

# CHAPTER 6

## FOREST AND ENVIRONMENT

### FOREST

6.01 Forest play vital role in maintaining ecological stability and contribute significantly to the State economy, particularly in the rural sector in shape of bringing food security and livelihood to people living around forests. The pressure of human population and livestock on forests for collecting firewood, wood for household purposes, forest eatables, non-edibles, oilseeds, medicinal products & raw-products and fodder is much more and beyond the carrying capacity of existing forests. These forests are under continuous threat of de-forestation and degradation due to rapid industrialisation and urbanisation which creates serious problems for the overall eco-system and livelihood of forest dependant population. Therefore, deforestation needs to be arrested and suitable measures devised for rapid aforestation, reforestation and restoration of degraded forests.

6.02 The State has a recorded forest area measuring 58136.907 sq. km., i.e. 37.34% of the total geographical area. This includes 26,329.12 sq km. (45.29%) of reserve forests, 11687.12sq. km. (20.10%) of demarcated and protected forests, 3,838.78 sq km. (6.60%) of un-demarcated protected forests, 20.55 sq km. (0.04%) of un-classified forests and

16,261.34 sq km (27.97%) of other forests (village forests, Khesra forests etc.).

6.03 According to the 'State of Forest Report, 2005' published by Forest Survey of India, Dehradun, the actual forest coverage in the State is 48,374 sq. kms. which constitutes 31.07% of State's geographical area. From the total forest coverage 538 sq. kms. is 'Very Dense Forest' (crown density above 70%), 27,656 Sq. km. is 'Moderately Dense Forest' (crown density 40%-70%) and 20,180 sq. kms. is 'Open Forest' (crown density of 10-40%). Tree coverage outside forest area, assessed separately, is 4589 sq. kms. Thus, while the recorded forest area constitutes about 37.34% of the total geographical area of the State, actual forest cover exists over only 31.07% of the geographical area. National Forest Policy has mandated that 33% of the geographical area should be under forest cover. The State Government is taking keen steps to cross the mandated figure

6.04 In regard to forest cover, there has been wide disparity between districts. While forests are generally located in the districts situated in Eastern ghat, Central Table Land and Northern Plateau, the coastal districts are deprived of good forest potential. The State

Government has, however, taken up afforestation programmes including development of village forests, and introduction of social and farm forestry in the coastal belt.

### **FORESTRY SECTOR VISION 2020**

6.05 Forest Department has finalized their Vision 2020. The elements of the 'Forestry Vision 2020' include:

- *Improved forest extent and conditions*
- *Sustainable forest management*
- *Increased flow of NTFPs and wood*
- *Local governance & participatory forestry*
- *Biodiversity conservation strategies*
- *Higher Allocations, investment, insurance & incentives for better forest management.*

6.06 The forestry sector objective in the 11<sup>th</sup> Five Year Plan and Annual Plan, 2007-08 is to promote sustainable forest management in the State with a higher goal of supporting rural livelihoods. Recognizing the crucial linkage between rural livelihoods and conservation of forest resources in the particular context of Orissa, the plan specifically focuses on conservation and development of forests and optimal use of forest resources in a sustainable manner. The immediate goal of forestry in the State is to protect the existing dense forests with their rich bio-diversity and wildlife from degradation and to restore, through appropriate treatment of their vigour, for natural regeneration. The forest policy, rules and regulations in force will also be fine-

tuned and modified, wherever required, during the Eleventh Plan period to make the policy and institutional environment conducive for Joint Forest Management of degraded forests.

6.07 The forestry sector development in the Eleventh Five Year Plan will adopt an approach combining elements of asset creation, institutional development and social development to promote sustainable forest management practices. The Plan will support development of forest resources in the State with focus on:

- i) *Conserving, protecting and developing 27,882 sq. km of dense forests.*
- ii) *Regenerating and developing 20,196 sq. km of open forests.*
- iii) *Afforesting and reforesting 5,782 sq. km of scrub forests.*
- iv) *Promoting Eco-tourism and Eco-development in the protected area and*
- v) *Building capacity of the Forest Department and Village level institutions to take up protection and management of the assigned forests.*

### **FOREST PLANTATIONS**

6.08 According to the Forest Survey of India, present forest cover in the State is 31.07% as against 33% of the total geographical area mandated by the National Forest Policy, 1988. Thus, there is an imperative need to accelerate efforts for afforestation and regeneration of the degraded forests for achieving the mandated 33% forest cover and also to reforest the degraded forests with less than 10% crown density in

the recorded forest area measuring 4,574 sq. km.

6.09 During 2007-08, the afforestation programme has been implemented over an area of 62614 Ha. against a target of 69780 Ha. This includes 11874 Ha. of block plantation and 50740 Ha. under rehabilitation of degraded forests. Besides, 39 lakhs seedlings were distributed and 69 Kms. of avenue plantation were also conducted.

### ***ECONOMIC PLANTATIONS***

6.10 The value of the growing stock of our forests is substantially lower in comparison to other States. This situation can be improved by raising plantations of economically important species like Teak, Bija, Sissoo, (Rose Wood) and Red Sanders etc. on suitable sites on a sustained basis. This will ensure substantially higher production of valuable timber in future. About 4,000 Ha. of suitable degraded barren land in the Non-KBK-Non-JBIC districts will be treated under this programme every year. Besides, 20,000 ha. of Teak plantation will be raised during the 11<sup>th</sup> Five Year Plan period. An outlay of Rs.18.00 crore has been proposed for the Eleventh Plan Period.

### ***MEDICINAL PLANTS***

6.11 During 2007-08, State Medicinal Plant Board (SMPB), Orissa has recommended 7 promotional schemes and three contractual farming schemes for Self Help Groups

(SHGs) to National Medicinal Plant Board (NMPB) for financial assistance. NMPB has sanctioned 147 contractual farming scheme submitted during 2006-07.

6.12 The Board has implemented Medicinal Plant Service Programme in 7 revenue districts as a livelihood improvement programme. During 2007-08, Herbal Garden in 21 schools is in progress. Four schools have been provided with final phase grant during the year 2007-08.

6.13 The Kalinga Herbal Fair-2008 was organised by the SMPB during 2<sup>nd</sup> to 8<sup>th</sup> February, 2008 to provide trade linkage and brand development through intellectual property instrument in the sector, at Bhubaneswar. The fair had stalls by 6 Government Institutions, 16 NGOs, 9 Traders, one Manufacturer from Gwalior and ten Vaidya Sanghas from 9 districts. During the fair, several seminars/ meets were organised which were attended by 72 NGOs, 200 Vaidyas, 150 Ayurvedic Pharmacies from the State.

### ***ORISSA STATE VANASPATI VAN SOCIETY***

6.14 A scheme "Vanaspati Van Project" is being implemented in Gandhamardan Hill Range of Bolangir district and Baragarh Forest Division. The project period of the programme is 5 years, i.e. 2003-04 to 2007-08 with financial outlay of Rs.5.00 crore. An

amount of Rs.2.05 crore has been released and Rs.1.75 crore has been spent for the scheme by the end of November, 2007. 200 hectares of in-Situ preservation, 300 ha. of in-Situ conservation, 40 ha. of ex-Situ demonstration plot and capacity building in 25 VSS have been achieved.

**AREA ORIENTED FUELWOOD & FODDER PROJECT SCHEME**

6.15 The Area Oriented Fuel and Fodder Plantation Scheme (AOFFP) is a Centrally Sponsored Plan scheme with a funding pattern of 50:50 between the Centre and the State. The main objective of the scheme is to augment production of fuel wood and fodder species through regeneration of degraded forests and adjoining lands by associating the local people in planning, implementation and management under Joint Forest Management (JFM).

**KENDU LEAF**

6.16 Kendu Leaf (KL) trade offers large employment opportunities in rural Orissa at a point of time when other employment avenues are non-existent. Kendu leaf trading has been nationalized since 1973. As per the State Government's decision, Forest Department does collection, processing, bagging and storage of Kendu Leaves and Orissa Forest Development Corporation (OFDC) finances the entire operational cost of production and conducts sale of K.L. as the sole selling agent on behalf of State Government. Kendu Leaf

Organization operated in 7608 collection centres (Phadies) spread over 23 western and central districts of the State for procurement of KL from pluckers. There are 981 Kendu leaf Central Godowns in the State for storage of processed and phal kendu leaf bags. During 2007 K.L. crop year, 22 central Godowns have been constructed to provide adequate storage capacity.

6.17 During 2007-08 (2007 KL crop year), against the target of 4.37 lakh quintals KL production, 4.47 lakh quintals (both processed and phal) were produced and about 4.35 lakh quintals KL were sold at the cost of Rs.261.68 crore. During 2007-08, about 7.43 lakh pluckers have been benefited from Kendu leaf collection. Other KL related activities viz Bush cutting, Phadi repair and maintenance, processing and binding of KL have generated 60 lakh person days of employment. Thus total employment of about 141 lakh man-days were generated during 2007 K.L. crop year.

6.18 During 2007 K.L. crop year, the procurement price was enhanced from 21.5 paise to 25 paise per Kerry (bundle comprising 20 leaves). The pluckers numbering to 7.44 lakhs have been paid @ Rs.27/- each towards a pair of Chappals.

6.19 "Kendu Leaf Pluckers and Binding Labourers Welfare Fund" has been setup during 2007 KL crop year. Compensation

amount of Rs.50,000/- is being given to the legal heir in case of death and Rs.25,000/- in case of permanently disabled plucker/labourer. During 2007, an amount of Rs.2.00 lakh has been disbursed to the legal heirs of four deceased pluckers under the Welfare Scheme.

### **DIVERSION OF FOREST LAND & COMPENSATORY AFFORESTATION**

6.20 A number of development activities in different sectors viz. Irrigation, Mining, Industries, Railways and Roads etc are also in progress, which involve diversion of forest land for non-forestry purpose. In the State, since 1980 by the end of 2007-08, 347 nos. of project proposals under different sectors of the State have been approved by MoEF, Government of India involving diversion of 35586.717 ha. of forest land. Out of these, 23 projects comprising 14 mining projects (2150.681 ha.), 5 irrigation projects (250.671 ha.), 3 railways projects (18.745 ha.) and one road (4.998 ha.) have got the approval during 2007-08. Government of India while according approval, have stipulated for undertaking compensatory afforestation in lieu of forest areas diverted for non-forest purposes. By the end of December, 2007, an amount of Rs.67 crore has been deposited by various agencies towards the cost of afforestation and afforestation have been raised over an area of 33,472 ha. of forest and non-forest land.

6.21 Pursuant to commitment of the State Government to regularise the pre-1980 encroachments/ forest villages in favour of the eligible encroachers, complete proposals in respect of 17 districts involving the case of 3754 families covering 3328.42 ha. of forest land to be settled in their favour was sent to Government of India for approval under provision of 'Forest (conservation) Act, 1980'. Out of these, Government of India has already accorded, in principle, approval for regularization of eligible pre-1980 encroachments of 13 districts involving 2051.5188 ha. benefiting 2323 families. The cases of balance 4 districts are under active consideration of the Government of India.

### **FOREST PROTECTION**

6.22 With growing population, there has been tremendous pressure on forests both for forest produce as well as forest land. Illegal removal of forest produces is largely confined to some vulnerable areas such as the basin of River Mahanadi spread over Angul, Sambalpur, Cuttack, Nayagarh and Boudh districts, Similipal Forests in Mayurbhanj district, the forests of Rayagada, Koraput, Malkangiri and regions adjoining Orissa-Andhra Pradesh border and the forest corridors on the Inter-State Orissa-Jharkhanda and Orissa-Chhatisgarh borders.

6.23 Forest Department has been keeping a close vigil over forest offences and taking

action for booking offenders. The State is divided into 281 (221 forest and 60 wild life) Ranges, 1001 Sections and 3674 Beats. Average forest area per Beat comes to 15.82 sq. kms, for a Forest Section 58.07 sq., kms. and for a Range 206.88 sq. kms., which is considered to be quite high, from the management point of view. During 2007-08, (up to November, 2007) about 3775 cum of timber valued at Rs.4.38 crore was seized as against 6680 Cum of timber valued at Rs.4.71 crore seized in 2006-07 (up to November, 2006). Similarly, 47,176 forest offence cases were registered involving 41,638 offenders during 2007-08 as against 42,880 cases were registered involving 39,104 offenders during 2007-08. Nineteen units of APR Forces have been posted in different Territorial Forest Divisions in vulnerable areas and Central Range Police Force (CRPF) has been deployed in the Dhuanali and Barbara Reserve Forest of Khurda Forest Division which is a patch of rich and unique forest with Teak plantation from the pre-independence time. Besides, 265 Forest Check gates have been established in the State to regulate the transit of forest produce and 739 VHF sets have been installed in different territorial ranges and vulnerable areas. Draft Rules for use of fire arms by Forest Officers are under consideration of State Government.

**JOINT FOREST MANAGEMENT**

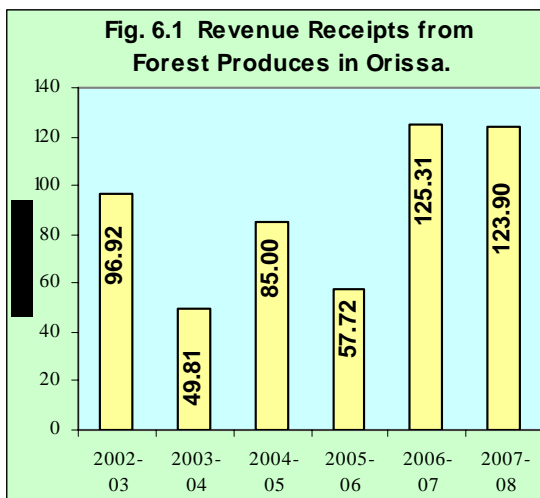
6.24 One of the salient features of the National Forest Policy, 1988 is to associate

people actively in protection, conservation and management of forests. The State Govt. brought out a resolution in August, 1988 to introduce a scheme of protection of peripheral reserve forests with participation of the people of adjoining villages. The process has been further fine-tuned from time to time, ending with September, 1996 Resolution.

6.25 In accordance with the 1993 JFM (Joint Forest Management) Resolution of the Government, 10,504 numbers of Vana Samrakshana Samities (VSS) are functioning in the State for protecting and regenerating an area of about 9560 sq. km. of degraded forests through JFM.

**FOREST REVENUE**

6.26 Forests are an important source of non-tax revenue for the State Government. Figure 6.1 and Table 6.1 show the revenue receipts from forest produce in Orissa since 2001-02. It is observed that revenue receipts from forest produce show a fluctuating trend with 2006-07 being the highest revenue earning year. During 2005-06, the revenue receipt was Rs.57.72 crore which increased to Rs.125.31 crore during 2006-07. Further, it is again slipped to Rs.123.90 crore during 2007-08 with declination of 1.14%. The revenue receipt from the Kendu Leaf Trade is being highest among other forest produces. During 2007-08, out of total Rs.123.90 crore revenue receipts, about 80.8% were earned from Kendu Leaf Trade.



Source: P.C.C.F., Orissa.

**Table – 6.1**  
**Revenue Receipts from Forest Produces in Orissa**

(Rs. in Crore)

Item	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08
Timber & firewood	9.15	3.7	8.94	6.65	9.84	11.00
Bamboo	0.07	1.45	1.58	4.21	5.05	3.74
Kendu leaf	75	31	24.25	40.14	102.1	100.08
Others	12.7	13.66	50.23	6.72	8.32	9.08
<b>Total</b>	<b>96.92</b>	<b>49.81</b>	<b>85.00</b>	<b>57.72</b>	<b>125.3</b>	<b>123.90</b>

Source: P.C.C.F., Orissa.

**ORISSA FOREST DEVELOPMENT CORPORATION (OFDC)**

6.27 Orissa Forest Development Corporation Ltd., a 100% Government of Orissa Company, is operating as the commercial arm of the Forest Department. It was formed on 01.10.1990 on merger of three forest based corporation viz. Similipal Forest Development Corporation (formed in 1979), Orissa Plantation Development Corporation (formed in August, 1985) and Orissa Forest Corporation (formed in 1962). At present the

Corporation has taken up 80 coupes working in 13 forest divisions.

6.28 The Corporation has 20 commercial units under 4 zones along with head quarters at Bhubaneswar. Ten saw-mills (including two hired) are now operating by the Corporation. The prime activities of the Corporation is to implement Policies and Programmes of the Government in scientific exploitation of forest resources and its marketing, both raw and finished products, inside and outside Orissa and to cater the need of the State through generation of employment.

6.29 The Corporation has taken up responsibility of supplying fire-wood, bamboo and house building materials to public mostly obtained from salvage of dead and wind fallen timber and U D case materials, through its 172 Retail Sale Depots all over Orissa. The Corporation finances the entire operational cost of production of Kendu Leaf and market the same as sole agent of the State Government. During 2007-08, the Corporation has produced 21,399 cum of timber and timber products, 17,283 MT of Fire Wood, 1,04,702 SU of bamboo, 4,46,587 quintals of Kendu Leaf and 306 MT Sal Seeds. During the period, Rs.311.10 crores revenue were collected by OSFDC on sale of different forest produce as against Rs.302.92 crore collected in 2006-07 showing a marginal increase of

2.70%. However, the Corporation has earned a profit of Rs.48.76 lakh in 2007-08 as against Rs.94.20 lakh profit earned during 2006-07.

Table 6.2 shows the production, sale and revenue collection of different forest products

made by OFDC Ltd. during 2006-07 and 2007-08. It is revealed from the table that except Kendu leaf and Sal seeds, the production in all other forest products has declined over 2006-07.

**Table 6.2**

**Production and Revenue Collection from Forest Produce by OFDC**

Item	Unit	2006-07			2007-08		
		Produce	Quantity sold	Revenue collected (Rs. in lakhs)	Produce	Quantity sold	Revenue collected (Rs. in lakh)
Timber & timber product	Cum	22608	21974	2504.39	21399	22735	2945.65
Fire wood	MT	18171	16471		17283	20449	
Bamboo	SU	113115	134741	1503.59	104702	137936	1700.86
Kendu leaf	Qtls.	387492	482648	25975.87	446587	434770	26168.15
Sal Seeds	MT	237	218	14.67	306	297	26.76
Others		-	-	293.16	-	-	269.05
Total		-	-	30291.68			31110.47

Source: Orissa Forest Development Corporation, Bhubaneswar.

**WILD LIFE**

6.30 Orissa with its diversified topography and climate has been the abode of a variety of wildlife species. But due to increasing biotic interference and dwindling forest cover, there has been a rapid decline in wildlife population in the State. In order to protect and preserve wild life, 18 Wildlife Sanctuaries and 2 National Parks have been established with protected areas of 9009.82 sq. kms. including 1408 sq. kms. of the coastal area. The total land surface notified as Sanctuaries and National Park is 4.25% of the State geographical area and 11% of the total forest area of the State.

6.31 Eighty-four (84) species of reptiles, 446 species of birds and 65 species of mammals have been identified in protected areas. As per wildlife census conducted in 2007-08, there were 1516 saltwater crocodiles, 1862 elephants, 107 mugger crocodiles (except river system of Similipal Tiger Reserve) in the State. Result of tiger census and some other animals are still awaited. Result of wildlife census for the last three years shown in Annexure - 6.4.

6.32 Three Elephant Reserves (ERs) namely Mayurbhanj ER, Mahanadi ER and Sambalpur ER were notified in the State in the years 2001 and 2002. These Reserves are meant to define prime elephant habitats and to launch various management interventions



for conservation of elephants. The extent of notified and proposed forest blocks in these three reserves is 4,129 sq km. and the geographical area covered by these three reserves is 8,509 sq. km.

6.33 The 2<sup>nd</sup> Tiger Reserve of the State comprising of Satakosia and Baisipalli wild life sanctuaries has been formed and 3<sup>rd</sup> proposal to constitute Sunabeda wildlife sanctuary has been accepted, in principle, by Government of India. Notification under section 26 (A) of wildlife (protection) Act, 1972 has been issued constituting Similipal as a "Wildlife Sanctuary" covering an area of 2306.61 sq. kms.

6.34 As per Tiger Census conducted in 5<sup>th</sup>-10<sup>th</sup> January, 2004, there were 192 tigers and 487 leopards in the State as against 173 tigers and 457 leopards counted in 2002 Census. Out of 192 tigers and 487 leopards, 101 tigers and 127 leopards were found in Similipal area.

6.35 As per the elephant census conducted in 2007-08, there are 1862 elephants are in the State. In order to provide better habitations to them, water bodies, fodder plantation programmes have been taken-up. On the other hand to protect the crops and life of villagers in the adjacent villagers, 54 numbers of anti-poaching and anti-depredation squads have been formed, 46 nos. of elephant trackers have been engaged to keep regular watch on the movement of the

elephants. Besides, villagers have been provided with search light, crackers, loud speakers to drive away the elephants. Efforts are being taken to contain the elephants by providing trench fencing/ stone walls and solar electric fencing at sensitive points to prevent the elephants from entering the human habitations.

6.36 Every winter lakhs of turtles visit three nesting sites at Gahirmatha, Rushikulya and Devi sea beaches to lay eggs. The Gahiramatha Marine Sanctuary, covering an area of 1,435 sq. km, is the largest nesting ground for Olive Ridley Sea Turtles in the World.

6.37 During 2007-08, there was mass nesting of 1.80 lakh Olive Ridley Sea Turtles at Gahiramatha rookery Rushikulya river mouth. As most of the deaths occur due to uncontrolled trawler traffic, the Government has made Turtle Extruder Devices (TEDs) mandatory aboard trawlers. The casualty of turtle in 2007-08 season was 5763 as against 4046 during 2006-07. There was vigorous enforcement of the provision of law against illegal fishing in turtle congregation areas. Total 45 fishing vessels including 18 trawlers, 3 gill netters and 24 mechanized boats were seized during 2007-08.

6.38 1516 saltwater crocodiles were counted in the river system of Bhitarkanika and its associated creeks/ rivers during 2007-

08 sharing an increase of 1.27% as against 1497 counted in 2006-07.

6.39 The winter welcomes the avian guest to Chilka, Bhitarkanika and other water spread areas in the State. Chilka lagoon receives over 7.5 lakh birds every year. Nalabana, a notified sanctuary, of Chilka is a major attraction for the winged visitors. Avian species like pintail, gull-billed tern, common sand pipers, bar headed geese, grey log geese, spotted eagle and osprey are some of the species of migratory birds. Migratory birds, which have arrived for wintering to the Chilka Lake and Bhitarkanika wetlands during 2007-08 migration season, are estimated to be numbering 8.78 lakh of 111 species and 1.25 lakh of 97 species respectively. Increased awareness, improved protection measures and surveillance have reduced the haunting of these birds. In order to provide safety net to winged guests, protection camps have been set up comprising villagers, volunteers and wildlife officials in and around Chilka lagoon and boating activity has been regulated at Nalabana to give the birds an undisturbed stay.

6.40 During 2007-08, 99 numbers of wildlife offence cases have been booked and 169 offenders have been arrested and forwarded to the Court. Table 6.3 shows the wildlife protection measures taken in the State since

2005-06, which shows a decreasing trend of offence.

**Table - 6.3**

**Wildlife protection in Orissa  
(Poaching, poisoning, trapping etc.)**

Item	2005-06	2006-07	2007-08
No. of incidents occurred	193	104	99
Cases found undetected	72	26	21
Cases filed in the court	121	78	78
Accused forwarded to the court	232	181	169

Source: PCCF, Orissa, BBSR

6.41 During 2007-08, 72 human death and 132 injuries were recorded in the State as against 92 death and 141 injurious recorded during 2006-07. Besides, crop damage over 9713.44 acres and 850 house damage were also recorded during 2007-08 and an amount of Rs.2.05 crore as compensation has been paid for the purposes. Table 6.4 presents the picture in detail.

**Table - 6.4**

**Damage caused by wildlife in Orissa.**

Year / wild animal	Human		crop damaged (in acre.)	House plunge	Campaign paid (Rs. in Cr.)
	kill	injury			
2006-07					
Elephant	71	16	4835.6	592	1.35
Others	21	125	-	-	0.44
2007-08					
Elephant	62	16	9713.44	850	1.8
Others	10	116	-	-	0.24

Source: PCCF, Orissa, BBSR

**Nandankanan Zoological Park**

6.42 Amidst lush green forests along the banks of Kanjia Lake Nandankanan stays, a beautiful zoological park that got its name

from “Nandan Van” meaning the “Garden of Gods”. Nandankanan Zoological Park is one of the finest zoos of India, located amidst a beautiful natural setting. Unlike conventional zoos, it spreads over vast 3.62 sq. kms. of undulating topography with natural moist deciduous forest, water bodies and other natural features that provides the zoo inhabitants an appropriate ambience to live in harmony with the nature. It was dedicated to public on 29<sup>th</sup> December 1960.

6.43 The zoological park together with the lake and botanical garden has been declared as Nandankanan Wildlife Sanctuary on 3<sup>rd</sup> August, 1979 covering an area of 4.37 sq. kms.

6.44 The park has a collection of about 1276 specimens of animals and birds representing 124 species (90 reptiles of 25 species, 674 birds of 56 species and 512 mammals of 43 species). The sylvan setup of the park boasts for many special features, which lure the visitors. Boating in Kanjia Lake, White Tiger and Lion Safari, Nocturnal Animal House, Reptile Park, Toy Train, Cable Car and Aquarium are some of the special attractions of the zoo.

6.45 During 2007-08, the number of visitors to the zoo increased from 15.08 lakh in 2006-07 to 17.33 lakh, an all time high for the zoo. The revenue collection of the zoo from all sources recorded at Rs.149.62 lakh as against Rs.167.32 lakh collected during 2006-

07. Table 6.5 shows the number of visitors and revenue collection of zoo since 2001-02.

**Table – 6.5**  
**Number of visitors & revenue collected by Nandankanan, Orissa**

Year	No. of visitors (in lakh nos.)	Revenue collection (Rs.in Cr.)
2001-02	11.99	0.81
2002-03	12.99	0.90
2003-04	13.37	0.89
2004-05	12.41	1.12
2005-06	13.06	1.46
2006-07	15.08	1.77
2007-08	17.33	1.50

Source: Directorate of Nandankanan.

6.46 Special package for development of Nandankanan Zoo has been introduced from the year 2006-07. The State Botanical Garden has been transferred to the management of Nandankanan Authority from August, 2006. In order to attract more and more visitors, an outlay of Rs.500.00 lakh has been proposed for the Annual Plan, 2008-09 for development and beautification of Nandankanan Zoo and Botanical Garden.

**WORLD FOOD PROGRAMME PROJECT**

6.47 Under this programme, food rations are being provided to labourers engaged in different forestry activities for improving their nutritional status. In order to avail benefits under the programme, a labourer is required to contribute voluntarily Rs. 9/- from his daily wage for getting a food packet of 2.5 kg of rice and 200 grams of pulses. The generated funds are utilized towards meeting the needs of local communities by implementation of micro plan projects and creating public infrastructure such as provision of drinking

water, storage go-down, concrete roads, renovation of ponds and promotion of pisciculture and renovation of old tanks. During 2006-07, about 4562 MT of rice and 275 MT of pulses were utilized under this

project till November, 2006 and welfare funds to the tune of Rs.274.48 lakh have been utilized out of generated funds for execution of micro projects as approved by S.L.C.C.

## **ECOLOGY AND ENVIRONMENT**

6.48 With the rapid industrial development, the adverse impact on environment is increasing day by day. Therefore it is important to keep a healthy balance between economic development and protection of environment. Keeping this in view, the thrust areas of the Forest and Environment during 11<sup>th</sup> plan will be:

- *Strengthening institutional capability for environmental management with the aim of planning and sustainable use of resources, protection and conservation of eco systems, prevention and control of pollution through regulatory and promotional measures and,*
- *Encouraging people's initiatives and community participation in environment protection and prevention of pollution.*

6.49 Environment Wing of the Forest and Environment Department, Govt. of Orissa is the Nodal Agency for environmental management and conservation in the State. The activities undertaken during 2007-08 are as follows:

6.50 Appellate Authorities have been constituted to hear appeals preferred against any order made by the State Pollution Control Board. By the end of 2007-08, 13 sittings of the Authorities have been held in which 50 appeals were initiated out of which 37 were disposed of by the Authorities.

6.51 The Orissa State Coastal Zone Management Authority has been constituted by Government of India to enforce the Coastal Zone Management Plan and to monitor violations of Coastal Zone Regulations. The Authority has recommended three project proposals, viz. - (i) Development of Fish Landing Zone at Mirzapur, (ii) Reconstruction and extension of Oberoi Palm Beach Hotel at Gopalpur-on-sea and (iii) Weather Radar Station at Paradeep by Indian Metrological Department. Out of these three, Radar Station at Paradeep has got clearance of MOEF, Government of India.

6.52 To recognize and provide encouragement for notable contribution in the field of conservation of environment and

protection of forest, Environmental Award like “Prakruti Mitra” and “Prakruti Bandhu” have been instituted by the State Government as an annual feature. State Government has awarded 31 nos. of “Prakruti Mitra” and 30 nos. of “Prakruti Bandhu” award to Voluntary Organizations/ Villages/ National Institutions and Individuals respectively for their meritorious work.

**STATE POLLUTION CONTROL BOARD (SPCB)**

6.53 The State Pollution Control Board (SPCB) was constituted in 1983 and is functioning under Forest and Environment Department, Govt. of Orissa. The Board is entrusted with the responsibility to execute and ensure proper implementation of Environmental Acts, particularly the Water (Prevention and Control of Pollution) Act, 1974, Air (Prevention and Control of Pollution) Act, 1981 and the Environment (Protection) Act, 1986 as amended from time to time, and various rules framed there-under. The Board is also expected to execute and ensure proper implementation of environmental Policy of the Union and the State Government.

6.54 During 2007-08, the Board has received 957 applications for consent to establish Industries and 504 pending proposals were carried forward from 2006-07. Out of these 1461 applications, consents have been given in favour of 1042 Industries.

6.55 After declaration of the entire State of Orissa as Air Pollution Control Area in 2002, all the brick kilns have to obtain consent to establish within 90 days of notification. During 2007-08, 26 applications including 8 carried forwarded from 2006-07 have been received and permission was granted in favour of 18 cases.

6.56 Similarly, 232 applications including 24 carried forwarded from 2006-07 were received during 2007-08 to establish stone crushers, out of which permission to all 232 units have been accorded during 2007-08.

6.57 During 2007-08, there were 74 cases including 16 spilled over cases from 2006-07 for public hearing. Out of this, 47 public hearing have been conducted for major industries/ mining/ development projects.

6.58 As per the provision of Hazardous Waste (Management & Handling) Rules, 1989 and Amendment made in 2003, the Board ensures proper management of hazardous waste through authorized administration. During 2007-08, about 235 authorization applications have been received, of which authorization was granted in favour of 150 units and show cause notice have been issued to 13 Hazardous Waste generating units.

6.59 Bio-medical Wastes generated in different health care establishments need to

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be disposed off safely without any adverse impact to the human health and environment. The OSPCB was declared as the prescribed authority for the State for enforcement of the rules and regulations for the waste management through authorized administration. During 2007-08, out of 987 health care establishments, the Board has brought 545 establishments under authorized administration. Thus, out of these establishments, 362 establishments have their own treatment facilities, 200 establishments are utilizing Common Bio Medical Waste Treatment and Disposal Facilities (CBWTDF), 186 establishments have no adequate facilities, 159 establishments have no facilities and 80 are exempted either due to closure or for providing treatment to less than 1,000 patients per month.

6.60 Under Municipal Solid Waste (Management & Handling) Rules, 2000, the Board has so far granted authorization in favour of 11 local bodies out of which 7 ULBs have valid authorizations.

6.61 In order to plan a comprehensive programme for prevention and control of pollution, the Board has undertaken the following activities during 2007-08.

- *Monitoring of Water qualities in 48 stations of 6 major rivers of the State (Mahanadi, Brahmani, Baitarani, Rushikulya, Subarnarekha and Nagavali). 32 water quality parameters are being regularly monitored in each of those stations.*

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- *Water quality study of Brahmani River at the upstream of Rengali to assess suitability of fish propagation and at Rushikulya and Devi river Muhanas connection with protection of Olive Ridley sea turtles.*
- *Monitoring of ground water quality of three towns (Cuttack, Bhubaneswar and Puri) at 15 stations and at the peripheral areas of NALCO Smelter plant, Angul and Phosphatic Fertilizer Units at Paradeep, to assess Fluoride concentration.*
- *Monitoring to ambient air quality in 9 important towns and industrial areas like, Angul, Rourkela, Rayagada, Bhubaneswar, Berhampur, Cuttack, Sambalpur, Keonjhar and Balasore. Air quality is being monitored in 17 stations in the above 9 towns in respect of four parameters namely, Suspended Particulate Matter, Sulphur Dioxide and Nitrogen Oxides.*
- *Monitoring of noise pollution level on Deepawali in 6 nos. of cities/ towns (Angul, Rourkela, Rayagada, Cuttack, Bhubaneswar and Berhampur) and impact of idol immersion in water quality during Dushera at Cuttack and Bhubaneswar.*
- *Two cities, Cuttack and Bhubaneswar, were surveyed for assessment of vehicular pollution.*
- *Baseline Environmental study of proposed Alumina Refinery, thermal power plant and bauxite mining at Lanjigarh, Kalahandi.*

6.62 Besides, the following Awareness Programmes are also undertaken by Orissa State Pollution Control Board.

- *The Board has collaborated with different organizations in a number of seminars/workshops for public awareness regarding environmental protection. An interaction meet was organised at Rourkela with the owners of sponge iron plants to improve their environmental performance located in Sambalpur, Jharsuguda and Sundergarh districts.*

- *The Board regularly publishes advertisements relating to environmental issues in different periodicals/ news papers / souvenirs.*
- *Board imparted training to high school teachers on "Environment & Pollution Control". Such programmes were organised in Berhampur and Rourkela.*
- *75 nos. of Police personnel from various districts of Orissa were imparted training on vehicular pollution monitoring and its control and noise monitoring.*
- *150 nos. of NCC cadets of Sainik School, Bhubaneswar were participated a seminar on 'Air Pollution and its impacts' under Mass Awareness Programme.*

6.63 Under recycled plastic manufacture and usage rules, 1999, the Commissioners of Bhubaneswar, Cuttack and Berhampur Municipal Corporation and Executive Officers of all the Municipalities and NACs have been declared as ex-officio Environment Officers of the Board, to enable them to take necessary action within their jurisdiction to prevent and control the menace of polythene carry bags of less than 20 microns thickness which has been banned in the State.

#### ***CHILKA DEVELOPMENT AUTHORITY (CDA)***

6.64 The Chilka Development Authority (CDA), established in November, 1992 as an autonomous body, is attending to various problems of the lake including its conservation and all-round development. The lake is facing a number of problems, viz, siltation, shifting of Chilka mouth, loss of salinity, extensive weed growth and depletion of fishery resources.

6.65 Chilka Development Authority (CDA) has initiated measures for catchments amelioration under "Action Plan- Integrated Sustainable Management of Chilika Lagoon" with financial support from Ministry of Environment, Govt. of India. During 2006-07 maintenance operation of plantation raised during 2005-06 was taken up. Besides, erosion protection work, installation of vegetative hedges, stabilization of ravine area etc. have been taken up during 2006-07.

6.66 CDA has taken initiative for development of 10 Micro Watersheds in Banapur block of Khurda district with the funds support of Ministry of Rural Development, Govt. of India through DRDA, Khurda. The project period is 5 years (20.10.2004 to 20.10.2009) with project cost of Rs.3.00 crore. It covers 38 villages with population of 7759 in the catchments of Chilika Lagoon. The total area of Micro Watershed is 8426 ha. with treatable area of 5000 ha. During 2006-07, plantation over 50 ha. in the degraded portion of forest land in Micro Watershed project area has been completed. Besides, a collaborative project wise use of the natural resources of Chilika Lagoon through stakeholder participation and documentation of emerging lesson with the fund support of India Canada Environment Facility is also under implementation.

6.67 CDA has successfully conducted the first National Training Programme for Wetland

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Managers in August, 2006 in which participants from different States were attended. Besides, CDA has also successfully conducted orientation training to local boatmen at Balugaon for eco-tourism through community participation in Chilika Lagoon. The 12<sup>th</sup> Finance Commission have recommended Rs.30.00 crore as Special Problem Grant for consolidation and strengthening of eco restoration of Chilika Lagoon. The work is in progress.

### **REGIONAL PLANT RESOURCE CENTRE (RPRC)**

6.68 Regional Plant Resource Centre, a leading plant conservation and Research Institute, known for its significant work in commercial plant tissue culture, rich collection of cacti and succulents, roses, bamboos, orchids, rare plants etc. at national and international level. It has recently geared up its activities in enhancing food security and generating livelihood support to tribal and rural poor by providing quality planting materials propagated through tissue culture, imparting training and encouraging farmers to adopt modern agricultural tools and inputs for enhanced yield. The performances of RPRC as on 31<sup>st</sup> March, 2008 are as follows:

- *RPRC has produced 2.60 lakh tissue culture banana plants out of which 1.72 lakh has been supplied to different Government organization, NGO and individual farmers.*
- *Improved variety of drumstick (10,000 nos.) and Papaya (10,000) has been*

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*generated and distributed in Orissa as well as in other States.*

- *450 accessions of seeds of forestry land medicinal importance have been collected and preserved in Seed Bank.*
- *A seed museum of 160 species of economic plants has been established for display and identification.*
- *13 Research Projects are in operation at the Centre funded by different funding agencies.*
- *DNA finger printing at about 135 species higher plants has been done by using RAPD, ISSR and AFLP techniques for assessment of genetic diversity and derivation of phylogenetic relationship among them.*
- *More than 100 MSc, B. Tech and B.Sc. students have been provided training in emerging area of biotechnology.*

### **CENTRE FOR ENVIRONMENTAL STUDIES**

6.69 Center for Environmental Studies (CES), a Registered Society, came into existence in 2000 with an objective to promote environmental awareness in the State. CES is the Regional Resource Agency for the National Environment Awareness Campaign (NEAC) and nodal agency for the National Green Crops Programme of Ministry of Environment and Forests, Government of India.

6.70 Under the NEAC programme, Ministry of Environment and Forest, Government of India releases grants to NGOs through CES working in the area of environmental conservation. During 2001-02 to 2006-07, 3078 NGOs were supported by CES. During



2007-08, 311 organizations were selected to undertake activities related to action oriented environmental awareness.

6.71 Under the National Green Crops Programme, Eco Clubs have been established in 5900 schools in all the 30 districts of Orissa. These include seminars, talks, camps, field visits, plantation, coastal eco-registration, turtle conservation awareness etc. CES provides resource materials for dissemination of environmental knowledge and facilitates activities among members of Eco Clubs.

6.72 As a part of ENVIS programme CES has created a database on the State of Environment related issues. It also maintains a website on the aspects of State of Environment in Orissa. The Centre has been selected by the Ministry of Environment and Forest (MoEF) to prepare Indian State Level

Basic Environmental Information Database (ISBEID) in association with National Informatics Centre (NIC), New Delhi.

***NATIONAL FOOD FOR WORK PROGRAMME (NFFWP)***

6.73 'National Food For Work Programme (NFFWP)' has been launched in the State. Through this programme, works like construction of water harvesting structures, plantation and rehabilitation of degraded forest, distribution of seedlings etc. are being taken up by utilizing food grain received from Central Government. During 2006-07, the expenditure made under the programme stood at Rs.48.30 lakh and 307.145 MT food grain have been utilized. Besides, 182.97 MT food grain and Rs.168.79 lakh have been utilized under NREGS scheme during 2006-07 (up to November, 2006) against the allocation of 207.67 MT food grain and Rs.496.70 lakh.

