



Highlights of ODISHA FORESTRY SECTOR 2024

Principal Chief Conservator of Forests & Head of Forest Force, Odisha
Aranya Bhawan, Chandrasekharpur
Bhubaneswar - 751 023





**HIGHLIGHTS OF
ODISHA FORESTRY SECTOR
2024**

**PRINCIPAL CHIEF CONSERVATOR OF FORESTS &
HEAD OF FOREST FORCE, ODISHA**

ARANYA BHAWAN, CHANDRASEKHARPUR
BHUBANESWAR - 751 023





Shri Pradeep Jena, IAS
Chief Secretary to
Govt. of Odisha

Message

World Forestry Day is celebrated on 21st March every year to create awareness about the importance of forests and trees.

The theme of World Forestry Day for this year is "Forests and Innovation": New Solutions for a Better World".

Innovation and technology have revolutionized forest monitoring, enabling us to track and report more effectively. The battle against deforestation requires new technological advancements. These innovations are essential for early warning system, sustainable commodity production and improving indigenous people through land mapping and climate finance access.

Today, apart from encouraging people to plant trees, it is vital to educate the importance of the innovative ideas for sustainable uses of Forest without hampering the healthy Environment.

I hope "Highlights of Odisha Forestry Sector 2024" report will be useful as a reference document for Academia, Policy makers and public.

A handwritten signature in blue ink, appearing to read 'Pradeep Jena', with a horizontal line underneath.

(Pradeep Jena)





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Message

International day of Forests is celebrated on 21st March every year as per the resolution of United Nations General Assembly to create awareness about the importance of all types of forests. This year the Theme for International day of Forests is "Forests and Innovation: New solutions for a better World".

As per the latest State of Forest report, 2021 brought out by Forest Survey of India, Odisha Forest Cover has increased by 537 Sq. Km. in last two years. There has also been an increase of 356 Square KM of tree cover. Therefore, there has been a total increase of 893 Square KM of Forest and tree cover in the State. This has been made possible by effective plantation programmes, protection measures by the Department and the community.

Today is the time to use IT for better monitoring and protection of our Forests, including the plantations to provide us a greener and better Planet.

I expect that this report titled "Highlights of Odisha Forestry Sector 2024" compiled with useful informations will be an useful document for all.

(Shri Satyabrata Sahu)



Debidutta Biswal, IFS
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FOREWORD

International Day of Forests is celebrated on 21st March every year.

The theme of 2024 is "Forests & Innovation"

Forests help mitigate Climate Change, provide us wood, protect soil erosion and create sustainable habitat for our planet. Managing Forests sustainably can help to reduce deforestation, restore degraded landscapes and provide people with employment opportunities and renewable materials. Expanding the innovation and use of Forest products and replacing less sustainable materials with renewable wood and tree based products can reduce our carbon foot prints.

It is crucial to utilize new technology and ideas to restore, protect and manage the forests. Drone and satellite use is now essential to detect forest fire points as well as to monitor wild animals and forest.

On this occasion a report titled "Highlights of Odisha Forestry Sector 2024" is being brought out, which throws light on status of Odisha Forests, various activities on Conservation, Protection and Afforestation strategies. A chapter is also specifically dedicated to "Forests and Innovations".

I am pleased to extend my thanks to all the officers for their tireless efforts in compilation of this report.

I am sure that this report will help not only field functionaries, field staff, administrators but also researchers, media and public at large.

(Debidutta Biswal)

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ODISHA FOREST

1.1. Background of Forests in Odisha

The State of Odisha located between the parallels of 17°49'N and 22.34'N latitudes and meridians of 81.27'E and 87.29'E longitudes is surrounded by the adjacent states of West Bengal to the north-east, Jharkhand to the north, Chhattisgarh to the west and north-west, Telangana to the south-west and Andhra Pradesh to the south. Covering an area of 155,707 square kilometer (4.87% of the total geographical area of the country), the state can physiographically be divided into four regions, viz, Northern Plateau, Eastern Ghats, Central Table Land and Coastal Plains. It has a coast line of about 480 kilometres stretched across the Bay of Bengal on its east, from Balasore to Ganjam with virgin beaches interspersed with a number of river mouths and deltas supporting coastal vegetation including mangroves and associated wild fauna.

The average annual rainfall varies from about 1,200 mm to about 1,600 mm and the average annual temperature ranges from 25°C - 28°C. The state is drained by a number of important rivers, which includes Mahanadi, Brahmani and Baitarani. The state has 30 districts, among which 12 are tribal districts. As per the 2011 census, Odisha has a population of 41.97 million accounting for 3.47% percent of India's population. Rural and urban populations respectively constitute 83.32% and 16.68%, whereas total tribal population in the state is 22.85%. The population density of the state is 270 per square kilometre, which is lower than the national average. The 20th Livestock census 2019 has reported a total livestock population of 61.01 million in the state.

Odisha's forests are well stocked, diverse, multi-storied and dense. As per the Champion & Seth Classification of Forest Types (1968), the forests in Odisha belong to four Forest type Groups which are further divided into 19 Forest Types. Two National Parks and 19 Wildlife Sanctuaries constitute the protected area net work of the state covering 5.19% of its Geographical area.

1.2. Forest Area

Total Geographical Area	1, 55,707 Sq Km
Recorded Forest Area (RFA)	61,204 Sq Km
Forest Cover within Recorded Forest Area (Green Wash)	32,686 Sq Km
Forest Cover outside Recorded Forest Area (Green Wash)	19,470 Sq Km
Forest Cover Area	52,156 Sq Km
Tree Cover (Outside Forest Area)	5,004 Sq Km
Total Forest & Tree Cover	57,160 Sq Km
Percentage of Forest Area (Recorded) to Geographical Area	39.31 %
Percentage of Forest Cover Area to Geographical Area	33.50 %
Percentage of Tree Cover Area to Geographical Area	3.21 %
Percentage of Forest & Tree Cover to Geographical Area	36.71 %

1.3. Forest and Tree Cover in Odisha

Based on Satellite imagery, the forest and tree cover of the State is being assessed and published every two years by the Forest Survey of India, Government of India since 1997. The Recorded Forest Area (RFA) of the state is 61,204.17 square kilometer which is 39.31% of Geographical Area. The Reserved Forests (36,049 square kilometer), Protected Forests (25,133 square kilometer) and Unclassed Forests (22 square kilometer) are 58.90%, 40.75% and 0.35% of the RFA in the state respectively.

As per the latest State of the Forest Report, 2021 by the Forest Survey of India, the forest cover in the State is 52,156 square kilometre i.e. 33.50% of its geographical area, while tree cover of the State is 5,004 square kilometre i.e. 3.21% of geographical area. The state has gained 537 square kilometres area of forest cover which is the third highest in the country and 356 square kilometres of tree cover second highest in the country within a period of 2 years i.e. from 2019 to 2021. So, the total forest and tree cover in the state has increased by 893 square kilometres during the period from 2019 to 2021. The total forest and tree cover area of forest constitutes 36.71% of the total Geographical Area of the state.

The Forest cover of the state has been categorized as Very Dense (7213 square kilometer), Moderately Dense (20,995 square kilometer), Open forest (23,948 square kilometer) and scrub (4,924 square kilometers). Shorearobusta i.e. Sal is the major tree species in Odisha forests & all its associates are found profusely.

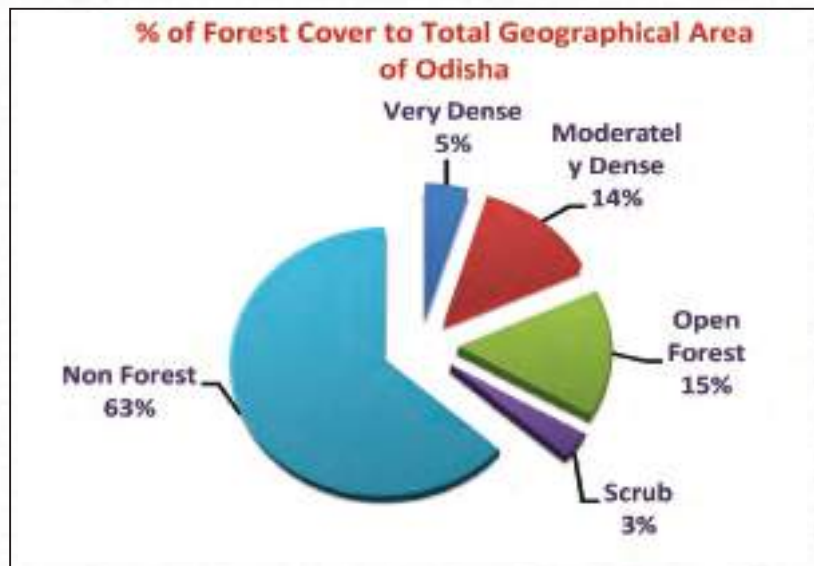
The forest cover of the State in 12 assessment years is as under:

(Area in Sq. Km)

India State of Forest Report	Very Dense Forest (VDF)	Dense Forest (DF)	Moderately Dense Forest (MDF)	Open Forest (OF)	Total	Scrub	Tree Cover	Mangrove
2021	7213	-	20995	23948	52156	4924	5004	259
2019	6970	-	21552	23097	51619	4327	4648	251
2017	6967	-	21370	23008	51345	4306	3993	243
2015	6985	-	21470	22005	50460	4499	3986	231
2013	7042	-	21298	22007	50347	4424	4013	213
2011	7060	-	21366	20477	48903	4734	4301	222
2009	7073	-	21394	20388	48855	4852	4435	221
2005	538	-	27656	20180	48374	4743	4589	203
2003	288	-	27882	20196	48366	-	-	207
2001	-	27972	-	20866	48838	5782	-	211
1999	-	26288	-	20745	47033	5489	-	215
1997	-	26312	-	20629	46941	5461	-	211

HIGHLIGHTS OF ODISHA FORESTRY SECTOR - 2024

- ❖ The State has gained more than 5215 square kilometre area of forest cover since 1997.
- ❖ Forest Cover in the State has increased by 537 square kilometre (with a net increase of 243 square kilometers in Very Dense Forest and 851 square kilometres in Open Forest and decrease of 557 square kilometers in Moderately Dense Forest), by 597 square kilometres of Scrub area and by 356 square kilometres of Tree Cover as compared to the previous assessment (2019).
- ❖ Massive plantation activities and concerted conservation efforts coupled with peoples' participation in protection of forests has led to increase in forest cover over the years.
- ❖ The digitized boundary of Recorded Forest Area (RFA) from the State covers 42,430 square kilometers and the forest cover inside the RFA is 32,686 square kilometers (77.04 % of forest cover inside RFA) covering 5649 square kilometers in VDF and 14,636 square kilometers in MDF and 12,401 square kilometers in OF.
- ❖ The forest cover outside the RFA is 19,470 square kilometers covering 1564 square kilometers in VDF and 6,359 square kilometers in MDF and 11,547 square kilometers in OF.
- ❖ As per the assessment of 2021, the total Forest Cover (52,156 square kilometers) includes area of Mangrove vegetation i .e. 259 square kilometers representing a major ecosystem with net increase by 8 square kilometers over the 2019 assessment, which is the highest increase in the country.



Nursery at Khordha Forest Division



Forest Cover inside and outside RFA (Area in Sq. Km)

Forest Cover inside the RFA				Forest Cover outside the RFA				Grand Total
VDF	MDF	OF	Total	VDF	MDF	OF	Total	
5,649	14,636	12,401	32,686	1,564	6,359	11,547	19,470	52,156
17.28%	44.78%	37.94%		8.03%	32.66%	59.31%		

- Extent of Trees Outside Forest (TOF) is estimated as sum of forest cover outside RFA and tree resources outside forests i.e. 19,470 sq km + 5004 sq km = 24,474 sq km which is 42.82 % of Forest and Tree cover of the State and 15.72 % of the total Geographical area of the state. It is assessed that Odisha is having the second largest in respect of extent of TOF in the country.

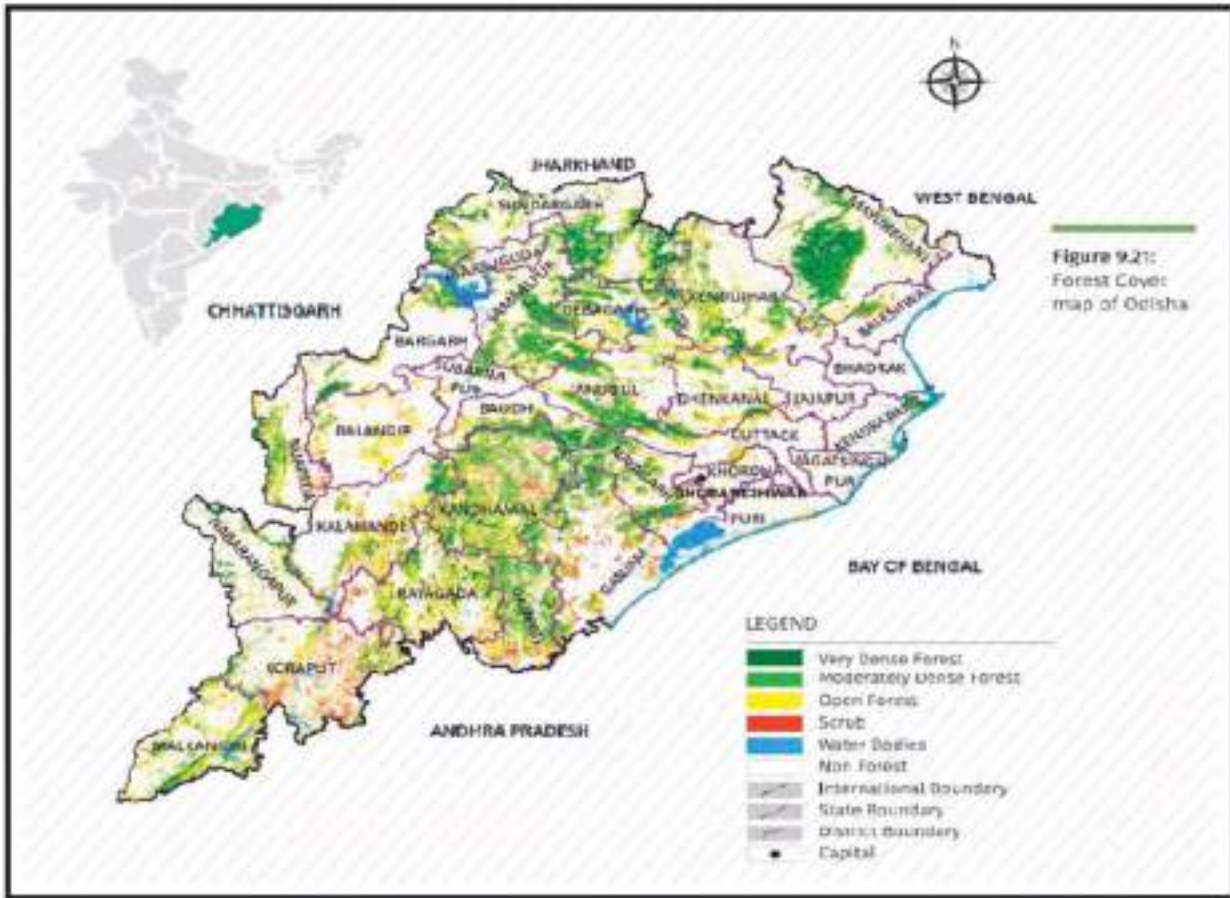
Mangrove Cover Assessment 2021 (Area in Sq. Km)

District wise Mangrove Cover	Very Dense Forest (VDF)	Moderately Dense Forest (MDF)	Open Forest (OF)	Total	Change over the assessment 2019
Balasore	0	1.00	4.40	5.40	0.33
Bhadrak	0	8.76	26.11	34.87	0.00
Jagasinghpur	0	1.01	7.32	8.33	0.27
Kendrapada	80.43	83.54	45.28	209.25	7.76
Puri	0	0	1.13	1.13	-0.02
Total	80.43	94.31	84.24	258.98	8.34

1.4. Growing Stock

Growing Stock in RFA	276.78 million cum
Growing Stock in Tree Outside Forest	106.87 million cum
Bamboo Bearing Area	1.12 million hectare
Total number of culms	3973 millions
Total equivalent green weight	23.716 million tonnes
Total Carbon Stock of Forest	444.83 million tonnes
	or 1631.04 million tonnes of CO ₂ equivalent (6.17% of the total forest carbon of the country)

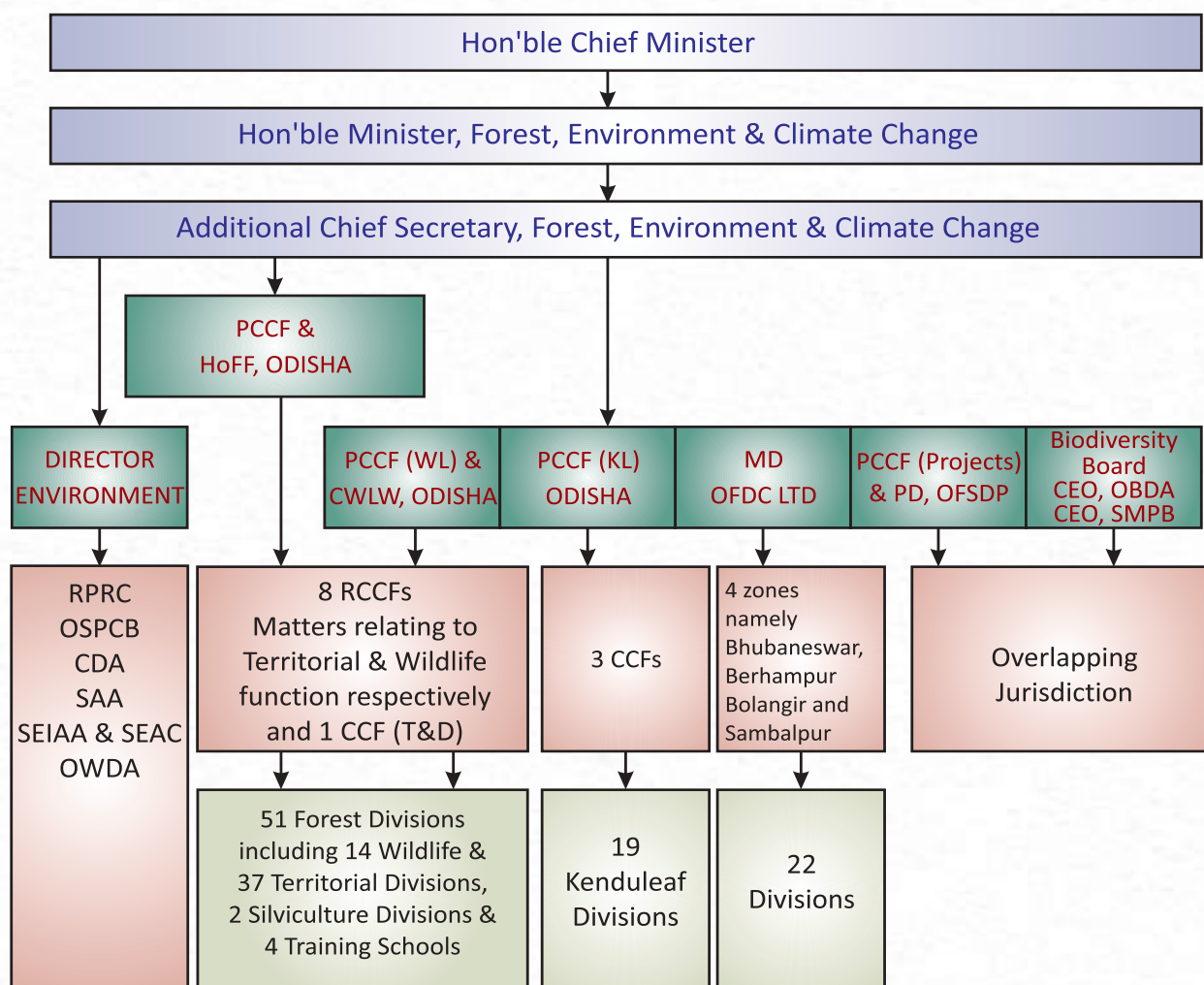
1.5. Map of Forest Cover of Odisha



Nursery at Khordha Forest Division



ORGANIZATION OF FOREST, ENVIRONMENT & CLIMATE CHANGE DEPARTMENT



- ❖ The Forest Department is headed by the Principal Chief Conservator of Forests (PCCF) & Head of Forest Force (HoFF). Broadly, the field organization of Territorial and Wildlife wings of Forest Department is as follows.

Wing	Circles	Divisions	Ranges	Sections	Beats
Territorial	8	37	223	827	3082
Wildlife	Overlapping	14	70	241	699
Kenduleaf	3	19	149	615	
Training & Development	1	2			
Working Plan		8			

HIGHLIGHTS OF ODISHA FORESTRY SECTOR - 2024

- ❖ Principal Chief Conservator of Forests (Wildlife) being the Chief Wildlife Warden under provisions of Wildlife Protection Act, 1972 looks after Wildlife Management in the State.
- ❖ The Kendu Leaf Organization is headed by Principal Chief Conservator of Forests (KL).
- ❖ Odisha Forestry Sector Development Project is headed by Principal Chief Conservator of Forests (Projects) & Project Director.
- ❖ The Odisha Forest Development Corporation is headed by Managing Director.
- ❖ Besides the above, there is a sub-wing in the name of Training & Development supervised by Chief Conservator of Forests (Training & Development), Cuttack under the control of PCCF, Odisha. This sub-wing is entrusted with the responsibility of Forestry Research & Training for the forest personnel. The training infrastructure includes Ranger's training college at Angul and three training schools at Champua, G. Udaygiri and Bhubaneswar for the training of Foresters and Forest Guards. Further, there are eight Working Plan Divisions in the State entrusted with the responsibility of preparation of Forest Working Plans of various divisions.



STATE BUDGET IN FORESTRY SECTOR

3.1. Budget from various Sources

The Budget detail from various sources for Forestry Sector during the Financial Year 2023-24 is given below:

Sl. No.	Source
1	Administrative Expenditure (Non-Plan)
2	Programme Expenditure (Plan)
3	Compensatory Afforestation Fund Management and Planning Authority (CAMPA) (Plan since 2019-20)
Funds Received under Extra Budgetary Source	
4	Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS)
5	Odisha Environment Management Fund (OEMF)
6	District Mineral Fund (DMF)
7	Odisha Mineral Bearing Areas Development Corporation (OMBADC)
8	National Rural Livelihood Mission (NRLM)
9	CSR from Corporate Sectors like OMC, Railways, MCL, OPGC etc.
10.	SRC funding

3.2. Budget Provision in last 15 years

The Budget provision in Forestry Sector under Plan & Non- Plan head during the last thirteen years is summarized below:

Year	Figures (Rs. in lakh)		
	Non-Plan	Plan	Total
2009-10	37817.76	21609.18	59426.94
2010-11	37069.38	24204.25	61273.63
2011-12	38309.00	28648.51	66957.51
2012-13	27952.84	36873.23	64826.07
2013-14	25791.51	39351.00	65142.51
2014-15	30722.16	25885.74	56607.90
2015-16	23040.88	20378.77	43419.65
2016-17	24637.81	18093.32	42731.13
	Non- Plan / Programme Expenditure Adminstrative Expenditure		
2017-18	30600.01	10057.75	40657.76
2018-19	30599.90	21989.24	52589.14
2019-20	32304.36	93963.00	125589.79
2020-21	32115.70	128670.50	160232.2
2021-22	32168.78	21059	53227.78
2022-23	35755.00	31322.83	67077.83
2023-24	36833.00	28574.33	65407.33

WORKING PLAN

4.1. Working Plans

The forests in the state are managed under the prescriptions of a Working Plan/ Scheme prepared on the basis of sustainable forest management and recognized innovative silviculture practices. The Working Plans are being approved by the authority as designated by the Ministry of Environment, Forests & Climate Change, Government of India.

Working Plan is generally revised every 10 years.

- ❖ For involvement and benefit of local stakeholders micro-plans are to be prepared within the ambit of working plan prescriptions for JFM areas and eco-development plan are to be prepared for eco-sensitive forest areas adjoining the notified protected areas.
- ❖ The micro-plan of jointly managed forests is prepared by the members of the JFMC through participating Rural Appraisal (PRA) with the technical assistance of forest staffs of the territorial division as per MoU for sharing the responsibilities of implementation and equitable sharing of usufructs among stakeholders within the broad prescriptions of Working Plan.
- ❖ Micro-plan preparation should be incorporated in the JFM Overlapping Working Circle.
- ❖ The forest area of the state is being managed under fiftyone (51) number of Forest and Wildlife (WL) Divisions; out of which seven (7) Wildlife Divisions namely Chandaka WL, Sunabeda WL, Satkosia WL, Mahanadi WL, Hirakud WL, Simlipal Tiger Reserve (North) and Simlipal Tiger Reserve (South) having only protected area are managed under approved Wild Life Management Plans. The Forest area of remaining seven Wildlife Divisions namely, Bamra WL, Rajnagar WL, Puri WL, Chilika WL, Balasore WL, Bhadrak WL and Keonjhar WL partly having protected area are managed under WildLife Management Plans for protection of forest areas and outside protected area managed under Working Plans. Thus, altogether 44 Forest Divisions including part of 7 Wildlife Divisions are covered under Working Plans for scientific management of Forests.
- ❖ **Status of approval of Working Plans**

Sl.	Status of Working Plan	No.	Name of the Division
1.	Approved Working Plan	39	Angul, Athgarh, Athamallik, Baragarh, Chilika WL, Puri WL, Baripada, Keonjhar WL, Subarnapur, Khordha, Bonai, Jeypore, Deogarh, Rourkela, Dhenkanal, Sundargarh, Nabarangpur, Gh. South, Gh. North, Koraput, Berhampur, Bamra WL, Cuttack, Jharsuguda, Rayagada, Karanja, Rairangpur, Baliguda, Phulbani,

HIGHLIGHTS OF ODISHA FORESTRY SECTOR - 2024

			Kalahandi North, Kalahandi South, Nayagarh, Malkangiri, Keonjhar (T), Rairakhol, Sambalpur, Bolangir, City Forest & Khariar
2.	Draft Revised Working Plan submitted but not approved by the MoEF & CC, GoI (Compliance report on the objections raised by the Ministry is yet to be submitted by the DFOs)	02	Bhadrak WL, Rajnagar (WL)
3.	Working Plan not submitted	03	Parlakhemundi, Balasore (WL), Boudh

4.2. Forest Working

4.2.1. Working of Coupes

Number of divisions where timber & bamboo coupes are due for working by OFDC Ltd with the no. of coupes worked out, no. of units worked out, no. of trees felled and no. of Divisions where sal leaf collection has been executed by the respective Divisions for last five years is given as follows:

Year	2018-19	2019-20	2020-21	2021-22	2022-23
Timber					
No.of divisions where timber operation taken up	25	29	26	25	24
No.of coupes worked out	93	129	119	111	137
No.of units worked out	55107	55397	54687	50834	72376.99
No.of trees felled	22580	21089	21578	19055	25433
Bamboo					
No.of divisions where bamboo operation takenup	14	18	21	21	18
Sal Leaf					
No.of Divisions where sal leaf collection has been made	15	15	15	15	15

4.2.2. Rate of Royalty

Rate of royalty for different forest produce such as Timber, Firewood, Pole, Casuarina firewood Bamboo, Sal leaf etc for last five years is given as below:

Rate of Royalty (in Rs.)					
Year	2019-20	2020-21	2021-22	2022-23	2023-24
Timber (per unit)	1929/-	2006/-	2086/-	2166/-	2250/-
Irregular Lots (per cft.)	293/-	305/-	317/-	329/-	342/-
Poles					
Sal Pole (per pc.)	55/-	60/-	60/-	60/-	60/-
Teak Pole (per pc.)	48/-	50/-	50/-	50/-	50/-
Other Pole (per pc.)	32/-	35/-	35/-	35/-	35/-
Firewood					
Sal & Non-Sal (per stack)	Rs.397/-	405/-	405/-	405/-	405/-
Casuarina (per Qtl.)	Rs.155/-	155/-	155/-	155/-	155/-
Bamboo					
Industrial Bamboo	255/-	255/-	255/-	255/-	314/-
Commercial Bamboo (per Piece)	Salia=1/- Daba=2.50	Salia=1/- Daba=2.50	Salia=1/- Daba=2.50	Salia=1/- Daba=2.50	Salia=2/- Daba=5.00
Sal Leaf (per Qtl.)	Royalty waived out	Royalty waived out	Royalty waived out	Royalty waived out	Royalty waived out



Temporary Nursery at Guma of Belghar Range

FOREST PROTECTION AND MANAGEMENT

5.1. Initiatives taken for Protection of Forest in the State

- ❖ The detail picture of the Forest Protection Units in the State is reflected below.

Number of Units	Forest Divisions	Wildlife Divisions	Total
	37	14	51
Number of Ranges	223	77	300
Number of Sections	827	241	1068
Number of Beats	3082	699	3781

The different programmes / activities undertaken by Forest Department during last 5 years for protection of forest from illicit felling/ smuggling by forest mafias which are as follows:

- ❖ The forest management units in the field comprise of 51 Divisions (37 Territorial Divisions + 14 Wildlife Divisions), 300 Ranges (223 Territorial Ranges + 77 Wildlife Ranges), 1068 Sections (827 Territorial Sections + 241 Wildlife Sections) and 3781 Beats (3082 Territorial Beats + 699 Wildlife Beats).
- ❖ Each Division, Range, Section and Beat is managed by the Divisional Forest Officer, Forest Ranger, Forester and Forest Guard respectively.
- ❖ In total, 122 Intra State Forest Check Gates are functioning under 27 Forest Divisions for checking of vehicles and prevention of smuggling of forest produce on transit.
- ❖ In total, 316 Forest Protection Squads under CAMPA scheme, having 10 local youths in each squad with 316 numbers of vehicles have been deployed at range level of 37 Territorial Divisions.
- ❖ 287 Fire Protection Squads have been constituted under Forest Conservation Development & Regeneration under component Protection from Fire, involving 2870 numbers of local youths (each squad of 10 persons) and @ one hired vehicle for each squad in all the Divisions of the State for forest fire prevention and control activities.
- ❖ During the year 2023-24 under SRC Scheme: Forest Fire Prevention and Management 19000 Kilometere of forest Fire Line have been created / maintained in shape of maintenance of compartment lines, Forest Boundary lines and other firelines for prevention of forest fire in different Forest Divisions of the State.
- ❖ During the year 2023-24 under CSS; FPM Scheme: Forest Fire Prevention and Management 5727 Kilometere of forest Fire Line have been created / maintained in shape of



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maintenance of compartment lines, Forest Boundary lines and other fire lines for prevention of forest fire in different Forest Divisions of the State.

- ❖ During the year 2023-24 under CAMPA Scheme: Forest Fire Prevention and Management 7074 Kilometere of forest Fire Line have been created / maintained in shape of maintenance of compartmentlines, Forest Boundary lines and other firelines for prevention of forest fire in different Forest Divisions of the State.
- ❖ 16,160 numbers of Vana Surakshya Samities have been formed in the State, where in 20,06,000 numbers of families of 15,303 villages are involved and they have been assigned with 13,93,144 hectares of forest area for its protection and usufruct benefit.
- ❖ 590 numbers of Eco-Development Committees have been formed in the proximity of protected area to protect forest & wildlife with active involvement of local community.
- ❖ 590 numbers of VHF stations and 880 numbers of walky-Talky are in operation in the State for strengthening communication network to be used for monitoring protection activities.
- ❖ The details of forest offence cases detected & booked with timber and vehicles seized in different forest divisions during last 5 years are furnished below:

Year	Offences Detected	Offenders involved (nos.)	Timber seized Quantity (in Cum)	Vehicles Seized (Nos.)
2019-20	59460	41310	3673	358
2020-21	55412	50740	6185	558
2021-22	41598	35286	7586	248
2022-23	41144	37542	1756	663
2023-24 (Up to Feb, 2024)	32490	30027	1845	551

5.2. Rewards to Informers and Forest Officials

- ❖ Rewards are being given to informers, staff, Public etc as per "Reward for detection of Forest Offence Rules, 2004" to encourage them to cooperate in forest protection activities. During financial year 2022-23 an amount of Rs.22,48,239 has been deposited in the Bank Accounts by different Divisional Forest Officers towards Reward amount to the informers.
- ❖ In addition to this, for protection of Berbera and Dhuanali forests from the claws of forest mafia 25 number of Forest Guards and 04 number of Foresters have been recruited especially to assist the Odisha Special Striking Forcein the State.

5.3. Online Timber Transit Permit System (OTTPS)

As per Government policy on ease of doing business Online Timber Transit Permit System (OTTPS) developed to facilitate applicants (Citizen or Institutions) to apply for transit permit for tenant timber from private holding land through online. An individual / applicant will apply through the internet facility available with Mobiles / Desktop/ Jana Seva Kendra in the website

www.ttpermitodisha.in. Applicant can easily apply for timber transit permit from any place and track his application status at any point of time. The User Guidelines / Manual for applying application through online system in details is available at the 1st webpage of the said website. To implement a transformational Action Point for 5T Governance, the timeline for issue of timber transit permit is fixed to 42 days for disposal through Online Timber Transit Permit System (OTTPS) which was earlier 172 days. All the provisions such as, Joint Verification, Registration of Property Hammer Mark, Submission of tree enumeration list, issuance of T.T. Permit etc. are streamlined through this online application system.

Now NTPS (National Timber Transit Pass System) has been approved by the State Government of Odisha, FE & CC Department vide Notification No-26504/FE&CC, Dated 27.12.2023.

5.4. Forest Fire Prevention and Management

The number of cases of forest fire that took place during the last three years and the current year in the state is given below:

Year	No. of fire incidences	No. of Fire point responded	Forest area affected (in Ha.)
2021	56,606	45011 (80%)	28329.05
2022	28,755	26348 (92%)	8414.55
2023	36713	36321 (99%)	9550.86
2024 (Till 01.03.2024)	1039	1002	299.669

The Forest, Environment & Climate Change Department, Government of Odisha have taken the following remedial and preventive measures to control forest fire and to save forest resources including wild animals.

- Information Technology intervention using Odisha Forest Management System (OFMS)
 1. Receiving of fire alerts from Forest Survey of India (FSI).
 2. Processing of Data in OFMS system and alerts sent directly to mobile up to the level of beat forest guards for immediate response in their jurisdiction.
 3. Offline navigation to fire alert points, data collection with geo tagged pictures and action taken are uploaded using OFMS mobile application.
 4. Centralized data sync from mobile to OFMS server for proper reporting of fire alerts status throughout the state.
- District Level Committee – In each district of the State a District level Committee has been formed under the chairmanship of concerned District Collector to facilitate inter-departmental cooperation for effective prevention and management of forest fires.
- Annual District Action Plan is put in place well in advance in order to mitigate the deficiency of funds under emergency situations from other schemes / sources of the District Administration to combat forest fire.

HIGHLIGHTS OF ODISHA FORESTRY SECTOR - 2024

- The Standard Operating Procedure (S.O.P.) for prevention and control of forest fire in the State has been prepared and circulated in vernacular language to field officials for taking up effective measures for prevention & control of forest fire.
- Creation and maintenance of fire lines on annual basis.
- Deployment of Fire Fighting Squads with hired vehicles and logistic support in all identified fire vulnerable sites of the State.
- Incentives are given to the Vana Surakhya Samities for their active participation in combating the forest fire in coordination with the forest department personnel.
- Supply of modern equipment like leaf litter blowers, other fire fighting gadgets and safety kits to Fire Fighting Squads for effective prevention and control of forest fire.
- Registering of Mobile numbers of all field staff starting from Forest Guards to the Divisional Forest Officer for receiving the fire alerts directly from Forest Survey of India. Control Rooms have been made functional both at State Forest Headquarters and Divisional Headquarters for monitoring of forest fire incidences. Control room at forest headquarters is dedicated with Toll Free Number 1800-3457-158 for use by public on 24x7 basis.
- Training & capacity building programmes are being regularly organized at different levels for field staff directly involved in combating the forest fire.
- Awareness campaign through distribution of leaflet, brochure, folk dance, road side play etc. and also through SHG groups are being organized to sensitize the forest fringe villagers on prevention of forest fire.

The Orissa Forest Act 1972 Section 27(3) and the Orissa Forest (Fire Protection) Rules, 1979 are in force to take up appropriate punitive measures against the culprits involved in causing forest fires.

The State Government have received financial assistance from Government of India through Centrally Sponsored Scheme under Forest Fire Prevention & Management programme in 60:40 basis (i.e. 60% Central Share & 40% State Share and through State Disaster Management Fund). The details are given below:

Sl.No.	Year	Name of the Scheme	Funds allotted (Rs. in Lakh)
1	2017-18	FPM under CSS (60:40) basis	280.00
2	2018-19	FPM under CSS (60:40) basis	467.39
3	2018-19	TSP Component of FPM under CSS (60:40) basis	83.99
4	2018-19	SCSP Component of FPM under CSS (60:40) basis	124.61
5	2019-20	FPM under CSS (60:40) basis	661.36
6	2020-21	FPM under CSS (60:40) basis	866.59
7	2021-22	FPM under CSS (60:40) basis	754.81
8	2022-23	FPM under CSS (60:40) basis	769.15
9	2023-24	FPM under CSS (60:40) basis	245.30
10	2023-24	SDMF	762.26



Fire squad

5.5. Saw Mills

The following nine numbers of Saw Mills owned by OFDC Ltd are functioning in the State:

1. Khapuria Saw Mill in Cuttack District under City Forest Division.
2. OFDC Saw Mill at Nawarangpur under Nawarangpur Division.
3. OFDC Saw Mill at Umri in Koraput District under Jeypore Division.
4. Mathili Saw Mill in Malkangiri District under Malkangiri Division.
5. Remed Saw Mill in Sambalpur District under Sambalpur (South) Division.
6. OFDC Saw Mill at Raghunathpur in Ganjam District under Berhampur Division
7. Orissa Saw Mill in Sundargarh District under Rourkela Division.
8. OFDC Saw Mill, Kantabanji, Bolangir.
9. OFDC Saw Mill, Muniguda, Rayagada.

In accordance with the Order dated 05.10.2015 of Hon'ble Supreme Court of India in W.P. (C) No.202/1995, T.N. Godavarman Thirumulpad -Vrs- Union of India & another, a State Level Committee under the chairpersonship of the Principal Chief Conservator of Forests & HoFF, Odisha has been constituted vide Notification No.15644/F&E dated 18.07.2018 of the Forest & Environment Department. The State Level Committee is functioning as per the Guidelines for Establishment & Regulation of wood based industries in the State of Odisha issued by the Government of India, Ministry of Environment, Forest & Climate Change, Government of India in 2016 and its amendment 2017. The earlier Committee on rehabilitation, relocation and functioning constituted vide Notification No.13891/F&E, dt.30.07.2011 of Forest & Environment Department, Govt. of Odisha and the present State Level Committee have passed their decision to rehabilitate the eligible delicensed/closed saw mills of the State in various identified/notified Industrial Estates of the State as per the provisions contained in Odisha Saw Mills and Saw Pits (Control) Act, 1991 and the Odisha Saw Mills and Saw Pits (Control) Amendment Act, 2010.

As of now, the status of private saw mills rehabilitated / functioning in the State are as follows:

- The Industries Department has notified 38 Industrial Estates in 26 Revenue Districts for rehabilitation of eligible Saw Mills.

154 nos. of private Saw mills are running in different Industrial Estate of the State.

AFFORESTATION & PROGRAMME EXPENDITURE SCHEMES

6.1. Afforestation Activities

Year wise Afforestation activities taken up under different schemes from 2010-11 to 2023-24 in the State are given below.

Year Wise Afforestation Activities taken up under different schemes							
Year	AR in ha	ANR with Gap Pltn in ha	ANR without Gap Pltn in ha	Total in ha	Avenue Pltn in RKM	Seedlings planted in lakh	Seedlings distributed in lakh
2010-11	70842	60084	102519	233445	241	1086.10	128.34
2011-12	22950	10291	148946	182187	769	358.92	195.92
2012-13	18603	20230	68454	107287	3107	321.66	211.92
2013-14	25086	38050	54532	117667	4506	467.67	304.14
2014-15	24600	60253	114038	198891	4755	696.57	550.00
2015-16	16576	98540	241975	357091	4607	487.98	460.96
2016-17	15322	128009	258121	401452	5838.48	499.79	376.57
2017-18	5776.17	20366.94	356221.26	382364.36	3234.50	166.86	145.14
2018-19	6223.80	108747.28	133560.84	248531.92	3685.65	338.74	142.46
2019-20	13055.19	55303.12	71698.00	140056.31	3558	339.26	212.48
2020-21	12486.07	94837.10	0	107323.17	4164.70	392.47	465.77
2021-22	11225.30	99143	0	110368.30	4616.60	382.91	230.46
2022-23	11856.30	76341.67	0	88197.96	4069.30	351.59	211.74
2023-24 (upto 31.12.2023)	5828.71	37513.61	0	43342.32	3111.87	248.39	397.63

6.1.1. Increasing Green Cover in the State

The scheme was introduced in 2013-14 by subsuming 11 continuing plan schemes. Since then, the scheme is under process. During 2023-24, Rs.6862.00 lakh Budget provision has been made for taking up different plantation activities under the scheme such as 210 ha AR Plantation, 1000 ha ANR with Gap Plantation, 1.09 lakh Urban Tree Plantation, Seedlings planted in 6.45 lakh (including UTP) & 206.26 lakh seedlings for Distribution.

Besides, the components implemented under this scheme during 2023-24 are (1) major components of "IGC" i.e raising of nurseries for plantation and distribution, creation (plantation) and maintenance of previous years plantations, (2) implementation of Medicinal Plants Knowledge Centre at Patrapada & (3) implementation of Ekamravana at Bindusagar.



Bald Hill Plantation of Th. Rampur Range Kalahandi South Forest Division - 2022-23

6.1.1.1. Medicinal Plants Knowledge Centre, Patrapada

Development of a Medicinal Plants Knowledge Centre at Patrapada has started operating since 2008-09 to enhance the knowledge about medicinal plant species. As of now, 314 species have been planted in 314 specified plots separately bounded by contour bunds to create zero run off. A demonstration area has been developed where all 314 plant species are displayed at a landscaped site. Two numbers of eight seater battery operated vehicle has been kept for movement of visitors.

A sum of Rs.155.00 lakh has been provided for development and maintenance of rare medicinal plant species and bamboo Setum in the centre during 2023-24.



SMRUTIVAN

Smrutivan is situated near NH 16 on the way from Patrapada to Khandagiri. It was started in 2014 with an idea of cherish the memories of people through planting a tree. The area is 17.516 acre. Till now more than 2000 trees have been planted there. People who wish to plant a sapling at Smrutivan are required to pay a sum of Rs. 8000/- out of which Rs. 5000/- goes towards installation of a stone plaque and the balance money is reserved for future maintenance.



ANANDBANA

Anandabana is located in K3A - KALINGANAGAR, in BHUBANESHWAR, Khurda. The forest area over 89.05 acres (comprising Parcel 1 which is 61.68 acres and Parcel 2 which is 27.37 acres). It is created with an objective of creating Urban Forest. URBAN FOREST is green infrastructure in an urban landscape where trees and associated vegetation provide an assortment of environmental services like cleaning the air, improving local environment, recreational and aesthetic value to urban society. People can feel elated in this urban forest as it provides happiness to the amalgamation of five senses which in Panchendriya (Gyanendriya), the main concept of Anandabana.



6.1.1.2. Ekamra Van at Bindusagar

Ekamra Van with a garden of medicinal plants at Bindusagar has been developed under the Ekamra Garden Society since 2009-10. The objective for establishing this garden is not only to set up a site of tranquillity and harmony in an ambience of religious atmosphere but to create awareness on traditional herbal medicines among urbanites. It is an example of quality work by local stone carvers and stone masons drawing inspiration from the ancient structures.

Maintenance of Medicinal Garden, Nursery & publicity etc are being organized by displaying stalls, photo exhibition, herbal fair, flower show, arogya mela, telecast of documentary films for development of the heritage plantations, improvement and maintenance of Ekamra Van at west bank of Bindusagar in Bhubaneswar.

A total budget provision of Rs.10.00 lakh has been made for maintenance and further Improvement of Ekamra Van at Bindusagar in Bhubaneswar during the year 2023-24.



6.1.1.3. Casuarina Plantation

122.78 ha casuarina plantation has been raised under the scheme during 2022-23. A sum of Rs.92.05 lakh has been allotted for planting 3.07 lakh casuarina seedlings. Only maintenance work has been done during 2023-24.



Casuarina Nursery/ Plantation, Puri Wild Life Division



6.1.1.4. Artificial Regeneration (AR / Block Plantation)

The condition of growing stock in the forests of the State is being consistently improved through this scheme by raising block plantations (@ 1600 plants/ha) with economically important species such as Rosewood, Sisso, Mahogany, Bija, Gambhar, Kasi, Tenra etc. in the suitable pockets of designated and notified forest areas. Sites having well to moderate soil depth and adequate soil moisture regime coming under Plantation Working Circle of the Working Plans and other suitable notified forest areas of the state are being treated under this scheme.

During 2023-24, 120 hectare plantation has been made under IGC scheme and maintenance works for previous plantations were also taken up as per supplementary budget provision. A target of 235 hectare has been provisioned for taking up plantations during 2024-25.



AR Plantation, Pipalpadar, Narayanpatna range, Koraput Forest Division



AR Plantation of Kotpad range at Jeypore Forest Division 2023-24

6.1.1.5. Bald Hill Plantation

The State of Odisha is having scrub forests of 4923.70 square kilometers and many of them are bald hills. Hence the soil and moisture conservation measures and plantations are taken up after filling the pits with foreign soil on Bald Hills.

The scheme was started during 2009-10 by adopting special plantation techniques for restoration of green cover on bald hills in the districts of Cuttack, Jajpur, Ganjam, Koraput,



Bald Hill Plantation of Th. Rampur Range, Kalahandi South Forest Division



Baldhill Plantation kurula DPF, Nayagarh Forest Division



HIGHLIGHTS OF ODISHA FORESTRY SECTOR - 2024

Kalahandi, Khordha, Sundergarh, Mayurbhanj, Nuapada, Subarnapur, Bolangir, Rayagada, Gajapati and Nayagarh.

During the year 2023-24, 90 ha Bald Hill Plantation by utilizing 1.44 seedlings have been achieved. For the year 2024-25, 95 ha have been provisioned for Bald Hill Plantation.

6.1.1.6. Assisted Natural Regeneration with Gap Plantation

During 2023-24, 1000 hectares of Assisted Natural Regeneration (ANR) with Gap Plantation @200 plants per hectare have been achieved. A target of 2975 hectare has been provisioned for taking up ANR Plantations during 2024-25.



Soil working in ANR plantation in Hatimunda RF, Nayagarh

6.1.1.7. Urban Plantation

This scheme was introduced during the year 2007-08 with an aim to create green pool in crowded urban areas. Initially the tall sapling plantation was taken up in and around Bhubaneswar City areas through OFDC Ltd, City Forest and Chandaka WL Division. From the year 2011-12 onwards almost all Urban Local Bodies throughout the State were covered.

During 2023-24, 1.09 lakh seedlings have been planted under Urban Tree Plantation. A target of 3.00 Lakh has been provisioned for taking up Urban Tree Plantations during 2024-25.





Urban plantation at Nuagaon, Mahipur Range, Nayagarh Forest Division



Urban plantation at Kalahandi South Forest Division

6.1.1.8. Seedlings Distribution during 2023-24

During the year 2023-24, 207.28 lakh seedlings were distributed under IGC.A target of 50.59 Lakh has been provisioned for distribution during 2024-25.



Distribution of Seedlings, Baripada Forest Division



6.1.1.9. 3rd Party Evaluation

As per decision of the Mission Monitoring Committee under the Scheme "IGC", internal Evaluation and Audit are being conducted from time to time by the Monitoring & Evaluation cell established in the office of the PCCF & HOFF, Odisha as well as by Audit Team of Accountant General, Odisha. During 2018-19, IIFM, Bhopal has been selected as third party agency to evaluate all plantations raised during the period from 2013-14 to 2016-17 under this scheme at a cost of Rs.76.00 lakh and the IIFM, Bhopal has submitted the evaluation report. 3rd party evaluation is being taken up by AFC India Ltd., New Delhi for the period from 2017-18 to 2022-23 for both IGC and GMM schemes.

6.1.2. Green Mahanadi Mission (GMM)

Mahanadi is a lifeline of Odisha and in order to enhance water availability and to improve livelihood, the river Mahanadi needs to be protected and conserved for ensuring its perennial flow for benefit of the people of the state. In view of this, a new scheme namely "Green

HIGHLIGHTS OF ODISHA FORESTRY SECTOR - 2024

Mahanadi Mission was launched during 2018-19 with an aim to create a Green belt in 1 km width on both sides of the river Mahanadi, Tel & IB on all available and suitable Forest Land, Revenue Forest Land, DLC Area and Private Land through massive participation of peoples representatives and all stake holders. In order to spread the awareness amongst people towards the aim of the mission, wide publicity has been created through different awareness programmes, Mahanadi Seva Yatra, Pada Yatra by the people's representatives, stakeholders and general public etc.

Besides, three respective GMM committees have been constituted in the Block, District and State level for monitoring and reviewing the GMM activities undertaken by different line departments for successful implementation of the mission in the state. Preparatory activities of the mission, like identification of villages, selection of plantation sites, nursery sites, Identification of Mahanadi Sevaks, mass motivation were taken up during 2017-18 in 16 districts covering 1303 villages under the jurisdiction of 20 Forest and Wildlife Divisions. The scheme is being implemented with the funding sources under State Plan. The scheme has been approved in the "Expenditure Finance Committee" (EFC) meeting from 2018-19 to 2022-23 and their maintenance up to 2025-26.



Azadika Park under GMM, Boudh Forest Division



GMM Urban Tree Plantation, Kalahandi South Forest Division

6.1.2.1. Achievement during 2022-23

576 hectare of AR, 424 hectare of Bald Hill, 2950 hectare of ANR Plantation, 2.89 lakh saplings under Urban Tree Plantation have been taken up and 8.48 lakh seedlings have been distributed among public.

6.1.2.2. Achievement during 2023-24

Plantations over an area of 100 hectare of AR, 65.5 hectare of Casuarina, 90 hectare of Bald Hill, 952 hectare ANR with Gap plantation, 2.26 lakh saplings under the scheme of Urban Tree Plantation (UTP) and distribution of 93.37 lakh seedlings have been successfully achieved under the mission during 2023-24.

6.1.2.3. Proposal during 2024-25

There is a proposal of taking up 84 hectare AR plantation, 72 hectare casuarina plantation, 75 hectare Bald Hill plantation, 1260 hectare ANR with Gap plantation, 2.00 lakh saplings under the scheme of Urban Tree Plantation (UTP) and 50 lakh seedlings for distribution for the financial year 2024-25.

6.1.3. Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS)

The Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) has been developed to reduce rural poverty through 100 days of guaranteed employment for each family per year. Using focus group methods, this scheme has been explored to provide rights based social protection through guaranteed employment for Scheduled Castes, Scheduled Tribes and women in our State. The main objectives of this scheme are: (1) social protection (2) the creation of durable assets such as water security, afforestation activities, soil moisture conservation measures, land productivity etc. through the manual labourers. The components of this scheme implemented during 2023-24 are:

6.1.3.1. Plantations under MGNREGS

During 2023-24, an area over 595 hectare of AR Plantations, 3616 hectare of ANR with Gap Plantations and 3022 RKM of Avenue Plantations & have been achieved under MGNREGS by planting 24.44 lakh seedlings of different species. There is a proposal for taking up of 224 hectare AR Plantation, 4745 hectare ANR with gap Plantation and 2755 RKM of Avenue plantation during the year 2024-25.



*Avenue plantation under MGNREGS,
Balliguda Forest Division*



*Plantation under MGNREGS Kamira,
Boudh Forest Division*



Check Dam under MGNREGS, Bargarh Forest Division

6.1.3.2. Year wise Afforestation Programme under MGNREGS

The year wise afforestation programme taken up and the amount utilized under MGNREGS up to 2023-24 (up to 27.02.2024) is given below.

Year	Area afforested (in ha)	Avenue Plantation taken up (in RKM)	Water bodies created(in no.)	Amount utilized (Rs. in lakh)
2006-07	779	0	146	264.00
2007-08	2590	51	0	492.00
2008-09	233	14	0	842.00
2009-10	11219	112	024	1106.41
2010-11	9543	241	26	1849.69
2011-12	14021	746	32	2648.45
2012-13	15307	2477	6	3954.36
2013-14	38115	3506	108	8703.55
2014-15	198891	4755	0	30904.02
2015-16	28354	3340	0	9113.18
2016-17	17806	3714	0	8213.62
2017-18	14330	2477	0	7245.25
2018-19	15370	3114	0	8567.00
2019-20	7288	3280	0	9021.00
2020-21	28615	4061	0	29137.43
2021-22	25041	4557	0	30595.00
2022-23	12509	3912	65	18207.85
2023-24	4211	3022	05	9912.11

6.1.4. Plantations through Odisha Mining Corporation Ltd. (OMC) under Corporate Social Responsibility (CSR)

As per MoU signed between M/s Odisha Mining Corporation Ltd represented through Managing Director and State Forest Department represented through Principal Chief Conservator



Plantation under CSR Sundargarh Forest Division



Plantation under CSR Sundargarh Forest Division

of Forests, Odisha executed on 5th June, 2015, it was decided to undertake plantation of 10 lakh seedlings every year along with its maintenance under Corporate Social Responsibility (CSR) scheme in the mining affected districts of the State. The districts covered under this scheme are Keonjhar, Sundargarh, Angul, Jajpur, Kalahandi, Koraput, Rayagada and Cuttack.

During 2023-24, AR plantations over an area of 625 hectare by planting 10.00 lakh seedlings have been achieved and districts like Malkangiri, Nabarangpur and Sambalpur are also covered under OMC plantation. There is a target of 375 hectare AR Plantations for the year 2024-25.

6.1.5. Plantations under site specific Wildlife Management of CAMPA APO (SSWLMP)

During 2023-24, 285 hectare of AR, 150 hectare of Bamboo, 790.58 hectare ANR with Gap plantation, 0.20 lakh saplings under the scheme of Urban Tree Plantation (UTP) have been achieved. For the above components 7.21 lakh seedlings have been planted.

6.1.6. Plantations under OFSDP-II

During 2022-23, AR plantation over an area of 3007.59 hectare, ANR with gap plantation over 832 hectare by planting 28.44 lakh seedlings have been achieved under the project.

Only maintenance work has been done during 2023-24.

6.1.7. Plantations under District Mineral Fund (DMF)

During 2019-20, 0.79 lakh seedlings have been planted in Urban-Peri Urban Areas of the Mineral Bearing affected Districts like Sundargarh, Angul, Jajpur, Koraput and Jharsuguda of the State. During 2020-21, 250 hectare AR, 1745 ha ANR with Gap Plantation, 2.08 lakh seedlings under Urban Tree Plantation & 40.80 lakh seedlings have been distributed. During 2021-22, 8.60 RKM Avenue Plantation have done by utilizing 0.02 lakh seedlings & 2.54 lakh seedlings have been distributed.

During 2023-24, 1 ha Miyawaki Plantation (AR) & 1 Ha (Rocky Hill Plantation) have been achieved by utilizing 0.096 lakh seedlings in Sambalpur Forest Division.

6.1.8. Miyawaki Plantation funded by NLC India Ltd.

During 2023-24, 1 ha Miyawaki Plantation (AR) has been achieved by utilizing 0.08 lakh seedlings in Jharsuguda Forest Division.



Miyawaki Forests in Jharsuguda Forest Division

6.1.9. Enhancing Climate Resilience of India's Coastal Communities (ECRICC)

During 2023-24, 147 ha AR Plantation has been achieved by utilizing 4.96 lakh seedlings in Rajnagar WL Division.

6.1.10. Misthi Plantation

During 2023-24, 15 ha AR Plantation has been achieved by utilizing 0.47 lakh seedlings in Rajnagar WL Division.

6.1.11. Costal Shelter Belt (Casuarinas Plantation)

During 2023-24, 15 ha AR Plantation has been achieved by utilizing 1.50 lakh seedlings in Puri WL Division.

6.1.12. Project Proponent

During 2023-24, 57.87 hectare of Avenue, 0.05 hectare of Bald Hill, 0.22 lakh saplings under the scheme of Urban Tree Plantation (UTP) have been achieved. For the above components 0.36 lakh seedlings have been planted.

6.1.13. NSPCL - Urban Tree Plantation

During 2023-24, 0.05 lakh Seedling have been planted under Urban Tree Plantation in Rourkela Forest Division.

6.1.14. RSP - Urban Tree Plantation

During 2023-24, 0.07 lakh Seedling have been planted under Urban Tree Plantation in Rourkela Forest Division.

6.1.15. State Forest Development Agency (SFDA) for implementation of Centrally Sponsored Schemes

As per the Revised Operational Guidelines issued during 2009 by National Afforestation and Eco-development Board (NAEB), the State Forest Development Agency, Odisha constituted on 17.06.2010 under the Societies Registration Act, 1860 with PCCF, Odisha as Chairperson and CCF (PP&A) as the Member Secretary and Chief Executive. The aim of constitution of this state level agency is to implement the centrally sponsored schemes in participatory mode by a three-tier set-up, namely State Forest Development Agency (SFDA) the State level, Forest Development Agencies (FDAs) at the forest division level, and Joint Forest Management Committees (JFMCs) or Eco-development Committees (EDCs) at the village level. The SFDA is the federation of 46 FDA divisions of the state. The Chairpersons and Member Secretaries of all FDAs of the State are members of SFDA, Odisha. No FDA has been formed in Chilika (WL), Sunabeda (WL), Mahanadi (WL), and STR (Baripada) divisions.

The SFDA is the implementing agency of two centrally sponsored schemes which are:

1. National Afforestation Programme(NAP)
2. National Mission for Green India (GIM)

6.1.15.1. National Afforestation Programme (NAP)

The National Afforestation Programme (NAP) is operated by the National Afforestation and Eco-Development Board (NAEB), Ministry of Environment and Forests as a Centrally



Sponsored Scheme. The objective of the scheme is to increase and/or improve Forest and Tree Cover for rehabilitation of degraded forests and other areas in participatory forest management processes for sustainable development and management of forest resources focusing on improvement in livelihoods of the forest-fringe communities, especially the poor.

The components under the scheme are as follows:

1. Planting /Regeneration:

Aided Natural Regeneration (200 plants/ha), Artificial Regeneration (1100 plants/ ha), Pasture Development / Silviculture (400 plants/ha), Bamboo Plantation (625 plants/ha), Planting of canes (625 plants/ha), Mixed Plantations of trees having MFP and medicinal value (1100 plants/ha) and Regeneration of perennial herbs and shrubs of medicinal value (2000 plants/ha).

2. Other components:

1. Strengthening of JFM: Constitution of JFMC (per JFMC) and Micro-planning (per JFMC), 2. Awareness Generation, 3. Microplanning, 4. Fencing, 5. Soil & Moisture Conservation, 6. Entry Point activities, 7. Training & Capacity Building, 8. Value Addition and Marketing of Forest Produce, 9. Concomitant Monitoring & Evaluation, 10. Overheads, 11. Treatment of Problem Lands and 12. Use of Improved Technology.

The scheme is implemented by a four-tier institutional set-up, namely State Forest Development Agency (SFDA) at the State level, Forest Development Agencies (FDAs) at the forest division level and range level involving Joint Forest Management Committees (VSSs/ EDCs) at the village level for carrying out plantation and ancillary activities. The scheme is being implemented on 60:40 of funding share between centre and state since 2015-16.

During the financial year 2021-22 the scheme was merged and subsumed under the National Mission of Green India Scheme (GIM).

In the 2021-22 financial year, an amount of Rs.1294.37 lakh was sanctioned for taking up maintenance of over 13776 hectare area of the last three years' plantations and the sanctioned amount revalidated during the financial year 2022-23 for utilisation for the same under APO 2022-23. The total outlay of APO 2022-23 for maintenance of 9241 hectares plantations is Rs.3.57 crore. The total outlay of APO 2023-24 for maintenance of 6268 hectares plantations is Rs.0.90 crore.



Plantation under GIM, Dhenkanal Forest Division



Plantation under GIM, Phulbani Forest Division



Urban Tree Plantation at Rourkela Forest Division

6.1.15.2. National Mission for Green India (GIM)

National Mission for Green India (GIM) is one of the eight Missions under the National Action Plan on Climate Change (NAPCC). The Broad objectives of the scheme are:

- to increase forest/tree cover to the extent of 5 million ha and improve the quality another 5 million ha of forest/non-forestlands,
- to enhance carbon sequestration through increase of forest/tree cover along with provisioning services like fuel, fodder, timber & non-timber forest produces and
- to increase the forest-based livelihood income level of 3 million households.

The scheme is being implemented on funding share of 60:40 between centre and state since 2015-16.

As per the approved project of five years from 2015-16 to 2019-20, plantations over 2177.72 ha (including distribution of seedlings) have been taken up with providing alternative fuel energy to 2500 households in five identified landscapes covering 50 VSSs under five divisions Under the 2nd project of five years started in 2018-19, plantations over 5537 hectare have been achieved with providing alternative fuel energy to 1200 households in the same five identified landscapes covering 81 VSSs. The third project which has been started during

2019-20, plantations over 4558 75 hectare, 1473.09 hectare and 495 hectare during 2020-21, 2021-22 and 2022-23 respectively have been achieved under different components and alternate fuel energy devices have been distributed to 2600 households in the selected landscapes covering 129 VSSs of fifteen divisions of the state. Similarly plantations over 2108 hectares have been achieved under the project started during 2021-22 under the 4th project.

Advance work 2030 hectare, creation of 2603.34 hectare with 1st year maintenance over 1473.09 hectare and 2 year maintenance of 4558.75 hectare and 3rd year maintenance of plantations over 5537 hectare have been taken up in the previously selected landscapes of fifteen divisions of the state under APO 2022-23. The sanctioned outlay for APO 2022-23 is Rs. 35.83 crore for implementation of the scheme in the state.

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Creation of 1672 hectare with 1st year maintenance over 2603.34 hectare and 2 year maintenance of 1473.09 hectare and 3rd year maintenance of plantations over 4558.75 hectare have been taken up in the previously selected landscapes of fifteen divisions of the state under APO 2023-24. The sanctioned outlay for APO 2023-24 is Rs. 17.72 crore for implementation of the scheme in the state.



Plantation under GIM, Baripada Forest Division



Plantation under GIM, Deogarh Forest Division

Other activities under GIM, Bolangir Forest Division



Sewing Machine



Multi spice Grinder



Solar powered / Normal Rice puffing machine



Multi food processing machine





Cow dung log making machine



Cow dung pot making machine



Sal / Siali leaf plate making machine



Tamarind Deseeder

6.1.16. ODISHA BAMBOO DEVELOPMENT AGENCY

Odisha Bamboo Development Agency (OBDA) is a State level Mission aimed at development of Bamboo Sector in Odisha. The focus is on Bamboo resource generation by commercial cultivation of Bamboo, promoting Bamboo products through value addition as well as setting up of Bamboo based industries with recent advance technology. The mission has special focus on adequate returns to farmers as well as promoting sustainable livelihood for tribal & rural poor people to engage in Bamboo sector with employment on women empowerment. It implements restructured National Bamboo Mission (NBM) a Centrally Sponsored Scheme with 60 % share of Central Govt. This programme was started in the year 2018-19. Following activities achieved during 2023-24.

1. Maintenance 16 numbers of Bamboo Nurseries throughout the State of Odisha including 3 Nos. of Hi-Tech Nurseries, 6 Nos. of Big Nurseries, 6 Nos. of Small Nurseries and One Big Nursery under Private Sector.
2. Raising of 154 ha of Bamboo Plantations in farmers' land benefiting 159 farmers done during 2023-24.

HIGHLIGHTS OF ODISHA FORESTRY SECTOR - 2024

3. Organized 10 Nos of Farmers Training programme in which 1000 Nos. of farmers participated at Lanjigarh, Dharmagarh, Junagarh & Thuamul Rampur of Kalahandi District, Tumudibandha, Baliguda, Phirinigia & Daringibadi of Kandhamal District, Malkangiri & Mathili of Malkangiri District.
4. Organized 3 No. of Artisans training at Chatabara, Khordha & Santhapur, Dhenkanal in which 83 Nos. of beneficiaries participated in the training.
5. 3 Nos. of artisans groups participated in the State Level Kalinga Herbal Fair from 05.12.2023 to 11.12.2023 at IDCO exhibition ground, Unit- III, Bhubaneswar.
7. Establishment of Demonstration Plot by the Silviculturist, Bhubaneswar & Silviculturist Rayagada.
8. 6 Nos. of Bamboo Artisans participated in 3 (three) National level bamboo handicraft festival held at : 1. Sangola, Moharastra, 2. Jaipur, Rajasthan, 3. Kochi, Kerala.
9. 12 numbers of farmers/ artisans/ official of Boudh and Malkangiri forest division participated in exposure visit cum training to RFRI, Jorhat, Assam from 31.08.2023 to 11.09.2023.
10. As per instruction of Govt. of India, 4 (four) nos of Famer Producer Organizations (FPOs) have been established at Betonai, Udala, Khunta & Kaptipada block of Mayurbhanj District to promote propagation and cultivation of bamboo which is taken up by NAFED, Bhubaneswar.
11. Following activities are under progress by Director, Handicraft Department;
 - a. Bamboo Treatment and Seasoning Plants - 2 Nos.
 - b. Processing units for value addition of Bamboo - 3 Nos.
 - c. Handicrafts/Cottage Industry - 2 Nos.
 - d. Furniture Making Unit - 4 Nos.
 - e. Incense stick making unit - 2 Nos.
 - f. Common Facility Centre - 4 Nos.
 - g. Bamboo Bazaar - 1 No.



Sankhabhanga Hi-Tech Nursery of OBDA under DFO, Baripada Forest Division



Bamboo Plantation at Jeypore Forest Division



HIGHLIGHTS OF ODISHA FORESTRY SECTOR - 2024



Farmers Participated Awareness Programme at Dharmagarh block of Kalahandi District on 18th & 19th November, 2023



Odisha Bamboo Development Agency awarded in Jaipur Expo, 2023, Rajstan from 14th & 16th Sept., 2023



One Month Artisan Training Programme at Chattabar, Khordha from 18.07.2023 to 22.08.2023



OBDA participated National Level Exhibition at Sangola, Maharashtra from 23rd to 25th August, 2023



Demonstration of Bamboo Propagation Technique to the Farmers & Artisans at RFRI, Jorhat



Odisha Bamboo Development Agency participated in 16th State Kalinga Herbal Fair, 2023 at Idco Exhibition Ground, Unit-III, Bhubaneswar from 05.12.2023 to 11.12.2023

6.1.17. Nagar Van Yojana (NVY)

The Nagar Van Scheme was initiated by the Ministry of Environment Forests & Climate Change during the World Environment Day celebrations in June 2020 with a prime vision of enhancing forest quality and increasing tree cover for maximizing carbon stock as well tackling the ill effects of urbanization. The implementation of the revamped "Nagar Van Scheme", from the Nagar Van Udyan Yojana (implemented during 2015) was revised with an aim to develop Nagar Vans/ Nagar Vatikas across the country in the next five years. Under the scheme the Nagar Vans are to be created in each city primarily on Forest and Non Forest land within the limits of municipalities/ local urban bodies or in its vicinity located within 10km.

The prime objectives of the scheme are for:

- providing wholesome healthy living environment for the residents.
- creating green space and aesthetic environment in an urban set up and
- contributing to growth of clean, green, healthy and sustainable cities.

The scheme is to be implemented with a renewed focus on people's participation in collaboration mode involving Forest and other Departments of the State, NGOs, Industries, Corporate bodies, Civil Societies etc.

One time development and non-recurring grant to the implementing divisions/ agencies(FDAs) for creation of an area of Nagar Van/ Nagar Vatika to a maximum extent of Rs. 2.0 Crores for 50 ha. (@ 4.0 lakhs/ha.) is provided by the Ministry. The balance cost is met by the agency from other funding sources.

The Government of India has approved 40 projects (29 Nagar Vans with extent of area more than 10 ha./11 Nagar Vatikas area less than 10 ha.) to be implemented in 25 Forest Divisions falling under 20 districts. The Government of India has sanctioned a onetime grant amounting to Rs. 2905.95 lakhs and released an amount of Rs. 2034.19 lakhs as 1st installment for implementation of these projects under Nagar Van Yojana in the state during the Financial Year 2021-22 & 2022-23.

Thirteen (13) new proposals have already been sent to Govt. of India for its approval for implementing during the year 2024-25 with an outlay of Rs.14.44 crore.



Nagar Van Yojana Bolangir Forest Division



Development of Nagar Van at Phulbani Forest Division

HIGHLIGHTS OF ODISHA FORESTRY SECTOR - 2024



Nagar Van Yojana at Baripada Forest Division



Nagar Van Yojana at Kalahandi South Division



Nagar Van Yojana at Koraput Forest Division



Nagar Van Yojana at Ghumsur South Forest Division



6.1.18. School Nursery Yojana (SNY)

The Ministry of Environment Forest & Climate Change has introduced the Scheme School Nursery Yojana for a period of five years from 2020-21 to 2024-25 in order to sensitize young students towards protecting our environment and ecology. Aim & objectives of the Scheme:

The School Nursery Yojana (SNY) aims to provide an environment for the school students to understand and appreciate the significance of plants in maintaining and sustaining the natural ecosystem. The underlying principle of the scheme is the concept of planting and growing seedlings.

The primary objective is to generate consciousness about plants and environment and promote plantation activity through involvement of students.

Students from class VI - VIII may be engaged for participation towards the raising of seedlings for plantation.

The Ministry has approved 50 School nurseries to be created in 12 Forest Divisions falling under the jurisdiction of 13 districts of the state at a total cost of Rs. 47.00 lakh and released Rs. 32.90 lakh as the first installment for implementation of the scheme during the Financial Year 2022-23.



School Nursery Yojana at Nayagarh Forest Division

6.1.19. Forest Fire Prevention and Management (FPM)

The scheme is being implemented with a fund sharing pattern of 60:40 between centre and state. The broad objectives of the scheme are to minimize forest fire incidence with optimal use of modern technology such as Remote sensing, GPS, GIS etc and assist in restoring productivity of forests in affected areas and institutionalize the partnership with forest fringe communities for forest protection for achieving the larger goal of maintaining environmental stability.

The components of the scheme include creation of fireline, maintenance of fireline, construction of watch towers, engagement of fire watches, assistance to Joint Forest Management Committees, construction of water storage structure, setting up of fire fighting cells, procurement of fire fighting equipment, fire mapping & preparation of fire management plan, training &

awareness control & management, strengthening infrastructure for forest protection, Working Plan preparation / survey and demarcation. During 2023-24, a total outlay of Rs.245.30 lakh has been received for taking up above activities.



6.2. Programme Expenditure Schemes

6.2.1. Intensive Protection of Critically Endangered Areas

The scheme was introduced in the State Plan Budget since 2008-09 with an aim to strengthen the protection measures of forests against organized mafias & timber smugglers and illicit removal of timbers and other forest produce.

Critically vulnerable belts of forests have been identified in 51 Forest Divisions where forest protection measures have been beefed up with the deployment of a squad in each belt. Avulnerable forest belt normally comprises of 3 contiguous Beats for detecting organized gangs of forest offenders / timber mafias/ poachers. Each squad consists of 10 local youth engaged on daily wage basis and stationed at strategic locations of each vulnerable belt through out the year for effective protection work. These squads not only carryout regular patrolling and monitoring the identified forest belts for surveillance on potential offenders operating in the area, but also act as a striking force to aid in search, seizure & raid operations. During the year 2023-24, an amount of Rs.893.33 lakh has been provided for engaging 124 squads in 51 territorial & wildlife divisions of the state.

6.2.2. Training Programme

An outlay of Rs.249.60 lakh has been provided during the year 2023-24 for taking up the following activities under the Programme Expenditure Scheme "Training Programme".

6.2.2.1. Human Resources Development Programme

The Forest staff need to be oriented and trained both in technology and forest extension aspects. Imparting training to initial recruits is very vital. To augment the efficiency & skill of forest personnel, updating their knowledge on emerging and new topics on all aspects of forestry, forest management and forest research is essential. Presently, there are 4 Training Institutes i.e. Foresters' Training School, Ghatikia, Bhubaneswar, Odisha Forest Ranger's College, Angul, Nicholson Forester Training School, Champua and Forester Training School, G. Udayagiri

where training programmes are being conducted regularly. During the current year, various training programmes have been carried out in these institutes. The infrastructure of the forest training institutes of the state needs to be further developed so as to make them well equipped for conducting training programmes smoothly. The Department also organizes Annual Forest Sports Meet for forest personnel at zonal & state level and select the best one for participation at National Level.

6.2.2.2. Policy Analysis & Strategic Planning Unit (PASPU)

The Policy Analysis & Strategic Planning Unit (PASPU) has been established with an aim to serve as a nodal point of convergence of programmes as per the National Forest Policy / Vision Document of different sector impacting forests & related livelihood activities, and to undertake publicity works like broadcasting of the weekly radio programme "BANANI" & other activities like revision of Forest Department Code etc.

6.2.3. Forest Research

Silviculture research on tree improvement, nursery and plantation techniques and plant ecological studies is an integral part of forestry and deserves top priority in the Forest Conservation & Development agenda. The scheme supports special research programmes based on the following themes-

- i) Tree breeding /improvement activities of commercially important trees and important indigenous species including NTFPs,
- ii) Standardization of nursery & establishment techniques of medicinal plants and NTFP species,
- iii) Sustainable harvest techniques for NTFPs and medicinal plants,
- iv) Propagation of improved varieties of Bamboo and Canes,
- v) Development of agro-forestry models indifferent agro-climatic zones,
- vi) Applications of bio-fertilizer and
- vii) Development of seed production areas for major species.

The aim is to conduct Silviculture research on tree improvement, nursery and plantation techniques and plant ecological studies as per approved quinquennial Research Programme. A total outlay of Rs.35.00 lakh has been provisioned during 2023-24.

6.2.4. Construction of Buildings

This scheme was introduced in the State Plan Budget since 2008-09 to provide accommodation facilities to Divisional Forest Officers, Assistant Conservator of Forests & Ministerial Staff working in the division/regional offices. During 2023-24, the budget provision of 1000.00 lakh has been made for construction of New Division Office building at Jharsuguda, New DFO Quarters-cum-Residential Office at Rajanagar (WL) Division, completion of RCCF office building at Baripada, DFO office building at Rourkela, new Forest Rest House at Boudh Division, 8 nos of ACF Residence, 10 nos of Ministerial Staff Quarters and 5 nos. of Class-IV Quarters.



6.2.5. Survey & Utilization of Forest Resources

6.2.5.1. Survey and Investigation Expenses

Forest Resource inventories (sampling, enumeration), compilation of reports, procurement of maps and Survey Instruments have been prepared under this scheme with a total outlay of Rs. 1.20 lakh during 2023-24.

6.2.5.2. Working Plan

Enumeration, stockmapping, estimation of growing stock, checking of boundary, procurement of maps and Survey of India toposheets, data entry in computer and print of book have been taken up under this scheme. The total out lay of Rs.200.00 lakh has been provisioned in Annual Plan 2023-24 for taking up the works.

6.2.6. Forest Conservation, Development and Regeneration

6.2.6.1. Working Plan

The main objective of the scheme is to carry out all working plan prescriptions & preparation of Working Plans. An out lay of Rs.400 lakh has been provisioned for Annual Plan 2023-24 for taking up the works.

6.2.6.2. Forest Consolidation

The components like demarcation and survey of new forest blocks, clearance of boundary of proposed forest blocks, repair of boundary pillars etc have been implemented with a total outlay of Rs.15.00 lakh during 2023-24.

6.2.6.3. Regeneration

Activities like cutting of high stumps, climber cutting, thinning in congested crop and gap planting of economic species have been taken up under this scheme to facilitate regeneration with a total outlay of Rs.13.20 lakh during 2023-24.

6.2.6.4. Sowing and Planting

Activities like production of QPM non-teak stumps, maintenance of (i) QPM non-teak stumps, (ii) 18 months old seedlings & (iii) root-trainer seedlings and seed collection have been taken up under this scheme with a total budget provision of Rs.33.00 lakh during the current year 2023-24.

6.2.6.5. Protection from Fire

A Fire Control Room at the State Forest Headquarters has been established & made fully functional for 24x7 hours under this scheme to monitor the forest fire incidences in the State. An outlay of Rs.1860.00 lakh has been provisioned in the State Annual Plan 2023-24 under this component.

6.2.7. Drift & Waif wood and Confiscated Forest Produce

This scheme includes components like salvaging of drift & waif wood collection of A1 timber and transportation of seized timber of UD & OR cases with a total out lay of Rs.32.00 lakh during 2023-24.



6.2.8. Forest Produce Sold to Consumer and Purchasers

Salvaging of naturally fallen trees due to cyclone as well as seized timber of Undetected (UD) and Offence Recorded (OR) cases are undertaken under this scheme. The total outlay of Rs.59 lakh has been provided for 2023-24 to implement the scheme.

6.2.9. Departmental Working of Forest Coupes and Depots

6.2.9.1. Departmental Working of Timber

The components of this scheme include demarcation and marking of timber coupes, departmental working of Car Timber etc. The total budget provision of Rs.180.00 lakh has been provided for 2023-24 works.

6.2.9.2. Departmental Working of Bamboo

Silviculture operations in bamboo coupes, cutting of broken, dead & dying clumps, thinning of congested clumps, thinning and putting earth around the clump, clearing and burning the debris, making half-moon trenches for water conservation structure at uphill side of clumps have been taken up during 2023-24 with a total outlay of Rs.20.00 lakh.

6.2.10. Information, Education and Communication

The Forest Department activity based programmes titled as "BANADARSHAN" in Door Darshan Odia are telecasted, creating public awareness in forest area & urban area through Slogans and Tin Signage on forest fire prevention and management during ensuing season 2024. The total outlay of Rs.50.00 lakh has been provided for 2023-24.

6.2.11. Relocation of Villages from Reserve Forests and Sanctuaries

This scheme has been introduced under Programme Expenditure since 2018-19. Villagers inhabiting in core area or buffer area of Protected Areas and Reserved Forests are trans-located to suitable places out side the PA and given compensation and other facilities as per the extant rules and guidelines issued by State Government.

During the year 2023-24, relocation of Bhrukunidi village from Satkosia Wildlife Sanctuary / Tiger Reserve of DFO, Satkosia (WL) Division has been carried out under the budget provision of Rs.312.00lakh.



Gramsabha at Lambipali Relocated Village



Gramsabha for Relocation of Three habitation i.e. Bhutuli, Rengali & Kurumkel

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Construction work of temporary shed of Lambipali relocated village



Temporary Shed of Lambipali Relocated Village



JOINT FOREST MANAGEMENT PROGRAMME

7.1. Implementation of Joint Forest Management Programme

In realizing the need for community participation in forest protection, the Govt. of Odisha was the pioneer to adopt a policy of JFM in August 1988, even before implementation of National Forest Policy, 1988 (w.e.f. 2.10.1988) in the country and initiated a step to involve the people in protection of forests adjoining their villages with assigning specific roles and in return granting certain concessions (under section 24 of the Odisha Forest Act 1972) for meeting their bonafide requirement of firewood and small timbers through Resolution No. 10F (Pron)-47/88/7240 FFAH dated 1st August 1988 and sought community participation for protection, regeneration and management of the forest wealth widening the scope of employment generation and social empowerment of the forest-fringe dwellers.

With the changing scenario of Forest Management, increasing awareness among people and experiences gained from the past management practices, such resolution on JFM, was revised and amended periodically latest on 2011, 2015 and 2019 respectively in adding several points, like inclusion of villages located within the National Park/ Sanctuaries as well as adjacent to the same for protection and management of the wildlife and habitat and covering the Reserved Forests and Protected forests, Village forests and Revenue forests having crown density of less than 40% under JFM, role of Palli Sabha and composition of members of Executive Body of Vana Surakshya Samiti, constitution of a "Range level VSS and EDC Forum" for having better interaction between the Range Officers and VSS Members etc.

7.1.1. Progress on Constitution of VSS/EDC in the state

- As per Government direction for implementation of one of the Transformational Action Points under 5T Governance, the 3rd Party Evaluation of Functioning of Vana Surakhya Samities (VSS) for understanding of effectiveness of the Joint Forest Management (JFM) activities has been done by the organization named as AFC India Ltd. New Delhi. The report has also been submitted by them.



Awareness campaign on Millet cultivation



Training programme on Mushroom cultivation at Raikela VS under Barsuan

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- A total of 13,93,144 hectare of Forests have been brought under Joint Forest Management through 16,160 Vana Surakshya Samities (VSSs) for protection under usufruct sharing mechanism. Besides, 590 Eco Development Committees (EDC) have been formed within and outside protected areas for protection of the Sanctuaries and National Parks.

JFMCs Formed (in No.)		Families Involved (No. in lakh)	Forest area assigned to VSS (Sq. Km.)
VSS/EDC	16160/590	20.06	13931.44

7.1.2. Implementation of JFM under different schemes/projects

Different projects and schemes named as National Afforestation Programme (NAP), Green India Mission (GIM), Odisha Forest Sector Development Project-I & Project II (OFSDP) and Aam Jungal Yojana (AJY) are also being implemented in the state under Joint Forest Management mode.



Awareness meeting 2023-24 at Gupteswar range Jeypore Forest Division



Awareness Meeting at Budaguda VSS of Kundra Range Jeypore Forest Division



VSS building of Kuntaradaba VSS under Jarda FMU, Bonai Forest Division



VSS building of Goudapada VSS under Sole FMU, Bonai Forest Division

WILDLIFE MANAGEMENT

8.1. Wildlife Organization

The State Wildlife Organisation is functioning at Prakruti Bhawan head by Principal CCF (Wildlife) and Chief Wildlife Warden, Odisha. The State is enriched with unique assemblage of Wildlife. The total protected area (i.e. 8380.72 sq.km.) constitute 13.69% of total forest area and 5.38% of total geographical area.

The State has 19 Wildlife Sanctuaries, one National Park, one proposed National Park, three Elephant Reserves, two Tiger Reserves, two proposed Tiger Reserves and 14 identified Elephant Corridors for addressing in-situ conservation of wildlife of the State in the natural environment. In our State 10 Zoos (out of which 01 large, 03 small and 06 mini Zoo) have been established to take care of ex-situ conservation of animals. Nandankanan Zoological Park is one among premier large Zoos of India located amidst beautiful natural sylvan surrounding spreading over an area of 3.62 sq.km. in the outskirts of Bhubaneswar. The undulating topography with natural moist deciduous forest, waterbodies and enchanting landscape provides the Zoo inhabitants an appropriate ambience to live in harmony with nature. Battery powered Topy Train Project has been carried out by M/s RITES Ltd. The project includes provision of new battery operated engine with five bogies and station renovation. The Toy Train can accommodate 72 nos. of passengers and the ride will be about 15 minutes. The Multi-Level car parking building in Nandankanan Zoological park has a three storied parking facility with a built up area of 5600 sq.mt. each and a capacity to accommodate parking for 583 cars. All the sanctuaries are guided by a wildlife management plan prepared for ten years which is approved by PCCF (WL) and CWLW, Odisha. Similarly, all the zoos are operated as per the Zoo Management Plan approved by the Central Zoo Authority of Govt. of India. Besides those the State has the singular distinction of having three stretches of mass nesting beaches of endangered Olive Ridley Sea Turtles (*Lepidochelys olivacea*) nesting ground at Gahirmatha, Rushikulya & Devi rookeries. Apart from that, the shores of Odisha attract massive migratory bird population which serve as their wintering grounds, prominent of which are Chilika & Bhitarkanika. The state has many natural wetlands including the largest brackish water wetland of Asia (Chilika) & Bhitarkanika which are



HIGHLIGHTS OF ODISHA FORESTRY SECTOR - 2024

declared as Ramsar Sites. It is imperative to protect & conserve marine eco-systems & habitats by extending legal security for designating them as inviolate zones in order to ensure conservation & proliferation of marine flora & fauna.

Voluntary relocation of villages from critical protected areas is an important step for conserving flagship species like tigers which require vast inviolate habitats. It not only makes the protected area inviolate but also enables the villagers to access the various development schemes of the state. Voluntary Relocation of villagers from the Protected Area / Tiger Reserve / other forest areas to outside these areas is done as per policy framed by NTCA & State Government. Till 2023, 24 villages 1762 families have been relocated outside the Tiger Reserve/ Protected Area.

Govt. have approved the Ecotourism Policy and the Forest Department has been declared as the Nodal Agency for development of ecotourism in the state. The Government have approved the Scheme "Development of Eco-tourism" with financial implication of Rs. 56.00 crores for a period of five years from the financial year 2016-17 to 2020-21 for its sustainable development and promotion.

The State has enhanced compassionate amount to Rs.4.00 lakh from Rs.3.00 lakh towards human kill. A crime cell has been constituted in the office of the Principal CCF (Wildlife) & CWLW, Odisha as well as in the office of the Special Director General of Police, CID-Crime, Odisha for proper and timely investigation of the wild animal poaching cases. Dossier of habitual offenders are being maintained and circulated to the field from time to time to keep close vigil on their activities. A new software module has been developed for monitoring the mortality of Olive Ridley sea turtles on daily basis and is now operational in all the 6 coastal Divisions of the State. Control Room, Elephant Monitoring App, Anukampa App, Site Specific Plan through App are developed to facilitate monitoring of different wildlife related activities.



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The details of physical achievement during 2022-23 and target for 2023-24 under Programme Expenditure is given here under:

Items	Physical achievement during 2022-23		Target for 2023-24	
	Budget	Campa	Budget	Campa
Mangrove plantation	165 ha. (ECRICC)	-	317 ha.	20 ha.
Meadow development	99.85 ha.	543.46 ha.	1150.40 ha.	133 ha.
Deployment of Anti-poaching / Protection squad	315 nos.	174 nos.	394 nos.	174 ha.
Deployment of Elephant Squad	134 nos.	-	140 nos.	-
Deployment of fire fighting squad	101 nos.	48 nos.	41 nos.	48 nos.
Protection of marine turtle and marine fauna	5 number of off-shore and 61 number of on-shore camps in 6 Divisions	-	5 number of off-shore and 61 number of on-shore camps in 6 Divisions	-
Creation of waterbody	22 nos.	-	89 nos.	32 nos.
Renovation of waterbody	61 nos.	-	241 nos.	20 nos.
Trench fencing	1 kms.	25.26 km.	-	21 km.
Provision of Solar street light	990 Nos.	-	273 nos.	95 nos.
Maintenance of Forest Road	42.42 Kms.	1281 Km.	411 Kms.	100 Km.
Construction of Watch Tower	11 Nos.	20 nos.	1 No.	10 nos.
Construction of Check Dam	0	-	-	-
Engagement of Gaja Sathi	942 nos.	863 nos.	265 nos.	1863 nos.



Hirakud Cruise

8.2. Census of Wildlife in Odisha

Mid-winter waterfowl census in Odisha during 2024

Mid-winter waterfowl / water bird status survey 2024 was conducted in the wetlands and water bodies all over Odisha by Divisional Forest Officers under the supervision of Odisha State Wildlife Organization. The waterfowl census report of major three water bodies of Odisha is given below:

Sl.No.	Name of the Wetland / Water Body	No. of Species	Number of Waterfowls
1	Chilika lagoon	108	10,98,813
2	Bhitarkanika Mangrove Wetland	121	1,51,421
3	Hirakud reservoir	113	3,42,345

Census of three crocodilian species in Odisha during 2024

Saltwater crocodile

Annual census of Saltwater crocodiles was conducted in the river systems, in and outside the Bhitarkanika Wildlife Sanctuary under Mangrove Forest Division (Wildlife), Rajnagar and river systems under Bhadrak Wildlife Division to assess their population number and trend, migration, survival, etc.

A total of 1850 Saltwater crocodiles were counted in the river systems coming under the jurisdictions of both Rajnagar and Bhadrak Wildlife Divisions during the current season 2023-2024. The size wise saltwater crocodile population is given below:

Census year	Hatchling (< 2')	Yearling (2'-3')	Juvenile (3'-6')	Sub-adult (6'-8')	Adult (8'-20'>)	Total
2024	587	387	334	171	371	1850



Mugger and Gharial crocodile

Census of Gharial and Mugger crocodile census in the Mahanadi river system

The annual census of Gharial and Mugger Crocodiles in Mahanadi river systems was conducted by Satkosia Wildlife Division jointly with Mahanadi (Wildlife) and Athamallik Divisions. The method of census adopted to count both the crocodilian species (Gharial & Mugger) was by direct sighting and track marks. The river route / area was suitably divided into seven census units and each unit was entrusted to a census party. The census results are as follows:

Gharial and Mugger estimation in Satkosia during 2024

Location	Gharial	Mugger
Mahanadi river system	14	90
Waterbodies in Satkosia Wildlife Division	0	6
Waterbodies in Athamallik Division	0	1
Water bodies in Mahanadi Wildlife Division	0	0
Total	14	97

Census of mugger crocodiles in the rivers systems of Similipal Tiger Reserve

The estimation of mugger crocodile was conducted in the river systems of Similipal from 6th to 8th January, 2024 by the Field Director, STR-cum-RCCF, Baripada and the Divisional Forest Officers, Similipal South Wildlife, Similipal North Wildlife and Karanjia Forest Divisions. The method of estimation adopted to count the Mugger crocodile population (number) was individual total count by direct day time sighting of animals.

Location	No. of Mugger Crocodile sighted 2024
West Deo River	63
East Deo River	2
Khairi/ Bhandan River	7
Budhabalanga River	3
Khadkei River	0
Palpala /Thakthaki River	1
Total	76

Census of mugger crocodiles in and around of Ghodahada reservoir, Berhampur

The mugger crocodile estimation was conducted in and around Ghodahada Reservoir from 6th to 8th January, 2024 by the Divisional Forest Officer, Berhampur Division. The entire reservoir was divided into 22 segments and each segment was surveyed by forest staffs for the crocodile estimation programme. The survey work was done as per the direct sighting method.



Mugger estimation in Ghodahada Reservoir

Location	No. of Mugger crocodile sighted during 2024
Ghodahada Reservoir	57
Outside Ghodahada Reservoir	27
Total	84

Abstract of Mugger and Gharial estimation Mugger crocodile

Location	No. of Mugger sighted during 2023	No. of Mugger sighted during 2024
Satkosia river system	83	97
Similipal river system	80	76
Ghodahada Reservoir	81	84
Total	244	257

Gharial crocodile

Location	No. of Gharial sighted during 2023	No. of Gharial sighted during 2024
Satkosia river system	0	0
Mahanadi river system	7	14
Total	7	14



Dolphins and other cetaceans in Odisha

The Dolphins and other cetaceans were found in coastal of Odisha. The Irrawaddy dolphin (*Orcella brevirostris*) is found mainly in Chilika lagoon. Census of Irrawaddy dolphin is carried out regularly in the Chilika lagoon since the year 2003 but during the year 2015 first time the census of Dolphins and other cetaceans species were conducted in entire coast of Odisha by the six coastal Divisions. During the current year 2024 census, a total of 743 nos. of Dolphin and other Cetacean species were found in Odisha.

Sl. No.	Name of the Division	Species and Number of Dolphins				Total
		Irrawaddy Dolphin	Bottle nose	Humpback	Finless	
1	Chilika Wildlife	155	0	47	0	202
2	Mangrove (WL) Rajnagar	22	0	480	0	502
3	Puri (WL)	0	27	7	1	35
4	Berhampur	0	0	0	0	0
5	Bhadrak (WL)	4	0	0	0	4
6	Balasore (WL)	0	0	0	0	0
Total		181	27	534	1	743



Olive Ridley Sea turtles in Odisha

Olive Ridley turtle is one of the 8 species of sea turtles, which are very ancient creatures. This species is critically endangered. All five species of sea turtles found in the sea along the Indian coast are listed in Scheduled-I of the Wildlife (Protection) Act.

More than 50 percent of the world population of Olive Ridley turtles are found in the Odisha coast. They are migratory species and there is a convention on migratory species to which India is a signatory. International Treaty obligations and our own law mandate protection of the Olive Ridley turtles.

The Olive Ridley turtle congregations starts building up in the coastal sea from middle of October each year at 3 places off the Odisha coast. These are Dhamara-Maipura river mouth area near Gahirmatha coast, Devi-Kadua river mouth area and Rushikulya river mouth area.

During the season 2022-23, mass nesting took place at Gahirmatha coast from 9th to 13th March, 2023; and over 5.12 lakhs turtles emerged to lay eggs and Mass nesting also took place at Rushikulya during the period from 23rd February to 2nd March, 2023; and about 6.37 lakhs laid eggs. Besides, there are sporadic nesting all along the Odisha Coast.



8.3. Nandankanan Zoological Park

Nandankanan Zoological Park is one among premier large Zoos of India located amidst beautiful natural surroundings spreading over an area of 362.1 Sq. Km in the outskirts of Bhubaneswar. The Zoological Park was dedicated to public on 29th December, 1960. The undulating topography with natural moist deciduous forest, water bodies and enchanting landscape provides the zoo inhabitants an appropriate ambience to live in harmony with nature.

Vision

To achieve global standards in all aspects of management and become a truly World class zoo by the next decade, and thereby to significantly contribute in conserving our country's biodiversity.

Mission

To plan and implement best practices in captive animal welfare and health care, enclosure design and display, aesthetic and visitor amenities, education and outreach, research and conservation, technology and teamwork so as to foster the people-nature connect and transform the zoo to a global leader in ex-situ conservation.

Visitors

Total 25,77,710 visitors had their footfall at Nandankanan during the year 2023-2024 (From 01st April 2023 to 31st December, 2023).

Revenue

An amount of Rs. 10,89,09,120/- has been generated during the year 2023-24 (From 01st April 2023 to 31st December, 2023) towards revenue from entry ticket and other facility.

Animal Collection

- Nandankanan currently has the largest animal collection among Indian Zoos housing 4186 individuals belonging to 164 species.
- 1 pair of Hoolock Gibbon and 1 pair of Leopard Cat were brought from Itanagar Zoo, Arunachal Pradesh on 25/07/2023.
- 1 pair of Hoolock Gibbon, 1 pair of Pigtail Macaque and 1 female Himalayan Black Bear were brought from Aizwal Zoo, Mizoram on 08/09/2023.
- 2:5 Chausingha and 2:3 Sambar were brought from Sambalpur Zoo on 05/12/2023 to enhance genetic diversity and bloodlines for these species.
- Squirrel Monkey (1:1), Ostrich (1:2), Cassowary(1:1), Red handed Tamarin (1:1), Wallaby(1:1) and Living stone Turaco (1:1) acquired.
- 264 births reported in the zoo during the year including Indian Grey Wolf bred in Nandankanan for the first time in its history.





Animal Housing & New Enclosures

- Two 2882 square meter enclosures with 2 back kraals and eight well-ventilated feeding cells for Hoolock Gibbons inaugurated on 18/10/2023.
- New Quarantine facility with three housing cells and video surveillance established in the Pangolin Conservation Breeding Centre.
- Construction of 6 numbers of back kraals for small mammals.
- New Wallaby enclosure covering 154 square meter exhibit area was constructed and inaugurated on 29/12/2023.



Health & Veterinary Care

- Mobile Veterinary Unit started functioning on 07.07.2023 with one Veterinary doctor, 1 Livestock Inspector, 2 Attendants and 1 Driver. Already 46 camps conducted till 31.12.2023.
- Endoscopy unit at Zoo Veterinary Hospital started functioning from 12.07.2023.
- Deployment of new equipment such as urine analyser, portable X-ray, Battery operated X-ray machine and ECG machines.
- Additional block in Live Feed Rearing Centre constructed.



Rescue & Rehabilitation

- During the year, the zoo provided medical care and rehabilitation to 56 rescued animals from different parts of the state.
- Rehabilitation of the seriously injured elephant calf through advanced medical treatment in the Zoo is a notable achievement.





Enhancement of Visitor Amenities

- First zoo in the country to offer Whats App based ticket booking services for visitors.
- Lily Pond within Multi-Level Car Parking restored and beautified.
- Zoo Souvenir shop renovated and started functioning directly under Zoo Society with new merchandise.
- Drinking water fountains installed at three strategic locations.
- Ropeway inaugurated on 17/11/2023.
- The boating facility resumed on 18/11/2023.



Infrastructure Development

- Mini conference room constructed in the office of the Deputy Director.
- Administrative building of State Botanical Garden renovated with Project Management Unit (PMU) and a conference Hall.
- New staff quarter (6 number for Foresters and 12 numbers for Forest Guards) inaugurated on 18/10/2023.
- Up gradation of 4.1 km of internal roads of the zoo.
- Renovation of Forest Rest House.
- Renovation of Zoo Conference Hall.





Human Resources, Capacity Building & Staff Welfare

- Project Management Unit consisting of a Project Manager, one Architect, one Civil engineer, one IT expert and one Accountant started functioning from 18/09/2023.
- Staff of Nandankanan participated in 11 (9 national and 2 state) conferences and training programmes.
- Dedicated monitoring App for Nandankanan, NIMS (Nandankanan Integrated Monitoring App) developed, tested and deployed.
- Three days Health camp organized with 199 staff availing services.
- Three days Eye check -up camp with 216 numbers staffs availing services.
- In order to motivate the field staff, a cricket tournament for staff conducted.



Conservation Breeding & Research

- Assistant Education Officer, Laboratory Technician, and Biological Data Manager engaged.
- 2nd phase of the project "Species Recovery of Gharial in river Mahanadi" implemented.
- Procurement of RT PCR, high end microscope and 80°C deep freezer for Zoo Laboratory.
- Six tigers, one Indian pangolin, and ten Mouse deers were born under conservation breeding programme.



Education & Outreach

- Ambassadors for Nandankanan got selected in 53 numbers of schools all over Odisha, through the education programme "Zoo Ambassador Programme"
- Students' education programme "One day at Nandankanan" organized for 18 Batches with 2554 number of students participating.
- Zoo Outreach programmes organized in 22 schools.
- Friends of Nandankanan," an online community for well-wishers of Nandankanan formed through the website of Nandankanan on 8th July, 2023.
- MoU signed with Centurion University of Technology and Management (CUTM), Bhubaneswar on 24.04.2023.
- Zoo Volunteers Programme launched on June 14, 2023 with 60 volunteers.



HIGHLIGHTS OF ODISHA FORESTRY SECTOR - 2024

- Felicitation of retired veterinarians of Nandankanan Zoological Park on World Veterinary Day-2023.
- Van Mahotsav 2023" celebrated with NWCSO on July 4, 2023.
- Celebration of Wildlife Week, 2023 observed on all days with three programmes each day.
- Collaborative workshop with NWCSO on "Ex-situ Conservation in Odisha- Present status & way Forward" for all zoos of Odisha Zoos.
- Important Eco/ important days celebrated on 14 individual days.



Development of State Botanical Garden

- New Bambusetum displaying 70 species of bamboos.
- Hydrophyte Garden showcasing 60 species with the Hydrophyte Museum featuring different species.
- New Website launched for State Botanical Garden.
- 32 awards won in different important state level flower show competitions.
- 2 number of water ATMs, three pre-fabricated toilets and one drinking water unit were installed to enhance the visitor amenities.
- Renovated the Forest Guest House (FRH-2).



HIGHLIGHTS OF ODISHA FORESTRY SECTOR - 2024



Habitat management

- In order to ensure the health of lake ecosystem of Kanjia, deweeding done in the entire stretch of the lake.
- Rejuvenation of Kiakani lake was carried out.



"World-class Nandankanan": a 5T initiative of the State Government

- On 23rd June, 2023, Hon. Chief Minister of Odisha declared that Nandankanan will be transformed to a world-class Zoo.
- Accordingly, a new Master Plan of Nandankanan Zoological Park for the period of 2023 to 2043 was prepared and was approved by the Central Zoo Authority (CZA) on 18/12/2023.
- A dedicated Project Management Unit for implementing new initiatives started functioning from 18th September, 2023.
- Two Consultants for landscaping, hardscaping and design of selected enclosures at Nandankanan and State Botanical Garden have been on boarded and work is under progress.
- New Ropeway opened for visitors.
- Concept plan for construction of Tunnel aquarium has been approved by the State Government and preparation of RFP in progress.
- Proposal for providing outlet for Kanjia lake prepared by the Water Resource Department has been approved and funds granted.
- Proposal for up gradation of toy train in PPP got in principle approval.



DIVERSION OF FOREST LAND

9.1. Diversion of Forest Land under Section 2 of F (C) Act, 1980

About 65974.950 hectare of forest land has been diverted under the Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980 for 594 number of different developmental projects as on 31.12.2023, the details of such diversion are reflected below.

Name of the Sector	No. of Proposals	Forest Area diverted (ha)
Irrigation	91	11163.824
Industry	35	4445.145
Mining	204	34939.283
Energy	08	159.45
Road & Bridges	60	1841.591
Railway	31	3086.401
Defence	04	3865.25
Human Habitation	06	403.850
Transmission	87	4608.749
Others	68	1452.397
TOTAL	594	65974.950

9.2. Diversion of Forest Land under Section 3 (2) of Forest Rights Act 2006

The Scheduled Tribes & Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 secure individual or community tenure or both. The Ministry of Environment, Forests & Climate Change, Govt. of India have authorized Divisional Forest Officers to grant permission for diversion of forest land up to 1.0 hectare in each case and this involves felling of trees not exceeding 75 numbers per hectare for small projects in 13 categories as envisaged under section 3 (2) of Forest Rights Act, 2006. About 1761.182 hectare of forest land has been diverted for 4096 number of different small developmental projects under the above Act as on 31.12.2023. The sector-wise details are given below.

Name of the Sector	No. of Proposals	Forest Area diverted (ha)
Anganwadi	21	1.164
Electric Line	645	330.124
Water Harvesting Structure	61	20.648
Tank & Other Minor Water Bodies	74	20.287
Drinking Water Supply & Water Pipeline	758	142.330
Irrigation	92	38.895
Road	919	587.162

HIGHLIGHTS OF ODISHA FORESTRY SECTOR - 2024

School	987	470.467
Community Centre	216	58.919
Vocational Training Centre	79	42.160
Hospital	31	14.921
Telephone Line	157	7.751
Non-Convention Energy Source	5	4.044
Fair Price Shop	1	1.000
Others	50	21.310
TOTAL	4096	1761.182

9.3. Diversion of Forest Land under General Approval by State Government

The Ministry of Environment, Forest & Climate Change, Government of India have authorized the State Government to grant General Approval under Section-2 of Van (Sanrakshan Evam Samvardhan) Adhinyam, 1980 for diversion of forest land up to 5 hectare in each case (in two laning of roads, the area is not limited to 5 hectares) for creation of critical public utility infrastructure by Government Departments and this involves felling of trees not exceeding 50 numbers of trees per hectare in Left Wing Extremism (LWE) affected districts in 15 categories. As on 31.12.2023, about 82.799 hectare of forest land has been diverted under the above Act for 20 numbers of different developmental projects in LWE districts, the details of such diversion are reflected below.

Name of the Sector	No. of Proposals	Forest Area diverted (Ha.)
Road	07	53.540
Stone Quarry	01	2.992
Police Establishment	04	3.972
Drinking Water Supply	04	6.241
Power Sub-Station	01	2.833
Irrigation	01	4.880
Transmission Line	01	4.261
School	01	4.160
Total	20	82.799

9.4. Rights to Tribal and Other Traditional Forest Dwellers (OTFD)

The Tribal and other Traditional Forest Dwellers have been granted individual rights and community rights as per provisions of the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Rights) Act, 2006. The detail picture on the titles issued under individual and community right up to 31.10.2023 is given below.

Category of Right	Titles issued	Forest Area involved (In Hectare)
Individual	458775	271546
Community	7817	151479

Source: ST&SC Development Minorities & Backward Class Welfare Department

DEVELOPMENT OF ECO-TOURISM

10.1. Eco Tourism Policy

As per Ecotourism Policy of the State, Forest, Environment & Climate Change Department (Wildlife Organization) is the Nodal Agency for development of ecotourism in the State. The department prioritizing the need of getting support of forest dependent communities for Forest & Wildlife Conservation initiated "Community Based Eco-tourism" during the year 2011-12. Subsequently, Ecotourism gained momentum from 2016-17 onwards.

10.2. Eco Tourism Destinations

50 Ecotourism destinations have been developed in different Forest and Wildlife areas of Odisha covering 20 revenue Districts including important tribal areas of Mayurbhanj, Sundargarh, Malkangiri, Koraput, Kandhamal, Bargarh, Nayagarh etc. 435 rooms are available to accommodate 1338 number of Eco-tourists/days. Forest dependent communities are made stakeholders in Ecotourism and major share of income generated from Ecotourism goes to the community members. There has been gradual increase in tourist footfall and income. Booking for all Ecotourism sites has been made online through www.ecotourodisha.com.



Nature camp at Dambargarh in Boudh Forest Division



Boating at Debrigarh Nature Camp in Hirkud Wildlife Division



Nature Camp at Satkosia Sands Resort (Badmul) in Mahanadi Wildlife Division



Boating through Bichitrapur Mangroves, Balasore WL Division

TABLE-1: Eco-Tourism Destinations in the State

District	Forest Division	Destination	Location
MAYURBHANJ	DD SIMILIPAL(N)	Similipal Nature Camps	Gurguria
			Jamuani
			Kumari
			Ramatirtha
			Barehipani
NAYAGARH	MAHANADI(WL)	Satkosia Sand Resorts	Satkosia Sand Resort (Badmul)
	NAYAGARH(T)	Sidhamula Nature Camp	Sidhamula
KENDRAPADA	RAJNAGAR(WL)	Bhitarkanika Nature Camps	Dangmal
			Gupti
			Habalikhati
ANGUL	SATOKOSIA(WL)	Satkosia Nature Camps	Baghamunda
			Chhotkei
			Purunakote
			Tarava
			Tikarpada
BARGARH	HIRAKUD(WL)	Debrigarh Nature Camp	Debrigarh
	BARGARH (T)	Nrusinghnath Nature Camp	Nrusinghnath
KANDHAMAL	BALIGUDA(T)	Daringbadi Nature Camp	Daringbadi
	PHULBANI(T)	Phulbani Nature Camps	Phulbani
			Mandasaru Valley
PURI	CHILIKA(WL)	Chilika Nature Camps	Rajhans
			Manglajodi
			Berhampura
	PURI(WL)	Nuanai Nature Camp	Nuanai
			Mangrove Retreat Nature Camp
BALASORE	BALASORE(WL)	Bichitrapur Nature Camp	Bichitrapur
		Chandipur Nature Camp	Chandipur
		Rissia Nature Camp	Rissia
SUNDARGARH	BONAI(T)	Khandadhar Nature Camp	Khandadhar
		Tensa Nature camp	Tensa
	SUNDERGARH (T)	Sarafgarh Nature Camp	Sarafgarh
KHORDHA	CHANDAKA(WL)	Chandaka Nature Camps	Deras
			Godibari
	KHORDHA (T)	Barbera Nature Camp	Barbera
KEONJHAR	KEONJHAR(T)	Sanghagra Nature Camp	Sanghagara

HIGHLIGHTS OF ODISHA FORESTRY SECTOR - 2024

GANJAM	GHUMSUR NORTH	Giant Squirrel Nature Camp	Kaliamba
		Blackbuck Nature Camps	Saluapali Bhanjanagar Dam
	GHUMSUR SOUTH		Chermaria
	BERHAMPUR (T)	Ghodahada Nature Camp	Ghodahada
CUTTACK	ATHGARH(T)	Ansupa Nature Camp	Ansupa
	CUTTACK(T)	Mahavinayak Nature Camp	Mahavinayak
JAJPUR		Olasuni Nature Camp	Olasuni
DHENKANAL	DHENKANAL(T)	Saptasajya Nature Camp	Saptasajya
MALKANGIRI	MALKANGIRI (T)	Chitrakonda Nature Camp	Chitrakonda
		Satiguda Nature Camp	Satiguda
NUAPADA	KHARIAR (T)	Patora Dam Nature Camp	Patora Dam
KORAPUT	KORAPUT (T)	Koraput Nature camp	Koraput (Pine Forest)
KALAHANDI	KALAHANDI (N)	Rabandhara Nature Camp	Rabandhara
BOUDH	BOUDH (T)	Dambargarh Nature Camp	Dambargarh

TABLE-2 : Footfall of Visitors & Income generated

Year	No. of Visitors	Income (In lakh)
2016-17	11,500	157.00
2017-18	17,148	340.00
2018-19	29,024	561.00
2019-20	46,019	685.00
2020-21	56,962	832.27
2021-22	70,216	1051.43
2022-23	1,32,053	1379.12
2023-24 (Till 28th February 2024)	1,33,178	1338.72

10.3. Employment Generation

As of now more than 650 local community members are engaged for managing 50 Ecotourism destinations all over the State & earning their livelihood, majority of them are rural women and tribal. Gradually a greater number of community member segregating enrolled in Ecotourism activities. Ecotourism has been an alternative income for them as they earlier used solely on forest for their survival by poaching, smuggling, fishing, collecting honey, firewood, etc. Indirectly, 5 to 6 villages per Ecotourism project are now earning their livelihood by providing daily requirements to the Ecotourism projects (i.e., by selling vegetables, handmade articles, different food items, milk, non-veg products, travel facilities etc). All the community members have been trained on hospitality & Ecotourism services for proper management of the

HIGHLIGHTS OF ODISHA FORESTRY SECTOR - 2024

destinations. They play different roles in management of Nature Camps i.e., Housekeeping, accounting, store, reception, service, cooking, cleaning etc. The total income generated through online booking is shared as below to respective community accounts. Forest & Environment Department, Government of Odisha have approved the standard income sharing mechanism of Ecotourism destinations as mentioned below (excluding 10% which is available for OFDC Ltd. for incentive to Tour Operators, maintenance of Ecotour portal and advertisement / promotion of Ecotour properties).

Components	%Share	Purpose
ETG Wage Salary (Online release to respective Community accounts)	35%	Shared by of the Community towards wages
Recurring Expenses (Online release to Community account)	25%	For day-to-day expenses & management of Nature Camps. (Fooding of visitors, fuel, electricity etc.)
Infrastructure Development (Online release to Community account)	10%	Maintenance & Improvement in infrastructures etc.
EDC Share (Online release to Community account)	10%	For developmental work in local villages
Corpus Fund [with PCCF (WL) for remuneration of Hospitality Experts engaged in Nature Camps etc.]	20%	Remuneration of professional consultant sengaged in different Ecotourism Destinations & other contingencies etc.
Total	100%	



Hospitality Training by Institute of Hotel Management at Mangalajodi in Chilika Wildlife Division

10.4. Facilities for Eco-tourists

Boating facilities have been created in Ecotourism destinations like Bhitarkanika, Debrigarh, Nuanai, Bichitrapur, Satkosia, Chilika, Chandaka, Sarafgarh, Chitrakonda, Satiguda, Badmul etc. For safety of tourists, Decks & Floating Jetties have been constructed and other ancillary facilities have been made available for all Ecotourists. Other activities like Cycling, Birding, Sports, Trekking, Farmland visits, Star gazing, Cultural programmes, etc. by local communities are being introduced in all destinations. Ecoguide (one person acquainted with local trees, herbs, birds, animals etc. from the community) service is provided in all Nature Camps. Display of wildlife movies, library facilities along with Souvenir shops, watch towers for sighting wild animals have also been developed in all destinations. Safari Tourism is functioning in Chandaka, Debrigarh, Similipal, Rabandhara, Berbera & Kapilash Wildlife Sanctuary with open Jeep as well as Air-Conditioned Safari vehicles.



Boating Jetty at Tikarpada Nature Camp in Satkosia Wildlife Division, Angul



Habalikhati Nature Camp in Mangrove Forest Division (Wildlife), Rajnagar

HIGHLIGHTS OF ODISHA FORESTRY SECTOR - 2024



ETG members of Barehipani Nature Camp in Similipal Wildlife Division



Jungle Safari at Debrigarh in Hirkud Wildlife Division



Luxury Cruise Ride at Debrigarh in Hirkud Wildlife Division



Satiguda Nature Camp in Malkangiri Forest Division



Koraput Pine Resort in Koraput Forest Division





Cottages at Mangrove Retreat Nature Camp, Astaranga in Puri Wildlife Division

10.5. Promotion of Ecotourism as part of 5T initiative

Ecotourism is listed as one of the Transformational Action points (5T) of Govt of Odisha under Forest, Environment & Climate Change Department. Upscaling of Ecotourism activities going on in the State, better services and management through professionals are the priority for taking Odisha Ecotourism to next level.

Forest & Tourism Department are signatory to a joint MoU till 7th January 2026 for promotion of Ecotour-Nature Camps throughout India and abroad. Eco-tour website www.ecotourodisha.com has been embedded in the website of Odisha Tourism website www.odishatourism.gov.in for better promotion of ecotourism destinations & for enhancing the booking of Nature Camps. Social media promotion of Ecotourism destinations is done on regular basis in Face book, Twitter, Instagram etc. jointly by Tourism & Forest Department.



10.6. New Up-coming Ecotourism Destinations

District	Division	Destination
Koraput	Koraput	Deomali Hills
Nayagarh	Nayagarh	Sidhamula (Upgradation)
Gajapati	Gajapati	Mahendragiri Hills
Kalahandi	Kalahandi South	Jakam
Mayurbhanj	Similipal North	Nawana
Boudh	Boudh	Kularikuda
Cuttack	Satkosia	Baliput
Jagatsinghpur	Cuttack	Dhaltangarh

10.7. Awards and Accolades

During the year 2019 the community model of ecotourism adopted by Odisha has received "Best Ecotourism Initiative Awards" by Federation of Indian Chambers of Commerce and Industry (FICCI).

10.8. Benefits of Community Managed Nature Tourism

- ❖ Livelihood support to the forest dependent communities of State.
- ❖ Employment to rural women & tribal communities in wildlife areas who were earlier dependent on poaching & anti forestry activities for their living.
- ❖ Prevention of forest fire and poaching in those landscapes where communities are engaged in Ecotourism activities.
- ❖ Communities are running programmes in each destination. Ecotourists are engaged in different activities like trekking, birding, boating, cycling, farm land visit, cultural programmes by locals, safari, watching wildlife movies in Nature Camps, can rope walk etc. to provide the visitor holistic experience on forest, culture & traditions of the local communities. Eco guides, boatman etc. employed in Ecotourism destinations are all local sand trained.
- ❖ The Ecotourism destinations have been developed covering different landscapes of the State i.e., forests, hill stations, lakes, rivers, beaches, lagoon etc. which also provides basic knowledge to the tourists about natural ecosystems.
- ❖ As Ecotourism destinations are providing job opportunities for the local communities, they themselves are conserving & protecting Nature and also maintaining cleanliness of the landscape. All destinations are maintained free from plastics.

FOREST RESEARCH

11.1. Silviculture Research

Silvicultural research in Odisha aims to optimize forest management practices, focusing on species diversity, ecological sustainability, and economic viability. The focus of research is to investigate tree growth patterns, regeneration techniques, and biodiversity conservation strategies to enhance forest productivity while preserving ecological balance. This research plays a crucial role in fostering sustainable forestry practices and mitigating environmental challenges in the region. Keeping in view on our vast stretch of forest cover, the Forest Research Wing with its head quarters at Angul was created during the year 1936 with a vision to explore various strategies & provide scientific support for decision making on matters related to forestry with particular emphasis on conservation, sustainable utilization and scientific management of our forest resources in the state. Subsequently the head quarters was shifted to Bhubaneswar in the year 1993 and one more Silviculture division was created with head quarters at Rayagada during the year 2003 for imparting focus on conservation strategy of Forest wealth in KBK districts which is having rich biodiversity.

In the present scenario, it is observed that though the forest cover is increasing, there is always a threat to our indigenous growing stock. Thus it is the need of the hour to give a fillip to the conservation strategy in the back drop of dwindling growing stock and to create employment opportunity and livelihood support for the forest dwellers through scientific management by utilizing our existing NTFP resources.

The research wing is having 19 nos of RGs and 04 nos HTNs in the state, where in different Silviculture studies are being conducted under guidance of the experienced officers of the state and scientists. The list of different Silviculture plots existing in the state are as follows.

Sl. No	Item	Number of Existing Plots	Area in Hectare
1	Research Garden	19	465.6
2	Preservation Plot	17	820.04
3	Sample Plots	20	5.985
4	Hi-tech Nursery	04	525.5
5	Seed Orchards	43	44.03
6	Seed production Area	11	66.63
7	Plus Tree	2308	-
8	Candidate Plus Tree	7720	-

Various kinds of research programmes are being carried out in this Division. The details are listed below:

1. Establishment of A Soil Testing Laboratory

A new Soil Testing laboratory has been established in the Division for analysis of different soil parameters like pH, EC, OC, N, P, K of collected soil sample from different sites for better forest management and conservation efforts. Efforts are on to institutionalize soil testing in the afforestation programmes of the department so that better results in terms of survivality is achieved. The establishment of a soil testing laboratory would be instrumental in assessing critical soil parameters like electrical conductivity (EC), organic carbon (OC), pH levels and nutrient composition (NPK). By conducting thorough analyses, it would enable informed decisions on plantation management, ensuring optimal conditions for tree growth, fostering biodiversity, and sustaining the ecosystem's health and productivity.



2. Strengthening of Existing Seed Testing Laboratory

A seed testing laboratory had been established as a part of seed development cell during the last financial year. At present testing is being carried out as per ISTA recommendation. Silviculture Division, Bhubaneswar and Rayagada (Bolangir Research Garden) have taken the responsibility of collection, processing, grading, certification and distribution of genetically superior seeds of different forestry species to the various Divisions of the State. The activities of the cell can be categorized into functions of two units, one unit to execute field works and the other unit to carry out the laboratory experiments. These units could be termed as Seed Development Unit and Seed testing and Certification Laboratory.

(a) Seed Development Unit

- (i) Maintenance of existing plus trees, seed production areas, clonal seed orchards, Germ Plasm Bank, multiplication garden etc.
- (ii) Identification and maintenance of new plus trees and seed production areas.
- (iii) Establishment of new clonal seed orchards, GPBs and multiplication gardens.
- (iv) Collection and storage of quality seeds of different species.

(b) Seed Testing and Certification laboratory

- (i) Registration
- (ii) Physical Purity Test
- (iii) Germination Test
- (iv) Moisture determination test
- (v) Biochemical Test for viability
- (vi) Certification

Some of the results of the seed testing lab has been reproduced below.

VIABILITY & GERMINATION TEST REPORT OF SEEDS					
Sl. No.	Local	Scientific Name	Conductivity of the Leachate of the sample (In μ s)	Moisture %	Germination %
1	ASOKA	<i>Saraka asoca</i>	1.81	27.8	43
2	BAULA	<i>Mimusops elengi</i>	1.11	9.3	54
3	GANGASIULI	<i>Nyctanthus arbor tristis</i>	34.78	6.35	40
4	GENDULI	<i>Streculia urens</i>	17.99	11.4	71
5	KALASIRISA	<i>Albizia lebbeck</i>	4.72	11.35	19
6	KANGADA	<i>Xylia xylocarpa</i>	41.37	11.9	30
7	KARANJA	<i>Pongamia pinnata</i>	3.7	10.05	87

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8	KOCHILA	<i>Strychnos- nux vomica</i>	7.65	10.65	40
9	KRUSHNACHUDA	<i>Delonix regia</i>	0.14	11.25	14
10	MEHOGANY	<i>Swietenia macrophylla</i>	1.29	9.15	91
11	NAGESWAR	<i>Mesua ferrea</i>	4.04	9.08	44
12	PALASA	<i>Butea monosperma</i>	8.14	13.65	89
13	RAI	<i>Dillenia pentagyna</i>	11.94	9.05	26
14	RAKTA CHANDAN	<i>Pterocarpus santalinus</i>	63.15	11.65	37
15	ROHINI	<i>Soyamida febrifuga</i>	69.26	9.4	15
16	SUBABUL	<i>Leucaena leucosephala</i>	13.48	4.45	55
17	SUNARI	<i>Casia fistula</i>	7.14	13.05	40
18	TENTULI	<i>Tamarindus indica</i>	4.16	13.15	90

The laboratory has been strengthened by way of procurement of germinators and incubators to further aid seed certification.





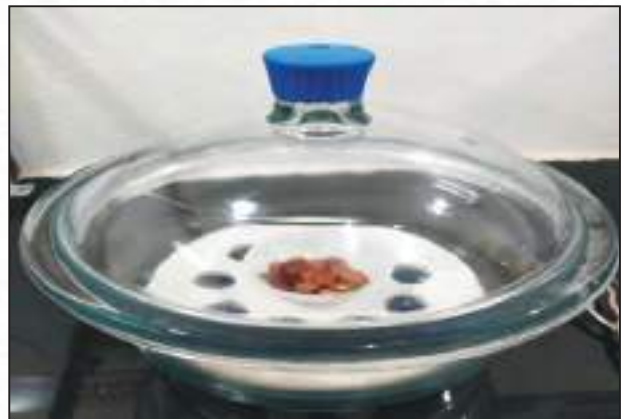
The results of the experiments of the seed testing laboratory procedures are reproduced below:

KARANJA SEEDS (*Pongamia pinnata*)

a. PURITY TEST



b. MOISTURE DETERMINATION TEST



c. GERMINATION TEST



d. VIABILITY TEST



3. Establishment of Trial Plot Casuarina hybrid

The focus of research activities has been on building collaborations. Accordingly establishment of trial plots for assessment of improved hybrids of Casuarina species in collaboration with IFGTB, Coimbatore at 4 sites of both Silviculture Division has been carried out to evaluate the Casuarina hybrid clones for higher productivity and wood quality in the context of Odisha. Details of Casuarina hybrids/ Seed lots planted in clonal proving trial are given below.

The sites are Tartua HTN, Ajodhya HTN, Bhasma HTN and Bolangir Research Garden.

Lot No.	Code	Source
1	CH-1	Hybrid clones developed by Casuarina equisetifolia X Casuarina junghuniana
2	CJ-1	Male clone of Casuarina junghuniana
3	CH-2	Hybrid clones developed by Casuarina equisetifolia X Casuarina junghuniana
4	CE-SSO	Seed orchard seedling of Casuarina
5	CH-3	Hybrid clones developed by Casuarina equisetifolia X Casuarina junghuniana
6	CJ-9	Male clone of Casuarina junghuniana
7	CH-4	Hybrid clones developed by Casuarina equisetifolia X Casuarina junghuniana

8	OD local	Odisha local seedlings
9	CH-5	Hybrid clones developed by Casuarina equisetifolia X Casuarina junghuniana
10	OD local	Odisha local seedlings



4. Spacing Trial Study

Spacing trial study of *Pterocarpus marsupium* and *Dalbergia latifolia* has been taken up in Bhasma Hi-tech nursery of Sambalpur Research Range over 2.16 ha. This would help to assess time series analysis of volume optimization / maximization of carbon sequestration in different spacing of plantation (2mtr X 2mtr, 3mtr X 3mtr, 4mtr X 4 mtr, 5mtr X 5 mtr).



5. Enrichment Planting Inside Old Teak Plantation

Enrichment planting inside old teak plantation at Khandagiri Research Garden has been taken up as an intercrop and to assess the growth of the *Terminalia* species and other species in the Teak plantation area over an area 1.0 ha. This year plantation has been carried out over 2500 nos. of seedling of different species like Arjuna, Asana, Bahada, Sissoo, Sidha, Piasal etc. Enrichment plantation of *Terminalia* species within old teak plantations presents a sustainable approach to diversifying forest ecosystems and enhancing their resilience. *Terminalia* species, known for their ecological benefits and commercial value, complement the existing teak stands, enriching biodiversity and ecosystem services. Through strategic planting, these species contribute to soil enrichment, carbon sequestration, and habitat restoration, while also offering potential economic opportunities. This integrated forestry practice fosters ecological balance,



improves overall forest health, and mitigates risks associated with monoculture plantations, ensuring long-term sustainability and resilience against environmental pressures like climate change and pest infestations.



6. Candidate Plus Tree

Candidate plus trees of important indigenous species have been indentified and selected on the basis of exceptional rate of growth form and resistance to adverse factors to obtain significant amount of genetic gain as quickly as possible. During the current year steps has been taken to identify the plus tree from the candidate trees with the collaboration of ICFRE, Derhadun under the guidance CCF, T&D, Cuttack. Now focus is being made to collect seeds from Plus trees of indigenous species. In total 7720 nos. of candidate trees and 2308 Plus trees have been selected in Bhubaneswar and Rayagada Silviculture Division from 2019-20 to 2022-23 covering different Reserve Forests of the state.



7. Raising Root Trainer Seedling of Indigenous Species

With a focus on raising indigenous species not normally part of afforestation programmes of the state a programme for raising indigenous species has been initiated this year employing root trainer technology. The large scale use of polypots for raising seedlings creates tremendous environmental hazards thereby inviting pollution in the vicinity of natural forests while carrying out massive plantation in the open forests. In order to minimize the pollution, steps have taken to introduce seedlings in hycopots permanently made for the purpose which are reusable and produce better quality planting material in comparison to polypots because of stronger root system of the seedlings.



8. Trial Plots of Indigenous Species

It is revealed that some of the valuable forest species are under threat and unscientific exploitation of MFP from the trees makes them more vulnerable. Hence focus on conservation and propagation of some indigenous trees are being given by raising seedlings and creating trial plots in RG/HTN. In the current year, the plantation of Medha, Bandhana, Padhel, Kaintha, Phanphana, Ritha, Ashok, Raktachandan, Ambada, Tentuli, Bela have been taken up in various research gardens and it is proposed to create large scale planting stock of indigenous species for supply to the divisions for its propagation in natural forests.





9. Production of Quality Planting Material (QPM)

With the intention of raising non-teak species in the nursery, effort is being made to collect different indigenous seeds from the forest particularly emphasizing the collection of seeds from SPA, Candidate plus trees and Trial plots. Since the traditional production of teak stump is discontinued, the collection of seeds of Sal associates was a difficult task. Raising of nursery in root trainers and mother beds (stump) was initiated for different indigenous species.

In total 4000000 nos. of quality planting material of indigenous species have been raised in Bhubaneswar and Rayagada Silviculture Division for distribution to different forest divisions of the state for afforestation programme during 2023-24.



10. Wild Fruit Bearing Species

Wild Fruit bearing species like Guar Koli, Karanda Koli, Pharsa Koli, Dalsingha, Hada Kankali, Nirasa Koli, Bhainchna Koli, Sagada batua Koli etc has been raised at Khandagiri Research Garden in 500 CC hycopots. These trees are popular in state of Odisha, where their beauty and productivity can be appreciated. They are also important to many ecosystems, providing food and habitat for variety of animals.



11. Publication of Journals

Publication of results of experiments by way of journals articles and working paper series as detailed below.

Sl. No	Name of the Book	Experiments / Study
1	Statistical Modeling of Height Growth, A case study of Forestry Plantations in Odisha. (WPS (SD): 01/2023 Silviculture Working Paper Series)	Data collected from different urban plantation sites of the states and soil analysis report of each site
2	Establishment of Seed Testing Laboratory (WPS (SD): 02/2023 Silviculture Working Paper Series).	Establishment of seed testing laboratory for analysis of purity, moisture, germination, viability of seeds before used for QPM.
3	Ecological Niche Modelling for Trees Improvement Programme and spatio temporal variation of Pterocarpus marsupium and Anogeissus latifolia under varied climate change conditions. (WPS (SD) :03/2023 Silviculture Working Paper Series)	Analysis of Candidate Plus Tree data of both Silviculture Division (Bhubaneswar & Rayagada).



12. Ficus Conservation Garden Along With Ficus Propagation Centre

In Khandagiri Research Garden over 3.0 ha of land a Ficus Conservation Plot has been established with 94 varieties of Ficus plants and more than 50 species of Ficus bonsai in the year 2018-19. Ficus species are large old trees which are often recognized for the provision of variety of ecosystem services to humanity. But the fact remains that they are declining day by day. Further existence of such keystone structures spans many human generations and they have become a historic link between the generations. Therefore protection and recognition of more culturally, historically, and ecologically important trees by establishing a comprehensive tree list of Ficus is the need of the day. The ecological roles of old trees in improving and maintaining the quality of water and soil, mitigating the impact of environmental pollution, carbon sequestration, regulation of microclimate, providing habitat for wildlife providing recreational and spiritual values, among other values are widely acknowledged.

It is pertinent to mention here that Ficus species perform very well with vegetative propagation. So exotic and rare species of Ficus can be multiplied and propagated along with few Bonsai plants. The study of growth and behavior of different species of Ficus is also being carried out in this garden. A Ficus propagation centre has been established to study the response of the various Ficus species to various types of auxins along with varying concentration. Thus the best method of propagation would be derived which will be utilized of mass multiplication.





13. Identification of SPA Area Occurring Naturally and Also Inside Different Research Station of Indigenous Species

Developing old trial plots of trees into seed production areas is a strategic move towards enhancing genetic diversity and ensuring sustainable forestry practices. By repurposing these plots, valuable data accumulated over years aids in selecting superior genetic stock for seed production. Through meticulous management, these areas become hubs for collecting high-quality seeds essential for reforestation and afforestation efforts. This initiative not only ensures the propagation of resilient and adaptable tree species but also promotes ecosystem restoration and biodiversity conservation. Consequently, it strengthens forest resilience against environmental challenges, secures future timber resources, and fosters the regeneration of healthy and diverse forest ecosystems. Accordingly efforts are on to select the best trial plots for conversion to seed production areas and also for selection of natural seed production areas.



Conversion of Old Trial Plots to Seed Production Areas



TRAINING, RECRUITMENT AND AWARDS

12.1. Training Programme

The Forest staff need to be both technically trained and extension oriented. The training of the initial recruits as well as orientation training for in-service personnel is extremely important. Updating knowledge on new emerging topics of different aspects of forestry, forest management and forest research is essential to augment the efficiency & skill of forestry personnel.

The training institutes need to be strengthened by providing modern training equipment, better amenities like boarding & lodging facility for the trainees, facility for sports & other curricular activities during training.

12.2. Training of Forest Range Officers and Frontline Staff

The training of frontline staff/ State level Executive officers is being under taken by the Forest Department under the supervision of Chief Conservator of Forests, Training and Development, Cuttack. The training imparted is of technical nature and as per the curriculum prescribed by Director of Forest Education, Dehradun. At present four training institutions are functioning in the State as detailed below.

12.2.1. Odisha Forest Rangers College, Angul

Odisha Forest Rangers College, Angul established in the year 1979 apart from conducting the regular Forest Range Officer Induction Course Training is also looking after various Refresher Course Training from the rank of ACFs to the rank of Forest Guards which is being sponsored by DFE, Dehradun as well as by the Forest, Environment and Climate Change Department, Government of Odisha.

During 2023-24 finance year, this institute has accomplished the 18 Month FRO Induction Course Training of 27 newly recruited FRO trainees of Odisha and 03 Trainees of Chhattisgarh in its 18th Batch of FRO Induction Course Training programme as per the existing Rules and guidelines. Furthermore, the institute has received another Batch of 46 directly recruited FRO trainees sponsored by the State Government of Chhattisgarh as its 19th Batch of FRO Induction Course Training since dt.26.12.2023 scheduled to get completed on 26.06.2025.

Being a Forest Officer, one must be physically and mentally fit for taking up any challenge in the field, in order to inculcate desired mental and physical robustness among the budding officer trainees; regular field exposure tour, trekking, weapon handling, combat tactics and Jungle survival training were conducted in house as well as in collaboration with the institutes of national repute such as ODRAF- Odisha, STF, Tamil Nadu, various National Parks & Sanctuaries of the country.

During the financial year 2023-24, this institute has successfully conducted exposure tour for its regular trainees to various parts of the country, like a 51 day long exposure tour to the



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Central and West Indian States such as Chhattisgarh, Madhya Pradesh, Rajasthan, Gujrat, Maharashtra, a 31 day long exposure tour to South Indian States such as Tamil Nadu, Karnataka, Kerala and to the Island of Andaman and Nicobar, a 40 day long exposure tour to Eastern, Northeastern and North Indian States such as Tripura, Nagaland, Arunachal Pradesh, Assam, West Bengal, Haryana, Punjab, Uttarakhand, Jammu & Kashmir, etc. apart from a 13 day long Weapon- cum- Jungle Survival Training at STF- Sathyamangalam, Tamil Nadu. An introductory tour to Northern parts of the state which includes important wildlife areas such as Bhitarkanika National Park, Kuldhia Wildlife Sanctuary and Similipal Tiger Reserve was also conducted. The trainees have also been exposed to the unique natural phenomenon of Arribada-mass nesting of Olive Ridley Turtles at Rushikulya River mouth and got exposed to the hatching of Olive Ridley Turtles hatchlings at Rushikulya rookery followed by its management.

In connection with various refresher course training meant for frontline staff, this institute has conducted four theme-based Refresher Course Training during the financial year 2023-24. This includes a 05day modular Refresher Training on "Forest Fire Prevention and Mitigation Strategies," (from 06.11.2023 to 10.11.2023) sponsored by DFE, Dehradun, a 06 day Refresher Course Training on "RTI Act. and its Implementation," (from 11.12.2023 to 16.12.2023), a 06 day Refresher Course Training on "GIS and Computer Application"(from 15.01.2024 to 20.01.2024) followed by a 06 day Refresher Course Training on "Silviculture and Research" (from 12.02.2024 to 17.02.2024).

With regards to infrastructural development within the institute during the financial year 2023-24, the old computer lab has been upgraded with 20 nos. of integrated advance computer system with the provision of high speed internet with the funding from Pr.C.C.F (WL) & CWLW, Odisha. Recently the old Gymnasium has been renovated which will be helpful in future training activities of Odisha Forest Rangers' College, Angul.



Mock Tranquilization Training Session, 18th Batch FRO-Induction Training Course, 2023-24

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Jungle Survival Training Module, 18th Batch FRO-Induction Training Course, 2023-24, STF-TN



Rescue Operation Training Module, 18th Batch FRO-Induction Training Course, 2023-24, STF-TN



Exposure to Mangalajodi, Chilka Lagoon, 18th Batch FRO-Induction Training Course, 2023-24



Exposure to Field Nursery, Dhandotopa, Athamalik, 18th Batch FRO-Induction Training Course, 2023-24



Refresher Training on Silviculture and Research, OFRC, Angul, 2023-24



Refresher Training on Forest Fire Prevention and Mitigation, OFRC, Angul, 2023-24



12.2.2. Foresters' Training School, Ghatikia, Bhubaneswar

Initially Forester Training School, Bhubaneswar was started in the year 1987 in a rented house subsequently shifted to the present permanent building at Ghatikia in the year 1994. Previously this Institute was functioning under the control of DFO, Khorda. During the year 2010 the institute has come under the direct control of the Deputy Conservator of Forests cum Director, FTS. This institute has imparted training to the VFWs, FEOs, Foresters and Forest Guards in induction courses from time to time. The ACFs, Forest Rangers, Foresters and Forest Guards are being trained in refresher courses.

Apart from the regular training curriculum the institute have the facility of Computer and GIS labs. There is an executive hostel to accommodate refresher trainees of other institutes FTS, G.Udaygiri and NFTS Champua. Induction trainees of various institutes also avail accommodation during their field visit in this hostel.

Recently the 48th Induction Trainees of 2022-23 batch have undergone Firearm training in Biju Patnaik State Police Academy for a week. This institute has also conducted Three Courses of Firearm Training for front-line staff keeping an eye to the field level problems of poachers. Further the induction trainees of 2022-23 batches were exposed to life saving techniques during various natural calamities in NDRF campus. Special sessions on Yoga in regular interval is the new addition to the existing training practice at this institutes. 37 nos. of Foresters of 2023-24, induction training batch is undergoing training now.

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A number of Refresher Trainings were successfully conducted by this Institute with eminent Forest personnels namely Sri D. Swain, IFS, Honorable Member Lokayukta, Dr Anup Nayak, IFS (Retd. PCCF (WL), Dr. A. K. Pattanaik, IFS (CCF T&D), Sri Sangram Keshari Behera, IFS (Director, Forestry Training, OFRC) as resource persons for the refresher course training.



Firing instruction to the trainees at Byree Firing Range during Firearms Training



Local tour of Induction Trainees to the Rajnagar (WL)



Induction Training Batch 2023-24 of FTS, Bhubanesar

12.2.3. Nicholson Foresters' Training School, Champua

Nicholson Forest Training School, Champua was established in the year 1927 by late Dr. H.F. Mooney, IFS the then advisor to the eastern states for imparting training in Forestry to the foresters of the province of Bihar, Orissa, and Eastern State Agency. It was the only institution of its type at that time in Bihar and Orissa. The original name of school was "Orissa State Forest School" which was changed to "Eastern State Forest School" in the year 1939. Subsequently, the school was renamed as "Nicholson Forest Training School" in the year 1950, in recognition of the meritorious service rendered by late Mr. J.W. Nicholson, IFS who was the first Conservator of Orissa. Even after separation of province, trainees from Bihar used to come for training till 1958. Mr. E. S. Higher was the first Director of Training School. Raisaheb S.K. Mukherjee was the first Instructor of the training school from 1927 to 1942. Till now 3411 numbers of trainees comprising of Foresters and Forest Guards including the present batch of trainees of Forest Guard have been passed out successfully from this institution.

During 2023-24 financial year, this institute has accomplished the 6-month Forest Guard Induction Course training of 160nos trainees in two batch (107th & 108th) Direct recruited Forest Guard induction course training programme as per the existing Rules and guidelines.

During this course, field tours were formulated as per the training manual in selected forest divisions of the State. Such as Keonjhar (T) Div'n, Similipal South(W/L) Div'n, Similipal North (W/L) Div'n, Karanjia (T) Div'n, Chilika (W.L.) Div'n, Chandaka (W.L.) Div'n, Khordha (T) Division, Puri (W.L.) Div'n, Nandankanan Biological Park, Cuttack Div'n, Balasore (W/L) Division, Mangrove Forest Division, Rajnagar, etc. to have their practical exposure with respect to departmental ongoing activities.

Apart from the tours, separate tranquilization and drone training also conducted in this institute. Physical training forms an important part of the training curriculum for which 1-hour physical training in the morning and 1 hour sessions for Games and Sports in the afternoon were made mandatory for all the trainees.

In connection with various refresher course training for frontline staff, this institute has conducted three Refresher course training during the financial year 2023-24 at FTS, Bhubaneswar.



Study Tour of 107th batch Forest Guard Trainees Champua



Passing out Parade of 108th Batch FG Trainees Champua

This included a 6-day long Refresher training on topic "Soil and Moisture Conservation Measure" (from dt.04.12.2023 to 09.12.2023), a 5day long Refresher training on topic "Wild Life (Protection) Act, 1972 another relevant Acts for wild Life Offence" (from dt.16.01.2024 to 20.01.2024) and a 3day long refresher training on "Forest Fire Protection and Prevention Measures" (from dt.22.01.2024 to 24.01.2024).

12.2.4. Foresters' Training School, G. Udayagiri

Foresters' Training School, G. Udayagiri was established in 1982 at G.Udayagiri Town of Kandhamal District occupying 11.5 acres of land. During 2021-22- 75 nos. and 2022-23- 72 nos. of Promotee Foresters have undergone 04 months Refresher Induction training Course in this School. During 2023-24 total 169 nos. of newly recruited Forest Guards trainees pass out from this school in two different batches.

During the financial year 2023-24, 06nos. Refresher Course Training programmes during November'2023 to March'24 for the Forester and Forest Guards has also been conducted successfully on different subjects.



12.3. Recruitment

Adequacy of staff and officials are of utmost importance for smooth management of forests and wildlife in Odisha. Considering the gravity of the situations recruitment process has been initiated for all ranks during last year to augment the personnel and present status is summarized hereunder.

1. 23 Assistant Conservator of Forests are undergoing training in CASFOS Dehradun since 18.07.2022. They will join in the state during July-2024. Further recruitment process for another 45 Assistant Conservators of Forests has been initiated through OPSC.
2. Forest Rangers form backbone of the department and lead in conservation linked livelihood support, sustainable management of forests & wildlife and other linked activities. After induction of 27 Forest Range Officer recently, action has already been initiated for filling up of another 131 Forest Rangers through OPSC.
3. Similarly for filling up of 316 posts of Foresters, advertisement has been uploaded in the website of OSSSC.
4. Out of 806 Forest Guards recruited by OSSSC, 698 Forest Guards are now serving in respective Forest Divisions. For filling of another 1677 Forest Guards, action has already been initiated and OSSSC has advertised.
5. For recruitment of 377 posts of Junior Assistant for District Cadre, action has already been initiated and under process at OSSSC.
6. 09 Junior Assistant are sponsored by OSSC for appointment in the Forests Heads of Department Cadre to strengthen administration. Further, the recruitment process for 08 Junior Grade Stenographers for Forest Heads of Department has already been notified by OSSC.

12.4. State Forestry Awards

State Forestry Awards are conferred, on the occasion of World Forestry Day, every year for outstanding work in afforestation and plantation activities to Gram Panchayats, Educational Institutions and students. As per the provision made in the Notification No. 8782-FE-PLANT-PLANT-0023/2019-F&E dated 04.05.2021 of Forest & Environment Department, Govt. of Odisha, since the year 2021-22, a cash award of Rs. 10,000/- for the Best Educational Institution (one for every sub-division) and cash award of Rs.20,000/- for the Best Gram Panchayat (one for every sub-division) are given each year for outstanding performance in plantation/afforestation work. These awards are given in district level functions each year on World Forestry Day. Further, the forest field staff (4 Forest Rangers, 12 Foresters and 24 Forest Guards) are honoured each with a cash award of Rs.10,000/-, a citation and a medallion for meritorious services and achievements in Forest protection, promotion of JFM, Afforestation and Plantation works, Forest and Wildlife Management, Forest Research and Kenduleaf operation.



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STATE MEDICINAL PLANTS BOARD, ODISHA

13.1. Constitution of Board

State Medicinal Plants Board, Odisha was constituted to ensure sustainable availability and use of medicinal plants. The SMPB is implementing various schemes under financial support received from State sector and Central sector.

On 6th June 2023 SMPB, Odisha had celebrated one Pledge activity under Mission Life campaign. Ministry of AYUSH emphasizing mind full and deliberate utilization instead of mindless west full consumption of resources. This event was organized at the campus of MPKC, Patrapada.

Two nos. of training programme on “Standard Cultivation Practices of Ashwagandha in Odisha” were conducted in Bhawanipatna of Kalahandi district & Paikamal of Bargarh district. 66 nos. of farmers have participated.

Two nos. of district wise school level essay writing and drawing competition on Ashwagandha as Health Promoter was conducted in Bhawanipatna and Sonapur.

SMPB, Odisha has organized 16th State Level Kalinga Herbal Fair at Bhubaneswar and two no. of Regional Kalinga Herbal Fairs at Rourkela & Phulbani.

A team consisting of 17 no. of Ashwagandha cultivators of Semiliguda Block of Koraput district and Thakurmunda Block of Mayurbhanj district have been selected for Exposure visit to Jabalpur, Madhya Pradesh accompanied by two no. of officials of SMPB, Odisha from 19th to 27th February, 2024. The purpose of visit is to collect information on utilization of medicinal plant produces in herbal industries including value addition and marketing and also regarding cultivation procedure.



Pledge activity on 6th June 2023 at MPKC, Patrapada, Bhubaneswar under Mission LiFE campaign, Ministry of AYUSH, New Delhi

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SMPB, Odisha has published a book entitled “Medicinal Plants used by tribes of Odisha” during this financial year after making of field survey all over Odisha on the Medicinal Plants used by the tribes.



One day Training Programme on Cultivation of Ashwagandha under Nation -wide Ashwagandha Campaign on 4th July 2023 at Paikmal, Bargarh.



School Level Essay Writing and Drawing Competition under Nation-wide Ashwagandha Campaign on 7th November, 2023 at B.M. High School, Bhawanipatna



Inauguration of 16th State Level Kalinga Herbal Fair, 2023 by Sri Pradip Kumar Amat, Hon'ble Minister FE&CC, Panchayati Raj and Drinking Water, I&PR, Govt of Odisha on 5th December, 2023 at IDCO Exhibition Ground, Unit-III, Bhubaneswar



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Unveiling of Medicinal Plants Book and Calendar during 16th State Level Kalinga Herbal Fair, Bhubaneswar on 5th December 2023



Regional Kalinga Herbal Fair, Rourkela held from 4th to 8th January, 2024



Inaugural ceremony of Regional Kalinga Herbal Fair, Phulbani held from on 10th to 14th January 2024



STATE COMPENSATORY AFFORESTATION FUND MANAGEMENT & PLANNING AUTHORITY (CAMPA)-ODISHA

14.1. Objectives

As per Hon'ble Supreme Court's Order dated 10th July 2009, the State Compensatory Afforestation Fund Management & Planning Authority (CAMPA), Odisha, was constituted vide Notification No. 13995/F & E dated 14.08.2009 with an objective of Conservation, Protection, Regeneration and Management of existing natural forests, Wildlife and their habitats and raising Site Specific Compensatory Afforestation, Penal Compensatory Afforestation etc. with utilization of funds deposited in Ad-hoc CAMPA towards Net Present Values of diversion of forest land for non-forestry purposes under Forest Conservation Act, 1980.

THE COMPENSATORY AFFORESTATION FUND ACT, 2016 has been enacted by the Hon'ble, President of India on 3rd August, 2016 and subsequently the rules framed in accordance to the Act as COMPENSATORY AFFORESTATION FUND RULES, 2018 on the 10th August, 2018 for smooth management of Compensatory Afforestation activities.

- ❖ The state CAMPA has formulated 14 Annual Plan of Operations (APOs) so far starting with APO 2009-10. The last one APO 2023-24 is being implemented from April 2023.
- ❖ Since inception of State CAMPA in 2009, 13 (thirteen) number of APOs have been implemented with total receipt of Rs.2644.15 Crore from Ad-hoc CAMPA and Rs.2630.68 Crore has been spent upto APO 2019-20 (October 2019).
- ❖ Further, a total sum of Rs.6284.19 Crore has been received from National Authority, CAMPA, New Delhi and kept in the public account to meet the expenses against forth coming APOs. Total expenditure of State CAMPA through budget provision upto APO 2022-23 is Rs.2868.81 Cr.

14.2. Achievement during APO 2022-23

14.2.1. Afforestation Activities

The following interventions under various afforestation components have been achieved.

- Site specific Compensatory Afforestation (CA) and Penal Compensatory Afforestation (PCA) etc. include 643.50 hectare of Block Plantation, 3024.61 hectare of ANR plantation, 168.078 hectare of Bald hill, 827.7615 hectare of ANR without Gap, and 13250 nos. tree plantation
- SSO Bamboo over - 76501 hectare,
- Block Plantation over - 2640 hectare
- ANR Plantation over - 49465 hectare
- AR Bald Hill Plantation over - 970 hectare
- AR Casuarina Plantation over- 150 hectare



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- AR Mangrove Plantation over- 133 hectare
- AR Fodder & Fruits Plantation over- 60 hectare
- ANR RET/ Medicinal Species- 2402 hectare
- Maintenance of Old Plantation - 139440.10 hectare



Silvicultural Operation of Bamboo



CA ANR Plantation



Fodder Plantation



ANR Plantation

14.2.2. Forest Protection & Prevention of Forest Fire

Under this head the following steps have been undertaken.

- Deployment of 213 firefighting squads in 37 Forest Divisions and 48 fire squads under Wildlife Divisions.
- Deployment of 2270 & 2740 nos. of rural unemployed youth for protection & conservation of forests & wildlife in 51 divisions.
- 226 no. hired vehicles in 37 Forest Divisions & 274 hired vehicles in Wildlife divisions engaged for forest protection duties.



14.2.3. Infrastructure Development

The following activities have been taken up under this component. They are:

- Construction of 09 nos. of Range Office, 13 nos. of Range Officer's Residence, 90 nos. of Forester's Quarters & 256 nos. of Forest Guard's Quarters,
- Construction of 128 nos. of Culverts, 376 nos. of Causeways and 25 nos. of Seizure Yard,
- Maintenance of 948.6 Km Forest Road



Forest Guard Quarter



Range Office

14.2.4. Wildlife Management

Under this component the following activities have been taken up such as:

- Management of Wildlife (Rs.177.84 Crore) in Protected Areas including Protection Activities, Anti-depredation Activities, Communication, Habitat Improvement, Infrastructure Development, Zoo Management & Implementation of Elephant Train Collision Mitigation Plan,
- Implementation of Site-Specific Wildlife Conservation Plan,
- Preparation of Comprehensive Wildlife Management Plan for the State
- Relocation of families from Similipal & Satkosia Tiger Reserves.

14.2.5. Other Programmes

It includes the following activities:

- Ama Jangala Yojana (37.13 Crore): Strengthening of VSS & Preparation of Micro Plan for maintenance of ANR & Block Plantation.
- Maintenance of Research Garden & other Research Activities like Adaptive Research / Tree Improvement Programmes/ Production of QPM.
- Construction of "State Forest Academy" at Shyamsundarpur, Chandaka, Bhubaneswar.

14.3. Highlights for APO 2023-24

The CAMPA Annual Plan of Operation 2023-24 is in operation since April, 2023 with financial outlay of Rs.1085.94 Crore which has been approved in the SLSC, against which Rs. 1055.13 Cr has been kept in State Budget. Meanwhile the National Authority has approved the APO at Rs.948.04 Cr. The APO 2023-24 is summarized below.

14.3.1. Afforestation Activities

- Site specific Compensatory Afforestation (CA), Penal Compensatory Afforestation (PCA) etc. over 183.674 ha of Block Plantation, 1377.44 ha of ANR Plantation, 393.07 Ha. of Bald Hill Plantation and 29346 nos. of tall tree planting.
- Regeneration of Degraded Bamboo Forests over 95000 hectare
- Block Plantation over 1395 hectare
- ANR Plantation over 20627 hectare
- Bald Hill Plantation over 968 hectare
- Fruit and Fodder Plantation over 184 hectare
- RET/ Medicinal with Gap Plantation over 7905 hectare
- Raising of 2.00 Crore 18 months old Seedlings for various Plantation activity.
- Soil Moisture Conservation (SMC) over 15,427 hectare



Raising of 18 months old seedlings



Nursery

14.3.2. Forest Protection & Prevention of Forest fire

- Deployment of 213 firefighting squads in 37 Forest Divisions and 48 fire squads under Wildlife Divisions.
- Deployment of 2270 & 2740 nos. of rural unemployed youth for protection & conservation of forests & wildlife in 51 divisions.
- 264 vehicles in 37 Forest Divisions & 274 hired vehicles in Wildlife divisions engaged for forest protection duties
- Creation & Maintenance of 19500 KM Fireline in Forest area and 7000 KM in Protected area.



Fire Fighting Squad



Fire Awareness



Fire Line



Use of Fire Blower

14.3.3. Infrastructure Development

- Construction of 06 nos. of Range Office, 04 nos. of Range Officer's Residence, 56nos. of Forester's Quarters & 186 nos. of Forest Guard's Quarters,
- Construction of 20 nos. of Seizure Yard,
- Construction of 134 nos. of Culverts and
- Maintenance & Repair of 1147 KM Forest Road

14.3.4. Wildlife Management

- Management of Wildlife (Rs.207.35 Crore) in Protected Areas including Protection activities, Anti-depredation activities, Communication, Habitat improvement, Infrastructure development, Zoo management & Implementation of Elephant Train Collision Mitigation Plan,
- Implementation of site-specific Wildlife Conservation Plan,
- Preparation of comprehensive Wildlife Management Plan for the State
- Relocation of families from Similipal & Satkosia Tiger Reserve.





Relocation Colony



Post Relocation meeting

14.3.5. Other Programmes

- Ama Jangala Yojana (Rs.27.21 Crore): Strengthening of VSS& maintenanceof ANR & Block Plantation& raising of seedlings.
- Maintenance of Research Garden & other research activities like Adaptive Research / Tree Improvement Programmes/ Production of QPM.
- Construction of "State Forest Academy" at Shyamsundarpur, Chandaka, Bhubaneswar.

14.3.6. Monitoring Mechanism (e-Green Watch)

Web based monitoring portal 'e-Green Watch' has been launched for monitoring and evaluation of all activities taken up under CAMPA in the state. The process of uploading the geo-reference of all activities undertaken in the portal has already been initiated and likely to be completed soon for their monitoring and evaluation by Forest Survey of India (FSI) & National Information Centre (NIC). Apart from that 3rd party monitoring and deployment of flying squads as internal vigilance have been setup for effective monitoring & checking of all CAMPA activities. Third party monitoring of 2022-23 APO is under progress.



ODISHA FORESTRY SECTOR DEVELOPMENT SOCIETY

15.1. Background

Odisha Forestry Sector Development Society (OFSDS) has been constituted as an autonomous society under the administrative control of Department of Forest, Environment and Climate Change, Govt. of Odisha primarily for implementation of Odisha Forestry Sector Development Project, Phase-I (OFSDP-I) during 2006-07 to 2014-15 with financial assistance from JICA (Japan International Cooperation Agency, formerly known as JBIC - Japan Bank of International Cooperation). Presently, the society is implementing three projects, namely- Odisha Forestry Sector Development Project, Phase-II (OFSDP-II), Ama Jangala Yojana (AJY) and OFSDS- OMBADC Livelihood Promotion Project in the selected Forest Divisions in the state. The Society is operated under the guidance of the High Power Committee headed by the Chief Secretary, Government of Odisha with Secretaries from 12 number of Departments as members. The Governing Body of the Society is headed by the Additional Chief Secretary to numbers of Govt., Department of Forest, Environment and Climate Change, Government of Odisha. The PCCF (Projects) and Project Director, OFSDS is the Member Secretary for both the High Power Committee and Governing Body of OFSDS.

15.2. Odisha Forestry Sector Development Project (OFSDP) Phase-I

Odisha Forestry Sector Development Project was initially formulated and implemented for a period of 7 years from 2006-07 to 2012-13. The project was implemented by the Department of Forest and Environment through Odisha Forestry Sector Development Society with the aim to restore degraded forests and to augment the income of villagers through promotion of sustainable forest management and community development, there by improving environment and alleviating poverty. The total project cost agreed as per the above agreement was Rs. 659.70 Crore (16,429 JPY million) with JICA loan of Rs. 559.69 Crore (13,937 JPY million) and Government of Odisha contribution of Rs.100.12 crore (492 JPY million). Subsequently, the total project outlay was revised and worked out to be Rs. 802.3 crore of which loan component came to Rs. 666.7 crore with the project period extended up to March 2015.

The project utilised an amount of Rs.790.26 crore till 31st March 2015. The reimbursement claims have been submitted for Rs.627.69 crore and total disbursement made by JICA up to March 2015 is Rs.622.46 crore. The project was implemented in 10 districts of Odisha i.e Angul, Balasore, Bhadrak, Deogarh, Gajapati, Kandhamal, Keonjhar, Koraput, Rayagada and Sundargarh covering 14 Forest and Wildlife Divisions namely Angul, Paralakheumndi, Phulbani, Baliguda, Koraput, Jeypore, Rayagada, Deogarh, Keonjhar, Bonai, Rourkela, Satakosia (WL), Balasore (WL) and Bhadrakh (WL).



15.3. Odisha Forestry Sector Development Project, Phase-II (OFSDP-II)

Odisha Forestry Sector Development Project, Phase-II is based on the learning of the Odisha Forestry Sector Development Project, Phase-I (OFSDP-I), which was implemented from 2006-07 to 2014-15. The learnings of OFSDP, Phase-I and of similar JICA assisted sustainable forestry management projects have been integrated into the Project Document of OFSDP, Phase- II.

Odisha Forestry Sector Development Project, Phase-II is an externally aided project being implemented in Odisha with the loan assistance from Japan International Cooperation Agency (JICA). The Executing Agency of the OFSDP- II is the Department of Forest, Environment & Climate Change, Govt. of Odisha, whereas the Odisha Forestry Sector Development Society is the Implementing Agency of the project. Such arrangements provide adequate flexibility in implementing the project activities. This project is for a period of 10 years from 2017-18 to 2026-27 and the total financial outlay of the project is Rs.1003.3 Crores, out of this JICA loan portion is Rs.848.60 Crores and State share is Rs.151.70 Crores.

The objective of the project is to promote sustainable forest management through community participation following Joint Forest Management mode of implementation and to promote sustainable livelihoods augmentation through inter-sectoral convergence.

The major themes of the project are:

- Sustainable Forest Management through Community Participation
- Livelihood Augmentation through Inter-sectoral Convergence
- Experiments in Biodiversity Conservation & Management
 - Satoyama Initiatives in Badarama Wildlife Sanctuary &
 - Scientific Monitoring of Bhattarkanika Conservation Area in Mangrove Forest Division (Wildlife), Rajnagar

This project is being implemented in 10 Revenue Districts and 12 Forest Territorial Divisions and 2 Wildlife Divisions of Odisha. The tenure of the project is ten years, which spans over 2017-18 to 2026-27. A total of 1211 number of Vana Surakshya Samiti (VSS) have been covered under OFSDP-II fold in phases from 47 Ranges (50 no. of FMUs). Similarly, 10 Eco Development Committee (EDCs) from Badarama Wildlife Sanctuary have also been brought under the fold of the project through the Satoyama Initiatives.



15.3.1. Project Outlay & Components

The Government of Odisha's share/contribution towards the project cost includes administrative expenditure for the implementation of the project in respect of PMU and 12 Forest Divisions and 2 Wildlife Divisions of the state. The Project outlay for the 10 years' project period is summarised below.

COMPONENTS	OUTLAY (Rs in Crore)
A. ELIGIBILITY PORTION - JICA loan	
Preparatory Works	83.4
Sustainable Forest Management	284.1
Sustainable Biodiversity Management	7.0
Livelihood Improvement	91.7
Capacity Development	73.5
Supporting Activities	131.2
Phase-out / Phase-In	5.0
Price escalation	116.3
Physical contingency	39.6
Consulting Services	16.8
Total	848.6
B. NON-ELIGIBLE PORTION - State Share	
Administrative cost	84.2
VAT for Material	16.6
Service Tax for Professional	35.3
Interest during Construction	13.9
Front end Fee	1.7
Total	151.7
TOTAL (A+B)	1000.3

15.3.2. Key Interventions under the project

The project is being implemented in JFM mode with active involvement of 1211 VSSs selected in 50 Forest Ranges within 12 Forest Divisions with execution of the biodiversity components in 2 Wildlife Divisions. For the purpose of community mobilisation and strengthening of the institutions like VSS/EDC, there is provision of engagement of the services of partner NGOs at the level of each implementing Divisions (DMU). Moreover, there is a provision for engagement of Animators at the level of each VSS for record maintenance and coordination of meetings, field level activities and convergence of programmes at the village level. The provision for Capacity Development of various stakeholders at different levels including the partner

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NGOs on various technical and managerial matters covering project implementation has tremendous impact on the project implementation. Income Generating Activities for enhancing the income of 3600 Women self-help groups has also been provisioned under the project.

PROJECT SCOPE

COMPONENTS	TARGETS
Sustainable Forest Management - JFM Mode	
ANR Plantation	51000 Ha.
Block Plantation	6000 Ha.
Drainage Line Treatment	1500 Ha.
Fire Protection	1710 km
Sustainable Forest Management Plan - Non-JFM Mode	
Farm Forestry	10000 Ha.
Drainage Line Treatment	750 Ha.
Permanent Nursery	6 numbers
Sustainable Biodiversity Management	2 Sanctuary
Livelihood Improvement	
Promotion of IGAs	3600 WSHG

15.3.3. Progress of Activities

Major activities implemented under OFSDP-II during the year 2022-23 are indicated below.

15.3.3.1. Preparatory work

Preparatory work across the 1211 VSSs from Batch-I to Batch-IV in 50 FMUs (47 Ranges) from 12 Project Divisions have been completed. The activities taken up under preparatory work include finalisation of VSSs, community mobilization, survey, demarcation, posting of pillar across the assigned area, conflict management, engagement of Partner NGOs at FMU level and Animators at VSS level to facilitate the implementation of project interventions. Comprehensive Micro Plan for all 1211 VSSs and 10 EDCs were prepared by the Communities during the preparatory phase.



15.3.3.2. Sustainable Forest Management Plan

Under this component, OFSDP-II has made the following progress in 2023-24 (till January 2024).

Component	Activities	Target & Achievements during 2023-24 (up to January 2024)		Cumulative Achievements up to January, 2024
		Targets	Achievements	
Drainage Line Treatment	DLT Establishment JFM Mode	26 Ha.	26 Ha.	1504.5 Ha.
	DLT Maintenance JFM Mode	1478.5 Ha.	1478.5 Ha.	1478.5 Ha.
	DLT Establishment Non-JFM Mode	13 Ha	13 Ha	756.29 Ha.
	DLT Maintenance Non-JFM Mode	743.29 Ha.	743.29 Ha.	743.29 Ha.
SMC	Fire line creation	28.5 Kms	28.5 Kms	1710.39 Kms
	Fire line maintenance	1681.89 Kms	1681.89 Kms	1681.89 Kms
	Consolidation of Forest Boundary	32 Kms	32 Kms	1897.81 Kms
Plantation	ANR Plantation	915 Ha.	915 Ha.	51006 Ha.
	ANR Maintenance	293 Ha.	293 Ha.	50091 Ha.
	AR plantation	50091 Ha.	50091 Ha.	6286 Ha.
	AR Maintenance	5993 Ha.	5993 Ha.	5993 Ha.
	Farm Forestry Plantation	2526.8 Ha.	2768.99 Ha.	8318 Ha.
Establishment of Hi-tech Nurseries	6 Hi-tech Nurseries have been established in Athamallik, Baripada and Ghumsur (North), Sambalpur, Subarnapur & Sundargarh Forest Divsiions with a capacity to raise 2.2 lakhs of Poly-pot Seedlings and 2.2. lakhs of Hyco-pot Seedlings in each Nursery every year.			

SMC WORK in 2023-24



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ESTABLISHMENT OF FIRE LINES in 2023-24



HI-TECH NURSERY



Badarohila Hi-Tech Nursery, Athamallik



Hi-tech Nursery Kaju, Sambalpur



PLANTATIONS IN 2023-24



15.3.3.3. Sustainable Biodiversity Management

Under this component two Wildlife Divisions viz. Bamra and Rajnagar have been selected.

15.3.3.4. Experiments on Bio-diversity Management

Several initiatives have been initiated under the project as experiments with the innovative process of Biodiversity conservation in some target sites of the Project Area.

A. Implementation of Satoyama Initiatives

Satoyama Initiative, a landscape based bio-diversity conservation and management with a focused sustainable livelihood initiatives, have been taken up in 10 numbers of Eco Development Committees in Badrama Wildlife Sanctuaries of Bamra Wildlife Division under OFSDP- II.

The Concept: "Satoyama" is a Japanese term for landscapes that include both human production activities and natural habitats, where human influence is an essential aspect of the local ecosystem. Satoyama Initiative is based on the principle that such landscapes, when properly managed, can benefit biodiversity and human livelihoods alike, rather than biodiversity and human livelihoods being in a state of conflict, thus leading to "society in harmony with nature".

The Coverage: The concept of SATOYAMA is being piloted in 10 villages, covering nearly 500 households and nearly 80% of household are tribal. The major occupation of the community members is agriculture. In addition to agriculture, people largely depend on wage labour for their income. The average land holding at community level is around 2 acres and around 10% of the households are landless.

Key interventions taken up at the EDC level include:

1. Formulation of Micro Plan of each EDC has been completed
2. Avenue Plantation across the village
3. Revival of traditional variety Paddy (Bhajana) in 1 ha land (pilot) of 14 farmers
4. Training on Bio-fertiliser & Bio insecticides preparation and its use



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5. Establishment of nutri garden through convergence in 32 households.
6. Supply of Smokeless Chullha to all households
7. Mushroom Cultivation, Apiculture, Livestock rearing etc. promoted through SHGs
8. Repair of Angan Wadi Centre and making it to functional
9. Clearance of invasive weed in the forest and SMC Measures: Gully Plugging, LBCD in all Nalas
10. Fire line construction and community driven protection of forest from fire
11. Solar Fencing for elephant depredation / reduction in man-animal conflict
12. Approach Pucca Road of 1 Km constructed through Rural Development Department, Govt. of Odisha
13. Revival of traditional equipment like Belana (Thrashing Equipment) and Dhinki (For Processing)
14. Declaration of plastic free - Eco friendly and open defecation free village.
15. 6 EDCs including 65 farmers marketed paddy of 15 different varieties about 20 metric tons at a cost of Rs.4.08 lakhs during January 2024.



Aromatic Paddy Seed Distribution under Satoyama initiative



Game tank for wild animals created under Satoyama initiative



Mo Bagicha initiative by EDC members in Badrama Area



*Clearance invasive weed in Badrama sanctuary area
Satoyama Initiatives under OFSDP-II*

B. Establishment of Scientific Monitoring System at Bhitarkanika:

Eco-system based Conservation Management of Bhitarkanika Conservation Area (BCA) is under implementation in Rajnagar Wildlife Division since December, 2017. National Centre for Sustainable Coastal Management, Chennai, Ministry of Environment, Forest and Climate Change, Government of India has been awarded the assignment to formulate the long term monitoring plan for eco-system based conservation and management of Bhitarkanika Conservation Area.

National Centre for Sustainable Coastal Management (NCSCM), Chennai has been preparing a database pertaining to different parameters i.e physical, chemical and biological etc. of Bhitarkanika Conservation Area for last three years. A team of scientists of NCSCM visits the Bhitarkanika Conservation Area (BCA) once in every month to record the required information. The information collected for last three years on different parameters have been analysed for delineating the stress factors and in developing an integrated science based management plan "Eco-system Health Report Card" for BCA involving various components for sustainable management of the mangrove ecosystem.

The Health Report Card of Bhitarkanika Conservation Area based on different parameters (Mangrove, Phytoplankton, pH Value, Dissolved Oxygen, Chlorophyll, Secchi depth, dissolved inorganic nitrogen & phosphate of water, Benthic, Zoo Plankton, Bird population, Salt water crocodiles, Olive Ridley etc.) have been released for 2019, 2021 and 2023. This is highly helpful for the management to take immediate precautionary action for improvement, if any.



Scientific Monitoring of BCA



C. Crosscutting Issues

a. REDD + Readiness- CMRV

In order to achieve the scientific and comprehensive monitoring, the project has carried out the activities to identify the drivers of deforestation, establish Community-based MRV system and build capacity to operationalize Community-Based MRV.

The drivers of forest degradation in 12 Project Divisions have been identified and the activities to address the drivers have been planned as part of the planning process. Some of the interventions that are being supported during the project include introduction of the alternative means of livelihood and household energy sources, sustainable harvesting of NTFPs, augmentation of forests, restoration initiatives, etc. Indicative options for the interventions linked with international scientific framework (REDD+) have been framed. These activities are planned and carried out under the JFM mode and livelihood support.

The project has introduced community level MRV system so as to involve and strengthen the capacity of the community in institutionalizing the concept of community level MRV. The community is expected to be greatly benefited in sustainable management of entire forest ecosystem.

b. Gender Mainstreaming

JICA assisted Odisha Forestry Sector Development Project has considered both men and women as important stakeholders in the Joint Forest Management. The objective of gender mainstreaming strategy and action plan for OFSDP-II is to ensure gender equity in access and control over the forest resources and promote women's economic and social empowerment through project interventions for the well-being of the forest dependent communities.

Income Generation Activities have been implemented for VSS members as part of the project interventions. This is aimed to provide alternative means of livelihoods to reduce dependence on the forest resources. This has also led to the economic empowerment and subsequent upliftment of the women's status in family and community. OFSDP-II has adopted a systematic approach and monitored the progress and achievements of the gender related interventions so that OFSDP-II can systematically adopt the gender responsive actions in implementation of the Project.

The Gender Mainstreaming Guidelines have been prepared at the initial stage of the project. At the PMU/ DMU/ FMU, the Gender Mainstreaming Strategy and Action Planning is being done. At the level of VSS/ EDC/SHGs, micro planning for 10 years is prepared. Based on the long term plan, at each level, annual planning is being undertaken. The activities planned in the annual plans are implemented by the project implementation units. As part of the regular project monitoring cycle, the periodic reviews are undertaken at each level, where the progress and achievements of the annual plan is monitored; of which gender responsive components are a part.

c. Environment and Social Management Safeguard Framework (ESMSF) and Scheduled Tribes and Forest Dwellers Planning Framework (STFDPF)

It is mandated under any JICA Assisted project to internalize and institutionalize the safeguard measures for avoiding adverse environmental and social impacts of implementation



of a project in the project area. The OFSDP II project is currently categorised as "Financial Intermediary (FI)" in accordance with the JICA guidelines (2010) which means that the project would not exhibit any significant negative impact on environmental and social dimensions. However, under this project, a broad framework on Environmental and Social Management System Framework (ESMSF) and a specific framework on Scheduled Tribe and Forest Dependents Plan Framework (STFDPF) is mandated.

Environmental and Social Safeguard system under the OFSDP II is to follow proper procedures including the free, prior and informed consultations with the stakeholders such as VSS/ PRI members, Forest Department staffs on possible negative and positive environmental and social impacts of the sub-projects identified by the beneficiaries such as Scheduled Tribes/ Scheduled Castes/Other Backward Castes and forest dependents in general. Micro-plan is the planning tool at the grass- root level and it is used to develop the indicators on forest management, forest product harvesting, use and trading, seasonality etc., of the forest protection and it also visualises the implementation of the project and its possible impacts. The broad checklist for monitoring of the environmental and social safeguard measures has been integrated into the Micro-plans for monitoring. The environmental and social management and monitoring plans are defined and followed for ensuring the successful implementation of the project components.

The Environmental and Social Management Safeguard Framework (ESMSF) for the OFSDP-II is the primary reference document outlining how environmental and social considerations are being addressed during the project implementation. ESMSF works together with the Scheduled Tribe and Forest Dependents Plan Framework (STFDPF) and also refers to the other safeguards tools which are intended to concentrate on or elaborate specific aspects.

D. Livelihood Improvement Initiatives

a. VSS Building cum IGA Facilitation Centre

Under Community Development component, a multi-purpose community building "VSS Building cum IGA Facilitation Centre" is being constructed in each VSSs covered under the Project. Till end of January 2024, a total of 1197 buildings have been constructed and constructions of the rest of the buildings are in progress and expected to be completed shortly.



VSS Building of Kankakumar, Bagdihi under Jharsuguda Division



VSS Building of Gundibira, Suroda under Ghumusur South Division

b. Community Development through Inter-sectoral Convergence:

Comprehensive development of the project villages has been envisaged under OFSDP-II through inter-sectoral convergence. Such development includes improvement in infrastructure, health, education, livelihood, sanitation, electricity, forest coverage, integrated farming, small scale enterprises etc. Comprehensive development Plans of 1211 VSSs have been formulated in a participatory manner at community level. The VSSs have prepared a comprehensive "Convergence Plan" or a Perspective Plan, under OFSDP-II. Convergence plan. Micro plan preparation of all the project VSSs are completed in all aspects among the 1211 VSSs in 12 Forest Divisions.

The Line departments are being involved at VSS level during preparation of convergence plan while formulating the micro plan. The plan is discussed in the Block level Advisory Committee (BLAC) Meeting under the Chairmanship of Block Development Officer. The convergence plan of each VSS is being discussed in the BLAC Meeting and the nodal officers of the respective departments actively implement these activities through the VSSs.

Similarly, the District Advisory Committee Meetings are conducted at District level under the Chairmanship of Collector & District Magistrate. The convergence issues are being highlighted to sort out the issues and to ensure the activities to be taken up in the villages on priority.

Since the beginning of implementation of OFSDP-II, a sum of Rs. 461.17 crore have been mobilized through inter-sectoral convergence, covering about 19.04 lakhs number of beneficiaries in the project villages till January 2024. The activities taken undertaken in all the VSSs covered under OFSDP-II through various Departments include supply of drinking water, provisioning of toilets, supply of seeds of pulses, cereals, vegetables, distribution of LPG connection, financial and technical support to the SHGs for development of Micro enterprise, series of capacity building activities, field demonstration etc. have been facilitated through convergence. Similarly, kitchen garden, Nutri-garden, supply of horticulture seedlings were also facilitated through horticulture department. Series of health camps are being organized at VSS level on regular intervals. Schemes of Fisheries and Animal Husbandry department are being synergized for the development of the forest dwellers in association with the Vana Surakshya Samities. The Project authorities have been working in tandem with the agencies and programmes under various Departments to provide the optimum benefits to the forest fringe dwellers of the VSSs.

Department Wise Convergence from the April 2018 till January 2024 under OFSDP-II

Sl. No.	Departments	Beneficiaries	Funds mobilised (Rs. in Lakh)
1	Agriculture & Farmers' Empowerment	66541	1168.88
2	Corporate & Bank	16960	1530.44
3	Department of Water Resource	2740	176.12
4	Dept. of Mission Shakti	12436	848.46
5	Dept. of Energy & OREDA	924	63.94
6	Dept. of Industry	577	76.08
7	Dept. of Youth Services & Sports	901	6.20

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8	District Mineral Foundation	2029	121.65
9	Finance Department	783	4.47
10	Fisheries and ARD Department	67402	1580.69
11	Forest, Environment & Climate Change	165399	1774.52
12	Handloom & Textile Dept.	47	4.40
13	Health & FW Dept.	113973	334.62
14	Horticulture Dept.	60360	1554.09
15	Irrigation	12934	1161.87
16	Labour Dept.	623	21.85
17	Ministry of Communication	976	540.60
18	Ministry of Food Processing	268	3.56
19	Ministry of Petroleum & Natural Gas (IOCL and others)	17947	289.60
20	MP/ MLA LAD	2115	12.20
21	MSME	688	13.25
22	NABARD	2950	8.05
23	NGO	16358	97.53
24	NHAI	63	3.61
25	OLM	1902	162.29
26	Others (Municipality, CSR, MP Lad Fund etc.)	3236	30.44
27	Panchayati Raj & Drinking Water	1155827	27817.10
28	PWD	6054	485.48
29	Railway Dept. (Skill Development)	24	2.40
30	Revenue & Disaster Management	213	8.21
31	Rural Development	30693	1571.82
32	SC & ST Dev. Dept.	61904	1884.61
33	School & Mass Education	1134	33.56
34	Sericulture	30	39.00
35	Skill Development & Technical Education	5033	122.58
36	Social Security & Empowerment	248	3.00
37	Soil Conservation Dept.	33143	2108.79
38	Urban Development	3955	131.00
39	Western Odisha Development Council	212	5.00
40	Women and Child Development	34197	315.26
Grand Total (Convergence)		1903799	46117.22

c. Income Generation Activities

Promotion of small Income Generating Activities (IGAs) by involving women Self Help Groups (SHGs), Common Interest Groups (CIG) and Poorest of Poor (POP) have been taken up under OFSDP-II. The Project provides support for strengthening these institutions through capacity building, in their business planning, credits, product development including value addition and in establishing market linkages. Various alternate livelihood options have been identified through product mapping for the forest dependent communities in the project area and these are being aggregated at Cluster level. The PMU has developed a guideline on Grounding of IGAs under OFSDP-II.



Vermi compost making by VSS members of Sundergarh DMU under different IGA activity



Tamarind procurement by VSS members of Samablpur DMU under IGA activity

d. Establishment of Multi-Product Clusters to promote Income Generation Activities in Project VSS:

In order to facilitate product aggregation and collective marketing, multiple product clusters have been identified for each Division. Accordingly, three Sal leaf Clusters have been established in Baripada, Karanjia and Rairangpur Forest Divisions of Mayurbhanj District. One Pulse Cluster in Boudh Forest Division, One Cashew Cluster in Dhenkanal Forest Division & One Lemon Grass Cluster in Jharsuguda Forest Division also have been established. Product Mapping, identification of beneficiaries, formulation of business plan and trial production has been initiated. Establishment of more 9 Clusters in other Project Divisions is under progress.

e. Livelihood Resource Cell:

Livelihood Resource Cell has been established under OFSDP-II since 2019-20 to provide long term support during and beyond for promotion and strengthening of product clusters. It facilitates the individual units involved in IGAs to traverse the business growth trajectory. Detailed guideline on functioning of LRC is being prepared for circulation to all Project Divisions. Advisory Committee at PMU level has been constituted to facilitate the functioning of LRC and to promote IGA activities through small units on cluster mode. Guideline on Income Generation Activities & Revolving fund has been prepared and training on the same has been imparted to all field level staff for effective utilization of fund to promote IGA activities.

f. Initiative of Marketing and Management Support Agency:

For Establishing and Operationalizing the Multi Product Cluster under OFSDS a Marketing and Management Support Agency (MMSA) the consortium of KIIT Technology Incubator, Bhubaneswar (KIIT-TBI), Bhubaneswar City Knowledge Institute Centre (BCKIC), Bhubaneswar, Indian Institute of Education (IIE) Guwhati have been engaged since June 2022 for augmenting various management and marketing strategies for the multi-product clusters developed under OFSDP-II.

E. Capacity Building:

During the preparatory phase of OFSDP-II, Training Need Assessment (TNA) Exercise was carried out to ascertain the training need of all stakeholders associated in implementation of OFSDP-II. Based on the TNA Document, a comprehensive capacity building requirement document under OFSDP-II has been prepared. Based on the intervention plan of VSSs, the capacity building plans for all stakeholders are being prepared every year. Further, modules relating to all training programme are being prepared at PMU. The field staffs of OFSDP-II at DMU & FMU level are being oriented on the thematic trainings as Training of Trainers for conducting similar trainings for the primary stakeholders.

Customized Capacity Building Modules along with corresponding power-point presentation are prepared for the trainings and are shared with the field staff for conducting the second round of trainings at field level. Till January 2024, a total of 4563 numbers of trainings/ orientation programme / exposure visits of primary and secondary stake holders have been conducted under OFSDP-II covering about 1,83,653 number of beneficiaries for smooth and effective implementation of project interventions.

The major themes covered till date under the capacity building aspects are as below:

1. Implementation OFSDP-II: Goal, Objectives, Project Components, Implementation Modalities, Roles and responsibilities etc.
2. Strategies and approaches for Community Mobilization for Primary Stakeholders
3. Preparation of Micro Plan/ Annual Plan / Perspective Plan etc.
4. Survey, demarcation & posting of Pillars
5. Sustainable Forest management in JFM Mode.
6. Book Keeping & Accounts Management at VSS level
7. Promotion and Livelihood initiatives through SHGs
8. Gender Mainstreaming
9. Community based Monitoring, Reporting & Verification (CMRV)
10. Guideline on Revolving Fund
11. Book Keeping & Accounts Management at FMU & DMU level.
12. Integrate Management System: function & Use
13. Integrate Management System: a tool for Concurrent Monitoring



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14. Forest Conservation & Management
15. SMC & DLT Measures & Forest Protection Mgt at VSS
16. Communication & Management for senior staff
17. Operational Guideline of Revolving Fund
18. Skill Development of SHG members on Sal Leaf Processing & Machine Sewing at Cluster
19. Skill Building training on IGA Through Convergence
20. Training on CMRV, Gender Mainstreaming & ESMSF Framework
21. Training on Re-visit of Micro-plan
22. Accrual & Trading of Carbon Credits



Capacity Building Programme at different level

F. Monitoring Activities:

1. Baseline Survey on Socio economic and Physical situation:

A detailed survey to capture baseline information on Socio economic and Physical situation of the project intervention areas and control area has been taken up by hiring an external agency. The baseline report would help the project to ascertain the impact / changes in the project areas due to project interventions.

2. Concurrent Monitoring:

GIS based Information Management System has been established under OFSDP-II to for concurrent monitoring of project interventions at field level. Dedicated module has been prepared for the activities / sub activities for all project components, wherein the field staff upload the data on real time basis to ascertain the progress.

The GIS Cell of OFSDP-II also prepares different thematic map (base map, potential treatment map, land use land cover map etc.) for each VSS, which contributes significantly in the planning exercise. Moreover, LISS-IV FMX of IRSRS2 satellite imageries covering the entire state of Odisha are being procured as well for different years from NRSC for planning and analyzing the changes occurred.

G. Communication & Publicity:

Communication and Documentation has been given utmost priority since commencement of OFSDP-II project. A detailed guideline of Communication Strategy for OFSDP-II has been developed and published. Requisite trainings on communication have been organized for the project staff associated in project implementation. Moreover, Quarterly News Letters highlighting the lessons learnt on different thematic areas of each Division are being captured for knowledge management and dissemination information to all quarters.

Sameekshya, an innovative platform both at DMU level and State level has been adopted under OFSDP-II for the VSS members and p-NGOs to showcase their successful endeavours. Such initiatives is not only an empowering platform for the VSS members to share their achievement to a larger audience but also contribute significantly for sharing of knowledge among each other for better appreciation and quick adoption. Further, Annual Progress Reports of OFSDP-II are being published regularly.

H. Geomatics Centre established at PMU:

The Geomatics Centre of OFSDS established in Project Management Unit of OFSDP at SFTRI, Campus, Ghatikia, Bhubaneswar. The centre is primarily involved in providing Geographic Information Management (GIS) solutions and Management Information System (MIS) reports, which facilitates in advanced planning & effective management of project activities. It is also involved in in-house development, deployment and maintenance of MIS and GIS Integrated System solutions of OFSDP-II and other projects. Since inception, the centre has been actively facilitating and providing support to the PMU in continuous monitoring and evaluation of progress of all development activities and programmes of the projects.

The GIS Lab is equipped with high end Workstations, Printer, Plotter, Scanner of required specifications and a video wall for high resolution image analysis and monitoring activities. The other equipment includes DGPS, GPS and Total Stations for ground truthing activities.



Activities in Geomatics Centre

1. 1. Developing and maintenance of all in-house GIS based decision support system.
2. Developing an archive of consistent and accurate geographic data and integrate up-to-date MIS for all forest activities within the project divisions.
3. Formulating and developing new MIS modules for data capturing & concurrent monitoring.
4. Building capacity of forestry officials and staff at all levels in using Geomatics.
5. GIS and Remote Sensing studies for forest cover analysis.
6. Preparing databases for the record of all information.
7. Maintenance & Development of both web and mobile applications and content management of Web portals.
8. Map preparation along with procurement of Resourcesat-2 LISS-IV imageries and FSI data.
9. Maintenance of IT infrastructure of PMU.
10. Coordinating with external stakeholders for IT related activities like procurement through GeM, emails management, web meeting/ hosting through NIC and etc.

15.4. Ama Jangala Yojana (AJY)

Ama Jangala Yojana (AJY) is a Flagship Program of Government of Odisha, being implemented through Odisha Forestry Sector Development Society with the objective to promote participatory and sustainable forest management and alternate livelihoods for the forest fringe dwelling communities in the State. The duration of the Scheme was six years i.e. from 2016-17 to 2021-22 which has been extended till 2024-25. Presently, the Scheme is being implemented in 22 Territorial and Wildlife Divisions of the State, covering about 4.2 lakh households. All the activities are being carried out with active participation of local community based institutions called Vana Suraksha Samities (VSSs) in Joint Forest Management (JFM) mode. State CAMPA & State Plan are the major source of funding for Ama Jangala Yojana.



HIGHLIGHTS OF ODISHA FORESTRY SECTOR - 2024

Total 4601 nos. of VSSs have been covered under the scheme by January, 2024. As a major policy under the project, participatory village micro-plans have been prepared, approved in Gram Sabha and implemented in all villages under the Scheme. In addition to this, 14,263 women self-help groups are linked with various Income Generation Activities (IGAs) under inter-sectoral convergence with Line Departments. During the Project period (as on January, 2024), Assisted Natural Regeneration (ANR)- Without Gap Plantation has been carried out in 2,09,568 ha of forest area and ANR-With Gap Plantation in 19,975 ha under the Scheme. Apart from these, Block Plantations have also been raised over 1005 ha of forest land. Out of the above, maintenance activities are being carried out in 69,837 ha of Assigned Forest Area during the present year i.e 2023-24. In addition to this, forest protection activities like survey, demarcation, pillar postings and fire protection activities have been carried out in the assigned areas of all 4601 VSSs. Soil & Moisture Conservation activities such as Check Dams, Loose Boulder Check Dams (LBCD) and staggered trenches have been created in the assigned areas under the project VSSs. The fire incidents in the assigned areas under AJY could be successfully handled by the proactive response of the VSS members and the Project team.

Capacity Building Training programs have been carried out under various project components and livelihood programme through the project as well as inter-sectoral convergence involving 2,39,922 members from 4601 VSS and 14,263 women SHGs of the project area.

Livelihood promotion is an important component of Ama Jangala Yojana. AJY aims to promote alternative livelihood opportunities among the forest fringe dwelling communities so that the pressure on forests for their day to day requirements is minimized, while simultaneously, the forest based resources are protected. However, there is no direct assistance from the project to promote livelihood activities in the project villages; it has been carried out through convergence with Schemes of other Line Departments. Inter-sectoral convergence has been given priority by the project team for livelihood promotion, income generation and community infrastructure development. Fifteen Partner NGOs have been engaged in the field level as support organizations for community mobilization and livelihood promotion activities under the scheme. In addition to this, 612 numbers of VSS buildings-cum-Income Generation Activities Facilitation Centres have been constructed and handed over to the communities in AJY Project area for multipurpose use.

By January 2024, Rs. 843.98 Crores have been mobilized from other Line Departments benefitting about 28,50,978 persons belonging to 4601 VSS and 14,263 SHGs under Livelihood promotion and Community Development initiatives. The SHGs in the project area are also linked to various Income Generating Programmes (IGPs) in convergence with 39 numbers of Line Departments and CSR agencies. Additionally, many activities pertaining to community infrastructure development have been undertaken under convergence initiatives. Livelihood promotion activities such as skill development of rural youths, support to individuals/groups for entrepreneurial activities, construction/repair/renovation of roads, water bodies and other community assets, drinking water supply, linkage to Govt. welfare schemes, construction of individual houses and MGNREGS based activities have been implemented through inter sectoral-convergence by which the quality of living of the forest fringe dwelling communities has been improved remarkably.



HIGHLIGHTS OF ODISHA FORESTRY SECTOR - 2024



Community Mobilization Activities under AJY



ANR With Gap & Block Plantations under AJY under AJY



Rakshya Bandhan for Forest Protection Awareness at Kanjiapal VSS, Keonjhar Wildlife Division



Forest Protection Awareness through plantation drive during Vana Mahotsav at Kalhapada VSS, Bamra (WL) Division



HIGHLIGHTS OF ODISHA FORESTRY SECTOR - 2024



VSS Building-cum-IGA Facilitation Centre inauguration at Kandili VSS, Rayagada Division



Inauguration of VSS Building-cum-IGA Facilitation Centre at Chedenga VSS, Malkangiri Division



Creation of Fire lines for Forest Fire Protection under AJY



Vegetable cultivation support to VSS members at Bhulukabahal VSS, Deogarh Division



Mustard cultivation support to VSS members at Bhulukabahal VSS, Deogarh Division



HIGHLIGHTS OF ODISHA FORESTRY SECTOR - 2024



Mushroom cultivation at Naigaon VSS of Keonjhar Division



Vermocompost Production and sale at Aharposi VSS, Keonjhar Division



Business Plan Preparation at Manigiri VSS, Keonjhar Wildlife Division



Distribution of poultry chicks to SHGs at Jugsaipatna VSS, Kalahandi (S) Division



Mushroom Production Training at Gangamata SHG, Phulbani Division



Agro processing machine support to members of Dumdumi VSS, Bolangir Division





Advisor, AJY Visits to Rugudisahi ANR Site, Phulbani Division



Advisor, AJY Visits to ANR without gap site at Khajuribani VSS, Keonjhar WL Division

15.5. OFSDS-OMBADC Livelihood Promotion Project

About the Project

People living in and around forests are highly dependent on forest resources for their livelihoods. Scheduled Tribe (ST) and Scheduled Caste (SC) populations, which are concentrated in forest fringes, depend largely on forest resources. To reduce dependency of the Poorest of Poor (PoP), socially vulnerable people and ST&SC community on forest resources and to improve the health of Forest Ecosystems, it is necessary to enhance and strengthen their livelihoods by providing them with a range of alternative livelihood options. Improving their skills and competencies and connecting them with various developmental programs can bring visible changes in their life.

The OFSDS- OMBADC Project is to be implemented with a view to mitigate the adversities faced by the forest fringe dwellers to some extent by providing them livelihood promotion opportunities.

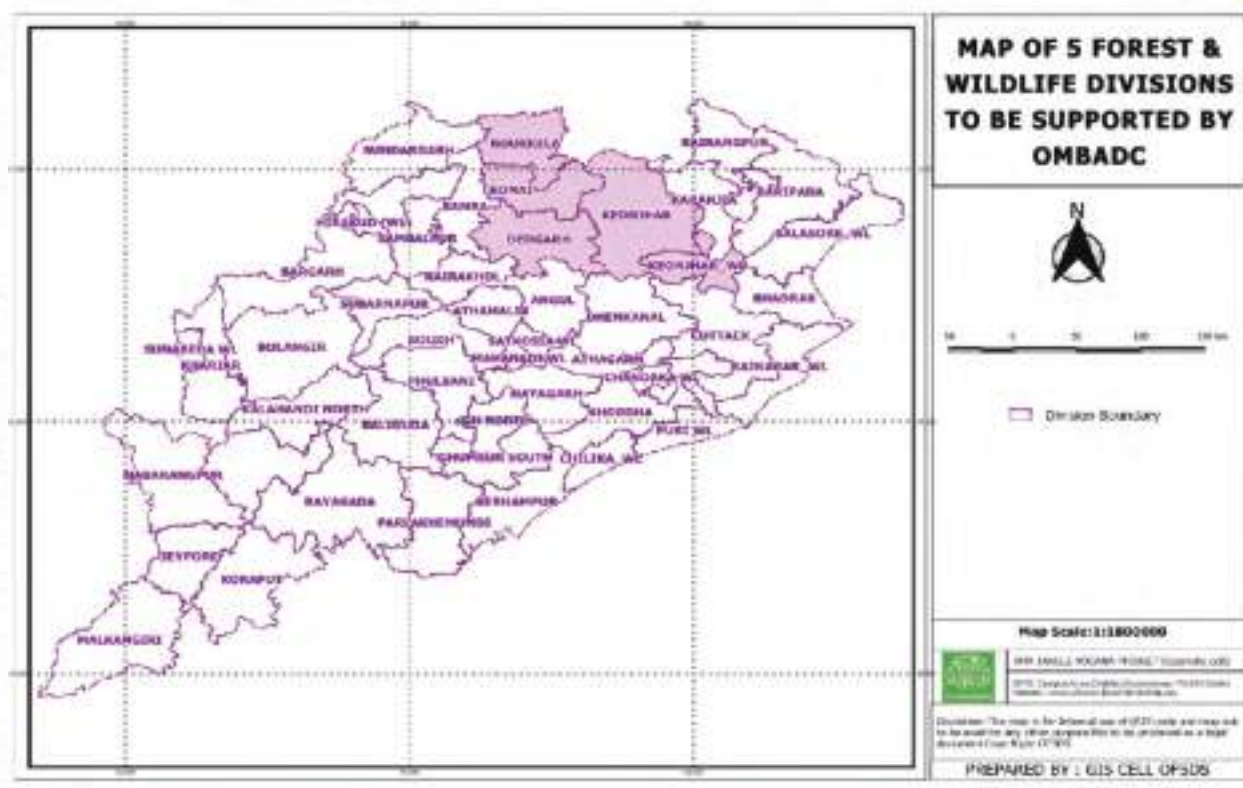
Objectives

The primary objectives of the Livelihood Promotion Project, OFSDS- OMBADC are:

- i. To provide alternative livelihood opportunities of the forest dependent and forest fringe dwelling communities so as to reduce their dependency on forests and provide additional/ alternative source of income.
- ii. To enhance the skill (technical, managerial and decision making) of the forest dependent communities including ST & SC population on various Income Generation Activities.

Location of the Project

The project is proposed to be implemented in 900 VSSs under 25 Forest Ranges belonging to 5 Forest Divisions namely; Rourkela, Bonai (Sundargarh District), Keonjhar, Keonjhar (WL) (Keonjhar District) and Deogarh Forest Division (Deogarh District).



Institutional Framework

An OFSDS- OMBADC Cell has been created at the PMU, OFSDS which is monitoring the implementation of the livelihood project in the 5 Forest Divisions, namely Bonai, Deogarh, Keonjhar, Keonjhar (WL) and Rourkela Divisions. The cell is administered by the Deputy Project Director, (CME&S) as the Nodal Officer, and is being assisted by Expert, NRM and Expert Livelihood from the PMC with adequate support personnel.

Similarly, OMBADC Cell have been created at each Division level with the DFO, ACF, AJY Co-ordinator/ Cluster Co-ordinator, P-NGO member and DEO as members. At FMU level, the Range officer will be in- charge of implementing the project is the selected VSS.

Project Components

The project has the following components:

1. Livelihood Promotion
 - 1.1. Convergence with line Departments
 - 1.2. Promotion of Income Generating Activities
 - 1.3. Development of multi- product Clusters
 - 1.4. Business Development Service
2. Institution Building and Capacity Building

Major Activities initiated under the OFSDS- OMBADC Livelihood Promotion Project up to January 2024

The major activities initiated under the OFSDS- OMBADC Livelihood Promotion Project up to January 2024 are as follows:

The progress of activities till January, 2024 is as follows:

1. VSS identification and Community mobilization has been completed in all 900 number of VSS.
2. The reconstitution of VSS as per the JFM resolution has been completed in 900 VSSs.
3. 900 numbers of community level training programme at VSS level completed.
4. Executive Committee of all the 900 VSSs have been resolved as sub-committee of Gram Sabha for compliance of FRA.
5. Survey, Demarcation and pillar posting of the forest area assigned to the VSSs completed.
6. Identification and approval of the products for IGA completed.
7. Identification of 3237 numbers of SHG for inclusion in the project activities completed in all 900 VSSs.
8. Promotion of guideline on management of Revolving fund for the Income Generation Activities of the SHG/CIG and Poorest of the Poor, circulated among the field staff as well as capacity building of the field level staff completed.
9. Constitution of loan appraisal committee in all VSSs completed.
10. PRA Exercise has been completed in 900 numbers of VSSs.
11. Livelihood plan preparation completed in 899 VSSs out of which, 600 numbers have been approved at DMU level.
12. Financial assistance to all project VSS for Income Generation Activities have been released.
13. Till January 2024, 14,541 numbers of various meetings conducted at VSS level.
14. Till January, 2024, 32,962 numbers of participants of 2930 numbers of women Self Help Groups have been trained through various Capacity Building Training Programmes under the project.
15. Community Development Activity amounting to Rs.3502.60 Lakhs have been mobilized through convergence of 24 Line Departments up to January, 2024 benefitting 67,350 Persons (34,161 Male & 33,189 Female) in OFSDS-OMBADC Project Divisions.
16. During the year 2023-24, preparation of livelihood plan as well as training on Income Generation Activities at VSS level is going on under OFSDS-OMBADC Livelihood Promotion Project.



1. Community Mobilization and Institutional Building Activities under OFSDS-OMBADC Livelihood Promotion Project



2. Capacity Building Initiatives



3. Livelihood Planning for the VSSs under OFSDS-OMBADC Project



4. Livelihood Promotion under OFSDS-OMBADC Project



Livelihood Promotion Initiatives under Keonjhar Division

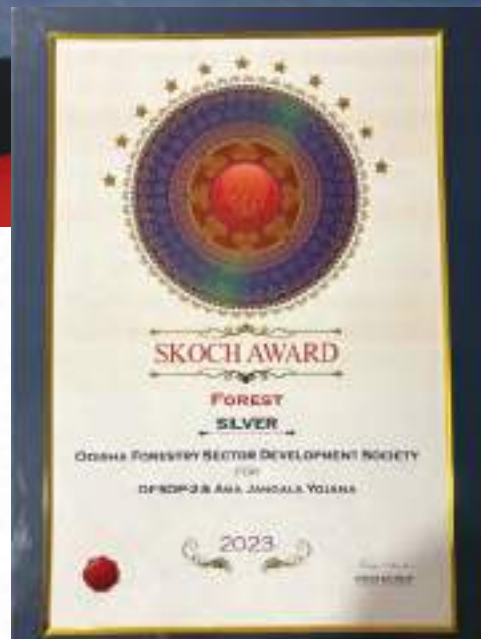


OFSDS awarded 96th SKOCH Summit Award, 2023 under Silver Category

Odisha Forestry Sector Development Society (OFSDS) has been awarded the 96th SKOCH Summit Award, 2023 under Silver Category for its projects Ama Jangala Yojana and Odisha Forestry Sector Development Project Phase II (OFSDP II). The project interventions of involving forest fringe dwelling communities and augmenting their livelihood both on spatial as well as temporal scales have been acknowledged and applauded through this award. The Award was received by Sri Swayam Mallick, IFS, Joint Project Director, PI&LCD and Sri Yosobanta Beriha, OFS (SAG), Deputy Project Director, A&F on behalf of OFSDS.



OFSDS Team receiving SKOCH Award at New Delhi



FOREST INFORMATION TECHNOLOGY AND GEOMATICS CENTRE (FITGC)

16.1. FIT & Geo-matics Centre

Objectives and activities of Forest Information Technology and Geo-matics Centre (FITGC) established in the O/o PCCF & HoFF, Odisha are as below:

16.1.1. Objectives

1. To undertake geospatial survey of all Forest Blocks and land parcels recorded or deemed as forests using RS, GIS and DGPS survey & development of Decision Support System.
2. To develop, upgrade and maintain web based Forest Management Information System/GIS for Forestry Sector (OFMS) in the state of Odisha.
3. To provide Internet & Wi-Fi facility with OSWAS connectivity in all the six floors in Aranya Bhawan & its maintenance.
4. To ensure & establish Internet & OSWAS Connectivity in all the Field functionaries up to Divisional Level.
5. Procurement, Installation, Commissioning and Maintenance of Computer/Server/ VC solution/CCTV Surveillance/ Network Hardware and Software system in the Forest Headquarter and guidance to field units thereof. Procurement of IT Equipment through Government e-Market Place.
6. Development, maintenance and up-gradation of a comprehensive database on web-based GIS application for decision support System in Forest Management and use of Odisha Spatial Data Infrastructure (OSDI) with the technical help of ORSAC.
7. Monitoring of Forest Cover Change periodically and land based forestry activities using Remote Sensing and GIS Technologies.
8. Capacity building of forestry personnel to build their capabilities to handle MIS/GIS activities for Forest Management & Protection.

16.1.2. Activities

- 1) **Official Website for the State Forest:** Official Website of PCCF & HoFF, Odisha in the domain name www.odishaforest.in is managed & updated by FITGC and hosted in the server placed at FITGC, Forest headquarters, Odisha. The social media account like Facebook, Instagram & Twitter handle is regularly updated by FITGC.
- 2) **DGPS Survey and Geo-referencing of Forest Lands in Odisha using high accuracy DGPS Survey, Remote Sensing & GIS:** For the implementation of the Supreme Court directives, MoEF & CC directed all States for Geo-referencing of all types of forest lands in the State/ UTs. It is mandated to Complete the exercise to identify all types of recorded Forest lands. Creation and regular updation of GIS based Decision Support System (DSS) with the location-boundary of each plot of land, ESZ & PA areas, Diverted Forest Land, FRA Land.

HIGHLIGHTS OF ODISHA FORESTRY SECTOR - 2024

Forest, Environment & Climate Change, Dept. Govt. of Odisha under the 5T initiative has taken up geo-referencing of all kinds of forestlands (RF, PF, Revenue forests, and deemed forests) and preparation of forest cadastres for the entire State as per directives of Hon'ble Supreme Court of India using DGPS, GIS & RS. Acting on the directives and with joint efforts of Forest and Revenue Departments, Odisha is the pioneer state to date to gazette notify a Standard Operating Procedure in July 2017.

The project aims to prepare geo-referenced forestland records of about 60,991 Sq.Km. of forest land i.e. 39% of the state's geographic area, duly reconciled and integrate with the revenue land records on a cadastral scale.

Till now validation of CMV & MMV has been completed in 51 Divisions, FRJVC in 3709 FBs of 34783.66Sq. Km. area, DGPS Survey in 2997 FBs of 24589.02Sq. km. area, DLC/ROR validation in 361 Tahsils, Final FSO certification of 2004 FBs of 14408.25Sq. km. area, ORSAC quality assurance (QA) & QC verification & authentication of 2609 FBs of area 21257.82sq km. area has been completed.

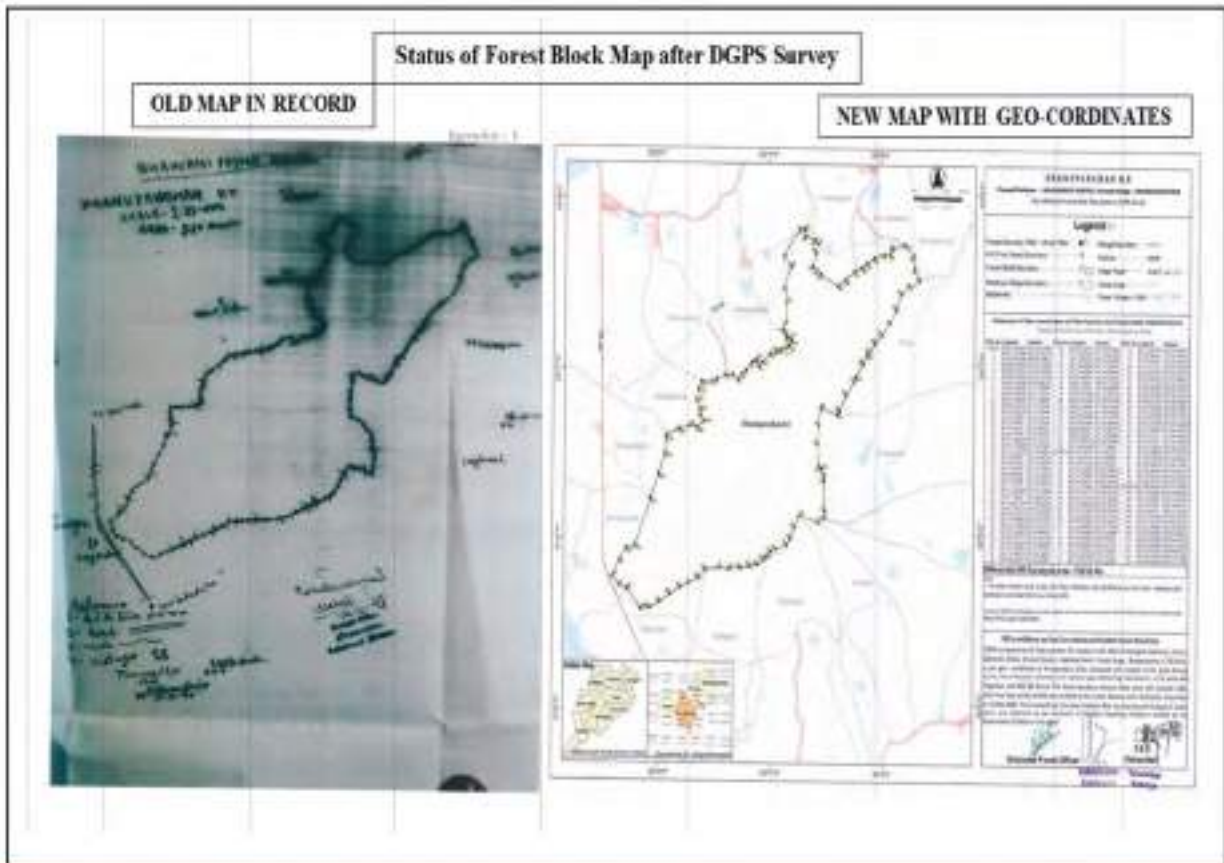




DGPS Survey in the Forest Blocks



Division Level Orientation Training



- Approximate scale
- Not possible to correlate on ground
- Forest block boundary disputes cannot be resolved
- Cross-referencing with cadastral is difficult

- To the scale with precise boundary description
- Easy to correlate on ground and read with cadastral maps
- Enclosed with Latitude & Longitude of each boundary pillar



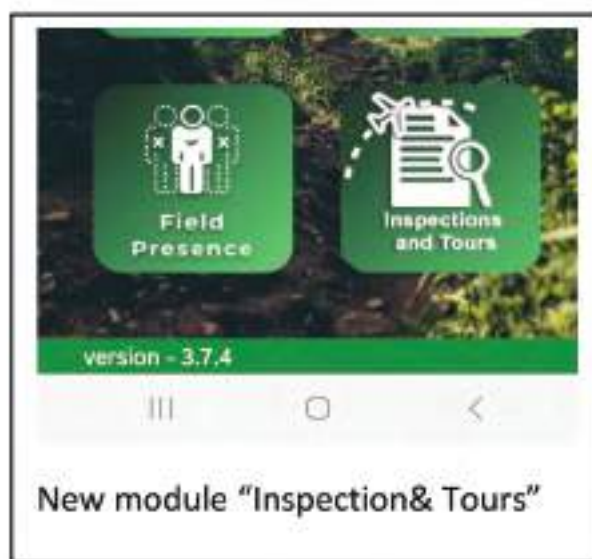
- 3) **Wi-Fi LAN System in Aranya Bhawan:** Wi-Fi LAN has been established in the office of PCCF, Odisha through a dedicated leased line connection from Software Technology Parks of India, Bhubaneswar and M/s Railtel @175 Mbps & 300 Mbps respectively.
- 4) **Digital monitoring of forestry activities:**



Geo-ICT based digital monitoring of forestry activities like foot patrolling, plantation & nursery activities, selection of afforestation areas, online forest fire mitigation/monitoring, wildlife habitat management & protection activities and survey of area approved under Forest Right Act inside notified forest blocks. Online monitoring by the administrators has been done in the website <https://odishaforestgis.in>. Using OFMS (Odisha Forest Monitoring System) from the website consolidated reports are generated on progress of Nursery, Afforestation & SWMC activities, Vanamahotsava celebration, Site selection for plantation, details of Forest fire mitigation etc. The captured details are also shown over Bing maps, Bhuban maps and Google maps for GIS queries and better analysis. There are also facilities for downloading of .kmz files for opening the data through Google Earth and shape files for working on GIS platform. Odisha Forest Monitoring System (OFMS) mobile application is made available in both in Google Play-store and App-Store. There are 26 modules in OFMS Application.

Twenty-Six (26) Modules in FITGC Odisha Forest Monitoring System





- A. **Forest Assets:** Module is used to map any asset geospatially to project it on map with images. Assets include all types of Plantations, Nurseries, buildings, Rest sheds, Roads, Waterbodies etc.
- B. **Afforestation Land Selector:** This application helps for selection of new Afforestation sites by the field staffs using recent Forest Canopy Density during verification in in the field.
- C. **Degraded Revenue Land Selector:** Using this App, the Degraded Revenue Land is being identified & selected.
- D. **Forest Patrol:** It is an application in the device which automatically captures the distance covered by the field staff during foot patrolling in Forest with Photographs.
- E. **AOI Survey:** This module helps in survey of a new area of interest.
- F. **Field Presence:** This module is for attendance of the field staff, which captures the location details along with photographs.
- G. **Forest Land Survey:** For survey of total or any part of any Forest Block with facilities for calculation of gross area, net area, number of pillars, perimeter of boundary line etc

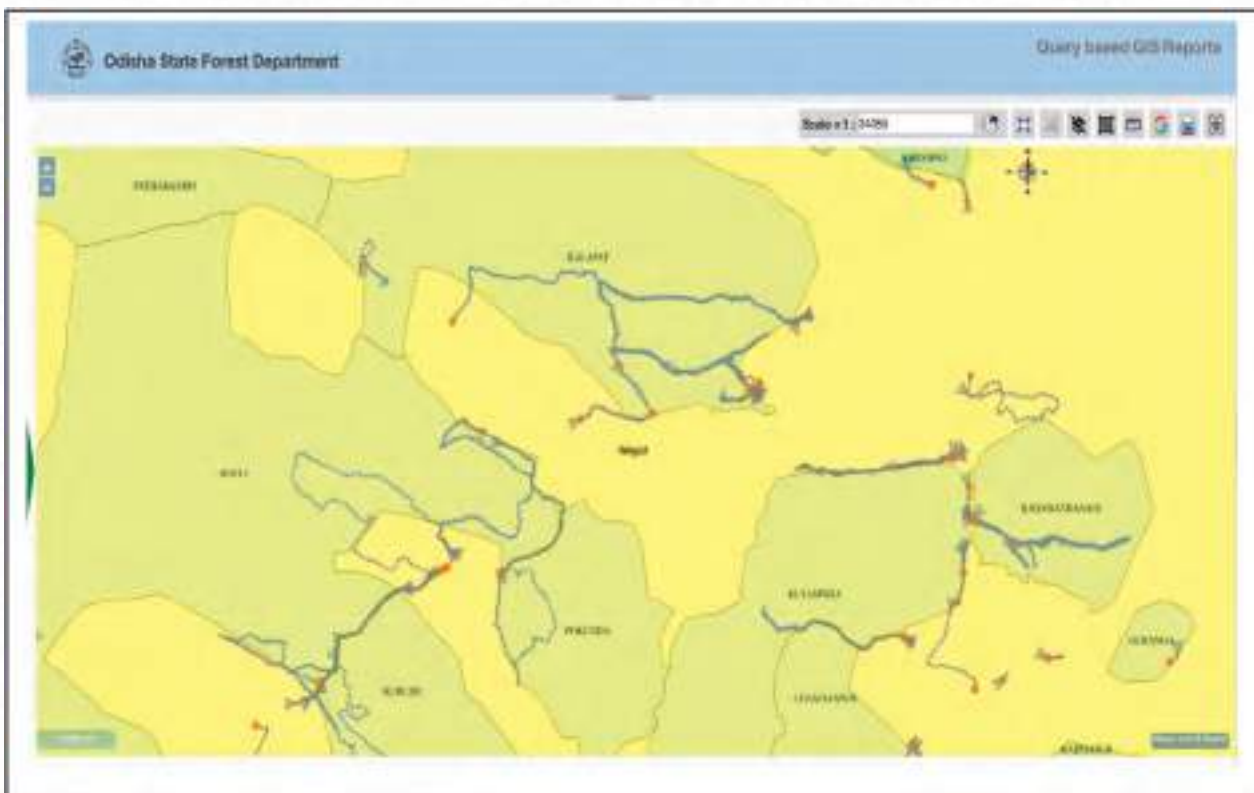
- H. **Working Plan Field Data:** This app is used for data capturing of number of trees/ herbs/ scrubs present at working plan sample points in various forest blocks provided by ORSAC/ NRSC for preparation of working plan.
- I. **Forestry Inspection:** Used to digitally capture the inspection report in the field by one Forest Officer.
- J. **Tree Felling & Salvage:** To report regarding illicit felling of tree & salvage of tree.
- K. **Forest Right Act Survey:** The application is used for survey of individual rights and community rights issued to the Tribal and Traditional Forest Dwellers as per provision of the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Rights) Act, 2006. This module also enable us to capture the data regarding rejected FRA cases.
- L. **Threats to Wildlife:** To capture wildlife vulnerability.
- M. **Forest Encroachment:** Forest land encroachment survey is carried out with the help of this module.
- N. **Tall Plant Monitor:** Monitoring of tall tree plantation in habitation areas.
- O. **Vanmahotsav:** Using this module Vanmahotsava sites are reported along with number of participants & photographs.
- P. **Damage by Wildlife:** Wildlife Depredation reported using this module.
- Q. **Animal Reporting:** Animal sighting is reported along with Death & Injury.
- R. **Forest Fire Controller:** Reporting of day to day fire incidents received from FSI portal to the field and feedback reporting from field are carried out using this application.
- S. **GNSS Skymap:** Function as GPS aids and used for tracking and arriving at any desired location.
- T. **Locator:** To know about the present location in field.
- U. **Navigation:** Which function as GPS aids and used for tracking and arriving at any desired location.
- V. **Data Trans:** Used to sync the captured data from field to FITGC Server and vice versa.
- W. **Forest Cam:** Used to take Geo Tagged photographs.
- X. **Gallery:** Used to store the Photographs & files.
- Y. **Road Explorer:** Used to survey & upload all the Forest Roads.
- Z. **Inspections and Tours:** Field inspections is to be captured by the field officers for successful monitoring of the Departmental activities.



Map View of an captured ANR Plantation Asset:



Map Showing Forest Patrolling data for a time period in OFMS Web Portal



Forest Patrolling Data Showing on Google image in OFMS Web Portal



5) **Development of mobile apps under 5T initiatives of Govt. of Odisha:** Two numbers of mobile applications has been developed and made available in Google Play Store & App Store to bring transparency is as follows:

- **KYFL @ Odisha (Know Your Forest Location in Odisha):** Under 5T initiatives of Govt. of Odisha, one Application i.e. KYFL @ Odisha has been inaugurated by Hon'ble Minister Forest and Environment, Parliamentary Affairs, Govt. of Odisha. The user can get the geo-location of Point of Interest (POI), name & Approximate Distance from the nearest Notified Forest Block and details of Forest Administrative Jurisdiction. The application also provide the additional land revenue Information like Name of the District, Tahasil, CD Block, GP, Village, Khata No., Plot No., Owner's Name, Land Type & area in Ha with respect to POI. About 1.00,000 users have downloaded the application.

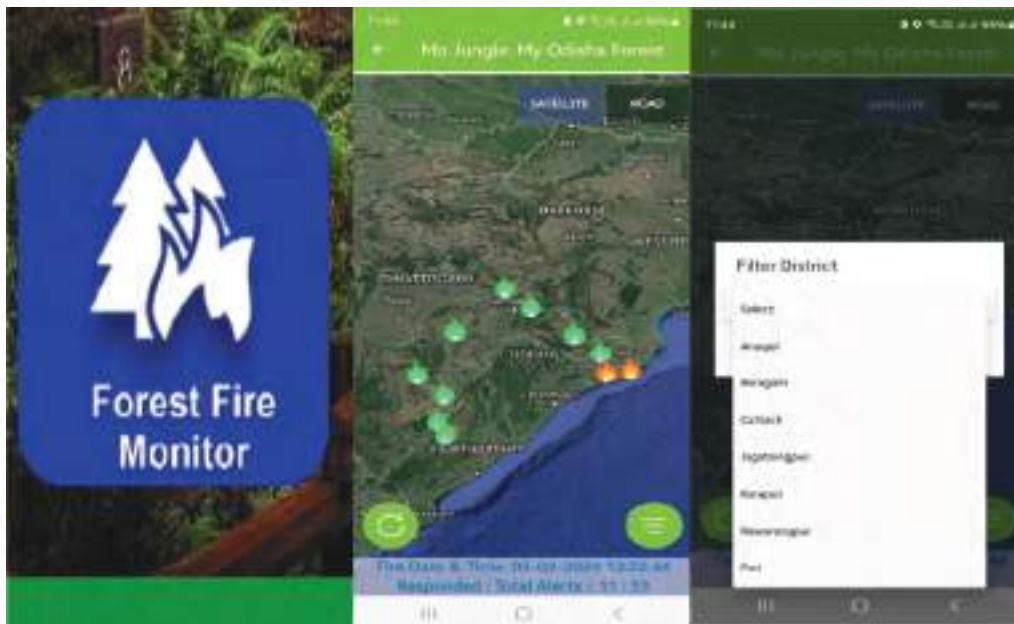


HIGHLIGHTS OF ODISHA FORESTRY SECTOR - 2024

- Mo Jungle: My Odisha Forest** - To bring transparency in afforestation activities, Mo Jungle: My Odisha Forest mobile application has been developed. About 1000 users have downloaded the application.



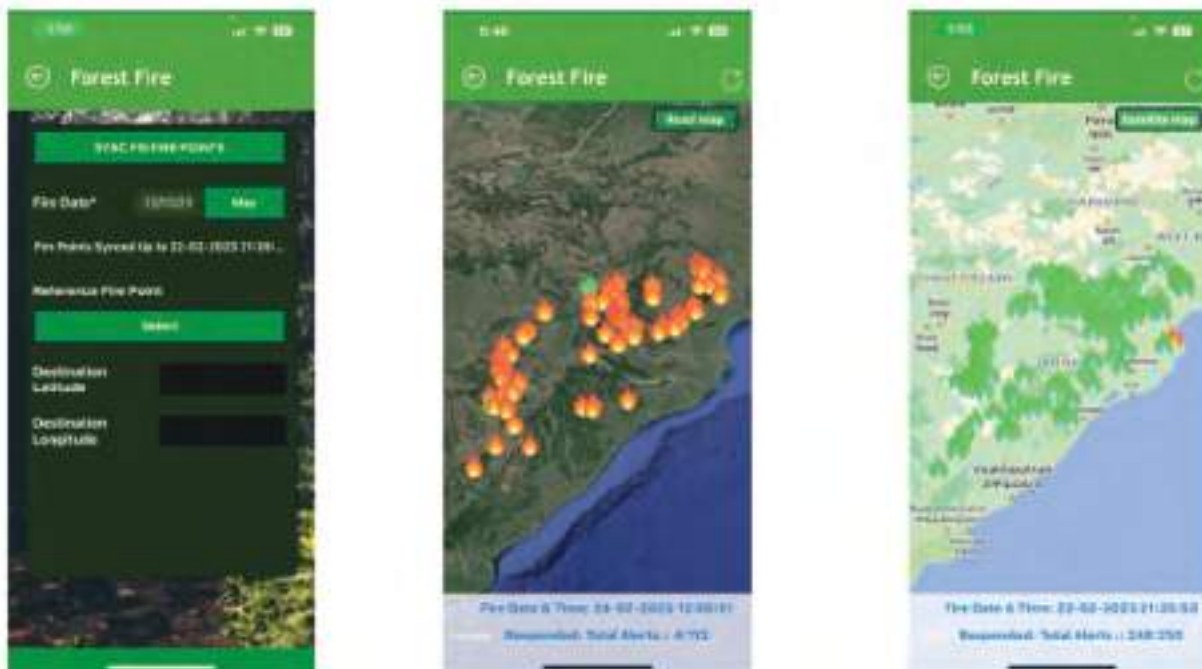
- Forest Fire Monitor for Citizens:** Forest Fire Module for citizens on our freely downloadable "Mo Jungle" mobile App both Android & IOS. It has a special feature of district-wise filter of forest fire on Google Map. Citizens can give feedback using App.



- 6) **Online Odisha Timber Transit Permit System:** The Online Odisha Timber Transit Permit System web & Mobile application helps the citizens and the institutions to apply for TT Permit online through the website: <https://ttpermitodisha.in>. General public & department officers/staff use iOS & Android mobile application to apply for TT permit Odisha from any where in the world.
- 7) **Annual Maintenance Contract and Purchase of IT equipment:** This Centre has taken up the task of Annual maintenance of Computers and peripherals through an approved firm by process of tender. The FITGC has also been assigned the task of procurement of IT items form GeM portal.
- 8) **Video Surveillance System in the Office of the PCCF, Odisha:** Video surveillance system consisting of 23 CCTV cameras have been set up at Aranya Bhawan. All the cameras are IP based and networked. These operate 24x7 and provide feed to remote users as per requirement and has built in analytics.
- 9) **Monitoring of Forest Fire:** The forest fire monitoring is done in a unique way by integrating our FITGC server with FSI server to fetch the fire data directly in the fire application from FSI server. In addition to this, the application having navigation facility helps the ground staff to navigate and quickly reach to the fire spot thereby substantially reducing time to respond fire incidences and area of damage. The user responds all the fire spot through android application and then sync the data to the server for further monitoring by Forest Headquarter. The Forest HQ has dedicated fire cell which monitors fire on 24X7 basis and thus the number of fire incidences has been reduced from year to year. The application has red spot and green spot to depict the non-responded fire point & responded fire point respectively to monitor the response of the user. The application also depicts the repeated fire points in different colour to alert the user on recurrence of fire incidences. During this year upto 08.03.2024, out of 1781 nos. of fire points 1747 have been responded. (Screen display of fire app showing the auto fetching fire point from FSI server, navigating to the fire spot, responding through App. and syncing to the server for monitoring.)



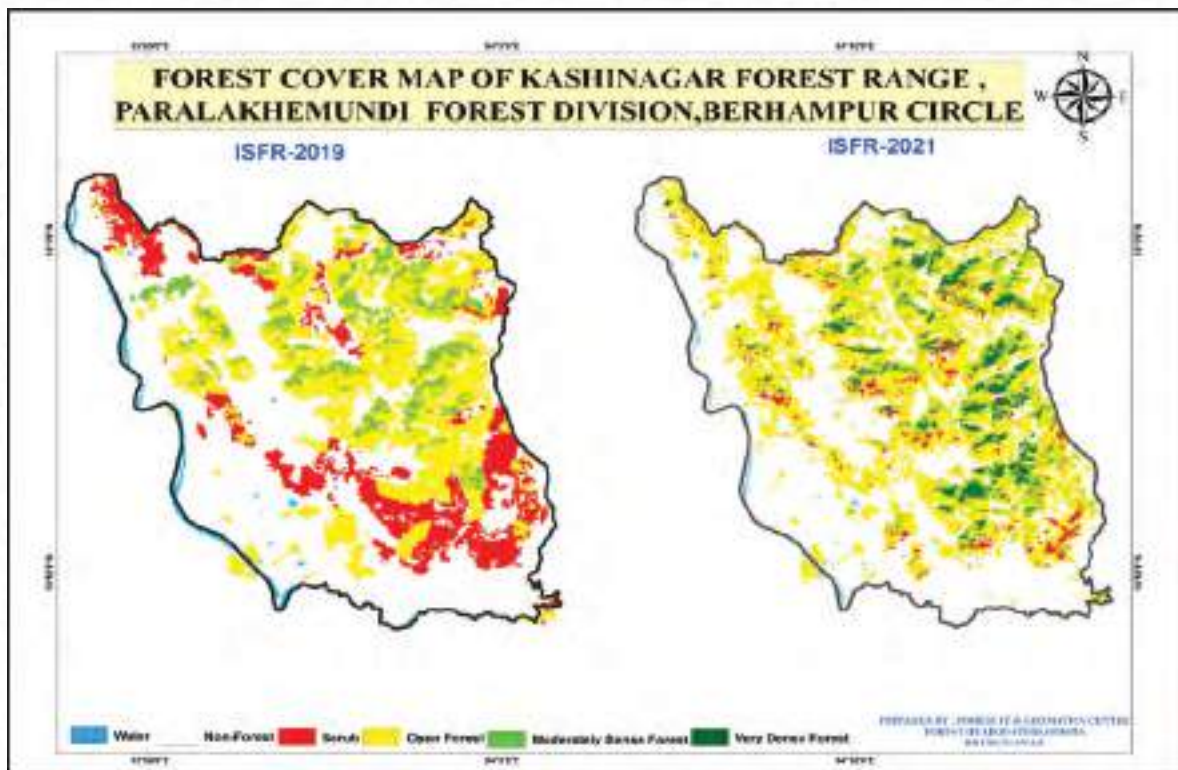
OFMS @ Mobile (Odisha Forest Management System)



- 10) **Maintenance & updation of the Server Room in FITGC:** A modular and integrated data centre was created in the Forest IT and Geomatics Centre in January 2016. These have been placed in a part of the FITGC having facilities of a mini server room. The Server room is now Populated with 18 servers and two Unified storage system from which all applications of FITGC including DGPS Survey, website of the office of the PCCF, Odisha and PCCF, Kenduleaves, Seasonal Staff HRMS & KL Accounting System of Kenduleaves Wing have been hosted. Similarly, Networking Infrastructure is being upgraded for better cyber security with Next Gen Firewall and Cisco network Switches. All the servers are housed in self-cooled contained chilled racks with networking infrastructure and facilities of storage of generated data. It is planned to host all Forest Department Data from the Data Centre.
- 11) **DRFL:** The project of identification of degraded Revenue Forest Land for the purpose of raising Compensatory Afforestation against the project requiring Diversion of Forest Land for Non-Forest use is under process. This is a part of the Project "Geo-referencing of Forest Land in Odisha". Till date Identification of Degraded Revenue Forest Land has completed in 27 Forest Divisions. Under this exercise all Revenue & DLC Forest in a Division is being Geo-referenced based on high resolution satellite image, cadastral maps and Tahsildar & DFO certified Revenue & DLC Forest Land schedules as per RoR & DLC records. All these data of each Division has made available in the official website odishaforestgis.in for use by Forest & Revenue officials as below:



- 12) **Monitoring of Forest Cover Change periodically:** Beat-wise Forest Cover changes is being analyzed from the ISFR data received from Forest Survey of India, Dehradun using Remote Sensing and GIS Technologies. The change detection data made available in our OFMS web portal for ready reference of the field staffs.



KENDU LEAVES ORGANIZATION, ODISHA

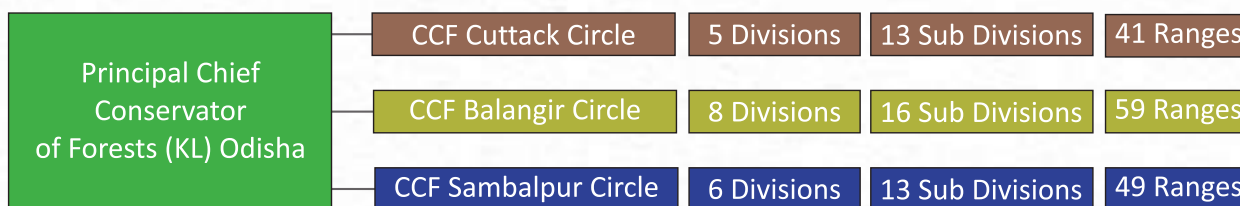
Introduction

Kendu leaves in Odisha, is an important forest produce and natural resource and plays a vital role in the lives of poor people especially tribals of our state. KL trade provides employment during lean summer by generating more than 100 lakh mandays annually, when there is no agricultural work or any other substantial wage-earning opportunity. In consideration of its large-scale importance, it is popularly known as "Green Gold" of Odisha.

Odisha is the third highest producer of Kendu leaves next to MP and Chhattisgarh. The annual production of Kendu leaves is around 3.0 lakh qtls which is about 20% of the country's annual production. It is found in 22 districts (40 Revenue Sub Divisions and 168 CD Blocks) excluding districts of Gajapati, Puri, Khurdha, Kendrapada, Jagatsinghpur, Jajpur, Bhadrak and Balasore. Kendu leaves found in Balangir district is considered as the best quality kendu leaf in the entire country.

17.1. Kendu Leaves Organization

Kendu leaves generates employment for large section of rural and tribal population. Besides, the uniqueness of Odisha Kendu leaves is the value addition of green leaves by way of drying and processing (except phal areas) for which Kendu leaves procurement and processing is managed by a full-scale Kendu leaf organization in Odisha headed by Principal Chief Conservator of Forests (KL). The field establishment comprises of 3 Kendu leaf Circles, 19 KL Divisions, 43 KL Sub Divisions and 149 KL ranges. In addition, there are about 18,000 Seasonal staff engaged in KL procurement and processing.



17.2. Kendu Leaves Working

Kendu leaf trade in Odisha was nationalized in the year 1973. In the meantime, this trade has successfully completed 50 years of working in the state. Since its nationalization, collection and processing of KL are being done by KL Organisation whereas disposal and sale of Kendu leaves have been entrusted to Odisha Forest Development Corporation (OFDC).

Kendu leaf working starts with Bush Cutting operation in the month of February-March. All KL bushes are cut flush to the ground. This operation is done manually by engaging semi-skilled labourers. After 45-50 days of Bush Cutting, collection of KL starts. Pluckers offer kendu leaves in form of "Kerry" containing 20 leaves in process area (In phal area one Kerry contains 40 leaves). KL kerries are purchased at phadis, the collection centres. Processing of KL is done

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in all the Divisions except phal areas which covers entire Jeypore (KL) Division, Nawarangpur (KL) Division, and a part of Khariar (KL) Division. In Phal areas, leaves are sold as such without processing. In the process areas, the leaves after drying are stored inside phadis till processing. There are about 7300 phadis across the state. There are about 8.5 lakh pluckers who offer kendu leaves. During the time of processing, the leaves are graded into different qualities from Grade- I to IV as per the specification of colour, texture, size and leaf condition and 5 Kg bundles are produced. 12 such bundles are packed in gunny bags which makes one bag of 60 Kg and 100 such bags equivalent to 60 qtls are delivered to OFDC for sale as KL lots. Around 23,000 binding labourers and 17,000 seasonal workers are involved in processing of KL.





17.3. Deregulation of KL trade

During 2013, one historical and landmark decision was taken by Government deregulating KL trade in entire Nabarangpur (KL) Division comprising entire Nabarangpur district and Boriguma and Kotpad Block of Koraput district followed by further deregulation in the entire Malkanagiri district of Jeypore (KL) Division during 2014. Now, the pluckers in the deregulated areas have the option of selling Kendu leaves either to Govt or to private traders. In further development of deregulation, recognizing the rights of forest dwelling tribal communities, 19 Gramsabhas in Kalahandi district were vested with Community Forest Right under the provisions of Forest Rights Act'2006 during 2017,2018 and 2021 providing right of ownership, access to collect, use, and dispose Kendu leaves by Gramsabhas.

17.4. Achievement of KL during last 5 years

The physical and financial achievement of last 5 years is furnished below

Crop year	Kerries Purchased In Crore	Physical achievement in lakh Qtl	Financial Achievement in crores	Sale value in crores	Mandays generated in lakhs	OFDC commission in crore	Trade Surplus in crore
2019	96.31	2.033	256.62	376.17	64.14	34.73	84.82
2020	89.34	1.902	265.44	410.79	60.18	38.75	106.60
2021	125.46	2.650	365.84	596.85	80.00	61.43	169.51
2022	130.92	2.785	412.33	589.80	100.00	61.57	115.82
2023	124.95	2.652	405.12 (Provisional)	493.72 (Provisional)	100.00	60.0	80.0

The physical and financial achievement of 2023 crop year upto 31.01.2024 is furnished herein under.

Physical

Crop year	Kerries Purchased In Crore	Target In lakh Qtl	Achievement In lakh Qtl	Sale In lakh Qtl upto 31.01.2024	Sale Value in crores upto 31.01.2024	Anticipated Sale value in crores	Anticipated Trade Surplus in crores
2023	196.00	2.649	2.652	2.09	493.72	570.0	80

Financial

Crop year	Revised Target in crores	Achievement in Crores upto 31.01.2024	Anticipated achievement in crores	Mandays generated in lakhs up to 31.01.2024
2023	412.77	405.12	412.77	100.00

17.5. Fund Management

- (i) Working Fund advance is arranged by OFDC by availing DRI loan and taking sale proceeds from KL Joint account.
- (ii) Kendu Leaves Development Board (KLDB) under the Chairmanship of Hon'ble Chief Minister, Odisha is the apex policy making body
- (iii) KLCC under the Chairmanship of Chief Secretary, Odisha approves budget and monitors progress of KL operations.

Kendu Leaf Development Board (KLDB) under the chairmanship of Hon'ble Chief Minister, Odisha is the apex policy making body and Kendu Leaf Coordination Committee (KLCC) under the chairmanship of Chief Secretary, Odisha approves annual budget and monitors progress of various operational works.

17.6. Welfare Measures

Besides the wages and dues, the entire trade surplus obtained from disposal of Kendu leaves is ploughed back again to the beneficiaries in form of various welfare measures like Bonus to Pluckers, Incentives to Binders and Seasonal staff, financial assistances, various other Welfare allowances- Water bottle, Chappal, Cap, Kerri procurement Cloth to Pluckers, Blanket & Mosquito net to Binders. In fact, Rs 250.75 Crores were distributed to more than 8.0 lakh beneficiaries during 2023 (for the crop year 2022). Government has also distributed Rs. 108.60 Cr. of bonus and incentives to about 9.00 lakhs beneficiaries during the year 2024. (For Crop year 2023).

17.7. Initiatives taken

1. Employment Generation

Kendu leaf provides huge employment opportunity for poor people. The trade generates more than 100 lakh mandays annually. Pluckers are major stake holders. Most of the beneficiaries are tribals and women folk.

2. DBT Payment

The annual budget for kendu leaf working is around 420 Crores. 95 % of the entire budget amount along with all welfare measures to the tune of more than Rs 500.0 Crores are paid to the beneficiaries through DBT in their respective bank accounts.

3. Mobile Banking facility

The remote areas where there are no banks/ATMs or any other facility for cash withdrawal, mobile banking facilities are provided by concerned banks with assistance of KL staff.

4. New Schemes

There is no budget provision for kendu leaf operational works from state budget. However, during Financial Year 2023-24, Rs 50.0 Crores have been provided under a new Scheme "Mukhyamantri Kendu leaf welfare Fund" for welfare of kendu leaf beneficiaries. Similarly, Rs 50.0 lakh have been provisioned for publication of IEC materials under Programme expenditure.

5. Women empowerment

80% of total beneficiaries are women folk which signifies women empowerment in kendu leaf working.



6. Regular hike in kerri price

As reiterated earlier, Pluckers are major stake holders and they constitute about 75%-80% of total beneficiaries. The kerri price is increased on a regular basis every year or atleast once in 2 years benefiting around 8.5 pluckers in the state. The kerri price which was Rs 0.34 per kerri during 2010 has increased by 300 % and presently the kerri rate is Rs 1.60 per kerri for the 2024 crop.

7. Geo tagging of Bush Cutting command areas

Around 6.5 lakh Ha Bush cutting command areas are coppiced annually to get fresh Kendu leaf shoots generating about 10 lakh mandays. During the current crop year initiatives have been taken to have geo-tagging of all such areas with GPS sets.

8. IT Intervention

One web-based application iKLMS(Integrated Kendu leaf Management system) developed by ORSAC is in operation for Kendu leaf working. For real time monitoring all operational details including data base of all beneficiaries have been integrated in a single portal. CMP-SBI portal as a means of direct online transfer of fund to the beneficiaries has been adopted to bring in more transparency in the system.

9. Integration with State DBT portal

"iKLMS" has been integrated with state DBT portal and work is going on to change the mode of transfer of fund from "Account based" to "Aadhar based" to avoid any type of duplication in the payment.

10. KL Anukampa

To smoothen the process, one online platform named "KL Anukampa" is under development by ORSAC for filing online death claim cases.

11. Mo Sarkar

Name & Contact No of 10.30 Lakh beneficiaries (Visitors) have been uploaded in Mo Sarkar portal during 2023-24 against 8.89 lakh visitors entered during 2022-23 to collect random feedback from the beneficiaries.



ODISHA FOREST DEVELOPMENT CORPORATION

Prior to 1962 forests were being worked by private contractors. But it was noticed that contractors were actually not adhering to Working Plan prescriptions leading- to unscientific exploitation causing damage to forests. There were instances of evasion of payment of taxes and non payment of royalty to Government. Contract system did not contribute towards systematic employment of local labourers specially the forest dependent tribal community. Hence the State Government took the decision for creation of the Orissa Forest Corporation with the mandate of "Working of State's vast forest resources scientifically without sacrificing the apparent forest values, ensuring a fair wages to forest labour forces, to promote feasible forest based industries in the State and to generate Tax & Non-tax Revenue to the State".

Odisha Forest Development Corporation was then incorporated on 28th September 1962 by the Government of Odisha as "Orissa Forest Corporation" to replace the privately working contractor system of forest working for producing timber and firewood with a view to use forest resources for generating revenue for the State and also to sell various forest produces acting as Commercial Wing of Forest Department. It is first of its kind Forestry based Corporation in the country for Forest working and revenue generation to the State from Forest Produces. It was incorporated with a paid up capital of Rs 10,00,000/- only which was subsequently increased to Rs 5.00 crore over a period of time.

During first year of its incorporation, Saw Mills were also installed at Rourkela, Jeypore, Mathili and Ballimela to provide the sawing facility to the people of the state as per demand of people and at present there are 9 saw mills are in operation at different parts of State of Odisha.

While timber, firewood and allied products remained its main activity, it entered into Kendu Leaf trade from the year 1965-66 and Sal seed trade from 1974-75. Subsequently, kendu leaf was nationalised from the year 1973 and Orissa Forest Corporation was made the sole selling agent of Kendu Leaves as per the provisions of the Orissa Kendu Leaves (Control of Trade) Act 1961. Further, from the year 1983 when Sal seed was nationalised, Corporation was entrusted with the task of collection of Sal seeds from a major part of the State as per the provisions of the Orissa Forest Produce (Control of Trade) Act 1981. Further it also collected Mohua Flower during 1991-92 to 1992-93 to fulfil the mandate of the Government.

In 1991, as per decision of the State Government two forestry-based corporation namely Similipal Forest Development Corporation Ltd which was operating in the Similipal Biosphere region of the state and M/s Orissa Plantation Development Corporation Ltd which was looking after afforestation activities of the Forest Department were merged with Orissa Forest Corporation to form a mega Corporation in the Forestry Sector of the State. The name of the Corporation was then changed to Odisha Forest Development Corporation Ltd.



18.1. OBJECTIVES

Align with the policy of the Government, the Corporation objectives are as follows:

- ❖ Scientific and sustainable working of forest resources
- ❖ Marketing of various forest products, both raw and value added within and outside the state
- ❖ To plant, grow, cultivate, propagate, produce and raise plantations of all varieties of forest species, trees, grasses, medicinal plants and crops.
- ❖ To buy, sell, export, import, process, manufacture, distribute or otherwise deal in all kinds of forest plants, trees, kenduleafs and other forest products
- ❖ To establish depots at convenient places for supply of timber, firewood and other forest products to the local people at reasonable rate
- ❖ To act as a nodal agency of the state for promotion of Ecotourism in the State.
- ❖ To undertake projects and scheme to discharge its Corporate Social Responsibility to the society.

18.2. ORGANISATION

OFDC operates through its 7 nos. of Commercial Divisions, 12 nos. of Commercial-cum-Kendu leaf Divisions and 1 no. Plantation Division. Besides Head Office, it has 4 nos. of Zonal Administrative Offices. OFDC has following operational units:

Units	Numbers
Zone Offices	04
Division Offices	20
Sub-Division Offices	63
Central Timber Depot	52
Retail Timber/Firewood Depot	67
OFDC Kendu Leaf Central Godown	39
Saw Mill	09
Commercial cashew Plantations	199
Other Commercial Plantations	728
Rubber Plantation	3
Canning & Pickling Unit	1
Theme Park (Jaydev Batika)	1

18.2.1. TIMBER & FIREWOOD

Timber and firewood is the main trade activity of the Corporation. Corporation receives maximum timber and firewood from coupe working based on the prescription of Working Plans ensuring scientific working of forests. In addition, timber is also received by salvaging from forests floor, from seized timber relating to different types of offences cases, developmental site clearance projects, from mining areas and tenants timber etc. Till 1990, clear felling and coppice working of coupes were quite prevalent, replacing miscellaneous forests with economic species. This system has been gradually phased out and conservation of biodiversity has got precedence over commercial exploitation of forests.

Many productive forest areas of State have been declared as Sanctuaries and National Parks. From the year 1992- 93 to 2004-05, Government of Odisha had imposed total ban on green felling of trees in forests of the State. Thus coupe working in the forests came to a standstill. All these steps reduced the availability of timber and timber trade of Corporation suffered badly. After lifting of ban from 2005-06, the new Working Plans have become very conservation oriented as a result many coupes have become economically non-viable. Many of forests areas are also affected with extremists problems where working was not congenial and these coupes were also not worked. Thus, availability of timber has been reduced considerably. From other sources also timber availability fluctuates depending on many factors. Thus, Corporation which traded about 3.29 lakh cubic meter of timber during 1982-83 is now trading only a meagre quantity of 0.30 lakh cubic meter per annum.



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The timber so obtained is put to sale through auction/tender by forming lots generally of volume equal to one truck load with same species and similar type of timber. Later on, to meet the requirement of local people, some timber as per choice of the purchaser are sold to them at fixed retail rate. From the year 2006-07, Government have taken decision to sell 30% of coupe timber to local people on retail basis confined to 35 cft. per family per year. With effect from 2008-09, Government have also earmarked 40% of irregular lots for sale on retail. It is seen that only for species like Teak and Sal there is more demand among retail purchasers.

Production of Timber & Firewood and Revenue earned by the Corporation during the last Five years are furnished below:

Timber Production (in cum)

Financial Year	No.of Coupes Worked	Timber Production			Total
		Coupe	Salvaging & UD Case	Other Sources	
2018-19	95	15206	6506	12733	34445
2019-20	97	14001	9621	6462	25001
2020-21	119	16069	3970	5994	26033
2021-22	100	12528	3436	4666	20630
2022-23	144	20346	3431	5919	29696

Firewood Production (in Stacks)

Financial Year	No.of Coupes Worked	Firewood Production			Total
		Coupe	Salvaging	Other Sources	
2018-19	95	8405	1805	19013	29223
2019-20	97	6381	4551	11108	22041
2020-21	119	6402	1112	12232	19747
2021-22	100	7014	2228	12402	21644
2022-23	144	8724	1929	1410	24760

Revenue from Round Timber & Firewood (in Crore Rs.)

Financial Year	Timber	Firewood	Total
2018-19	109.78	14.34	124.12
2019-20	79.05	10.36	89.41
2020-21	66.94	7.21	74.15
2021-22	50.52	8.87	59.39
2022-23	56.10	11.55	67.65

18.2.2. SAW MILL OPERATION

OFDC Ltd is operating 9 Saw Mills at Berhampur (Ganjam), Khapuria (Cuttack), Jeypore (Koraput), Maithali (Malkangiri) Nowrangpur, Remed (Sambalpur), Muniguda, Kantabanji, and Rourkela for meeting sawing requirement of the general people. The Corporation also sells different sawn sizes by sawing timbers. It has sawn sizes godown at all these places. Recently the Corporation has upgraded the sawing capacity of 4 nos. of existing saw mill units followed with installation of automated saw mill units shifting from conventional operation to automation there by improving the quality of sawing and reduction of wastage.



18.2.3. KENDULEAF

Kendu leaf is an important 'Non-Timber Forest Products (NTFP)' item of Forest Department. It is used as wrapper of Bidi. In Odisha these leaves are collected, stored, processed and bagged by Kendu Leaves organisation of Forest Department. There are two different ways of trading these leaves - 'Phal' leaves which are the dried leaves bagged in standard bags, each weighing about 40 Kg. Such type of collection is common in Kendu leaves producing states like Andhra Pradesh, Bihar, Chhatisgarh, Jharkhand, Madhya Pradesh, Maharashtra, Rajasthan, and U.P. The other kind of trading involves processing of leaves at Phadi house into different grades of quality and leaves are bundled quality wise weighing 5 Kg each and bagged with each bag weighing about 60 Kg. These processed leaves are the monopoly of Odisha State only and best quality processed leaves are exported by the purchasers to countries like Sri Lanka, Bangladesh, Pakistan etc. This trade creates about one crore mandays of job mostly during peak summer season. Corporation entered into this trade from the year 1965-66. However, after nationalisation

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of produce from the year 1973, Corporation has been made the sole selling agent. After collection, processing and bagging, the leaves are delivered to Corporation by the Kendu Leaves Organisation and the Corporation through its marketing strategy sells the leaves through tender or Auction. Tender or Auction takes place at regular interval. The manual tender and auctions for sale of Kendu Leafs are now being replaced with e-tender and e-auction mode through e-tender/e-auction portal of OFDC Ltd. For kendu leaves working in the field, Corporation arranges working fund advance for Kendu Leaves Organisation which are subsequently recovered from the sale proceeds. Corporation gets commission at fixed rate. After realising taxes, working fund advance and commission, balance fund is paid to Kendu Leaf Development Fund.



Crop Year	Quantity delivered to OFDC (in Lakh Qntl)	Quantity sold (in Lakh Quintals)			Sale Value (Rs. in Crore)
		Processed	Phal	Total	
2018	2.84	2.36	0.48	2.84	461.71
2019	2.033	1.584	0.449	2.033	377.98
2020	1.915	1.584	0.331	1.95	410.81
2021	2.649	2.118	0.420	2.538	593.45
2022	2.785	2.327	0.457	2.784	589.77

18.2.4. Harvesting & Disposal of Red sanders wood

1262 Red sanders trees were damaged/ uprooted during 'Titili' Cyclone in October 2018 in Parlakhemundi Forest Division, out of which 1252 trees were delivered to OFDC in six phases (25.03.2019 to 07.02.2022) and balance 10 trees have been harvested by the Department and converted stocks handed over to OFDC Ltd. The harvesting of 1262 trees were completed by FY 2022-23 with outturn of 11106 logs = 1306.0116 cum, which have been transported to depot at Berhampur. The fashioning of 11106 Red sanders logs have been completed and 729.9255 cum = 943.0914 MT of heartwood obtained.

The Ministry of Environment, Forest & Climate Change (Wildlife Division), Govt. of India have accorded CITES clearance for a one-time disposal of 810.1894 MT (769.94 cum) of Red sanders heartwood and the Director General of Foreign Trade, Ministry of Commerce & Industries, Govt. of India have relaxed the prohibition on export of 810.1894 MT of Red sanders wood in

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log form for export by Forest, Environment & Climate Change Department, Government of Odisha. The relaxation was initially valid for a period of one-year up to 6.10.2022 and subsequently extended up to 06.10.2023. The grant of further extension of relaxation period by the DGFT is awaited.

For disposal of 810.1894 MT of Red Sanders heartwood, Government have constituted a Committee under the Chairmanship of Additional Chief Secretary to Government, Forest, Environment & Climate Change Department to facilitate the global e-tender/e-auction sale of 810.1894 MT of Red Sanders wood in log form vide Notification No. FE-PRO-FPRO-0001-2019/922/F&E, dt. 13.01.2022. The State Government have also constituted other committees to suggest upset price of different lots of Red sanders wood and approval of upset price of each Red Sanders wood lot respectively. A technical committee under chairmanship of RCCF Berhampur circle is supervising re-measurement, fashioning, grading and lot formation etc. of Red sanders heartwood logs.

On approval of the Special Terms & Conditions (STC) along with General Terms & Conditions (GTC) and Buyers Specific Terms & Conditions (BSTC) in respect of sale of 810.1894 MT of Red sanders heartwood through global e-tender-cum-e-auction by the State Level Committee during their meeting held on 05.09.2022, the OFDC had notified for global e-tender-cum-e-auction sale of 809.7844 MT of Red sanders wood in 38 lots. The global e-tender-cum-e-auction sale was held in 3 cycles i.e., on 17.02.2023, on 03.03.2023 and on 17.03.2023. 3 (three) nos. lots weighing 38.7082 MT have been sold at Rs.13,70,07,278/- and sold material already shipped to foreign country.



18.2.5. BAMBOO

Like Kendu leaves, Bamboo is also a nationalised forest produce in the State. It is worked in the forest areas as per the prescriptions of Working Plans and Working Schemes. For managing the working of Bamboo there is an 'Empowered Committee' at State level under the Chairmanship of Additional Chief Secretary, FE & CC Department. Bamboo working is done by OFDC



Ltd through Raw Material Procurers (RMP) as per guidelines approved by the Empowered Committee. Most of the Bamboos in the form of Industrial Bamboo [I.B] are sold to different industrial units whereas Commercial Bamboos [C.B] are harvested for supply to local people and Bamboo artisans at concessional rate. Till 2016, the paper Mills were major procurers of Industrial bamboo. In the meanwhile, Paper Mills have adopted a new technology for paper manufacturing replacing bamboo with soft wood as raw materials. Thereby, requirement of bamboo as a raw material is reduced to minimal which has resulted in drastic reduction on the demand of Industrial Bamboo.

Financial Year	No.of Coupes Worked	Production of	
		Industrial Bamboo (in SU)	Commercial Bamboo (in nos.)
2017-18	37	9268.45	449413
2018-19	32	3748.78	306562
2019-20	24	3502.26	351938
2020-21	38	4873.47	375851
2021-22	29	3245.00	204810
2022-23	29	4459.72	101590

18.2.6. COMMERCIAL PLANTATION

Commercial Plantations including Cashew, Rubber, Eucalyptus and other suitable species have been raised by OFDC over an area of 53,389 ha. The Cashew Plantations are leased out through competitive bidding process to the interested bidders for collection of cashew nuts. The Corporation has taken steps for enrichment of 10 nos. of Cashew Plantation fields through nurturing of naturally regenerated seedlings by taking up enrichment measures such as weeding, soil working & manuring etc.



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The Rubber Plantations have been raised during 1985-86 in Khurda and Mayurbhanj districts. For collection of latex, the existing Rubber Plantations are leased out to entrepreneurs through competitive bidding process. The OFDC Ltd. also collects latex and sells processed rubber to different entrepreneurs as value added product, where plantations could not be leased out.

18.2.7. CANNING CENTER

The OFDC is also processing MFP items like honey. It is also producing pickles from mango, lemon, green chili etc. and squash and also a non-carbonated soft drinks made from honey, ginger and lemon. These items are sold through various outlets of OFDC and also through authorised selling agents. There is good demand of all these products in the market throughout the State. Keeping the demand in view, OFDC has set up an Automated Honey Processing Plant at Jashipur of Mayurbhanj District of the annual capacity 15 MT.



18.2.8. ECOTOURISM AND THEME PARK

OFDC has been appointed as the Nodal Agency for promotion of Ecotourism in the State and to provide one stop solution for this purpose. The OFDC is operating the ecotourism portal www.ecotourodisha.com and doing advance booking for all the accommodation facilities available at 49 numbers of Eco-tourism Destinations. The OFDC is also doing advance booking for safari vehicles and boating facilities wherever available in these sites.

During the financial year 2022-23, there were 10701 nos. of online booking for accommodation with total transaction value of Rs.13.79 Crore.



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The OFDC Ltd has developed a natural park at Jaydev Vatika in the outskirts of Bhubaneswar. Jaydev Vatika is an aesthetic park having more than 300 native and exotic species with medicinal trees, shrubs, herbs, climbers, grass and bamboo spread over an area of 39 hectares. The natural topography added with creative landscaping with vast expanse of lawn and meadows, lilies ponds & lotus ponds, floating fountains, artificial waterfall and cascading stream have indeed made it a wonderful picturesque landscape park with scenic beauty for the visitors to have mental peace with ecstatic joy. Further development work in the park has also been taken up on a continuous basis for providing better facilities to the visitors. During the FY 2022-23 earnings of Rs.168.44 lakhs has been made by the OFDC from the Park.



With the reduction of timber working, bamboo working and reduction in sale of kenduleafs due to more than one external reasons, the OFDC Ltd has diversified its activities by taking up new areas of working viz plantation, landscaping, sports ground development, selling other value-added forest & non-forest produces and promotion of ecotourism.

The OFDC Ltd is the one specialized agency in removal of trees for site preparation for any infrastructure developmental projects.

In recent years, it has expanded its field of operation to green consulting and turnkey projects which now contributing 10-15% of its total revenue as commission by implementing several plantations and greening projects. It has established a strong credential in reforestation mining area, degraded lands, industrial zones and establishing several eco parks and landscaping stadiums and institutional campus.





The OFDC Ltd is also engaged in raising avenue and block plantations, plantations around industrial, urban and coastal areas, landscaping etc. for various institutions like IOCL, Dhamra Port, NHAI, East Coast railways, Airport Authority of India, MCL, NALCO, OMC, SAIL etc. The landscaping project of Kalinga Stadium at Bhubaneswar, Birsa Munda Hockey Stadium at Rourkela, IOCL campus at Paradeep Port area, Ravenshaw College Stadium, Raj Bhawan at Bhubaneswar and Eco-Park at Jayadev Vatika and many more greening projects of the State under implementation by this organization demonstrates the newly acquired expertise of the OFDC Ltd. and now become a major green developer of the State.





The Corporation is also discharging its social responsibilities effectively as a responsible partner of the Government and always stood by the Government during cyclone and other natural calamities for tree clearance work in order to restore road communication, power restoration for safety of life & property of public and thereby ensuring immediate assistance and relief to the people of the affected area. The untiring, dedicated service of its staffs and officers in bringing normalcy among the people of the affected area during post severe cyclonic storm “Hudhud”, “Titli” and “Fani” have been appreciated at various quarters.



Towards fulfilling its mandate, this organization directly and indirectly helps in creating employment opportunities for people living within and at periphery of forests especially for weaker sections of society and thus helps in reducing dependency of these people on forest leading to better protection of forest and wildlife. The Corporation has also been contributing substantial amount to the exchequer which helps the Government to take up various developmental measures for the people associated with the trade.



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It is a fact that inspite of low capital base, the corporation which is a Zero Debt PSU of the State has made its best efforts to turn around its financial conditions. This Corporation has been not only earning profits consecutively for last 15 years and paying cash dividend to Government every year complying to the direction of the Government, it has also excelled in its workings for categorization as Gold Category State PSU in terms of guidelines of the Public Enterprises Department, Govt. of Odisha. The turnover, income from operation and profit before tax for last five years are as follows:

Turnover & Profit for Last 5 years (in crore)

Financial Year	Turnover	Income from Operation	Profit for the year (Before Tax)
2018-19	647.23	195.72	25.84
2019-20	562.46	152.03	20.15
2020-21	611.75	140.21	25.58
2021-22	740.58	242.50	27.42
2022-23	754.04	256.23	30.02

Corporation working is totally based on forest products. At the time of its inception there were no regulatory laws except 'The Orissa Kendu leaves (Control of Trade) Act, 1961 and subsequently Orissa Forest Act, 1972, Wildlife (Protection) Act, 1972 and 'The Orissa Sawmill and Saw Pit' (Control) Act, 1991 were promulgated. The Rules under these Acts also came into force at different point of times. Thus after 1972, trade of Corporation was affected due to various regulations. From the year 1980, Forest Conservation Act 1980 came into force. The restriction imposed on running of Saw Mills during 1st decade of this century had not only affected its revenue but also deprived the people of sawing facilities. Now Forest Rights Act 2002 is further going to affect its trade of timber, KL and Bamboo.

In this background, OFDC has to search new avenues for diversification of activities align with its expertise for sustenance. Apart from Ecotourism, Government's programme of afforestation through various schemes has created mass awareness among masses for tree plantation on their private lands and farm lands. These have to be harvested by the owners to get the benefit by selling it and earning the income. In tenant timber business, there is vast scope for Corporation to get the work. The removal of such timber from tenant's land as per tenant's convenience need Government's special attention by simplifying the rules and procedures.

Further OFDC needs land for taking up plantation from its own resources which after harvesting can meet the requirement of people and Industry and will generate revenue to the Corporation. Ther plantation raised by OFDC on Forest lands from its own resources in the past are yet to be harvested fell due to various reasons. By having its own land Corporation can have its own scheme of plantation and harvesting.

There is a potential market for pure and natural honey and the quality of the honey processed and sold by the OFDC is quite good compare to other branded honey available in the market. A step for setting up of production of processed honey through Automatic Processing Plant is a welcome move by the Corporation. However, there is a need to create and establish a marketing channel for marketing of canning MFP products to augment its revenue activities.

CHILIKA DEVELOPMENT AUTHORITY

For the preservation of Chilika Lake ecology and conservation as well as to bring an all-round development in and around the lake, calls for multidimensional and multi-Disciplinary developmental activities, Chilika Development Authority is carrying out the Most desired and appropriate restoration measures of the lake. The following are the main activities taken up

19.1. Formulation of the leasing policy of Chilika Fishery Sairats

As per the Order of the Hon'ble High Court of Orissa Chilika Development Authority, Bhubaneswar formulated a Chilika Fishing Leasing and submitted the same to Addl. Chief Secretary, Revenue & Disaster Management, Govt. of Odisha. As per the direction of the Hon'ble High Court of Orissa, CDA prepared and shared the individual earthen gherry superimposed on Cadastral maps to all three districts namely Puri, Khorda, and Ganjam Tahasil. Which includes Longitude and Latitude values, Length of the Pond and also area.

19.2. Excavation of Feeder Channel

CDA has been carrying out the Bhusandapur Creek excavation to facilitate the navigation of the Tourist and Fisherman boats to Chilika Lake.



19.3. Chilika Health Report Card

Chilika Development Authority has published the Chilika Health Report Card every two years since 2012, taking the inputs from the monitoring data. The 2022 Health report is under preparation.

19.4. Monitor the Physiochemical Parameters

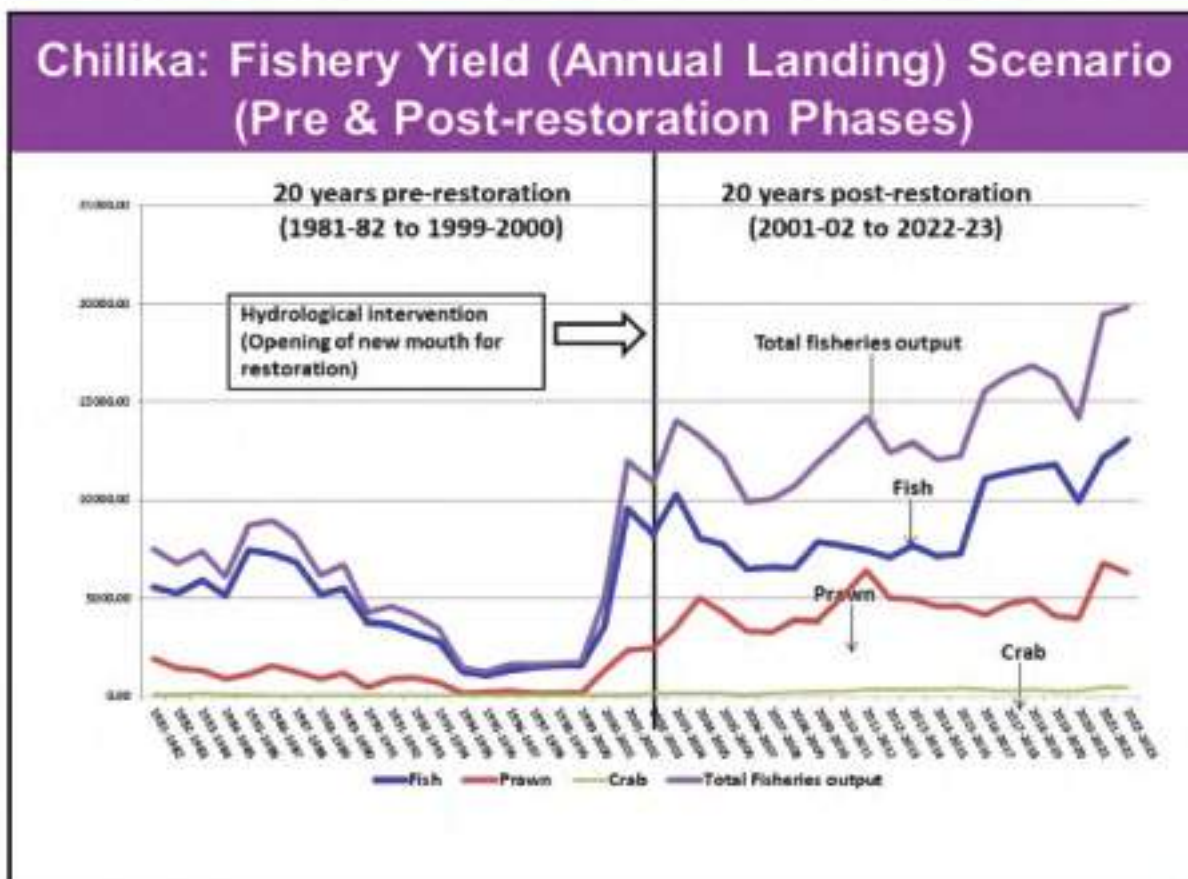
Chilika Development Authority monitors the Physiochemical Parameters from 33 pre-defined stations covering 4 sectors of Chilika Lake and monitoring the Chilika Inlets every month.

19.5. Wetland Campaigning

Chilika Development Authority is identified as one of the Knowledge partners by the Minister of Forest, Environment & Climate Change, Govt. of India under the Save Wetland campaigning and Amruta Dharodhar Programme.

19.6. Fishery Resource Development

CDA has been continuing to monitor the fishery resource assessment from 34 landing centers and two go-downs, demolition of unauthorized gharries, research studies on crab and shrimps, construction of fish landing centers, capacity building, and training of fishermen, etc.



19.7. Population Estimation of Fishing Cat

CDA initiated the Annual Population Estimation of Fishing Cat. The total study area is 230 sq. km. A map of this study area was superimposed with grids of 1.5 km x 1.5 km. Each station was placed at the location for at least 30 trap nights, leading to 1440 trap nights. A total No. of 119 were recorded along with seven kittens during the first phase of Population estimation in the Northern sector of Chilika Lake.



19.8. Annual population estimation survey of the Irrawaddy Dolphin

Irrawaddy dolphin is the flagship species inhabiting Chilika Lake. The annual population estimation survey of the Irrawaddy dolphin has been conducted by CDA since 2003. The annual survey is conducted by the "Transact Survey Method" followed worldwide for a population of aquatic mammals. Each survey team was equipped with binoculars, GPS, Range finder data recording sheets, etc.

19.9. Wetland Research, Training, Monitoring & Assessment; Ecological Health Monitoring of Chilika

Wetland Research and Training Centre (WRTC), Barkul is currently monitoring the ecological health of Chilika Lagoon through a systematic monitoring and research program. The monitoring program measures vital biological and chemical parameters from the lagoon which are bioindicators of lake ecological health. Currently, measurement of physicochemical parameters such as Depth, Water transparency, Specific conductivity, Turbidity, pH, Salinity, Dissolved Oxygen (DO), nutrients, and Biochemical Oxygen demand (BOD) is done from a total of 33 stations of lagoon every month. The spread of seagrasses and phytoplankton, zooplankton, and benthic organisms are also monitored.



19.10. Ansupa lake

For the long-term sustainable development of Ansupa Lake, the only freshwater lake of Odisha many important and viable activities have been undertaken by the Chilika Development Authority (CDA). The following are the main activities taken up.

19.11. Fishery Resource Development

CDA has been continuing to monitor the fishery resource assessment from 33 landing centers and Two Godowns, demolition of unauthorized gharries, research studies on crab and shrimps, construction of fish landing centers, catch capacity building, and training of fishermen, etc. The total estimated Fish, Prawn and Crabs from Chilika during the year 2021-22 was 12187.58 MT, 6762.02 MT and 478.70 MT respectively and total recorded fish landing was 19428.30 MT.

1. De-weeding of Ansupa Lake

To decrease the excessive weeds in the lake, the De-weeding work has been taken up in 56.55 ha area in the lake. It will be helpful for navigation and plying of tourist boats.

2. De-siltation Work

The sediments come to Ansupa Lake from the catchment area as well as from the Mahanadi River system. The lake bottom silted up from year to year resulting in shallowness of the lake. De-siltation work has been undertaken in 318 CuM in the lake.

3. Nature Trail Work

For the benefit of the tourists coming to the lake, 307 sqmt of cement concrete road has been built in the nature trail. Besides, morum was spreading over 990 rmt area. Construction of 2 nos. of thatched waiting room has been completed.

4. Fishery Activities

To increase the socio-economic condition of the local fishermen and to increase the fishery resource of the lake, the Chilika Development Authority has released Yearlings of Indian carp and Grass carp into the lake. These grass carp will also help to decrease the sub-merged weeds in the lake.



HIGHLIGHTS OF ODISHA FORESTRY SECTOR - 2024



Eco-park, Ansupa



Monitoring Centre at Eco-park, Ansupa



Repairing of OTDC Hall at Ansupa



Watch Tower No-2 at Ansupa



REGIONAL PLANT RESOURCE CENTRE

Research and Developmental Activities in RPRC

Being an autonomous R&D institute of Forest, Environment & Climate Change Department, Govt. of Odisha, Regional Plant Resource Centre (RPRC), Bhubaneswar, has been implementing various R&D activities primarily through execution of various research projects relevant to the state and establishment of different State of the Art facilities to produce and conserve plant genetic resources such as Modern Tissue Culture Laboratory, Orchidarium, Threatened Plants (RET) Garden: Wild Edible Fruits Garden, Medicinal Plants Garden, Cacti and other Succulents, Jagannath Vatika, Fragrant Flower Garden, Morning Health Walk etc. Various research programmes have been undertaken with the financial support from Forest, Environment & Climate Change Department, Govt. of Odisha, RKVY, Science & Technology, Govt. of Odisha, other apex central funding agency like DBT, NMPB, Govt. of India, which were prioritized to address issues pertaining to conservation and bio-resource utilization relevant to the state of Odisha.

RPRC has prioritized research areas such as re-introduction of RET and other important special group of plants including mangroves and orchids, domestication and evaluation of wild edible fruits and medicinal plants for active bio-molecules, nutraceuticals, antioxidants, useful secondary metabolites from fungi, micro-propagation of edible mushroom, forest species, plantation crops and endangered plants.

During the year 2023-24, a total of three external funded, twenty state plan funded projects have been implemented during the year 2023-24, engaged around thirty research fellows, published sixteen research papers, two books, one Research & Activity Report, trained five M.Sc. Biotech students for their PG degrees.

20.1. Highlights of various research activities undertaken

20.1.1. Microbiological Applications

Morphotaxonomic characterization and documentation of fungi of Odisha have been done for documentation of microfungi in forest soils of Odisha. Till date 87 no. soil samples collected. Total 321 no. fungal isolates obtained. Segregated into 170 no. of fungal isolates & Plate culture of 162 no. of fungi completed. Slide culture of 152 no. of fungi completed

Bioprocess optimization for enhanced recovery of L-glutaminase free L-asparaginase of fungal origin has been undertaken. Determination of effect of different K, P, Mn, Mg, Ca, Fe salts, amino acids, organic acids, vitamins, hormones for improvement in enzyme production is in process. Lyophilised enzyme samples being subjected to analysis for evaluation of anticancer properties. The fungal strain has already been submitted for Molecular Identification.

Extraction, purification and characterization of piperine content have been undertaken to harness the potential of endophytes of *Piper longum* as an alternate source for piperine production through optimization of protocol for laboratory production.

Bioactive lead molecule from fungal endophytes has been extracted, purified and characterized with Endophytic fungi having potential candidate for the production of various secondary metabolites to explore and investigate alternative avenues for searching novel bioactive molecules.

20.1.2. Tissue Culture & its application on various important plant spp. (banana, orchids, medicinal & forest spp. & mushrooms)

In vitro regeneration techniques of red banana has been standardized for establishment in Odisha climate condition. After micropropagation, hardening experimentation has been undertaken. Impact of various hardening media like Soil, Vermicompost; Soil mixture and Vermicompost (1:1), Soil mixture and Vermicompost (2:1) & Soil mixture and Vermicompost (1:2) have been assessed. Impact of varying concentrations of Auxins and the salt content of MS (Murashige and Skoog) media on the in vitro rooting of red banana micro-shoots. Vermicompost effectively decreases the mortality percentage while simultaneously increasing the survival percentage (up to 95%). Growth performances are also being studied.

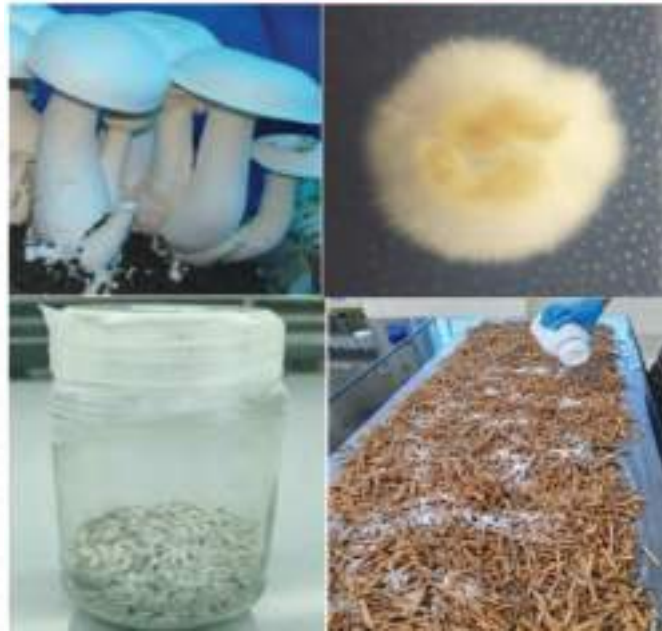
The figure shows the preparation of the media bed and the transfer to the primary hardening chamber of red banana plants



Conventional propagation & reintroduction for conservation of a few endemic and endangered plants in Odisha such as *Rademachera xylocarpa*, *Nothopegia racemosa*, *Cryptocarya amygdalina* and *Alphonsea madraspatana* by collecting seeds, air-layering and rooting stem cuttings have been undertaken. Raised *Cryptocarya amygdalina* plantlets (1500 nos) during the first phase.

Developing protocols for spawn production and cultivation of few selected wild edible mushroom species in Odisha. *Termitomyces clypeatus*, *Termitomyces medius*, *Russula cyanoxantha*, *Russula lepida*, *Tuber rufum* and *Calocybe indica* are subjected to micro propagation to explore ideal explant, media and optimizing temperature, pH and humidity for achieving pure cultures.

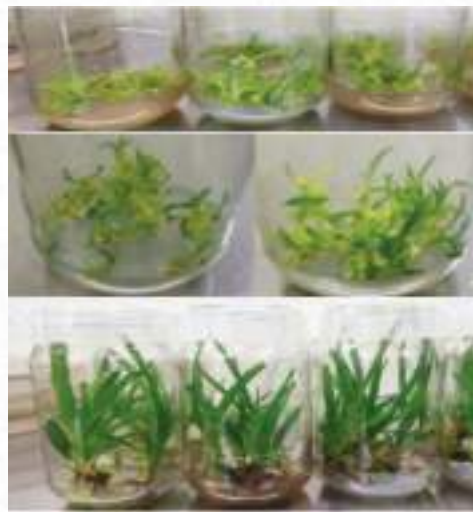
Development of pure culture of *Calocybe indica* and spawn production



Development of pure culture of *Calocybe indica* & Spawn production

Efficient micro-propagation methods for some RET listed forest tree species of Odisha has been standardized. Collection of nodal explant source from tree & culture establishment for *Pterocarpus santalinus*, shoot initiation and growth of nodal segments (explants collected from tree/ germinated seedlings), explant source from the seedling & culture establishment, axillary shoot, multipleshoot initiation and growth (from germinated seedlings) have been achieved. Besides, shoot initiation and growth of *Lasiococcomberis* nodal segments has also been achieved.

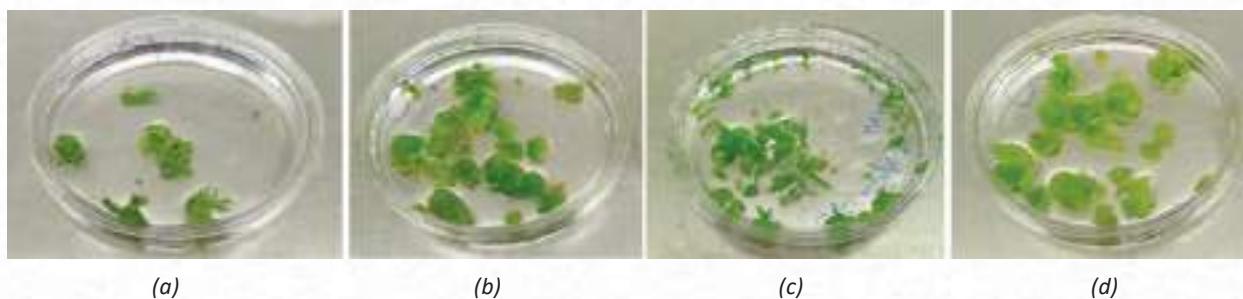
Standardization of propagation methods for *Bulbophyllum*, *Pomatocalpa decipiens* and *Cymbidium bicolor* orchids through tissue culture has been achieved through seeds as well as vegetative parts as explants like young shoot buds.



Propagation of *Cymbidium bicolor* through in vitro culture of shoots



Generation of Genetic Variants for *Dendrobium*, *Cattleya*, *Cymbidium* and *Spathoglottis* Orchids Through Mutation Breeding towards the development of Novel Flowers has been initiated. Seeds/protocorms are subjected to chemical mutagen (EMS- Ethyl methanesulphonate. Mutation induction has been started with the protocorms of *Cymbidium aloifolium*, *Dendrobium Sonia*, *Cattleya pink*, *Spathoglottis plicata*.



Mutation treatment for 24hrs condition; Protocorms of (a) *Spathoglottisplicata*, (b) *Dendrobium Sonia*, (c) *Cattleya pink* and (d) *Cymbidium aloifolium*.

Using Mass Propagation and Breeding Facility of Orchids, established in RPRC, *in vitro* propagation of *Dendrobium*, *Cattleya* orchids has been undertaken. Development of molecular markers for the *Dendrobium* orchids has also been worked out.

In order to regulate ripening and enhance fruit shelf-life in banana, an important fruit crop for food security, studies through Omics-approach have been undertaken. In this context RNA isolation and cDNA synthesis started for different developmental and ripening stages and tissues (peel and pulp) of banana along with studies on RTqPCR for the selective genes/proteins concerned.

20.1.3. Wild Edible Fruits : Conservation and nutraceutical analysis

Sugar Profiling and Antinutrient Analysis of Some Unexplored Wild Edible Fruits of Odisha: Sugar profiling and antinutrients analysis were performed for eight different wild edible fruits to identify fruit species containing less amount of anti-nutrients and sugar content for selective & legitimate consumptions as well as to encourage its conservation. Sugar profiling (Total Sugar, Reducing Sugar and Non-reducing sugar) & Antinutrient (Oxalate, Tanin, Phytate, Phenolic content) were quantitatively analysed through spectrophotometer and further isolation and qualitative analysis using HPLC is going on.



Ficus racemosa Eugenia roxburghii Grewia asiatica

HIGHLIGHTS OF ODISHA FORESTRY SECTOR - 2024

Characterization Of α -tocopherol & Polyphenols in Some Immune Boosting Wild Edible Fruits Used by Tribal Communities for Therapeutic Value: This research aims to characterize, isolate, and analyze α -tocopherol and Polyphenols in ten wild edible fruit species to identify potent and immune-boosting fruit species. Fruits were collected from three different agro-climatic zones of Odisha for better comparison and selection of promising one. Isolation and Qualitative study of α -tocopherol and Polyphenols (Tannin, Flavonoid, Phenolic, Quercetin, Catechin) were planned to carried out using UV-V is Spectrophotometer followed by HPLC. Screening and quantitative analysis of polyphenols were performed through UV-Vis Spectrophotometer and HPLC analysis for polyphenols are going on.



Carissa spinarum



Artocarpus lakoocha



Phyllanthus acidus

(*alpha*-tocopherol (Vit-E)& Polyphenols analysis)

Conservation of wild edible fruit plants through field introduction in different protected wild areas of Odisha: Field introduction of wild edible fruit species done at Site: 1 Podagada, Nayagarh Forest Range under Nayagarh Forest Division. And Site: 2 Sorisiapada, Kapilash Forest Range under Dhenkanal Forest Division. Field visit to Chandaka WL Division completed for site survey. Each site was introduced with around 900 saplings of *Antidesma ghaesembilla*, *Carmona retusa*, *Eugenia roxburghii*, *Glycosmis pentaphylla*, *Polyalthia suberosa* and *Toddalia asiatica*.



Field introduction of wild edible fruit species at Podagada, Nayagarh Forest Division



Field survey for field introduction of Wild edible Fruit species at Dhenkanal Forest Division

20.1.4. Propagation and reintroduction of Mangrove plants

Conservation of rare mangrove species of *Xylocarpus* through vegetative propagation & re-introduction in protected areas of Odisha.:Artificial regeneration of these rare, endangered, and threatened mangroves viz. *Xylocarpus* spp. through vegetative propagation methods has been attempted. Various methods, such as air-layering and Black-taping, were employed for rooting and artificial regeneration using rooting hormones. Air-layering was effective in *X. granatum* and *X. mekongensis*, but *X. moluccensis* acted as difficult to root species. Further mass propagation and hardening are in progress.



Hardening of Vegetatively propagated *Xylocarpus granatum* and *X. mekongensis*, under Shade-Net House in RPRC

20.1.5. Medicinal plant and its application

A study has been undertaken to explore ameliorative effect of *Aporosa octandra* against carbon tetrachloride-induced oxidative stress and hepatocellular injury in experimental animal model along with the phytochemical investigation of the leaf extracts.

The fruit extract of *Buchanania lanzan* Spreng., a medicinal plant, has been studied for its protective diabetic neuropathy effect in streptozotocin induced type 2 diabetic rats for exploring the therapeutic potential.

Biological evaluation of leaf extracts of *Zingiber zerumbet* and *Hedychium spicatum*. Both of these are rhizomatous plants and rhizomes have been reported to Possess significant medicinal properties, In the project leaf extracts of the same are being explored for their medicinal properties through Phytochemical analysis for the presence of secondary metabolites, antioxidant activity of extracts using qualitative and quantitative assays and Cytotoxic activity of leaf extracts using brine shrimp assay.

An exploration study on cytotoxic potential of methanolic leaf extract of medicinal plant *Crinum defixum* has been undertaken. In order to isolate active principle, large scale preparation of methanolic extract of leaf of the plant has been initiated which is followed by column chromatographic separation various gradients of acetonitrile and methanol for isolation of single molecule.

20.2. OTHER ACHIEVEMENTS

1. Up-scaling of QPM production & Sale: Ornamental & Garden plants, Seasonal & Orchids, wild edible fruit plants.
2. Establishment of Modern Plant Sale Counter.

HIGHLIGHTS OF ODISHA FORESTRY SECTOR - 2024

3. Celebration of Van Mahotsav 2023: Introduction of RET Plants in RET Garden, RPRC.
4. Release of RPRC Publications on occasion of World Environment Day 2023.
5. Organize Exposure Visits to RPRC by various organizations/institutions.

20.3. RELEASE OF BOOKS AND OTHER PUBLICATIONS



RPRC Publications (2023) Released on occasion of World Environment Day (June 5th, 2023): Book: i. Fungi of Odisha, Part-II; ii. Initiations of Reintroduction of RET and other Speial Group of Plants

20.4. EXPOSURE VISIT OF VARIOUS INSTITUTIONS/ORGANIZATIONS TO RPRC



Exposure visit of Forest Personnel's from G.Udaigiri (2023)



Exposure visit of Students from different educational institutions (2023)



Exposure visit of Students from OUAT, Bhubaneswar (2023)

20.5. CELEBRATION OF VAN MAHOTSAV 2023 IN RPRC: INTRODUCTION OF RET PLANTS IN RET GARDEN, RPRC



Introduction of RET plants in RET Garden, RPRC during Van Mahotsav 2023.

20.6. INAUGURATION OF RPRC SALE COUNTER: BLOSSOM BAZAAR



Inauguration of RPRC Sale Counter Blossom Bazaar by Additional Chief Secretary, FE&CC Dept, Odisha in presence of PCCF & HoFF& PCCF & Chief Executive, RPRC on 22nd December, 2023

20.7. ANNUAL FLOWER SHOW 2024 OF RPRC



Annual Flower Show 2024 of RPRC inaugurated by PCCF & HoFF, Odisha in presence of PCCF & Chief Executive, RPRC on 13th January, 2024



Research & Activity Report 2022-23 of RPRC released by PCCF & HoFF in presence of PCCF & Chief Executive, RPRC on 13th January, 2024 during Flower Show

FOREST & INNOVATIONS

21.1. Rapid Response Teams to Mitigate Human-wildlife Conflict

Across the country, instances of wild animals straying close to human habitations are rising and Odisha is no exception. Such cases lead to increasing human-wildlife interfaces. To mitigate such situations and to provide safe passage for the distressed animals, there was a dire need to have trained man power with necessary skill sets and equipments to undertake quick and effective rescue in a professional manner. To address this felt need and fill a significant gap, the Wildlife Wing has constituted Rapid Response Team (RRT) in each circle.

Circle level Rapid Response Teams have been constituted with an aim to provide a self-sufficient team to conduct rapid rescue, safe shifting and release of wild animals in distress. In the 1st leg, 18 Forest Divisions having maximum incidents of human-wildlife conflicts have been provided with these teams, but they can operate in any Division within that circle as & when required. These RRTs have been deployed at strategic locations all over Odisha namely at Chandaka, Nandankanan, Bhanjanagar, Bhawanipatna, Nawarangpur, Rayagada, Angul, Dhenkanal, Sambalpur, Keonjhar, Rourkela, Sundergarh, Baripada, Karanjia, Paralakhemundi, Bargarh, Bolangir and Malkangiri.

Each team comprises of 6 to 9 members comprising of Forest Ranger/Deputy Ranger, Forester, Forest Guard and Squad personnel. The teams were trained in six Phases from 15th February 2024 to 6th March 2024 at Godibari of Chandaka Wildlife Division by an expert team from the Wildlife Trust of India. The Rapid Response Teams have been well-equipped with a whole suite of state-of-the-art equipments required for rescue and safe release of wild animals. The equipments broadly covers personal safety equipments, rescue and transport equipments and equipments used for monitoring and documentation.

Further, on 7th March 2024, 11 number of customized, all weather, multi role 4 WD Vehicles equipped with required facilities were pressed into service for effective functioning of RRTs all over the state. The RRTs shall function as per Standard Operating Procedure for effective and timely operations. Further, they will conduct regular mock drills and other exercises for refreshing the skills of members.



HIGHLIGHTS OF ODISHA FORESTRY SECTOR - 2024





21.2. Use of Avenza Mobile App in Forest Fireline Planning, Positioning and Monitoring in Parlekhamundi Forest Division

Fireline creation is one of the most important steps in Forest Fire preparatory activities. Fireline helps in preventing the spread of forest fire from one side to other side. There were different ideas and suggestions on locating the Fireline in the Forest areas, each having its own advantages and disadvantages. Some suggestions were to create Fireline along the forest boundaries or along the compartment lines etc.

To Locate/Position the Fireline, last three years fire points data were analyzed and the Firelines were located using Google Earth, where the greatest number of fire points were observed and repeatedly occurring in a particular location. This exercise was done for the entire division and each fire line was given specific nomenclature having the data of length also.





Location of Fireline in Google Earth after Analysing the fire points of the Years 2021, 2022, 2023

All the Fire lines drawn in google earth were then exported to Avenza Maps and the field staffs were provided training on the usage of Avenza app. While Creation of Fireline in the field, the staff has to track the particular Fireline in the Avenza app and attach 7/8 photographs for each Fireline at the Start, Middle and End of the Fireline. The Photos of Screenshots and the Photos of Fireline would be stored in Range and Division for future references.



Image showing MA30 Fireline and MA30 fireline tracked by staffs after completion of Fireline and Placemark shows the Photographs taken and attached by the staffs



Image Showing fireline created

Range and Division level officers would have a master map of fire lines of their respective jurisdictions. A google sheet was communicated to Ranges and regularly the google sheets has to be updated on the status. Whenever on inspection, the officers can check the Fireline google sheet and Map and correlate the Fireline works done in the field.

Fire line achieved as on 20.02.2024 of Chandragiri Range

Name of the Range	Serial No	Name of Forest Block	Name of Fireline	Length/Target (in KM)	Achieved
Chandragiri	1	Malaspadar UDPF	CP 1	0.78	0.78
Chandragiri	2	Malaspadar UDPF	CP 2	0.87	0.87
Chandragiri	3	Malaspadar UDPF	CP 3	0.62	0.62
Chandragiri	4	Malaspadar UDPF	CP 4	0.86	0.86
Chandragiri	5	Malaspadar UDPF	CP 5	0.5	0.5
Chandragiri	6	Malaspadar UDPF	CP 6	0.77	0.77
Chandragiri	7	Malaspadar UDPF	CP 7	0.46	0.46
Chandragiri	8	Malaspadar UDPF	CP 8	1.23	1.23
Chandragiri	9	Malaspadar UDPF	CP 9	0.77	0.77
Chandragiri	10	Malaspadar UDPF	CP 10	0.68	0.68

Google Sheet data Showing the Fireline Achieved as on 20.02.2024 of Chandragiri Range

Other Advantages include:

- ❖ Helps in analyzing the Efficiency of Firelines.
- ❖ Data Already Available, just the large and repeat Fire points to be super imposed and help improving decision making.
- ❖ Also during Firefighting season, the Fireline will be acting as footpaths which help in reducing the Response time.
- ❖ The Fire points will be super imposed in the Fireline maps. Whenever fire points are communicated to staffs, they will be able to locate the fire points with reference to Firelines, which will reduce the response time, staffs are able to reach the fire spot quickly and thus preventing a fire point from turning to Large fire.
- ❖ Also it will bring Transparency and helps in monitoring the execution of firelines. As the data images and documentation is already available, it will bring transparency in Fireline creation and monitoring.

21.3. Success Story of Value addition of Mahua Flowers

This is an inspiring journey of Smt. Sanjukta Bhainsa, a determined individual from Jaduloisingh VSS under the Sadar Range, who, with the guidance of the Project Staff from OFSDP-II (Odisha Forestry Sector Development Project Phase-II), has achieved remarkable success through value-added Mahua flowers training.

Sanjukta Bhainsa’s story begins as a gatherer of Mahua flowers, a traditional practice in her community. However, the earnings from this labor-intensive work were modest, and the potential for economic growth was limited. Recognizing this, Sanjukta decided to explore the possibilities of adding value to the abundant Mahua flowers.

Sanjukta’s journey towards success took a significant turn when she joined the value addition Mahua flowers training program facilitated by the Project Staff of OFSDP-II. This program aimed to equip local communities with the skills and knowledge needed to enhance the value of forest produce and improve their livelihoods.





Through the guidance and mentorship of Project Staff, Sanjukta learned various techniques related to post-harvest handling, processing, and value addition of mahua flowers. She gained proficiency in making variety of food item products like Mahua, Moringa and Mango (i.e. Cake, Cookies, Jam, Jelly, Murku, Ice-cream, Chatni, RTS, Chhiki, Achar, Laddu, Floor Cleaner, Hand Sanitizer, Pachakgoli, Candy, Gulab Jamun) from Mahua extract which would fulfil the nutrition value of food of their family as well as selling to school children which keeps them away from fast food.



With newfound skills and a dose of entrepreneurial spirit, Sanjukta set up a small- shop for value-added Mahua products in her village. She began to produce high-quality goods that not only retained the natural essence of Mahua flowers but also had a longer shelf life, attracting a broader market. Sanjukta's success had a ripple effect in her community. She has provided employment opportunities to local women, empowering them to contribute to their family's income. The increased income in the village had positive spill-over effects, including improved access to healthcare and education.

Sanjukta's products gained recognition beyond the local market. They were appreciated for their quality and authenticity. This recognition led to orders from urban markets and even participation in regional and national trade fairs. The present valuation of the Mahua flower is about 15-20 rupees per kg and after the value addition it is predicted that the VSS members would get about 200 rupees profit as per the assessment.



Sanjukta's journey from a Mahua flower gatherer to a successful entrepreneur not only improved her economic situation but also transformed the outlook of her entire community. Her story serves as an inspiration to others in her village and neighboring areas.

21.4. Jeevamrutha in nursery and plantation

Continuous use of chemical fertilisers not only disturb the soil health leading to acidification, micronutrient depletion but also drastically affect the micro flora and fauna leading to poor crop health. Besides, use of chemical fertilizers may contribute to environmental risks like in global warming, water pollution etc. In view of this it is desirable that we may have to return to practices which are eco-friendly and meet the nutrient requirements and sustain quality food production. In this direction the role of Jeevamrutha offers immense scope to meet organic resources. Jeevamrutha adds organic matter to the soil which improves soil structure, aeration, soil moisture-holding capacity, and water infiltration. Jeevamrutha improves the healthy growth of plant and the native micro-organisms are cultured in a traditional, cost-effective method. Considering the above issues, an effort is made to restore the micro flora and assist in the rapid development of soil fertility in the nursery and plantation of Sambalpur division. Before execution and use of Jeevamrutha, demonstration & capacity building on Jeevamruth must be imparted to all stakeholders especially frontline staffs, nursery workers



and VSS members to enhance their Knowledge, skill and attitudes towards the benefit of Jeevamrutha. The demonstration was conducted in all nurseries and miyawaki plantation in town range of the division.

The technology does not require bigger financial investment except for one-time expenditure to set up the production tank. Raw materials like cow dung, cow urine and other organic wastes are commonly available. Bulk production helps in keeping the environment clean by managing rural organic wastes. Jeevamrutha improves soil health and reduces pollution caused by use of chemical fertilizers and pesticides.

Material required for production of 200 litre Jeevamrutha

- 1) Cow Dung-10 kg
- 2) Cow Urine-12 litres
- 3) Soil (under Sal tree)/(Termite mound) which contains micro-organism-10 kg
- 4) Jaggery -5 kg
- 5) Pulse flour -3 kg
- 6) Any micro-organism inoculation (if available)

The ingredients are mixed in a container and added in 200 litres drum/barrel. This barrel should be covered superficially. The mixture should be swirled twice, morning and evening for about 7 days. Once the fermentation process is completed, bubbles will appear during the process when the mixture is ready. There will be odour smell of mixture when it is ready.

Then, the mixture need to be diluted before applying to the field. One litre of Jeevamruthais mixed in 4 litres of water (1:4). Then apply in filling/potting mixture or apply 5ml to 10ml each plant for better result. The Department took this on experimental basis at Miyawaki plantation (Veer Surendra Sai Planation) in Potapali village, nurseries and few plantations in Sambalpur Forest Division.

Approximate Cost of Jeevamrutha

1. Cost of 200 lt capacity plastic drum	Rs. 800.00
2. Gram Flour (Besan) 3kg @ Rs.80/kg	Rs. 240.00
3. Jaggery (Guda) 3kg @ Rs. 50/kg	Rs. 150.00
4. Cow Dung 10kg @ Rs. 10/kg	Rs. 100.00



Preparation of Jeevamrutha

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5. Cow urine 12 lt@ Rs. 20/lit	Rs. 240.00
6. Soil (under Sal tree)10 kg@ Rs. 15/kg	Rs. 00.00
7. Soil (Termite mound)5 kg@ Rs. 15/kg	Rs. 00.00
8. Labour Charge for preparation	Rs. 00.00

Total Cost Rs. 1530.00 or Say Rs. 1500.00 per 200 litres, and diluted five times before application of the fertilizers

I.e. Rs 3.00 per litre of 1st drum and Rs. 1.40 per litre of subsequent drums.

*Labour cost not included as the regular worker/farmer can do the same job.

In the era of green revolution, the main target was to increase the production as such the old practice of using the locally prepared manures which are rich in micro nutrients and beneficial microorganisms was redundant over a period of time. Efforts were made to increase the soil health by the use of jeevamrutha by locally culturing of the microorganisms and thereby increase the soil health and ultimately improving the growth and healthy plants. The process needs one-time investment and it is self-reproducing in nature as there is an increase in the population of the beneficial microorganisms and subsequent increase in dependant soil fauna. The use of Jeevamrutha is also a good platform of income generating venture for rural women and helps in the production of organic manure, which helps to improve the forest density, takes care of soil quality, sustainable agriculture.

The results were outstanding in case of Miyawaki plantation and in the nursery beds. The organic liquid has also been used in different plantations along with the vermicompost and other bio fertilisers. The health of the plants was good with the good collar diameter and the height of the plants was two times vigorous and faster. Similar observations were observed in different plantations.

The soil was sent to the Sambalpur University, biotechnology department, for the soil microbial population when compared to the normal soil. It was observed that there was an increase in the soil microbes by eight times. Profuse presence of the nitrogen fixing bacteria, different fungi and mycorrhiza specifically VAM (Vesicular Arbuscular Mycorrhizae) were noticed. The better results were attributed to the profuse increase in the soil microbes and the same was expressed by the experts from the Sambalpur University and the GM University.





Application of Jeevamrutha at Miyawaki Plantation



Seedling after application of Jeevamrutha

21.5. Vermicomposting of Crop residues through community participation; a win-win story

Boudh Forest Division has embarked on a revolutionary journey to transform waste into wealth powered by vermicomposting. Recognising the pressing need to address the forest fire and carbon release into the atmosphere due to unscientific practices of disposing the paddy





field residues, this organisation embraced vermicomposting as a viable solution to counter these effects vis-a-vis providing income generation activities to the rural people.

The first step involved extensive research and collaboration with experts in vermicomposting who delved into the science and art of “composting with earth worms”. Suitable species of worms (*Eisenia fetida*) was identified and experimented with different organic waste materials, tailoring the process to suit the local ecosystem. The vital aspect of the saga was the community involvement. Awareness campaigns were organised to educate local communities about the benefits of vermicomposting. Workshops were organized to build up capacity of the SHGs and the stakeholders and enabling them to become entrepreneurs under OFSDP-II.

To kickstart the initiative empowered by MGNREGA scheme the Forest Department established a model vermicomposting unit at Biranarasingshpur in a cluster manner. The model unit showcased the potential of transforming organic waste into nutrient-rich compost through the earthworms. The crop residue which is transformed into nutrient rich eco-friendly vermicompost, left unutilised would have contributed to the major causes of forest fire by proliferating fire from the crop field to the forest, further burdening the atmospheric carbon pool worsening Global Warming. The success of these model units served as an inspiration for local communities to adopt similar practices. This department leveraged the vermicomposting initiative to create employment opportunities for the local population. Boudh Forest Division has aided the establishment of 131 permanent vermicomposting units saturating the forest fringe villages and operational responsibilities of 75 units have been assigned to SHGs with participation of 750 rural women. These units having 370 operative composting chambers which consume raw materials to a tune of 29.60 Tonnes of straw collected from the paddy field before the onset of the forest fire season. This straw added with other raw material like cow dung and water, with bio-activity of earthworms, are converted into vermicompost and vermiwash as the final by product. A market linkage of e-commerce portal “vankarigari.com” has been indigenously developed to facilitate the sale of Vermicompost along with the rural sales which provides additional income to the rural women. So far, these SHGs have earned an amount of Rs. 17,92,000.00 since its inception. Forest Department’s commitment to sustainability, community engagement, and innovation turned what was once considered waste and causative agent for forest fire and carbon emission into a valuable resource. The vermicomposting success story stands as a testament to the transformative power and collective action, leaving a green legacy for generations to come.

21.6. Making the plantation sites Polythene free

Plastic recycling is an appropriate and easily realizable action which immensely helps in reduction of plastic pollution. This method can help limit our plastic use, use it more effectively and dispose of it sustainably. The Hindustan Seals Corporation under the guidance of Forest Department began collecting these bags. The programme was initiated in two divisions on a pilot basis, namely Bolangir & Khurda. Soon, the buyback drive expanded to cover 25 forest divisions, encompassing 122 range offices and 165 collection points. Over 203 tonnes of waste (gross weight) were collected over a period of 4 months.

By recycling 58 tonnes of plastic waste (net weight after cleaning), approximately 47.4 lakhs used nursery bags were removed from the plantation sites & not only the environment was saved from plastic pollution, but also indirectly helped in reducing carbon footprints by reducing the need for new plastic through recycling of old ones. The initiative not only benefited the environment but also empowered local communities and conserved valuable resources. The forest watchers who helped in the collection were given around 5.80 lakhs as a reward.

The carbon footprint of plastic (LDPE or PET, polyethylene) is about 6 kg CO₂ per kg of plastic & 1 carbon credit is equivalent to one metric ton of CO₂. Recycling plastic saves an average of 4.5 kg of CO₂ per kilogram of plastic produced. One carbon credit is issued for one metric ton of CO₂e, same amount of CO₂ one tree will absorb in 40 years.

SL.NO.	DETAILS	DATA
1	Number of divisions covered with this NB buy back initiative	25
2	Number of Ranges from where waste NB bags were collected	125
3	Number of collection points	165
4	Total quantity of waste collected (gross weight)	203 tonnes approx
5	Total quantity of plastic recycled (Net weight after cleaning)	58 tonnes
6	Total Number of NB removed from sites	47,40,000 lakhs
7	Cash rewards for watchers and Team	Rs 5,80,000/-
8	Final finished products made out of this waste	40 tonnes
9	Impact of carbon footprint	4.5x58 tonnes CO ₂



OBSERVATION OF IMPORTANT DAYS

22.1. List of Observation days

Following are some of the annual events observed at international, national level and celebrated throughout the state to raise public awareness about values, importance and significance of natural resources like environment, forests, wildlife, wetland etc.

1. WORLD VETERINARY DAY	29th April 2023
2. WORLD ENVIRONMENT DAY	5th June, 2023
3. WORLD CROCODILE DAY	17th June, 2023
4. VAN MAHOTSAV	4th July, 2023
5. INTERNATIONAL TIGER DAY	29th July, 2023
6. WORLD ELEPHANT DAY	12th August, 2023
7. 69th WILDLIFE WEEK CELEBRATION AT NANDANKANAN ZOOLOGICAL PARK	02nd to 8th October, 2023

22.1.1. 1. WORLD VETERINARY DAY - 29th April 2023

World Veterinary Day 2023 was celebrated at Nandankanan on 29th April, 2023 with this year theme "Promoting Diversity, Equity and Inclusiveness in Veterinary Profession". In morning session an awareness programme was conducted in front of Interpretation centre where zoo vets explained about their veterinary profession, importance of zoo management, rescue and rehabilitation in wild. In evening session, a meeting was conducted where 14 retired zoo veterinarians were felicitated for their notable work who worked with and contributed to development of Nandankanan.





22.1.2. WORLD ENVIRONMENT DAY - 5th June, 2023

A poster presentation on Lifestyle for environment (LiFE) and Beat plastic pollution was conducted at Nandankanan Zoological Park on World Environment Day. The event aimed to raise awareness about the need of eco-friendly life style and to promote conservation of environment. A total of 25 participants were participated from various colleges and universities, who displayed their posters on different themes related to the topic. The posters were judged by a panel of experts i.e. Dr Siba Prasad Parida, Professor in Zoology, Centurion University, Sri Sourav Mohapatra, Assistant Professor, College of Forestry, OUAT, Bhubaneswar, Sri Sanath Kumar N., Deputy Director, Nandankanan Zoological Park and Dr Rajesh Kumar Mohapatra, Biologist, Nandankanan Zoological Park. The winners were announced and awarded with certificates and cash prizes. The first prize went to Sradhanjali Panda from NIIS Group of Institution, Bhubaneswar for their poster on “Waste management for sustainable environment”. The second prize went to Chinmayee Dhal, Utkal University for their poster on “Lifestyle for environment (LiFE) against climate change”. The third prize went to Meniswani Rout, NIIS Group of Institution, Bhubaneswar for their poster on “Role of environment in population control: Infertility”. The event was a success and received positive feedback from the students and the media.





22.1.3. WORLD CROCODILE DAY - 17th June, 2023

Crocodiles are cold-blooded creatures that typically bask in the sun for a significant portion of the day. They are often seen on the banks of aquatic systems. The IUCN Red List of Threatened Species classifies the three crocodiles found in India as Saltwater Crocodile, Mugger Crocodile and Gharial as Least Concern, Vulnerable, and Critically Endangered, respectively.

Odisha is the only state in India where these three varieties are found viz. *Crocodylus palustris* (freshwater crocodile /Mugger), *Crocodylus porosus* (saltwater crocodile), *Gavialis gangeticus* (Gharial). World Crocodile Day was celebrated at Nandankanan Zoological Park, Bhubaneswar on 17th June 2023. The event was bestowed with the presence of Prof. Sudarshan Maharana, Former Regional Director of Education, an eminent personality who has his expertise with crocodiles, especially gharials. Other reverent members present in the meeting were Shi Sanath Kumar N., Deputy Director, Dr Rashmi Ranjan Swain, ACF, Dr Sudipta Ku. Panda, ACF, Sri Gagan Bihari Malik, ACF, Dr Rajesh K. Mohapatra, Biologist, Sri Milan Kumar Panda, Education Officer and Miss Rupsana Pradhan, Asst. Education Officer. Many Foresters, forest guards, Research scholars, Zoo Interns and Zoo Volunteers are also participated in this programme.

The event started with a presentation on Species recovery of Gharial (*Gavialis gangeticus*, Gmelin 1789) in river Mahanadi by Laxmi Prasad Rath, Gharial Researcher on Gharial project. Followed by a presentation on Crocodiles by Prof. Sudarshan Maharana.

After the presentations the audience engaged with asking questions. The session ended with a poster presentation to the foresters, forest guards, Zoo interns and Zoo Volunteers.





22.1.4. VAN MAHOTSAV - 4th July, 2023

Van Mahotsav is observed in the first week of the month of July as it coincides with 'monsoon'. This week marks the plantation of native trees that would need less care and have more chances of survival and support the birds, insects, and animals. Nandankanan Zoological Park along with Nature & Wildlife Conservation Society of Odisha (NWCSO) celebrated "VAN MAHOTSAV- 2023" programme at Nandankanan Zoological Park on 4th July, 2023 at 09:00 am. The event was graced by the presence of eminent members of Nature & Wildlife Conservation Society of Odisha (NWCSO) namely Sri Saroj Patnaik, IFS (Rtd.), Dr. Sudarsan Panda, IFS (Rtd.), Dr Anup Nayak, IFS (Rtd.) and Sri Sushant Das, Joint Secretary, NWCSO. Other esteemed members present were Sri. Sushil Ku. Popli, IFS, PCCF (WL) & CWLW, Sri Bikas Ranjan Das, DCF Dr. Manoj V. Nair, IFS Director, Nandankanan, Sri Sanath Kumar N., IFS, Deputy Director and other officials and staff of Nandankanan. The plantation programme was inaugurated by Sri Saroj Pattnaik, (IFS) Retd followed by plantation by other dignitaries and members of NWCSO and officials of Nandankanan. A new addition to the Nandankanan Zoological Park, the Zoo Volunteers and the Zoo Interns also stepped forward to plant trees in this event. A total of 12 varieties of plants were selected for plantation with 2000 saplings. The lists of plants used in plantation are Neem, Polanga, Baula, Phasi, Karanja, Patuli, Ashoka, Pista badam, Oau, Arjuna, Jamun and Guava.





22.1.5. INTERNATIONAL TIGER DAY - 29th July, 2023

International Tiger Day, 2023 was celebrated at Nandankanan Zoological Park on 29th July, 2023 in presence of Sri Sanath Kumar N., (IFS), Deputy Director, Nandankanan Zoological Park. On this occasion online quiz on "Tiger Conservation"• were conducted on Nandankanan website i.e. www.nandankanan.org. All the participants will be given e-certificate for their participation. In Nandankanan, four school students about 70 nos were invited to participate in student orientation programme as "One day with tigers of Nandankanan"• where all aspects of tiger up keeping will be explained to them by Zoo Volunteers. Miss Samarpita Dash, Ollywood actress also joined the celebration to support the message of tiger conservation. On the spot quiz for students and visitors were conducted in front of Kanan enclosure where prizes were distributed to 50 participants which is highly appreciated by the them. The students and visitors put their message on tiger conservation in the signature campaign board. The whole programme was showed Facebook live on Nandankanan Facebook Page. All 17 nos of tiger keepers were felicitated in this occasion for their hard and dedicated work. In afternoon, special olfactory enrichments were given to tigers and keepers talk programme was also conducted with special focus to Nandankanan tigers to aware visitor about how keeper take care to tiger in daily routine. The tiger awareness message, pictures, videos etc. were shared to print and electronic media and social media platform for wider circulation. At present Nandankanan has 27 tigers including (17) normal coloured tigers, (07) white tigers and (03) melanistic tigers.





22.1.6. WORLD ELEPHANT DAY - 12th August, 2023

World Elephant Day was celebrated at Nandankanan Zoological Park on 12th August, 2023 with the following events.

1. Asian elephants of Nandankanan Zoological Park were provided with a special treat of feeding enrichment including coconut, banana, sugarcane, maize, watermelon, and apple.
2. The Mahouts of Nandankanan were felicitated for their dedicated care and management of the zoo elephants.
3. A Signature campaign was observed. In the said programme distinguished guests and visitors have given messages on elephant conservation.
4. On this occasion online slogan and painting competition on elephants were conducted at Nandankanan website i.e., www.nandankanan.org . After the evaluation prizes will be sent to the winners. All the participants will be given e-certificate for their participation.
5. An on-the-spot quiz competition was organized for the visitors based on elephants and their conservation. It was coordinated by the Zoo Volunteers.
6. Keepers talk programme was also conducted with special focus to Nandankanan elephants to aware visitor about how keepers take care of elephant in daily routine.

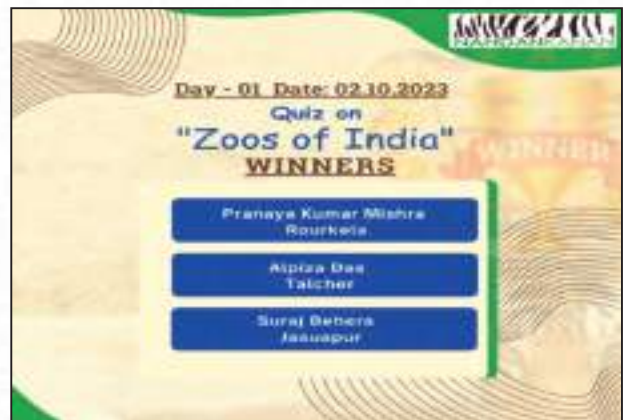




22.1.7. 69th WILDLIFE WEEK CELEBRATION AT NANDANKANAN ZOOLOGICAL PARK 02nd to 8th October, 2023

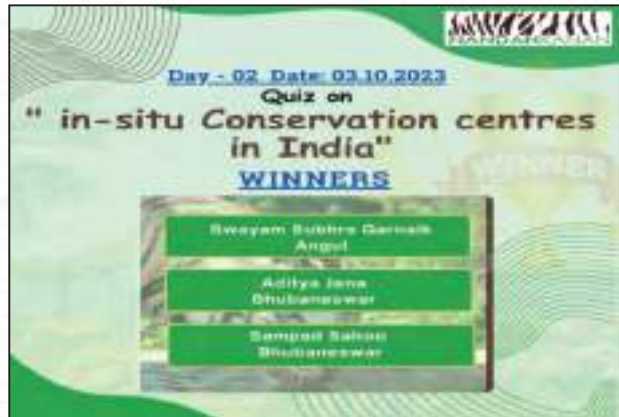
Day 1: 02.10.23 (Monday)

69th Wildlife week celebration started at Nandankanan with "Anti-Plastic Drive" involving school students of Nandankanan Govt. High School. To boost the occasion there was a special "Nukkad Natak" performed by the Zoo volunteers on the theme "How plastic affects the wildlife and its habitat". An online quiz on "Zoos of India" was also conducted where 48 participants participated in the programme.



Day 2: 03.10.23 (Tuesday)

The second day of 69th Wildlife Week was celebrated at Nandankanan with a "Story Telling Session" by Prachitara Mishra, Storyteller where students from Damana Government High School participated. The storyteller inculcated a sense of responsibility in the minds of students towards conservation of wildlife. A keeper's talk was arranged on "Big Cats" where animal keepers shared their experiences with visitors. An online quiz on "In-situ Conservation centres in India" was also conducted where 84 participants participated in the programme.



Day 3: 04.10.23 (Wednesday)

Nandankanan celebrated the 3rd day of Wildlife Week with "One day at Nandankanan" Programme where students from Centurion University of Technology and Management, Bhubaneswar guided by Dr.Siba Prasad Parida, Professor, Department of Zoology, visited the Nandankanan Zoological Park and State Botanical Garden. The students got a chance to learn about various plants, animals and insects, they got the opportunity to witness various facilities at zoo like the Zoo Laboratory, Zoo Hospital and Zoo Museum. An online quiz on the topic "Reptiles" where 64 participants participated in the programme and keepers talk on "Reptiles" were also arranged. The animal keeper discussed about the feeding, breeding biology, behaviour of the reptiles and made people aware of the lifespan, living habits, types and the ways to differentiate a venomous snake from a non-venomous one.



Day 4: 05.10.23 (Thursday)

A workshop on "Ex-situ Conservation: Present Status & Way Forward" in coordination with Nature and Wildlife Conservation Society of Odisha (NWCSO) was organised to celebrate Day-4 of 69th Wildlife Week. The workshop was attended by members of Nature & Wildlife Conservation Society of Odisha, officials of Nandankanan Zoological Park, representatives of all Zoos of Odisha including DFOs, ACFs, Range Officers, Foresters, Forest Guards, Research Scholars and Zoo Volunteers. The representatives of the zoos discussed their facilities and way forward in ex-situ conservation. An online quiz on "Insects" was also conducted where 66 participants participated in the programme. In addition to this a keeper's talk on "Elephants" were also arranged. The zoo keeper explained the number of elephants, their feeding habits and interesting stories of previous elephants to the visitors.





Day 5: 06.10.23 (Friday)

Nandankanan celebrated the 5th day of 69th Wildlife Week with a "Nature Trail" with Resource Person Dr. Siba Prasad Parida, Professor, CUTM, Bhubaneswar. 22 participants along with zoo volunteers provided a great opportunity to explore the flora and fauna in nature. An online quiz on "Plants" was conducted where 60 participants participated in the programme and a keeper's talk about "Deers" was also arranged.



Day 6: 07.10.23 (Saturday)

Nandankanan celebrated the 6th day of 69th Wildlife Week with a set of events such as a "Wetland Trail" guided by Dr Satyaranjan Behera, Zoologist, Odisha Biodiversity Board, Bhubaneswar. A "keepers talk" about "Primates" and an Online Quiz on "Wetlands". Dr Siba Prasad Parida, students from Centurion University of Technology and Management, ACF, Biologist, Education Officer, Assistant Education Officer, Zoo Volunteers of Nandankanan Zoological Park and others joined the events. The Nature Trail started at 7am with 28 people who had registered prior to the event and were accompanied by Dr Siba Prasad Parida and Dr Satyaranjan Behera and Zoo volunteers. An informative session was taken by Dr Behera at FRH after the event. In addition to that, keepers talk on "Primates" was organised in cooperation with the Zoo Volunteers. An online quiz on "Primates" was conducted where 60 participants participated in the programme.



Day 7: 08.10.23 (Sunday)

Nandankanan Zoological Park celebrated the 7th and the last day of 69th Wildlife week with various events such as "Bird Walk", "Keepers Talk", "Online Quiz" and a "Moth Watching". Dr Swetashree Purohit, Asst. Professor, CV Raman Global University, Dr Siba Prasad Parida, Prof., Centurion University of Technology and Management, students from CV Raman Global University, Birder and nature enthusiasts and Zoo Volunteers joined the events to make them successful. The "Bird Walk" started at 7am with Dr Swetashree Purohit being the resource person; 43 participants along with Dr Siba Prasad Parida and the Zoo Volunteers participated to know about the birding culture, ornithology research and wetland as well as terrestrial birds and observed

HIGHLIGHTS OF ODISHA FORESTRY SECTOR - 2024

around 35 species of birds. The keepers talk with the theme being "Birds" started at 12 noon with two Zoo Keepers from Aviary section along with Zoo Volunteers. The visitors were educated about the bird rearing and care at Nandankanan. An interaction session with Zoo volunteers was organised at 5pm at FRH, State Botanical Garden in presence of Deputy Director, Nandankanan and ACF, Nandankanan. A "Moth Watching" session was organised at State Botanical Garden in the evening at 6pm with Mr Udit Pratap Das, PhD Scholar, Utkal University and nature enthusiasts from around the country. A mothing setup was assembled at State Botanical Garden where the 14 participants were educated about 30 types of moths. An online quiz on "Birds" also conducted where 53 participants participated in the programme.



HIGHLIGHTS OF ODISHA FORESTRY SECTOR - 2024

Overall, the observation of 69th Wildlife Week at Nandankanan Zoological Park provided facilities for a lot of nature lovers from various fields, thereby spreading a message of protection of wildlife and its conservation. A signature campaign was also organized throughout the week to create awareness on importance of wildlife conservation amongst the visitors. These awareness and outreach activities were shared over print, electronic and social media platforms for wider circulation.

22.1.8. WORLD WETLAND DAY 2024 - 2nd February, 2024

World Wetland Day was celebrated at Nandankanan on 2nd February, 2024 at State Botanical Garden. A group of 50 students from Godisahi Govt High School, Godisahi, Cuttack participated in the celebration along with their Headmaster and teachers. The programme was inaugurated by Deputy Director Nandankanan, Assistant Conservator of Forest (State Botanical Garden) and Assistant Conservator of Forest (Sanctuary Management) in presence of Headmaster of Godisahi Govt High School, Range Officers, Forest Guard, Forester, Education Officer, Assistant Education Officer and Zoo Volunteers and Zoo Interns. Each participant received a badge made on the theme of World Wetland Day, 2024.



The programme started with an introduction to what is a wetland, its importance and why it is celebrated on 2nd February every year. Deputy Director, Sri Sanath Kumar gave a message that forest department alone cannot save the wetlands; it is the collaborative efforts of every individual to save and preserve the wetlands.



HIGHLIGHTS OF ODISHA FORESTRY SECTOR - 2024

An act on this year's theme of World Wetland Day 2024 i.e. Wetlands and Human Being was enacted by Zoo Volunteers who gave a message how our habits are affecting wetlands and our role in saving the wetlands.



Slogans on wetlands were repeated by the students to inculcate a sense of responsibility towards their role in conservation of wetlands.



After a short refreshment break, interesting activities like on-the-spot drawing competition, slogan Competition and quiz competition was organised where Zoo Volunteers, Education Officer and Assistant Education Officer coordinated all the events. The students were divided into teams and with a leader and team name based on the Ramsar sites present in Odisha, namely Ansupa, Satkosia, Hiraakud, Chilika, Bhitarkanika.



HIGHLIGHTS OF ODISHA FORESTRY SECTOR - 2024

After all the competitions, an Origami session was conducted which is an art of paper folding that create various shapes. The students were taught to make wetland animals frog, fish and bird through paper folding (origami).



The students were exposed to see the biodiversity of wetland and observe birds around wetland behind the amphitheatre with the help of binoculars.

At the end, prizes were distributed to the winning team and the best performers in all the competitions. The students and teachers expressed their views on wetland day and the event was wound up with a zoo visit.

22.1.9. WORLD PANGOLIN DAY - 17th February, 2024

The World Pangolin Day was celebrated at Nandankanan Zoological Park on 17th February, 2024. The programme was inaugurated in the presence of Deputy Director, Nandankanan and Assistant Conservator of Forest, State Botanical Garden. Zoo Volunteers, Zoo Interns, Zoo Keepers, Foresters, Forest Guard, Field Biologist (PCBC), Biological Data Manager, Research Associate (PCBC), Assistant Education Officer and students from various colleges joined for the One-day workshop on Pangolin conservation.



The programme started with message from Deputy Director who focused on spreading of awareness as wide as possible among common mass. A question answer round was done among 5 members from audience who volunteered to test their knowledge on pangolin. The winner was felicitated with a pangolin kit, badge and a pen.

HIGHLIGHTS OF ODISHA FORESTRY SECTOR - 2024



The Field Biologist, Jyoti Shankar Mishra of Pangolin Centre Breeding Conservation (PCBC) gave a presentation on basics of pangolin biology, types, conservation issues and the methods to protect it from poachers. The participants were taught to make pangolin through origami or paper folding. All the students, zoo keepers, students participated with great enthusiasm. Another presentation was given by Research Associate, Prajnashree Priyambada on overview of Pangolin studies where she presented her research work to make people understand how microbiological and molecular methods are helping in pangolin conservation. This followed a question answer session.

Lastly vote of thanks was given by Biological Data Manager to end the technical session. This was followed by mass Signature Campaign near the Interpretation centre and spreading awareness among zoo visitors.



A keeper's talk was arranged with visitors to make people aware about pangolin conservation.



FOREST HEAD QUARTERS, ODISHA
BHUBANESWAR

Glimpses of Aranya Bhawan





