from Kendu Leafs (1980-81 Onwards)



Production of Kendu Leafs (1980-81 –20001-02)



Annexure-5.11
Procurement of NTFPs Items Classified as Drugs

(Figures in Qtls.)

Sl. No.	Drugs	1977-78	1980-81	1985-86	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01 (P)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	Tamarind	91885	34772	123932	165213	94518	851818	976190	1871712	701737	1012439	842438	1562930	642828	568066
2	Mahua Flowers	410764	293543	646514	449501	632478	2364565	5700174	4969196	39358469	3348100	4573551	2342329	3625095	84783
3	Patal Garuda	54	8	18	--	--	--	--	--	--	--	--	--	--	--
4	Arrowroot	70	63	--	13	34	779	247	417	77	182	1259	19	--	--
5	Honey & Wax	60	14	1828	21	96	8288	1312	1392	1289	690	890	304	206	--
6	Nux Vomica	19055	649	591	1300	132	1397	22934	6146	13644	9440	122995	1308	4760	50
7	Shekoy	164	306	120	221	211	1262	749	370	303	324	--	--	--	900
8	Markiry Nut	2889	--	--	4363	550	12851	48861	15718	81851	133816	8542	38256	124850	3500
9	Chireita	--	--	160	10194	1920	--	--	--	--	--	--	--	--	--
10	Dhataki Flower	2332	3477	2500	635	7	24478	5572	7725	9751	282	149	243	--	20
11	Gila	16	--	--	138	1330	27541	19860	25298	19424	5235	701	--	--	--
12	Chain Climber	62	--	--	--	--	--	--	--	--	--	--	--	--	--
13	Nageswar Flower	--	--	--	--	--	--	--	--	33	4	1	1	--	--
14	Bhuin Nima	--	--	--	--	--	--	2600	--	600	--	520	6100	--	--
15	Bana tulasi	--	--	--	7347	6755	24548	153536	55416	122741	4439	545	--	5810	400
16	Indrajob	--	--	15	224	23	128	133	2	--	--	--	--	--	--
17	Khairo (Katha)	--	323	--	--	--	--	--	--	--	--	--	--	--	--
18	Mayrabolans	10130	16858	34014	53868	37516	178904	92163	123738	176373-H 49037-B 19028-A	111259 80847 41153	355861	191614	148894	196022

Source: Office of the PCCF, Orissa.
P= Provisional

ANNEXURE-5.12

Some Important Medicinal Plants of Orissa Forests

Sl. No.	Sanskrit Name	Botanical Name	Family
1	2	3	4
1.	Amla-Amlaki	Phyllanthus Emblica (Emblica officinalis)	Euphorbiaceae
2.	Arjuna	Terminalia Arjuna	Combretaceae
3.	Ankula	A.Lamarckli, A. Chinese Alangium Hexapetalum Syn. A. Salvifollum	Alangiaceae
4.	Ashok	Saraca Asoca	Caesalpinlaceae
5.	Amra	Mangifera Indica	Anacardiaceae
6.	Agasthi	Sesbania Grandiflora	Fabaceae
7.	Arka	Calotropis Giagantia	Asclepiadaceae
8.	Aswagandha	Withania Somnifera	Solanacae
9.	Apamarg	Achyranthes Aspera	Amarnthaceae
10.	Patha/Ambashtha	Cissampelos pareira	Menispermaceae
11.	Adityarakta	Cleome Viscosa	Capparidaceae
12.	Aparajeeta	Clitoria Ternatea (Sankha Puspa)	Leguminosae (Fabaceae)
13.	Asthisanhar	Cissus Quadrangularis	Vitaceae
14.	Atibala	Abutilon Indicum	Malvaceae
15.	Kutaj	Holarrhena antidysenterica	Apocynaceae
16.	Indramarish	Acalyha Indica	Euphorbiaceae
17.	Ushira, Khaskhas	Vetiveria Zizanoides	Gramineae Poaceae
18.	Arsaghna	Amorphophallus Campanulatus or Arum Campanulatum	Araceae
19.	Pippala	Ficus Religiosa	Moraceae
20.	Srigala-kantaka	Argemone mexicana	Papaveracea
21.	Kapitha	Feronia Elephantum	Rutaceae
22.	Tintrini, Amlika Atmyala	Tamarindus Indica	Caesalpiniaceae
23.	Karanj	Derris Indica Pongamia Glabra (P.Pinnata)	Fabaceae
24.	Rakta Kanchan	Bauhinia Variegata	Caesalpiniceae
25.	Cadamba	Anthocephalus Cadamba	Rubiaceae
26.	Rechanka	Mallotus Philippinensis	Euphorbiaceae
27.	Kataka	Strychnos Potatorum	Loganiaceae
28.	Kustha	Costus Speciosus	Zingiberaceae
29.	Gunja	Abrus Precatorius	Fabaceae
30.	Kokilakshya	Asteracentha Longifolia Hygrophila Spinosa	Acanthaceae
31.	Tomala	Diospyros Macrophyla Syn-Diospyros Peregrina	Ebenaceae
32.	Kaju	Anacardium Occidentale	Anacardiaceae
33.	Sarpunkh	Tephrosia Purpurea	Papilionaceae/Fabaceae
34.	Khadeera	Acacia Catechu	Mimosaceae
35.	Kakadumbura	Ficus hispida (Syn. F.Oppositifolia)	Moraceae
36.	Lankasiju	Euphorbia Tirucalli	Euphorbiaceae
37.	Dronopushpi Darounpushpi	Leucas Cephalotes Leucas Aspera	Labiateae/Lamiaceae
38.	Harsingar Swettamanjari	Nyctanthes Arbortristis	Obaeceae/Nyctaginaceae

Sl. No.	Sanskrit Name	Botanical Name	Family
1	2	3	4
39.	Gambhari	Gmelina Arborea	Verbenaceae
40.	Guduchi	Tinospora Cordifolia	Menispermaceae
41.	Gila (Putikaranj)	Caesalpinia Crista	Caeslpiniacea
42.	Ajasringi	Gymnema Sylvestre	Asclepiadaceae
43.	Gokshura	Tribulus Terrestris T. alatus	Zygophyllaceae
44.	Chandan	Santalum Album	Santalceae
45.	Champa	Michelia Champaka	Magnoliaceae
46.	Chakunda Chakramard	Cassia Tora	Caesalpiniceae
47.	Chironji	Buchanania Lanzan	Anacardiaceae
48.	Nagbail	Syn. V. Leucoxylon Vitex Peduncularis	Verbenaceae
49.	Kantakari	Solanum Xanthocarpum	Solanaceae
50.	Punarnava Sothaghnee	Boerhaavia Diffusa Boerhaavia Repens	Nyctaginaceae
51.	Chitraka (Sweta) Chitraka (Rakta)	Plumbago Zeylancia (White) Plumbago Rosea (Red) (Syn. Plumbago Indica)	Plumbaginaceae
52.	Deshi Chireita Or Kalimehga	Andrographis Paniculata A. Panicula lus	Acanthaceae
53.	Sapta Parna	Alstonia Scholaris	Apocynaceae
54.	Jamun or Jambu	Syzyglumcumini Syn. Eugenia Jambolana	Myrtaceae
55.	Kunda	Jasminum Auriculatum, Jasminum Grandiflorum Or Jasminum Officinale, Or Jasminum Multiflorum	Oleaceae
56.	Jagyanadimiri	Ficus Glomerata or Ficus Racemosa	Moraceae
57.	Bruhati	Solanum Indicum	Solanaceae
58.	Musali or Talamulika	Curculigo Orchioides	Amaryl lidaceae
59.	Tulasi	Ocimum Sanctum	Labiaetae (Lamiaceae)
60.	Munjariki	Ocumum Basilicum	Labiatae
61.	Vridhatulasi Or Ramatulasi	Ocimum Gratissimum	Libiatae
62.	Jayapala	Croton Tiglium Croton Polyandrus Syn. Baliospermum Montanum	Euphorbiaceae
63.	Vajradanti	Barleria Prionitis (Yellow Flower) B. Cristata (Blue Flowers) (December Plant) B. Dichotoma (White Flower)	Acanthaceae
64.	Sudarsana Somaballi, Madanmast	Tinospora Malabarica Syn. Tinospora Tomentosa Cocculus hirsutus	Menispermaceae
65.	Dhustur Dhatura	Datura Fastuosa Datura Metel D. alba D.Stramonium	Solanaceae
66.	Anantamula Sugandhi	Hemidesmus Indicus	Asclepiadaceae
67.	Durlabha	Alhagi Pseudoalhagi Alhagi Camelorum	Papilionaceae/Fabaceae
68.	Dhataki	Woodfordia Floribunda Syn. W. Fruticosa	Lythraceae
69.	Nagakeshar	Mesua Ferrea	Guttiferae/Clusiaceae
70.	Neem	Azadirachta Indica	Meliaceae
71.	Amarabela	Cuscuta Reflexa	Convolvulaceae
72.	Nilika or Neel	Indigofer Tinctoria	Fabaceae/Papilionaceae
73.	Kinsuka Palash	Butea Monosperma Butea Frondosa	Papilionaceae/ Fabaceae
74.	Prasruni	Paederia Scandens Syn. Paederia Foetida	Rub
75.	Shakrapushpi	Glorios ia superba	Liliaceae

Sl. No.	Sanskrit Name	Botanical Name	Family
1	2	3	4
76.	Sarpagandha	Rauwolfia Serpentina	Apocynaceae
77.	Ishvari or Rudrajata	Aristolochia Indica	Aristolochiaceae
78.	Paribhadra or Kanta Kisnsuka	Erythrina Indica or E.Variegata	Fabaceae/Papilionaceae
79.	Pashanbhedi, Osmovedi	Coleus Amboinicus or C. Aromaticus	Labiatae
80.	Piasal	Pterocarpus Marsupium	Papilionaceae/Fabaceae
81.	Putranjiba	Putranjiba Roxburghi	Euphorbiaceae
82.	Punnaga	Calophyllum Inophyllum	Guttiferae/Clusiaceae
83.	Shyonaka or Sword Plants	Oroxylum Indicum	Bignoniaceae
84.	Pindara Jandakhai	Trewia Nudiflora	Euphorbiaceae
85.	Bakula	Mimusops Elengi	Sapotaceae
86.	Bala	Sida Acordata (white flower) Sida cordifolia Sida veronacetolia	Malvaceae
87.	Baruna	Crataeva Religiosa	Capparidaceae
88.	Bara, Ficus tree	Ficus Bengalensis	Moraceae
89.	Badari	Ziziphus Mauritiana Syn. Zizyphys jujuba Z. Nummularia	Rhamnaceae
90.	Sukasimbi	Mucuna Prureins Syn. Mucuna Monosperma	Fabaceae/Papilionaceae
91.	Bhunamala	Phyllanthus niruri(white) Phyllanthus fraternus (Coloured)	Euphorbiaceae
92.	Babbula	Acacia nilotica Syn. Acacia arabica	Mimosaceae
93.	Basang, Vasa	Adhatoda Zey lanica Adhatoda Vasica	Acanthaceae
94.	Bibhitaka	Terminalia Belerica	Combretaceae
95.	Vrischikali	Tragia Involucrata	Euphorbiaceae
96.	Bridhadark	Argyreia speciosa	Convolvulaceae
97.	Birgundi	Vitex negundo	Verbenaceae
98.	Bel, Bilwa	Aegle Marmelas	Rutaceae
99.	Brahmi	Centelia Asiatica	Umbelliferae/Aplaceae
100.	Marking Nut	Semecarpus Anacardium	Anacardiaceae
101.	Mundirika, Bhukadamba, Munditika	Sphaeranthus Indicus	Compositae/Asteraceae
102.	Bhrungaraj, Blimaraja	Eclipta Alba	Compositae/Asteraceae
103.	Bhirra, Bheru	Chloroxylon Wietenia	Rutaceae
104.	Suravinimba, Curry leaves	Murraya Koenigii	Rutaceae
105.	Mehendi	Lawsonia Inermis	Lythracea
106.	Madhuka Gudapushpa	Madhuca Longifolia Syn. Bassia Latifolia Syn. Madhuca Indica	Sapotaceae
107.	Mahakala	Trichosanthes Bracteata or Trichosanthes Palmata	Cucurbitaceae
108.	Kumarika	Smilax Macrophylla S. ovalifolia S. Zeylanica	Liliaceae
109.	Madhavi	Hiptage Benghalensis	Malpighiaceae

Sl. No.	Sanskrit Name	Botanical Name	Family
1	2	3	4
110.	Mriga-Shinga	Helicterers Isora	Sterculiaceae
111.	Kanguni Jyotismati	Celastrus Paniculatus	Celastraceae
112.	Rakta Chandan Indian Laurel Wood	Pterocarpus Santalinus	Leguminosae
113.	Rasna	Vandatassellata	Orchidaceae
114.	Sangkha-Phull	Vinca rosea/Catharanthus	Apocynaceae
115.	Lajjawanti	Mimosa Pudica	Mimosaceae
116.	Kakamachi	Solanum Nigrum	Solanaceae
117.	Lodhra	Symplocos Racemosa	Symplocaceae
118.	Satamuli	Asparagus Recemosus	Liliaceae
119.	Sovanjana Swanjana	Moringa Oleifera Moringa Pterygosperma	Moringaceae
120.	Sal	Shorea Robusta	Dipterocarpaceae
121.	Sakhat Saheda	Streblus Asper	Moraceae
122.	Sveta Salmali (American Semul)	Ceiba Pentandra	Bombacaceae
123.	Salmali	Bombax Ceiba, B. Malabaricum, Salmalia Malabarica	Bombacaceae
124.	Safed Siris Sweta Sirisa Kala Sirisa Chakunda	Albizzia procera A. Odoratissima B. A Lebbeck	Mimosaceae
125.	Shinsapa, Sissam	Dalbergia Latifolia	Papilionaceae
126.	Saptala, Sikakai	Acacia Concinna	Leguminosae
127.	Sunakukhi	Cassia Angustifolia	Aleguminosae (Caesal Piniaceae)
128.	Amattas, Laburnum tree, Swana Pushpa	Cassia Fistula	Leguminosae (Caesalpiniaceae)
129.	Shalaparini	Desmodium Gangeticum	Papilionaceae Fabaceae
130.	Haritaki Avaya, Myrobalan (Chebulic)	Terminalia Chebula	Combretaceae

Source: *A Decade of Forestry in Orissa: 1981-90* complied by the Statistical Branch, Office of the P.C.C.F, Orissa, Bhubaneswar.

Annexure-5.13

Procurement of Industrial Bamboo and Royalty Position from 1988-89 to 1999-2000 (up to 01.04.2002)

Crop Year	Procure-ment of Industrial Bamboo (In Lakh S.U)	Rate of Royalty on Sale Units fixed by EC (Employed Committee) (In Rs.)	Concession Allowed by Govt rate F&E Deptt. Letter No. 22858 dt. 31.12.99 read with letter No. 4451 dt. 22.02.99 of OFDC ltd.		Amount of Royalty Dues (Rs. in Lakh)	Amount of Royalty paid (Rs. in Lakh)	Balance Dues (Rs. in Lakh)
			Qty Supplied to BILT (In Lakh S.U)	Account of Concession Permitted (Rs. in Lakh)			
1	2	3	4	5	6	7	8
1988-89	2.5	320	--	--	796.2	759.3	36.9
1989-90	2.3	336	--	--	779.3	789.5	(-)10.2
1990-91	2.1	355	--	--	759.7	745.5	14.2
1991-92	2.3	372	0.3	30.0	837.2	825.6	11.6
1992-93	2.4	390	0.4	40.0	901.7	873.1	28.5
1993-94	2.4	460	0.6	57.4	1041.4	1011.4	30.0
1994-95	2.4	483	0.7	66.6	1083.3	1035.1	48.2
1995-96	2.2	532	0.6	62.1	1083.1	953.2	130.0
1996-97	2.5	559	0.6	62.4	1311.1	900.0	411.1
1997-98	2.1	587	0.3	34.8	1168.1	850.0	318.1
1998-99	1.2	616	--	--	726.6	850.0	(-)123.4
1999-00	1.1	647	--	--	706.0	200.0	506.0

Source: PCCF, Bhubaneswar, Orissa.

Note: 1 Sale Unit (S.U) = 49.6 Bundle = 2400 Mtrs.
1 Bundle = 48.3 Mtrs.
1 Bundle = 21 Nos. of Industrial Bamboos

Annexure-5.14

Division-wise Procurement of Bamboo 1999-2000

(In S.U.)

Sl. No.	Division	I.B	C.S.B.	C.D.B.	Total C.B (4+5)	All total (3+6)
1	2	3	4	5	6	7
1	Angul	--	--	--	--	--
2	Athagarh	1621.71	67800	38012	105812	107433.71
3	Athamalik	813.5	33546	--	33546	34359.5
4	Baliguda	14253.91	83398	--	83398	97651.91
5	Bamara	1021.39	17100	--	17100	18121.39
6	Bonai	2709.04	8533	--	8533	11242.04
7	Boudh	--	--	--	--	--
8	Bolangir	424.25	19170	--	19170	19594.25
9	Deogarh	1629.63	64245	--	64245	65874.63
10	Dhenkanal	--	--	--	--	--
11	Ghumser (N)	4007.05	42657	--	42657	46664.05
12	Ghumser (S)	6502.77	31014	--	31014	37516.77
13	Jeypore	26660.11	109875	--	109875	136535.11
14	Kalahandi	16248.84	93767	--	93767	110015.84
15	Khariar	320.95	--	--	--	320.95
16	Nayagarh	6462.3	119560	--	119560	126022.3
17	Parlakhemundi	--	--	--	--	--
18	Phulabani	12477.54	87538	--	87538	100015.54
19	Puri	79.23	--	--	--	79.23
20	Rairakhol	324.49	22540	--	22540	22864.49
21	Rayagada	9209.61	46213	--	46213	55422.61
22	Sambalpur	4360.95	45224	--	45224	49584.95
23	Sundargarh	--	--	--	--	--
Grand Total		109127.3	892180	38012	930192	1039319.3

Source: PCCF, Orissa

Note: IB = Industrial Bamboo
CB = Commercial Bamboo
CSB = Commercial Salia Bamboo
CDB = Commercial Daba Bamboo

1 Sale Unit in Salia = 2400 Mtr in Length
1 Sale Unit in Daba = (2.5 x 1S.U of Salia) mtrs.