

# SUSTAINABLE UTILISATION AND DEVELOPMENT THROUGH TASAR BIOLOGICAL DIVERSITY

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"The forest is a peculiar organism of unlimited kindness that makes no demands for its sustenance and extends generously the product of its life activity, it affords protection to all beings, offering shade even to the axeman who destroys it" - (Gautam Buddha).

Forest is priceless wealth to the human society. It is vital for maintenance of ecological balance and reducing the rigours of certain natural calamities such as drought, soil erosion, cyclones etc. There is an enormous variety of plants and animals on earth, and the high degree of species richness in tropical forests and coral reefs is a marvel. The National Forest Policy explicitly recognises the multiple use of the forests, the rights of local populations and the role that forests play in the survival strategies of the poor. The current rate of loss of species diversity both plants and animals and the reduction in the genetic variety of crops and wild species could seriously affect human welfare. Dwindling forest cover at an alarming rate in India as well as in Orissa, is a matter of grave concern. Population growth, excessive dependence on wood for fuel and construction, extension of farm land, rapid industrialisation and urbanisation are the factors which have contributed to rapid deforestation.

## Tasar biodiversity

The total area under forests in Orissa in 1981 was 59,963 sq. km, which was about 38% of the total geographical area of the state and 8% of the forest cover of India. During 1993-94, the forest area was 57,184 sq. km, which accounts for 36.7% of the total geographical area of the state. Out of the total forest area of 57,184 sq. kms in the state 27,088, 16,113 and 13,967 and 16 sq. kms come under reserved forest, demarcated protected forest, undemarcated protected and unclassified forest respectively (Table - 1 and 2). However, according to the State forest Report, 1993 published by the Forest Survey of India, the actual forest cover has been reduced to 47,145 sq. km which is 30.16% of the geographical area. The forest cover in Orissa is unevenly distributed. The coastal district with much higher population density have comparatively less forest area (Table - 1).

Forest cover in Orissa enjoys chiefly Asan, Arjun, Sal, Teak and various other timber and firewood. The dense is remarkable in tribal districts such as Mayurbhanj, Dhenkanal, Sundargarh, Sambalpur, Keonjhar etc. Therefore, the people of tribal districts having rich tasar flora have been cultivating tasar silk from time immemorial. This dense forest having Sal, Asan or Arjun trees are gradually deteriorating indicating decline in tasar cocoon production (Mohanty 1994, 1995, 1997). Furthermore, the revenue receipts from forest product like timbers and fire wood is higher next to Kendu leaf (Table - 3). The gradual deterioration of forest would certainly minimise the state revenue.

## Sustainable utilisation and development

The term sustainable explain the "means of sustenance" or "supporting the life". But the greedy and selfish human be-

ings denature our ecosystem and the forest in particular unscrupulously reacting in deterioration of the natural resources with gradual depletion of our global resource crunch over the last century in particular, it has been clearly realised that we have been left with very little room for further manoeuvring in our attempt to make more compromises between the demands of interest of conservation on one hand and utilisation of such resources for various human interests on the other.

Since utilisation of natural renewable resources is often linked with sustenance of human beings, it is obvious that utilisation of such resources should be allowed for the "people in and around" the protected areas, where the conservation of biodiversity is contemplated. The unavailable and sure fall out of such permission is overuse due to the rising demand on such resources, which probably far outstrips the sustainable limits of production - thus compounding the problem of degradation of the habitat or impoverishment of natural ecosystems, which ultimately adversely effects the natural productivity also in a chain reaction. The process thus becomes counter productive. So for sustainable development forest resources need proper attention, protection and conservation.

## Conservation and development

The simple definition of conservation is "keeping the entire" or "preserving". In India, we have only 0.97% of the country's land area under National Parks, which corresponds to a mere 4.90% of the forest area of the country. While we should have 33% of the total land area of the country under forest cover for ecological reasons, we actually have only 21% now under forest cover. Even out of this inadequate forest area we have a large chunk of degraded forest area. And worse still is the fact that even now there is tremendous pressure for diversion of more forest areas for non-forest purposes, which has prompted Govt. of India to enact the Forest conservation act.

The main thrust given under the forest sector during the 8th plan is to conserve forests by intensifying protective measures and enlisting people's involvement in checking illegal felling and removal of trees. The Government have taken several measures to check smuggling of forest produce and to protect natural forests in the state. Forest is, no doubt, the cockpit of the life of all fauna including human beings.

In order to prevent the fast depletion forest resources and to preserve ecological balance, massive plantation programmes in degraded forests and waste lands were launched since the beginning of 7th plan under various state plan and central plan schemes. The main objective and strategy of forest planning during the 7th plan period was "Development without destruction". In Orissa three Government agencies i.e. Orissa Forest Development Corporation (OFDC), Social Forestry

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Project (SIDA assisted) and the territorial wing of the Principal Chief Conservator of Forests have been entrusted with the responsibility of undertaking massive plantation programme all over the state in degraded reserve forests and waste lands. Under "Rural Fuel Wood Plantation Scheme" suitable quick growing species are being planted on Government land and also in degraded sites to meet the increasing fuelwood requirement of the rural mass (Economic Survey, Govt. of Orissa 1995-96). The achievement of forest plantation programme during 1991 - 92, 1992 - 93, 1993 - 94 and 1994 - 95 in Orissa is presented in Table - 4. The task of regenerating the degraded forest areas and lands adjoining forest areas and other protected and ecologically fragile areas and implementation of ecodevelopment programmes is being under taken by the National Afforestation and Eco-Development Board. During 1994 - 95 an area of 9,84,102 ha of public land was brought under vegetative cover in the country and 10,810 lakh seedlings were distributed for planting on private land under the 20 - point programme (Economic Survey, Govt. of India 1995 - 96).

Plants can be protected under subsection 4 (A) of section 2 of Chapter 1 of the Indian Forest Act, which classifies "Forest

Produce" as timber, charcoal, wood - oil, resin, natural varnish, bark, lac, mahua flower and seeds, kuth and myrobalans, irrespective whether they are found in the forest or not. But plants, trees, leaves, flowers and fruits are classified as "forest produce" only if brought from a forest. It is expected that different developments would bring a change in ecodevelopment, which would also accelerate the production the tasar flora and fauna. So tribal economy would certainly be restored alongwith the forest development, ecodevelopment and national economy as a whole.

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**Table - 1 Districtwise (undivided) classification of Forest Area in Orissa, 1993 (area in sq. Km.)**

| S.No. | District   | Geographical Area 1991 | Reserved | Forest Area Demarcated Protected | Undemarcated Protected | Other unclassified | Total    | Percentage toTotal |
|-------|------------|------------------------|----------|----------------------------------|------------------------|--------------------|----------|--------------------|
| 1.    | Balasore   | 6,311                  | 204.22   | 42.70                            | 11.02                  | 0.19               | 258.13   | 4.1                |
| 2.    | Bolangir   | 8,913                  | 1316.65  | 30.50                            | 90.00                  | 0.16               | 1437.01  | 16.1               |
| 3.    | Cuttack    | 11,142                 | 497.81   | 702.14                           | 496.56                 | 0.59               | 1717.10  | 15.4               |
| 4.    | Dhenkanal  | 10,827                 | 2865.90  | 308.18                           | 2167.10                | 1.31               | 5342.49  | 49.3               |
| 5.    | Ganjam     | 12,531                 | 1886.04  | 2578.94                          | 2566.91                | 0.99               | 7032.88  | 56.1               |
| 6.    | Kalahandi  | 11,772                 | 1448.13  | 2527.86                          | 1676.62                | 0.98               | 5653.59  | 48.0               |
| 7.    | Keonjhar   | 8,303                  | 1833.02  | 648.41                           | 12.68                  | 0.24               | 2494.35  | 30.0               |
| 8.    | Koraput    | 26,961                 | 2144.16  | 4281.51                          | 2440.29                | 0.83               | 8866.79  | 32.9               |
| 9.    | Mayurbhanj | 10,418                 | 4219.53  | 371.52                           | 663.47                 | 2.14               | 5256.66  | 50.5               |
| 10.   | Phulbani   | 11,119                 | 3025.20  | 1875.13                          | 747.76                 | 3.01               | 5651.10  | 50.8               |
| 11.   | Puri       | 10,182                 | 1609.97  | 607.30                           | 1054.47                | 1.53               | 3283.27  | 32.2               |
| 12.   | Sambalpur  | 17,516                 | 3384.62  | 1215.82                          | 1598.45                | 2.24               | 6201.13  | 35.4               |
| 13.   | Sundargarh | 9,712                  | 2652.39  | 903.32                           | 431.64                 | 1.72               | 3989.07  | 41.1               |
|       | Orissa     | 1,55,707               | 27087.34 | 16113.33                         | 13966.97               | 15.93              | 57183.57 | 36.7               |

Source : Principal chief Conservator of Forests, Orissa.

**Table - 2 Land Utilisation pattern in Orissa (Area in 1000 hecets.)**

| Year    | Geographical Area | Forest Area | Misc.Tree | Permanent pastures | Culturable Waste | Land put to Non-agri. use | Barren & Unculturable land | Current Fallow | Other Fallow | Net area sown. |
|---------|-------------------|-------------|-----------|--------------------|------------------|---------------------------|----------------------------|----------------|--------------|----------------|
| 1989-90 | 15540             | 5476        | 859       | 726                | 517              | 742                       | 499                        | 146            | 254          | 6321           |
| 1990-91 | 15540             | 5476        | 859       | 726                | 597              | 746                       | 499                        | 119            | 214          | 6304           |
| 1991-92 | 15540             | 5482        | 855       | 726                | 572              | 748                       | 499                        | 137            | 184          | 6337           |
| 1992-93 | 15540             | 5478        | 857       | 663                | 538              | 781                       | 532                        | 184            | 203          | 6304           |
| 1993-94 | 15540             | 5534        | 867       | 635                | 487              | 781                       | 541                        | 149            | 243          | 6303           |

Source : Directorate, Agriculture and Food Production, Orissa.

**Table - 3 Revenue Receipts from Forest Products (Rs. in Crore)**

| S.No. | Item                | 1989-90 | 1990-91 | 1991-92 | 1992-93 | 1993-94 | 1994-95 (BE) |
|-------|---------------------|---------|---------|---------|---------|---------|--------------|
| 1.    | Timber and Firewood | 21.10   | 21.10   | 18.15   | 10.40   | 8.33    | 19.66        |
| 2.    | Bamboo              | 6.32    | 6.45    | 7.00    | 10.00   | 9.65    | 12.04        |
| 3.    | Kendu leaf          | 82.44   | 76.85   | 51.57   | 78.26   | 75.35   | 80.62        |
| 4.    | Others              | 9.19    | 4.68    | 8.00    | 5.36    | 5.97    | 14.89        |
| Total |                     | 119.05  | 109.08  | 84.72   | 104.00  | 99.00   | 127.21       |

Source: Forest and Environment Department, Govt. of Orissa.

**Table - 4 Achievement under Forest Plantation Programme**

| Plantation/Agency /Year                  | Plantation (Hect.) | Avenue Plantation (In R. Km.) | R.D.F (Hect.) | Gap Plantation (Hect.) | Seedling Distribution (Lakh Nos.) |
|------------------------------------------|--------------------|-------------------------------|---------------|------------------------|-----------------------------------|
| <b>A. OFDC</b>                           |                    |                               |               |                        |                                   |
| 1991-92                                  | 20,375.42          | 54.00                         | 2000.00       | -                      | -                                 |
| 1992-93                                  | 23,643.86          | -                             | 2000.00       | 2394.28                | -                                 |
| 1993-94                                  | 8,754.14           | 63.70 (no of Plants)          | -             | -                      | -                                 |
| 1994-95(p)                               | 12,368.43          | 59.1                          | -             | -                      | -                                 |
| <b>B. Social Forestry Project (SIDA)</b> |                    |                               |               |                        |                                   |
| 1991-92                                  | 5,516.40           | -                             | 5005.00       | -                      | 287.64                            |
| 1992-93                                  | 10,036.50          | -                             | 5540.00       | -                      | 300.00                            |
| 1993-94                                  | 10,370.00          | -                             | 5542.00       | -                      | 300.00                            |
| 1994-95(p)                               | 6,085.00           | -                             | 7020.00       | -                      | 300.47                            |
| <b>C. Territorial wing (PCCF)</b>        |                    |                               |               |                        |                                   |
| 1991-92                                  | 2,969.67           | -                             | 4217.50       | -                      | 1948                              |
| 1992-93                                  | 2,528.31           | 46.20                         | 8049.90       | -                      | -                                 |
| 1993-94                                  | 1,527.00           | -                             | 195.00        | -                      | -                                 |
| 1994-95(p)                               | N. A.              | -                             | N. A.         | -                      | -                                 |
| <b>Total (A+B+C)</b>                     |                    |                               |               |                        |                                   |
| 1991-92                                  | 28,861.49          | 54.00                         | 11222.50      | -                      | 307.12                            |
| 1992-93                                  | 36,208.67          | 46.20                         | 15589.90      | 2394.28                | 300.00                            |
| 1993-94                                  | 20,651.14          | 6370. (no of Plants)          | 5737.00       | -                      | 300.00                            |
| 1994-95(p)                               | 18,453.43          | 59.1                          | 7020.00       | -                      | 300.47                            |
| Including territorial                    |                    |                               |               |                        |                                   |

R. km. Running Kilometre, R.D.F - Rehabilitation of Degraded Forests

Source: OFDC and Social Forestry.