HIGHLIGHTS OF

ODISHA FORESTRY SECTOR 2026

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

ARANYA BHAWAN, CHANDRASEKHARPUR
BHUBANESWAR - 751 023

MOHAN CHARAN MAJHI
CHIEF MINISTER, ODISHA

सत्यमेव जयते

LOKASEVA BHAVAN
BHUBANESWAR

MESSAGE

I am glad to know that the Forest Department, Government of Odisha, is bringing out a publication 'Highlights of Odisha Forestry Sector-2026' with the theme 'Forest & Economies'. This publication provides a comprehensive overview of the key initiatives and achievements in the conservation and sustainable management of the State's rich forest resources.

Forests are among Odisha's most valuable natural assets, playing a vital role in maintaining ecological balance, conserving biodiversity and addressing the challenges of climate change. They are also an important pillar of the State's economy, supporting livelihoods, delivering ecosystem services and enabling sustainable development. The chosen theme underscores the close linkage between forest conservation and economic progress.

The Odisha Forest Department has undertaken several significant initiatives, including strengthening forest protection, expanding green cover through large-scale afforestation, promoting community participation through Joint Forest Management and ensuring regulated use of forest land for development and growth.

Management and ensuring regulated use of forest land for development and growth. Efforts towards eco-tourism development and promotion of medicinal plants are commendable steps in generating sustainable livelihood opportunities.

The Government of Odisha remains firmly committed to safeguarding and enhancing the State's forest wealth while ensuring that these resources contribute meaningfully to the socio-economic development of our people. I appreciated the Forest Department for bringing out this publication. It will serve as a valuable resource for policymakers, researchers, forest officials and all those engaged in the forestry sector.

I extend my best wishes for the continued success of the Department in its endeavors towards conservation, sustainable management and responsible utilization of Odisha's forests.

(Mohan Charan Majhi)

GANESH RAM SINGKHUNTIA
MINISTER OF STATE (IND.)
Forest, Environment &
Climate Change, Labour &
Employees' State Insurance, Odisha

Office : (0674)2536930
Res. Off. : (0674)2536795
Mob. No. : 9438829870, 6372036830
e-mail: min.fecc@gov.in
D.O. No ...../MFL
BHUBANESWAR
Dated 19.03.2026

M E S S A G E

I am pleased to know that Forest Department, Odisha is bringing out the publication "Highlights of Odisha Forestry Sector 2026" with the theme "Forests & Economies". This publication showcases the important initiatives, achievements and progressive efforts undertaken by the Department towards conservation, sustainable management and productive utilization of forest resources in the State.

Forests are one of the most valuable natural assets of Odisha, contributing significantly to ecological stability, biodiversity conservation and climate resilience. At the same time, forests play a vital role in strengthening the rural economy and supporting the livelihoods of millions of forest-dependent people. The theme "Forests & Economies" highlights the growing recognition of forests as an important driver of sustainable development, providing ecosystem services, livelihood opportunities and economic benefits to society.

The publication highlights key programmes and activities undertaken by the Department in areas such as forest protection and management, expansion of green cover through afforestation programmes, promotion of community participation through Joint Forest Management, regulated diversion of forest land for developmental needs, development of eco-tourism and the promotion of medicinal plant resources through the State Medicinal Plants Board.

The Government of Odisha remains committed to ensuring that forest conservation goes hand in hand with economic development and livelihood security. Various initiatives are being implemented to strengthen forest governance, promote sustainable forest-based enterprises and encourage community participation in forest management.

I congratulate the Forest Department for bringing out this informative publication and hope it will serve as a valuable reference for policymakers, researchers, forest officials and all stakeholders working in the forestry sector.

I extend my best wishes for the continued success of the Department in its efforts towards protection, conservation and sustainable management of Odisha's rich forest resources.

(GANESH RAM SINGKHUNTIA)

Bhaskar Sarma, IAS
Principal Secretary

Forest, Env. & C.C, Department
Government of Odisha
Kharavel Bhawan
Bhubaneswar-751001
Telephone: +91-674-2536822
E-mail: feses.or@od.gov.in
No. /PRSFE&CC, Date

M E S S A G E

I am glad to know that Forest Department, Odisha is bringing out the publication "Highlights of Odisha Forestry Sector-2026" with the theme "Forests & Economies". The publication presents a comprehensive overview of the major initiatives, achievements and ongoing efforts of the Department in the field of forest conservation, sustainable management and socio-economic development.

Forests are not only vital for maintaining ecological balance and conserving biodiversity, but they also play a significant role in supporting rural livelihoods and contributing to the economy. The theme "Forests & Economies" aptly highlights the increasing importance of forests as a source of sustainable development, ecosystem services and livelihood opportunities for forest-dependent communities.

I am confident that this publication will serve as a valuable reference for policymakers, researchers, forest officials and other stakeholders. It will also help in enhancing awareness about the critical role of forests in ecological security and economic development.

I appreciate the efforts of the officers and staff of the Forest Department for bringing out this informative publication and wish them continued success in their endeavours for conservation and sustainable management of forest resources in the State.

(Bhaskar Sarma)

ଡକ୍ଟର କେ. ମୁରୁଗେସନ୍
Dr. K. Murugesan

ପ୍ରଧାନ ମୁଖ୍ୟ ବନ ସଂରକ୍ଷକ
ଓ ବାହିନୀ ମୁଖ୍ୟ, ଓଡ଼ିଶା
Principal Chief Conservator of Forests
& Head of Forest Force, Odisha

F O R E W O R D

The International Day of Forests is celebrated on 21st March since 2012. This year United Nations has vowed to celebrate this day with the theme Forest and Economics. It gives me immense pleasure to present the publication "Highlights of Odisha Forest Sector-2026", which encapsulates the major initiatives, achievements and progress made by the Forest Department of Odisha in the field of forest conservation and sustainable management.

Forests play a vital role in maintaining ecological balance, conserving biodiversity and supporting the livelihoods of forest dependent communities. The Government of Odisha has consistently undertaken various programmes and policy initiatives to strengthen forest protection, enhance green cover and promote community participation in forest management

This publication provides a concise overview of the key activities and programmes implemented by the Department. The book comprises the following important chapters like Forest Protection and Management, Afforestation & Programme Expenditure Schemes, Joint Forest Management Programme, Diversion of Forest Land, Development of Eco-tourism, Activities of the State Medicinal Plants Board and Odisha Bamboo Development Agency.

Each chapter highlights the efforts made by the Department towards conservation of forest resources, expansion of forest cover through various afforestation programmes, involvement of local communities through Joint Forest Management, regulated diversion of forest land for developmental activities, promotion of eco-tourism for sustainable livelihood opportunities, and development and conservation of medicinal plants

I hope that this publication will serve as a valuable reference for policymakers, researchers, forest officials and all stakeholders associated with the forestry sector. It will also help in creating greater awareness about the initiatives and achievements of the Forest Department of Odisha.

I place on record my appreciation for ME&IV Team for compiling this publication.

(Dr. K. Murugesen)

CONTENTS

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, Baitarani , Budhabalanga, Subarnarekha and Rushikulya. 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. One National Park and 19 Wildlife Sanctuaries constitute the protected area net work of the state covering 5.36% 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)	33,040.47 Sq. Km
Forest Cover outside Recorded Forest Area (Green Wash)	19,393.09 Sq Km
Forest Cover Area	52,433.56 Sq Km
Tree Cover (Outside Forest Area)	6,163.45 Sq Km
Total Forest & Tree Cover	58,597.01 Sq.Km
Percentage of Forest Area (Recorded) to Geographical Area	39.31 %
Percentage of Forest Cover Area to Geographical Area	33.67 %
Percentage of Tree Cover Area to Geographical Area	3.95%
Percentage of Forest & Tree Cover to Geographical Area	37.63%

1.3. Forest and Tree Cover in Odisha

Based on Satellite imagery, the forest and tree cover of the Country 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, 2023 by the Forest Survey of India, the forest cover in the State is 52,433.56 square kilometre i.e. 33.67% of its geographical area, while tree cover of the State is 6,163.45 square kilometre i.e. 3.95 % of geographical area. The state has gained 151.89 square kilometres area of forest cover and 406.68 square kilometres of tree cover within a period of 2 years i.e. from 2021 to 2023.

The total gain in the Forest & Tree Cover is 558.57 square kilometres which is the 3rd highest increase in the country. The total forest and tree cover area of forest constitutes 37.63% of the total Geographical Area of the state.

The Forest cover of the state has been categorized as Very Dense (7224.42 square kilometer), Moderately Dense (21065.55 square kilometer), Open forest (24,143.59 square kilometer) and scrub (4,632.68 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
2023	7224.42	-	21065.55	24143.59	52,433.56	4,632.68	6,163.45	259.06
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

The State has gained more than 5492.56 square kilometre area of forest cover since 1997.

Massive plantation activities and concerted conservation and protection efforts coupled with peoples' participation in protection of forests through more than 16000 VSSs has led to increase in forest cover over the years.

As per the assessment of 2023, the total Forest Cover (52,433.56 square kilometers) includes area of Mangrove vegetation ie. 259.06 square kilometers representing a major ecosystem with net increase by 1.55 square kilometers over the 2021 assessment.

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	52,433.56
5,709.16	14,834.51	12,496.80	33,040.47	1,515.26	6,231.04	11,646.79	19,393.09	
17.28%	44.90%	37.82%		7.81%	32.13%	60.06%		

Extent of Trees Outside Forest (TOF) is estimated as sum of forest cover outside RFA and tree resources outside forests i.e. 19,393.09 sq km + 6,163.45 sq km = 25,556.54 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.

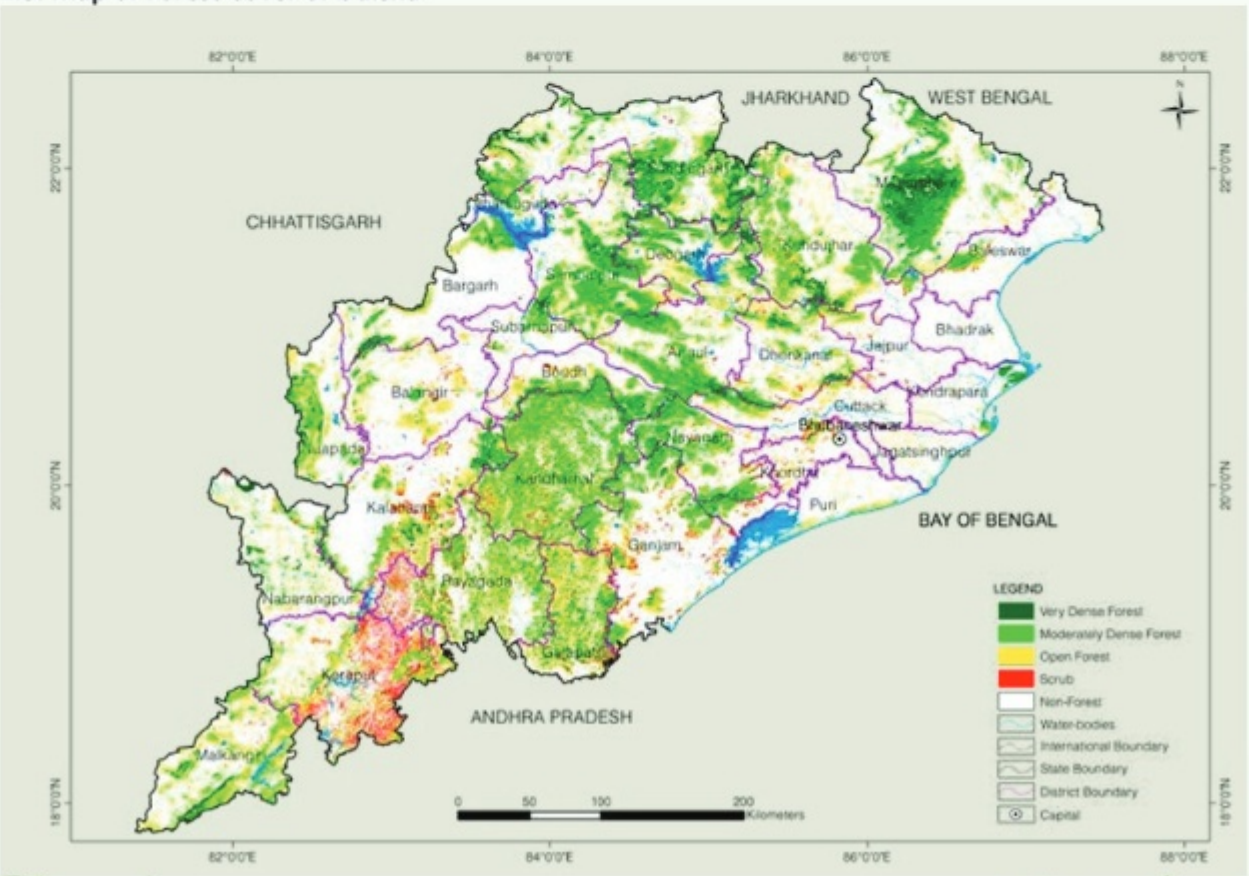
Mangrove Cover Assessment 2023 (Area in Sq. Km)

District wise Mangrove Cover	Very Dense Forest (VDF)	Moderately Dense Forest (MDF)	Open Forest (OF)	Total	Change over the assessment 2021
Balasore	0.00	0.57	4.25	4.82	0.06
Bhadrak	0.12	8.92	23.35	32.39	-0.07
Jagatsinghpur	0.00	1.32	7.10	8.42	0.00
Kendrapara	81.55	83.80	47.34	212.69	1.67
Puri	0.00	0.00	0.74	0.74	-0.11
Total	81.67	94.61	82.78	259.06	1.55

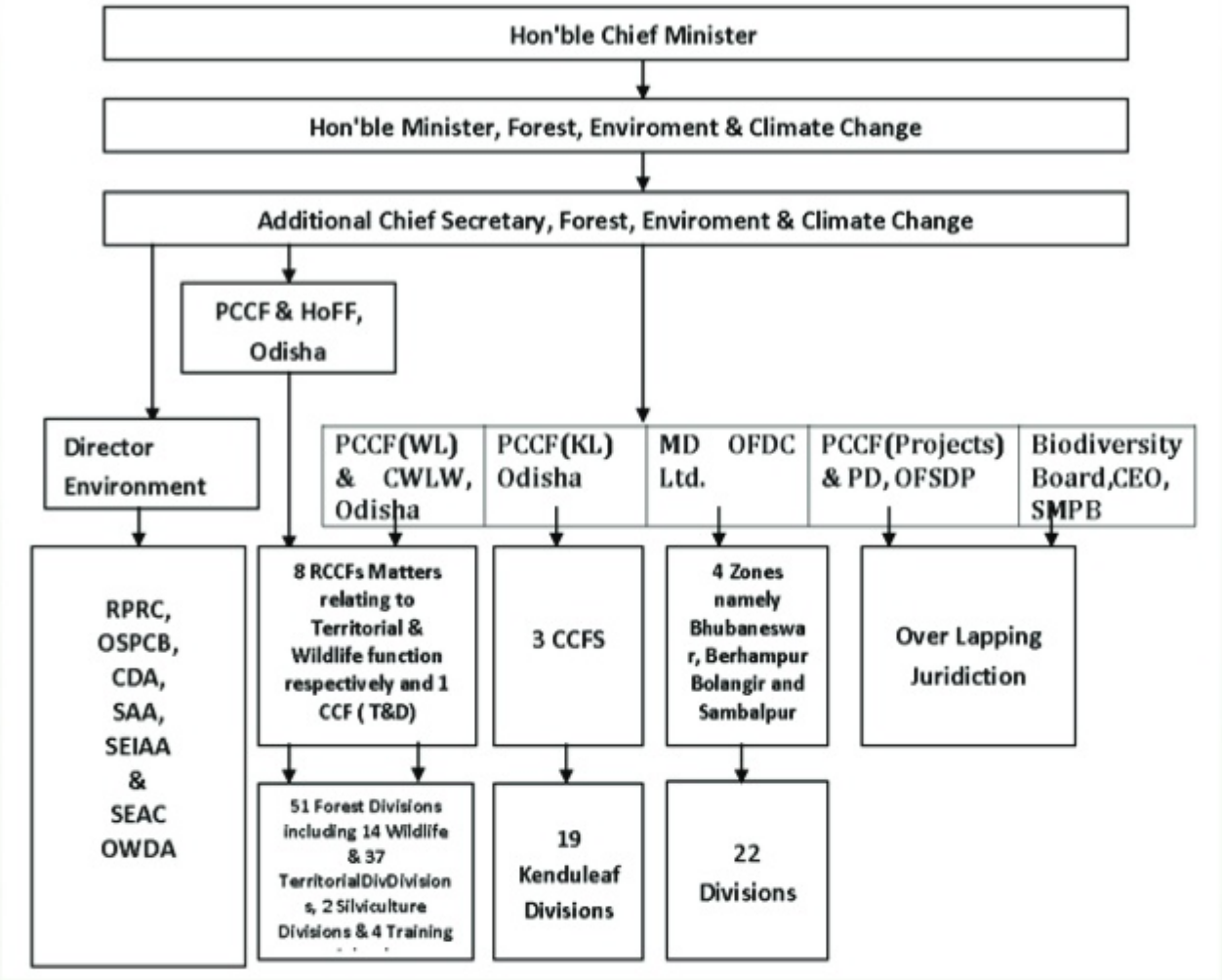
1.4. Growing Stock

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 tones
Total Carbon Stock of Forest	444.83 million tones or 1631.04 million tones of CO2 equivalent (6.17% of the total forest carbon of the country)

1.5. Map of Forest Cover of Odisha



ORGANIZATION OF FOREST, ENVIRONMENT & CLIMATE CHANGE DEPARTMENT



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

Wing	Circle	Division	Ranges	Section	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			

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.
- 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 details from various sources for forestry sector during the financial year 2024-25 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:

Figures (Rs. in lakh)

Year	Non-Plan	Plan	Total
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
2017-18	30600.01	10057.75	40657.76
Non-Plan/ Programme Expenditure		Administrative Expenditure	
2018-19	30599.90	21989.24	52589.14
2019-20	32304.36	39363.00	125589.79
2020-21	32115.70	128670.50	160232.20
2021-22	32168.78	21059	53227.78
2022-23	35755.00	31322.83	67077.83
2023-24	36833.00	28574.33	65407.33
2024-25	42672.00	34077.05	76749.05
2025-26	38653.00	29659.65	68312.65

WORKING PLAN

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 10years.

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 WorkingPlan.

Micro-plan preparation should be incorporated in the JFM Overlapping Working Circle.

The forest area of the state is being managed under fifty one (51)number of Forest and Wildlife (WL) Divisions; out of which seven (7) Wildlife Divisions namely ChandakaWL, 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, ChilikaWL, BalasoreWL, Bhadrak WL and Keonjhar WL partly having protected area are managed under Wild Life 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	36	Angul, Athgarh, Athamallik, Baragarh, Chilika (WL), Puri (WL), Baripada, Keonjhar (WL), Subarnapur, Khordha, Bonai, Jeypore, Dhenkanal, Nabarangpur,Bamra(WL), Cuttack, Jharsuguda, Rayagada, Karanjia, Rairangpur, Baliguda, Phulbani, Kalahandi North, Khariar, Kalahandi South, Nayagarh, Koraput, Malkangiri, Keonjhar(T), Rairakhol, CityF orest, Bhadrak(WL), Sambalpur, Rajnagar(WL) & Bolangir, Balasore (WL)
2.	Working Plan not submitted	02	Parlakhemundi and Boudh Division
3.	One year Extension of Working Plan for the year 2025-26	06	Ghumsur South, Sundargarh, Gh. North, Deogarh, Berhampur, Rourkela

Forest Working

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	2020-21	2021-22	2022-23	2023-24	2024-25
	Timber				
No. of divisions where timber operation taken up	26	25	24	27	31
No. of coupes worked out	119	111	137	203	132
No. of units worked out	54687	50834	72376.99	64094.035	64939.805
No. of trees felled	21578	19055	25433	24075	24267
Bamboo					
No. of divisions where bamboo operation taken up	21	21	18	12	12
SalLeaf					
No. of Divisions where sal leaf collection has been made	15	15	15	15	15

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	2021-22	2022-23	2023-24	2024-25	2025-26
Timber(per unit)	2086/-	2166/-	2250/-	2350/-	2335/-
Irregular Lots (per cft.)	317/-	329/-	342/-	355/-	355/-
Poles					
Sal Pole (per pc.)	60/-	60/-	60/-	60/-	60/-
Teak Pole (per pc.)	50/-	50/-	50/-	50/-	50/-
Other Pole (per pc.)	35/-	35/-	35/-	35/-	35/-
Firewood					
Sal &Non-Sal(per stack)	405/-	405/-	405/-	405/-	405/-
Casuarina (per Qtl.)	155/-	155/-	155/-	155/-	155/-
Bamboo					
Industrial Bamboo (per SU)	-	-	2000/-	2140/-	2290/-
Commercial Bamboo	Salia = 1/-	Salia = 1/-	Salia = 2/-	Salia = 2/-	Salia = 2/-
(per Piece)	Daba = 2.50	Daba = 2.50	Daba=5.00	Daba=5.00	Daba=5.00
Sal Leaf (per Qtl.)	Royalty waived out	Royalty waived out	Royalty waived out	Royalty waived out	Royalty waived out

FOREST PROTECTION AND MANAGEMENT

5.1 Initiatives taken for Protection of Forest in the State

Thedetail picture of the Forest Protection Units in the State is reflected below.

NumberofUnits	ForestDivisions	WildlifeDivisions	Total
	37	14	51
Numberof Ranges	223	77	300
Number of Sections	827	241	1068
Numberof Beats	3082	699	3781

The different programmes / activities undertaken by Forest Department during last 5yearsforprotection of forest from illicit felling/ smuggling by forest mafias which are asfollows:

- 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 manned 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, 227 Forest Protection Squads under CAMPA Scheme, having 10 local youths in each squad with 227 numbers of vehicles, have been deployed at range level of 37 Territorial Divisions.
- 261 Fire Protection Squads have been constituted under CAMPA involving 2610 numbers of local youths (each squad of 10 persons) and @1 hired vehicle for each squad in all the divisions of the state for forest fire prevention and control activities of the State during 2024–25.
- During the year 2025–26, under CSS i.e. FPM scheme and FCDR (Forest Conservation Development and Regeneration) scheme, 3461 km of Fire Lines have been created/maintained in the shape of maintenance of compartment line, forest boundary lines and other fire lines for prevention of forest fire in different forest divisions of the state.
- During the year 2025–26, under CAMPA scheme: Forest Fire Prevention and Management, 17,000 km of Forest Fire Lines have been created/maintained in the shape of compartment line, forest boundary lines and other fire lines for prevention of forest fire in different forest divisions of the state.
- Up to now, 16,217 numbers of Vana Surakshya Samities have been formed in the State, wherein 20,11,787 numbers of families of 15,355 villages are involved and they have been assigned with 13,97,577.24 hectares of forest area for its protection and usufruct benefit.
- 590 numbers of Eco-Development Committees have been formed in the proximity of protected areas to protect forest & wildlife with active involvement of the local community.
- 590 numbers of VHF stations and 880 numbers of walkie-talkies 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 the last 5 years, are furnished below:

Year	OffencesDetected	Offenders involved (nos.)	Timberseized-Quantity(inCum)	VehiclesSeized(Nos.)
2020-21	55412	50740	6185	558
2021-22	41598	35286	7586	248
2022-23	41144	37542	1756	663
2023-24	23922	15450	5537	716
2024-25 (upto31.10.25)	26978	24223	3291	520

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 2024–25, an amount of Rs. 32,17,651/- 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 numbers of Forest Guards and 04 numbers of Foresters have been recruited, especially to assist the Odisha Special Striking Force in 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) has been developed to facilitate applicants (citizens or institutions) to apply for transit permit for tenant timber from private holding land through online mode.

An individual/applicant will apply through the internet facility available with mobiles/desktop/Jana Seva Kendra in the website www.ttpermitodisha.in. Applicants can easily apply for timber transit permit from any place and track their application status at any point of time.

The user guidelines/manual for applying through the online system in detail is available at the first webpage of the said website.

To implement a transformational action point, 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.

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.)
2022	28755	26348 (92%)	8414.55
2023	36713	36321 (99%)	9550.86
2024	22868	22837 (99.86%)	4067.05
2025	29709	29694 (99.94%)	125.61
2026 (upto 31st Jan.)	343	341 (99.41%)	66.88

The Forest, Environment & Climate Change Department, Government of Odisha has 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):
- Receiving of fire alerts from Forest Survey of India (FSI).
- Processing of data in OFMS system, and alerts sent directly to mobile phones up to the level of Beat Forest Guards for immediate response within their jurisdiction.
- Offline navigation to fire alert points, data collection with geo-tagged pictures, and action taken are uploaded using OFMS mobile application.
- Centralized data sync from mobile to OFMS server for proper reporting of fire alert status throughout the State.
- District Level Committee - In each district of the State, a District Level Committee has been formed under the chairmanship of the concerned District Collector to facilitate inter-departmental cooperation for effective prevention and management of forest fires.
- Planning & Institutional Measures - Annual District Action Plan is put in place well in advance to mitigate deficiency of funds during emergency situations from other schemes/sources of the District Administration to combat forest fire.
- 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 and other fire fighting gadgets 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 throughCentrallySponsored Scheme under Forest Fire Prevention & Management programme in 60:40basis (i.e.60% Central Share & 40% State Share). The details are given below:

Sl.No.	Year	Name of the Scheme ted(Rs.inLakh)	Fundsallot-
1	2020-21	FPMunderCSS(60:40)basis	866.59
2	2021-22	FPMunderCSS(60:40)basis	754.81
3	2022-23	FPMunderCSS(60:40)basis 769.15	
4	2023-24 2023-24	FPMunderCSS(60:40)basis 245.30 SDMF 762.26	
5	2024-25	FPMunderCSS(60:40)basis 636.2	
6	2025-26	FPMunderCSS(60:40)basis 50.70	

Firesquad Mega bicycle rally on forest fire prevention, Jharsuguda

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.

.166 nos. of private Sawmills are running in different Industrial Estate of the State.

AFFORESTATION & PROGRAMME EXPENDITURE SCHEMES

6.1. Afforestation Activities

Afforestation activities taken up under different schemes such as Increasing Green Cover in the State (IGC), Green Mahanadi Mission (GMM), CAMPA, National Mission for Green India (GIM), MGNREGS, CSR through OMC Ltd., National Bamboo Mission (NBM), MISHTI, GCP, OMBADC, OFSDP, DMF, Miyawaki etc. from 2010–11 to 2025–26 in the State are given below:

Year Wise Afforestation Activities taken up under different schemes

Year	ARin ha	ANRwith GapPltn inha	ANRwith-out GapPltn inha	Total inha	Avenue Pltn in RKM	Seedlings plantedin-lakh	Seedlings distributed inlakh
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	5828.71	37513.61	0	43391.09	3111.87	254.42	408.57
2024-25	4042.68	26676.66	170.80	30890.14	2020.70	195.34	233.73
2025-26	2884.06	23265.57	0	26149.63	1908.3	206.80	180.08

6.1.1. Increasing Green Coverin the State

The scheme was introduced in 2013–14 by subsuming 11 continuing plan schemes. Since then, the scheme is under implementation. During 2025–26, different plantation activities such as 54 ha AR Plantation (30 ha. Bald hill plantation and 24 ha. casuarina plantation), 540 ha. ANR with Gap Plantation @ 200 plant per ha., 3.00 lakh seedlings under Urban Tree Plantation with a Budget provision of Rs. 8706.90 lakh. For the above purpose, 5.16 lakh seedlings have been planted. Further, 9.74 lakh seedlings have been distributed among the beneficiaries.

Besides, the other components implemented under this scheme during 2025–26 include (1) Raising of nurseries for plantation and distribution, (2) Creation and Maintenance of previous years plantations, (3) Maintenance of Medicinal Plants Knowledge Centre at Patrapada & (4) Ekamravana at Bindusagar.

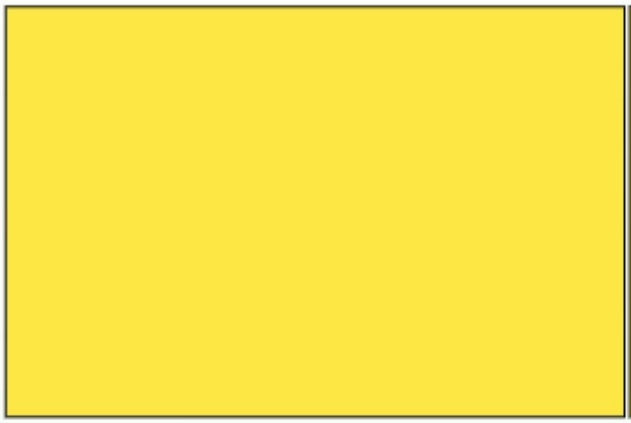
6.1.1.1 Medicinal Plants Knowledge Centre (MPKC), Patrapada

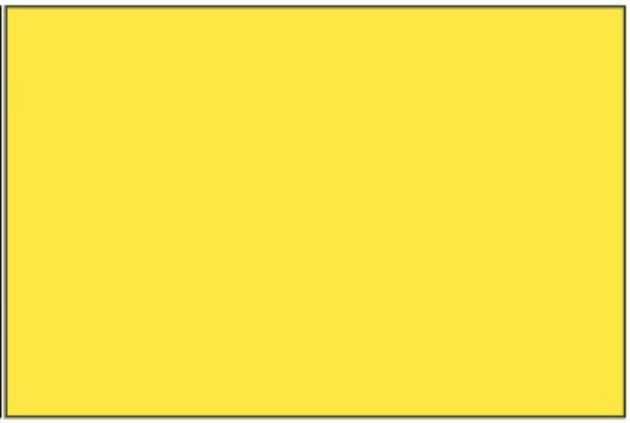
Development of a Medicinal Plants Knowledge Centre at Patrapada, Bhubaneswar was started operating since 2008-09 to spread awareness on knowledge about medicinal plant species to common public. This will promote medicinal plant sector for ex situ conservation activities through demonstrative Herbal Gardens in the state. As of now, 260 species have been planted in 260 designated plots separately bounded and displayed at a landscaped site. A processing unit has recently been set up for producing Non-Timber Forest Produce from locally sourced plants and seeds.

A sum of Rs. 241.05 lakh has been estimated for development and maintenance of rare medicinal plant species and development of a Bamboos setum in the center during 2025-26.

SMRUTIVAN

Smrutivan is situated near NH 16 on the way from Patrapada to Khandagiri. Established in 2014 to cherish the events viz. birthdays, anniversaries etc. and the memories of deceased ones through planting a tree. The total is of 17.516 acre. As of now 1,684 nos. of 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.





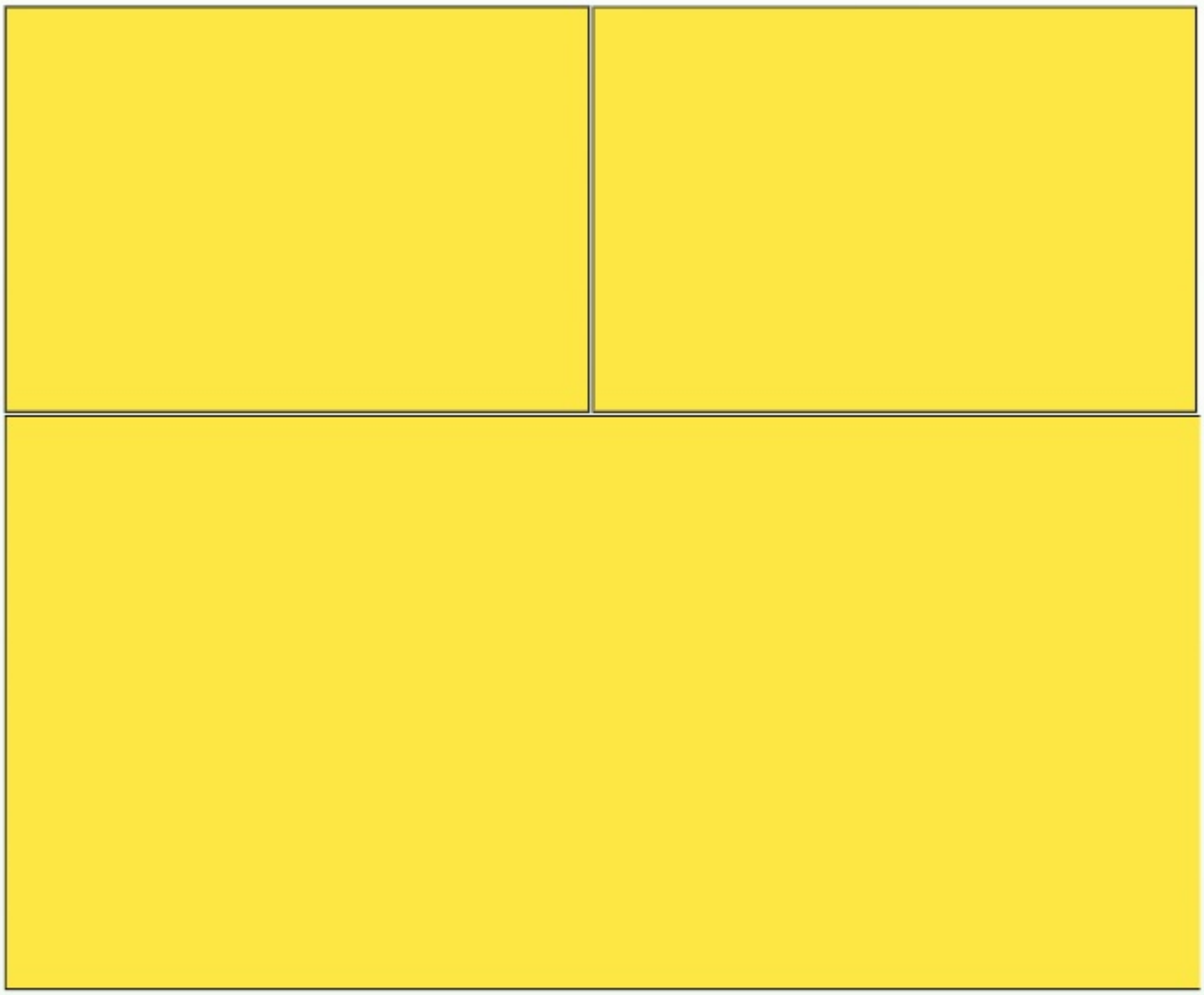
Atal Bihari Vajpayee Anandabana

Atal Bihari Vajpayee Anandabana is located in K3A – Kalinga Nagar, Bhubaneswar. It was created and opened to public in 2024. The forest area is over 89.05 acres (comprising Parcel 1 which is 61.68 acres and Parcel 2 which is 27.37 acres). This project was aimed for creating an urban forest acting as city lungs. This green initiative is with a motto of improving local environment, enhancing biodiversity and maximizing carbon stock. Several components of visitor amenities such as, Axis of Happiness, Soil Trail, Rock Trail, Rose Garden, Amphitheatre, Interpretation Centre, Yoga Mandap, Library etc. have been created, which cater a lot to the recreation and wellbeing of city dwellers.

6.1.1.2 Ekamra Van at Bindusagar

Ekamra Van a garden of medicinal plants at west bank of holy Bindusagar developed near Lord Lingaraj Temple under the Ekamra Garden Society in 2009-10, with objective for setting up 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.



6.1.1.3 Artificial Regeneration (AR/Block Plantation)

The growing stock in the forests of the State is consistently improved through this scheme by raising block plantations @ 1600 plants/ha with economically important species such as Rosewood, Sisso, Mahogany, Bija, Gambhar, Kasi, Tentra 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 2025–26, 54 hectare plantation has been created under IGC scheme and maintenance works for previous years plantations were also taken up.

AR Plantation at New Jali, Ghumsur South Forest Division

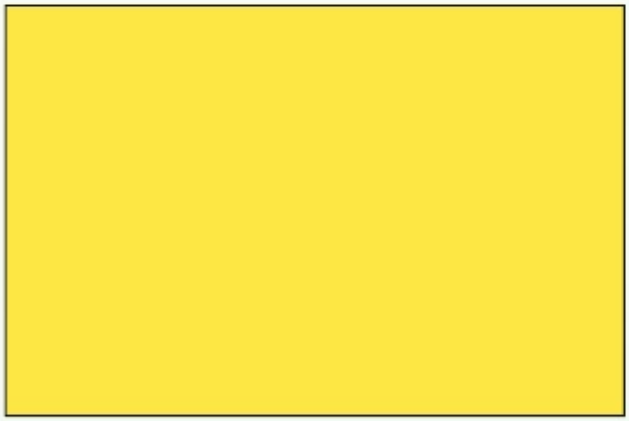
AR Plantation under CAMPA at Bolangir Forest Division FY- 2025-26

6.1.1.4 Bald Hill Plantation

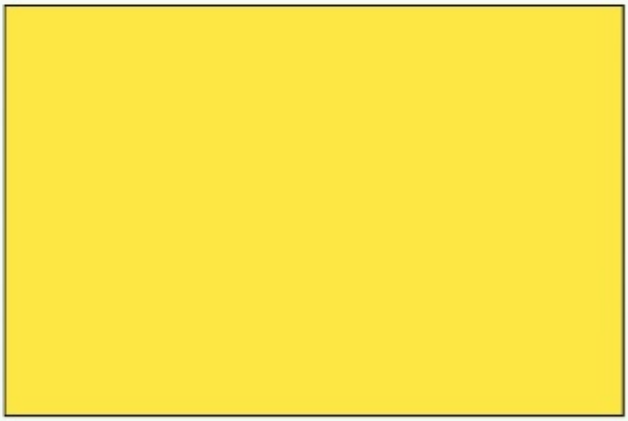
Odisha has scrub forests to the extent of 4632.68 square kilometers and many of them are bald hills. Hence, planting of different species along with various soil and moisture conservation measures like digging of staggered trenches, percolation pit, loose boulder check dam, gully control are being taken up to prevent further soil erosion.

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

During the year 2025–26, 30 ha Bald Hill Plantation by utilizing 0.48 lakh seedlings have been achieved. A target of 125 hectare has been provisioned for taking up Bald hill plantations during 2026–27.



Bald Hill Plantation FY- 2024-25 K. Dhaugaon, Ghumsur South Forest Division



Bald Hill Plantation at Majhimundia RL Nayagarh Forest Division

6.1.1.5 Assisted Natural Regeneration with Gap Plantation

During 2025–26, 540 hectares of Assisted Natural Regeneration (ANR) with Gap Plantation @ 200 plants per hectare have been achieved. A target of 2688 hectare has been provisioned for taking up ANR Plantations during 2026–27.

Khariar Forest Division, Kasipala ANR with Gap Plantation-2024-25

Ghumsur South Forest Division, Kiriamba RF, ANR Plantation-2025-26

6.1.1.6 Urban Plantation

This scheme was introduced during the year 2007–08 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.

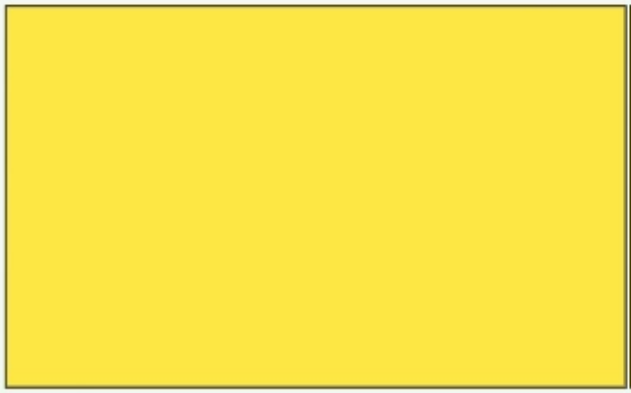
During 2025–26, 3.00 lakh seedlings have been planted under Urban Tree Plantation. A target of 3.00 Lakh has been provisioned for taking up Urban Tree Plantations during 2026–27.

Urban Tree Plantation at Tangianisha, Athmallik Forest Division

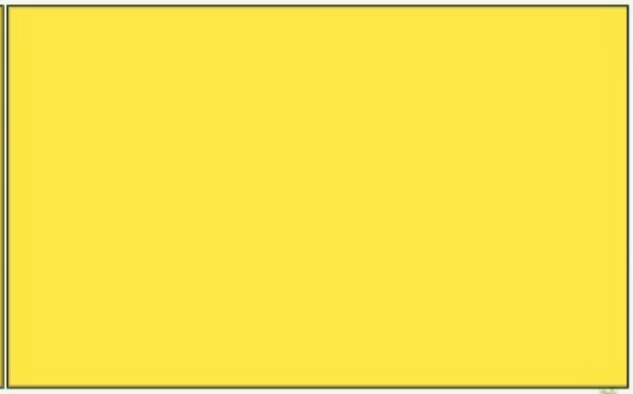
Urban Plantation 2024-25 at Piasalia, Nayagarh Division, Nayagarh Range

6.1.1.7 Seedlings Distribution during 2025-26

During the year 2025–26, 9.74 lakh seedlings have been distributed under IGC among the general public and various institutions in order to enhance greenery in non-forest land.



Seedlings Distribution at Omm High School, Bankapur in Khariar Range



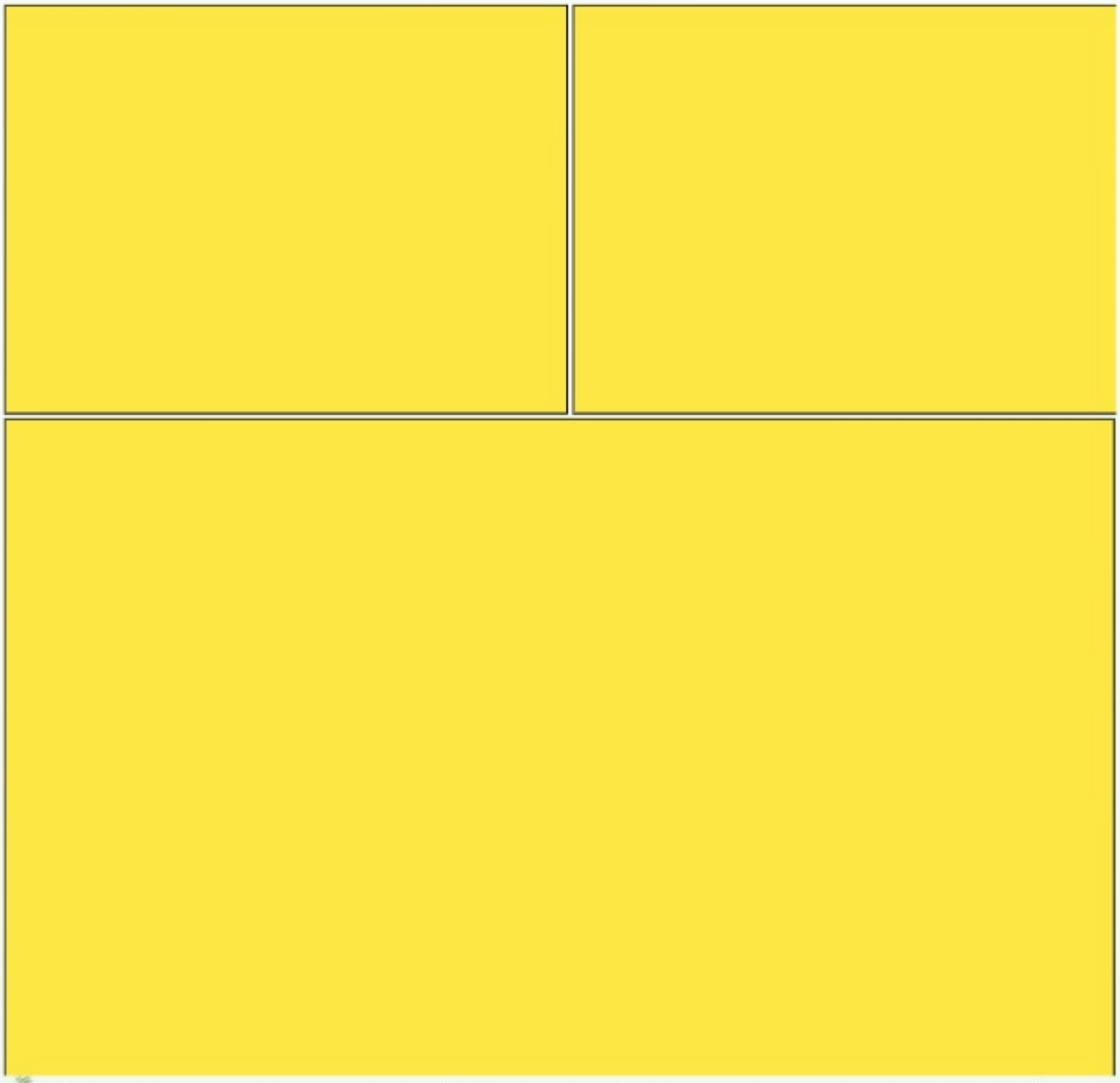
Seedlings Distribution at Govt. U.P. School, Khasbahal in Khariar Range

6.1.2 Green Mahanadi Mission (GMM)

Mahanadi is the lifeline of Odisha, 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 Mahanadi Mission" was launched during 2018–19 to create a Greenbelt in 1 km width on both sides of the river Mahanadi, Tel & IB on all available and suitable Forest and Non-Forest land through massive plantation with involvement of people's representatives and all stakeholders. In order to spread the awareness amongst people towards the objective of the mission, wide publicity has been created through different awareness programme, Mahanadi Seva Yatra, Pada Yatra by the people's representatives, stakeholders and general public etc.

Besides, three GMM committees have been constituted in the Block, District and State level for monitoring and reviewing of the GMM activities undertaken 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.

6.1.2.1 Achievement during 2025-26



Urban Tree Plantation under GMM at Mirdhapali, Balangir Forest Division FY- 2025-26

Plantations over an area of 125 hectare of AR, 84 hectares of Casuarina, 29.50 hectare of Bald Hill, 535-hectare ANR with Gap plantation, 2.97 lakh saplings under Urban Tree Plantation (UTP) have been achieved. For this 8.61 lakh seedlings have been planted. Besides, 12.96 lakh seedlings have been distributed among the public under the mission during 2025–26 (31.12.2025).

6.1.2.2 Proposal during 2026-27

There is a proposal for taking up 234-hectare AR plantation, 45 ha Bald hill Plantation, 2418 hectare ANR with Gap plantation, 3.95 lakh seedlings under the scheme of Urban Tree Plantation (UTP) for the financial year 2026–27. For which, 13.25 lakh seedlings have been proposed to be planted. Further, there is proposal of raising 200.00 lakh 6 months old seedlings for distribution.

6.1.3 Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS)

The Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) covers the entire country except the districts having 100% urban population. This scheme aims to provide at least 100 days of guaranteed wage employment in each financial year to every rural household whose adult members volunteer to do unskilled manual work. It gives social protection for the most vulnerable people living in rural area by providing employment opportunities through creation of durable assets, improve water security, afforestation linked with soil conservation activities and higher land productivity.

Viksit Bharat - Guarantee for Rozgar and Ajeevika Mission (Gramin): VB – GRAMIN Act 2025 aligned with the National vision of Viksit Bharat @ 2047 replaces Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGS). This act provides an enhanced statutory wage employment guarantee of 125 days in each Financial Year to every rural household whose adult members volunteer to undertake unskilled manual work. It focuses on Empowerment, Growth, Convergence and Saturation for a prosperous and resilient rural Bharat. The works to be taken up under this scheme are (1) Water related work for water security, (2) Core Rural Infrastructure, (3) Livelihood-related Infrastructure and Special works to mitigate Extreme Weather Events and Disaster Preparedness.

6.1.3.1 Plantations under MGNREGS during 2025–26

During 2025–26, an area over 8.6 hectare of AR Plantations, 651 hectare of ANR with Gap Plantations and 1889.30 RKM of Avenue Plantations have been achieved under MGNREGS by planting 6.16 lakh seedlings of different species. There is a proposal for raising of 50 hectare AR Plantation, 1500 hectare ANR with gap Plantation @ 200 plant per ha., 2000 RKM of Avenue plantation and 150 lakh seedlings to be distributed during the year 2026–27.

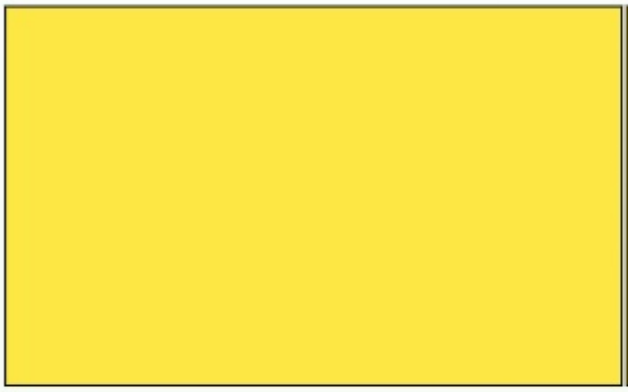
Year wise Afforestation Programme under MGNREGS

The year wise afforestation programme taken up and the amount utilized under MGNREGS upto 2025–26 (upto 31.12.2025) is given below.

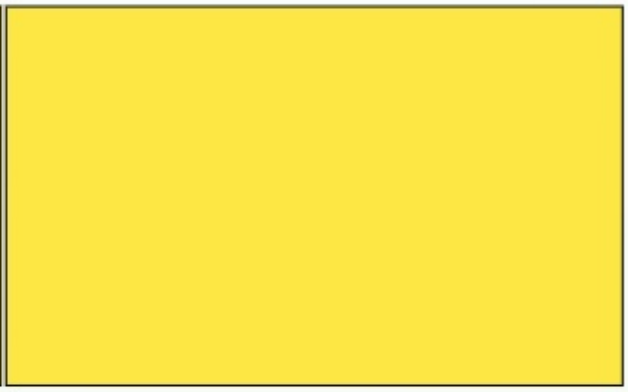
Year	Areaafforested (inha)	AvenuePlantation takenup(inRKM)	Waterbodies created (inno.)	Amountutilized (Rs.inlakh)
2006-07	779	0	146	264.00
2007-08	2590	51	0	492.00
2008-09	233	14	0	842.00
2009-10	11219	112	024	1106.41
2010-11	9543	241	26	1849.69
2011-12	14021	746	32	2648.45
2012-13	15307	2477	6	3954.36
2013-14	38115	3506	108	8703.55
2014-15	39904	3755	0	6749.54

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	12808.54
2024-25	1583	2006	0	14450.41
2025-26	59.6	1889.30	0	5937.61

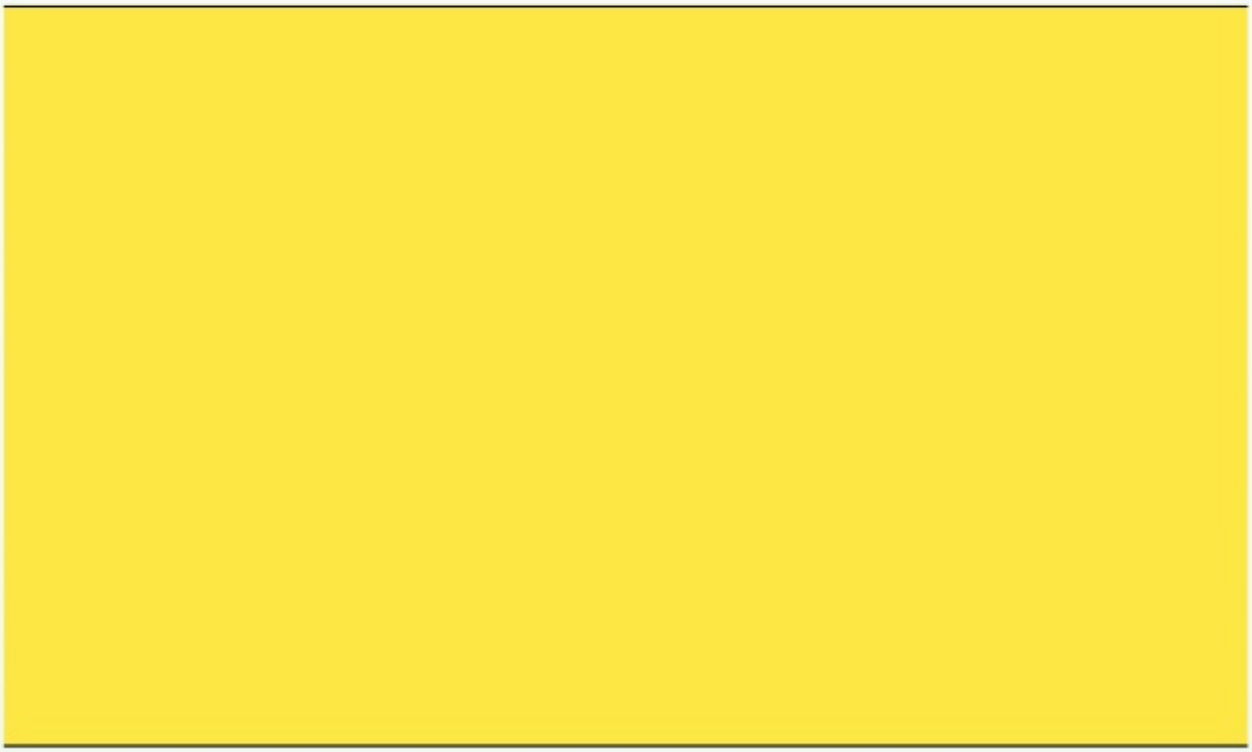
6.1.4 Plantations through Odisha Mining Corporation Ltd.(OMC)under Corporate Social Responsibility(CSR)



Avenue Plantation under MGNREGS, Balliguda Forest Division



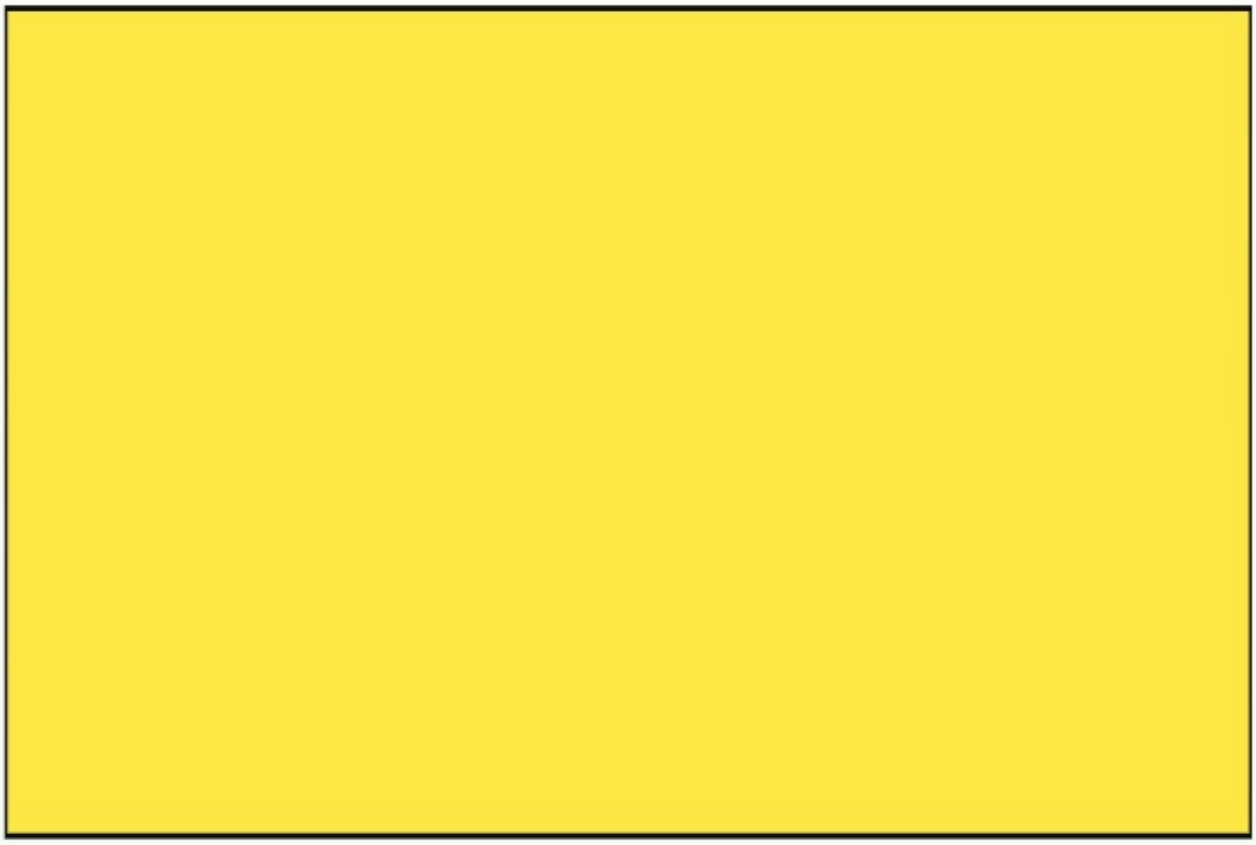
Plantation under MGNREGS, Balliguda Forest Division



Urban Tree Plantation under GMM at Mirdhapali, Balangir Forest Division FY- 2025-26

As per MoU signed between M/s Odisha Mining Corporation Ltd represented through Managing Director and State Forest Department represented through Principal Chief Conservator 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 2025–26, AR plantations over an area of 364 hectare and UTP over 0.65 lakh seedlings have been achieved by planting 6.47 lakh seedlings in the districts like Malkangiri, Nabarangpur and Sambalpur under CSR Scheme



6.1.5 Miyawaki Plantation Bonai Forest Division, Barachapal KF 10 ha under CSR

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

6.1.7 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) at 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:

National Afforestation Programme (NAP)

National Mission for Green India (GIM)

6.1.7.1 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-forest lands,
- 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 center and state since 2015–16.

Maintenance work over 4441.34 hectare have been taken up during 2025–26.

6.1.7.2 EK PED MAA KE NAAM CAMPAIGN

Under the tree planting campaign, "EK Ped Maa Ke Naam", massive afforestation programs have been taken up by Forest Department. During the first week of July, State Level Vanmahotsava function was

Plantation under GIM Garbaganda VSS (Urban & Peri Urban), Ghumsur South Forest Division

Plantation under GIM 2nd year ANR inside Banamunda RF under Banamunda VSS, Karanjia Forest Division

ANR Plantation under GIM at Koraput Forest Division

observed with participation of Hon'ble Chief Minister, Hon'ble Forest Minister and other dignitaries. At the divisional level, plantation drives were organized in all Forest Divisions with the participation of Hon'ble Ministers, Members of Parliament, People Representatives, Educational Institutions, Govt. Departments, Civil Society Organizations, local communities etc. ensuring widespread public participation in the campaign.

As on 13.02.2026, 8.10 crore seedlings have been uploaded in MeriLiFE Portal.

Single Day Plantation Drive:

- Odisha marked a historic milestone in its green journey by launching a state-wide single-day plantation drive on 17 September 2025 under Ek Ped Maa Ke Naam 2.0.
- Commemorating the 75th birth anniversary of Hon'ble Prime Minister Shri NarendraModi, the initiative symbolised collectiveresponsibility toward nature, transformingplantation into a people's movement for a greener and more sustainable future.
- Upon the clarion call of Hon'ble Chief Minister Shri Mohan Charan Majhi, the initiative created an unprecedented outcome resulting in plantation of 1.49 crore saplings in a single day. The total area covered under this plantation program aggregated to 9341.70 hectare.
- FE&CC Department, Government of Odisha spearheaded the campaign as nodal org with active and wholehearted participation of PR&DW and A&FE Department for this program; these three departments alone contributed for planting 1.0 Cr+ seedlings on the single-day plantation drive.
- This vision transformed into reality, thanks to the collective efforts of various stakeholders from State Government departments to district administrations, PSUs, civil society groups, Gram Panchayats, educational institutions, and women SHGs etc.
- The plantation drive was organised across villages, urban areas, and coastal belts, focusing on native and climate-resilient species. Public awareness campaigns, social media engagement, and leadership support further boosted large-scale public participation. As a result, Odisha not only took a giant leap towards increasing green cover but also demonstrated a global model in environmental stewardship among citizens.
- Sundargarh, Koraput and Keonjhar were the top districts each recording planting of over 10 lakh saplings on the same day. As of 28th January, 2026, Odisha has planted 8.10 Cr seedlings as against the target of 7.5 Crore, securing 5th position among all states in the nation under the program showcasing commitment towards a greener India.

6.1.7.3 PALMYRA PALM (TALA) PLANTATION

The "Palmyra Palm" called Tala in Odisha is a socially and economically wide accepted tree found naturally

Single Day Plantation in Bhubaneswar

grown in coastal areas as well as hilly lands along river systems of Odisha. The fruits are consumed by animals like Elephants, Wild Boar, Bears, Monkeys, Rodents etc. The mesocarp of tender raw fruit provides livelihood to the local communities. The immature tender fruits with vitamins and minerals are consumed during summer season made available by road side vendors and in weekly local markets. The leaf also has various utilities in Odisha by the poor villagers and other people in the form of leaf mats, ornamental manual fans, toy making and roof thatch. The trunk of matured trees is used as beams and rafters for construction of thatched house which is eco-friendly, economical and durable for providing thatch to the poor people. The fibrous root system of palm tree augments soil conservation. Besides, the religious importance of Palm Tree bears significance for its leaf used as container of sacred Mahaprasad of Lord Jagannath, Puri.

Objectives:

1) Palmyra palm plant attains an average height of 20 mts to 30 mts at its maturity without any branch with a cylindrical bole and acts as Lightning Arresters.

2) Due to its distinguishing features, it helps in securing Forest Block boundaries as well as facilitating demarcation.

3) Enriching Biodiversity.

4) Fodder for wildlife especially wild elephants.

5) Soil Conservation

6) Livelihood support to the poor people

7) Nesting place for weaving birds (Baya Chadhei).

8) Source of seed (Kernel) collection for future plantations

During the year 2024-25, 19 lakh palm plantations have been taken up along the forest block boundaries of the state. Similarly, in 2025-26 18 lakh palm stones have been collected and dibbled around the Forest Blocks as well as revenue land.

6.1.8 ODISHA BAMBOO DEVELOPMENT AGENCY

Plantation under TALA, Hirakud Forest Division

Odisha Bamboo Development Agency (OBDA) is an initiative aimed at development of Bamboo resources of 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 advances in technology. The mission has special focus on adequate returns to farmers as well as promoting sustainable livelihood for tribal & rural poor people engaged in Bamboo sector with employment on women empowerment. The restructured National Bamboo Mission implemented during 2018-19 under a Centrally Sponsored Scheme with 60 % share by Central Government and 40% share of State Government.

Major Achievement during 2025-26

1. An amount of Rs. 207.41 lakhs has been received for the FY 2025-26 and an amount of Rs. 99.75 lakhs has been utilized till date.
2. Establishment of bamboo handicraft training and production centre at Sindurpur under DFO, Boudh Forest Division, which is going to be completed during this year. The project included such as :-

a. Bamboo treatment and seasoning Unit.

b. Processing unit for value addition.

c. Handicraft/Cottage Industry.

d. Common Facility Centre.

e. Rural Haat- For Show Room.

3. A State Level Bamboo Nursery Accreditation Committee (SLBNAC) had issued accreditation Certificate in favour of the private nursery established at Khaladi, Kodala, Ganjam owned by Sri Kedar Krushna Panda on dt. 08.09.2025 for three years.
4. A workshop with bamboo stakeholder/beneficiaries/ farmers/ entrepreneurs and others was organized on dt. 16.07.2025 at Aranya Bhawan, Chandrasekharpur, Bhubaneswar for promotion of bamboo based industries in Odisha.
5. A National Conference on Bamboo was organized on 20thNovember 2025 at the Convention Centre, Lok Seva Bhawan, Bhubaneswar in collaboration with OFSDP Phase-II. In which the delegates are invited from Co-Founder Managing Director, Jans Bamboo Product Pvt. Ltd, Maharashtra/KFRI, Kerala/ INBAR, New Delhi/CEO, URAVU, Kerala/ NID, Ahemedabad/ CEO, CGBMT, Bengaluru/ NID, Bengaluru & representative of Common Ground.

Further, **there are two numbers of MoU were signed** with the Institutions like:-

1. NID, Ahemedabad for potential of design-driven value addition for bamboo-based livelihoods, cluster-level enterprise enhancement, and global market exposure

and

2. Kerala Forest Research Institute, Kerala for Bamboo and Research, Propagation and Resource Management.

6. The Odisha Bamboo Development Agency (OBDA) have developed one website namely "www.odishabamboohaat.com" in e-commerce portal for online retail outlet of bamboo handicraft products. The website was inaugurated by Shri Ganesh Ram Singhkhutia, Hon,ble Minister, Forest Environment & Climate Change Department, Odisha on 20th Novemeber,2025 on the occasion of said National Conference.
7. OBDA have participated in the "Viksit Odisha 2025" mega exhibition held at Rairangpur, Odisha from 07.10.2025 to 09.10.2025 and "Pragatishila Maharashtra 2025" held at Jalagaon, Maharashtra from 03.11.2025 to 05.11.2025. Smt. Tilottama Mohanta & Sri. Ananada Mohanta have been participated in both the mega exhibitions on behalf of the OBDA.
8. The land has been identified for construction of bamboo cluster in Talabasta, Banki under Cuttack district.
9. OBDA have participated in the 18th state level Kalinga Herbal Fair, 2025 at UNIT-III, IDCO Exhibition Ground from 10th to 16th December 2025, Bhubaneswar, where three number of stalls have been booked and six numbers of bamboo artisan have been participated in the fair for sale cum display of bamboo handicraft product.
10. OBDA have participated in the "22nd Kerala Bamboo Fest" mega exhibition held at Kaloor, Ernakulam, Kerala from 27.12.2025 to 01.01.2026. Sri. Ananada Mohanta have been participated in the mega exhibitions on behalf of the OBDA.

Organizing National Conference on Bamboo on date 20.11.2025 at Convention Centre, Lok Seva Bhawan, Bhubaneswar

18th State Level Kalinga Herbal Fair 2025 from 10.12.2025 to 16.12.2025 at IDCO Exhibition ground, Unit III, Bhubaneswar

Participation in the National Level Exhibition from 03.11.2025 to 05.11.2025 at Jalgaon, Maharashtra

Participation in the Kerala Bamboo Fest, 2025 from 27.12.2025 to 01.01.2026 at Kaloor, Ernakulam, Kerala.

6.1.9 Nagar Van Yojana (NVY)

The Nagar Van Scheme was initiated by the Ministry of Environment, Forest and Climate Change during the World Environment Day celebrations in June 2020 with the primary objective of improving forest quality, enhancing tree cover to maximize carbon stock, and mitigating the adverse impacts of urbanization. The scheme is a revamped version of the earlier Nagar Van Udyan Yojana (implemented in 2015) and aims to establish Nagar Vans/Nagar Vatikas across the country over a period of 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 10 km.

The prime objectives of the scheme are:

- providing wholesome healthy living environment for the residents.
- creating green space and aesthetic environment in an urban setup 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 are less than 10 ha.) to be implemented in 25 Forest Divisions falling under 20 districts. The Government of India has sanctioned a one time 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. Out of 40 projects, 34 projects have already been implemented in the state.

Thirteen (13) new proposals have already been sent to Govt. of India for its approval for implementing during the year 2024–25.

Nagar Bhatika under (NVY) at Ganesh Temple near Mankadajhola, Rayagada Range, Rayagada Forest Division

Nagar Van at Khariar Forest Division

Nagar Van at Boudh Forest Division

6.1.10 Forest Fire Prevention and Management (FPM)

The scheme is being implemented with a fund sharing pattern of 60:40 between centre and state. The primary 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 to institutionalize partnerships with forest fringe communities for forest protection, thereby contributing to the broader goal of maintaining environmental stability.

The components of the scheme include creation of Fire line, maintenance of Fire line, 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 2025–26, a total outlay of Rs. 50.70 lakh has been received for taking up above activities.

Forest Fire Awareness Meeting at Dhorlamunda VSS, Khariar Forest Division

Extinguish of Forest fire in Adipta PRF in Sinapali Range, Khariar Forest

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. A vulnerable 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 throughout the year for effective protection work. These squads not only carry out 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 2025–26, an amount of Rs. 2541.17 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. 299.60 lakh has been provided during the year 2025–26 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 need 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.

6.2.3 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 in different 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. 55.00 lakh has been provisioned during 2025–26.

6.2.4 Construction of Buildings

This scheme was introduced in the State Plan Budget during 2008–09 to provide accommodation facilities to Divisional Forest Officers, Assistant Conservator of Forests & Ministerial Staff working in the division/ regional offices. During 2025–26, the budget provision of 1500.00 lakh has been made for construction of DFO Residential Building in Athagarh Division, 11 nos of ACF Residence, 24 nos of Ministerial Staff Quarters and 6 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 2025–26.

6.2.5.2 Working Plan

Enumeration, stock mapping, 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 outlay of Rs. 200.00 lakh has been provisioned in Annual Plan 2025–26 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 outlay of Rs. 400 lakh has been provisioned for Annual Plan 2025–26 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 2025–26.

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 2025–26.

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 2025–26.

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 along-with construction of Watch Tower, Hiring Vehicle, Engagement of Fire Squad and Purchase of Blowers. An outlay of Rs. 1042.00 lakh has been provisioned in the State Annual Plan 2025–26 under this component.

6.2.7 Drift & Waifwood and Confiscated Forest Produce

This scheme includes components like salvaging of drift & waifwood collection of A1 timber and transportation of seized timber of UD & OR cases with a total outlay of Rs. 32.00 lakh during 2025–26.

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. 59.00 lakh has been provided for 2025–26 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. 150.00 lakh has been provided for 2025–26.

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 2025–26 with a total outlay of Rs. 50.00 lakh.

6.2.10 Information, Education and Communication

The Forest Department has undertaken a series of activity-based programmes to enhance public awareness and outreach. These include the telecast of the programme titled "BANADARSHAN" on Doordarshan Odia, aimed at creating awareness on forest-related issues. Additionally, 2,000 copies of the booklet titled "Barsha Ek Upalabdhi Anek" highlighting the one-year achievements of the new Government have been printed. A 5–10 minute audio-visual film has also been produced for presentation at the DFOs' Conference

2025 held at the Convention Hall, Lokseva Bhawan on 05.08.2025. Further, a documentary film titled "Save Forest for a Secured Future" has been produced as part of the Department's awareness initiatives. An outlay of Rs. 60.00 lakh has been provided for the year 2025–26 to carry out these activities.

6.2.11 Relocation of Villages from Reserve Forests and Sanctuaries

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

During the year 2025–26, (i) Ex Gratia for FRA a individual right holder and (ii) Temporary shed, approach road, drinking water, sanitation in rehabilitation area with free ration for three months & hand holding support at Keonjhar (WL) Division, relocation of 33 families from Udol Village located within the Northern Reserve Forest under Handapa Range of Athmallik Division & relocation of villages towards meeting the cost of relocation of villages from the Satkosia Tiger Reserve during the FY 2025–26.

JOINTFORESTMANAGEMENTPROGRAMME

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 meting 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-fringed 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.

As on 30.09.2025, a total of 13,97,631 hectare of Forests have been brought under Joint Forest Management through 16,219 Vana Surakshya Samities (VSSs) for protection under usufruct sharing mechanism. Besides, 569 Eco Development Committees (EDC) have been formed within and outside protected areas for protection of the Sanctuaries and National Parks

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Awareness Meeting at Nuamalpada VSS, Khariar Forest Division

Awareness Meeting at Musurangi village in Nuapada Range, Khariar Forest Division

JFMCs-Formed(inNo.)	Families Involved (No.inlakh)	Forest area assigned toVSS(Sq. Km.)	
VSS/EDC	16219/569	20.12	13976.31

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 Ama Jungal Yojana (AJY) are also being implemented in the state under Joint Forest Management mode.

Patrolling by women Members of Kanteipali VSS Ganjam, Berhampur Forest Division

WILDLIFE MANAGEMENT

8.1 Wildlife Organisation

The State Wildlife Organisation is functioning at Prakruti Bhawan, Sahidnagar, Bhubaneswar headed by Principal CCF (Wildlife) and Chief Wildlife Warden, Odisha. The State is enriched with unique assemblage of Wildlife.

The State has 19 Wildlife Sanctuaries, one National Park, one proposed National Park, three Elephant Reserves, two Tiger Reserves, two Conservation 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 to Train Project has been carried out by M/s RITES Ltd. as recommended by Indian Railways. 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 declared as Ramsar Sites. It is imperative to protect & conserve marine including Satkosia George, Hirakud, Ansupa and Tampara lake 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 enable 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 2025, 28 villages 1931 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 `56.00 crores for a period of five years from the financial year 2016-17 to 2020-21 for its sustainable development and promotion.

539 nos. of Eco Development Committees (EDC) have been formed covering an area of 43455.32 ha of protected area and thus people's participation plays a major role in conservation of wildlife. The State has enhanced compassionate amount to Rs.6.00 lakh from Rs.4.00 lakh towards human kill. A Joint Task Force has been constituted in State Wildlife Headquarters consisting of Forest and Police officials to oversee protection of elephant and other wild animals in the State. Dossier of habitual offenders are being maintained and circulated to the field from time to time to keep close vigil on their activities. A 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, iWLMS are developed to facilitate monitoring of different wildlife related activities.

The details of physical achievement during 2023-24 and target for 2024-25 under Programme Expenditure is given here under:

Items	Achievement for 2023-24	Target for 2024-25		
	Budget	Campa	Budget	Campa
Mangrove plantation	307Ha.	-	375Ha.	-
Meadow development	1129.37Ha.	98.71 ha.	55Ha.	300 ha.
Deployment of Anti-poaching / Protection squad	317Nos.	174 nos.	355Nos.	177 nos.
Deployment of Elephant Squad	140Nos.	-	101Nos.	-
Deployment of fire fighting squad	43Nos.	48 nos.	42Nos.	48 nos.
Protection of marine turtle and marine fauna	-	-		-
Creation of water body	103Nos.	32 nos.	25Nos.	30 nos.
Renovation of water body	241 Nos.	20 nos.	53Nos.	70 nos.
Trench fencing	-	13.5 Km.	16Kms.	30 Rkm.
Provision of Solarstreet light	472 Nos.	-	161 Nos.	60 nos.
Maintenance of Forest Road	750 Kms.	459.20 Kms.	660 Kms.	-
Construction of Watch Tower	9 Nos.	-	1 No.	10 nos.
Construction of Check Dam	0	-	4 Nos.	-
Engagement of Gaja Sathi	265Nos.	1612 nos.	238Nos.	1490 nos.

8.2 Census of Wildlife in Odisha

Mid-winter waterfowl census in Odisha during 2025

Mid-winter waterfowl / water bird status survey 2025 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	109	**10,87,226**
2	Bhitarkanika Mangrove Wetland	118	**1,51,614**
3	Hirakud reservoir	122	**3,77,732**

Census of three crocodilian species in Odisha during 2025

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 1881 nos. Saltwater crocodiles were counted in the river systems coming under the jurisdictions of both Rajnagar and Bhadrak Wildlife Divisions during the current season 2024-25. 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
2025	585	405	343	174	374	1881

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 2025

Location	Gharial	Mugger
Mahanadi river system	16	41
Water bodies in Satkosia Wildlife Division	0	16
Water bodies in Athamallik Division	0	2
Water bodies in Mahanadi Wildlife Division	0	0
Total	**16**	**59**

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, 2025 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 2025
West Deo River	59
East Deo River	4
Khairi/ Bhandan River	8
Budhabalanga River	1
Khadkei River	2
Palpala /Thakthaki River	1
Total	**75**

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, 2025 by the Divisional Forest Officer, Berhampur Division. The entire reservoir was divided into 27 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 2025
Ghodahada Reservoir	56
Outside Ghodahada Reservoir	31
Total	**87**

Abstract of Mugger and Gharial estimation

Mugger crocodile

Location	No. of mugger sighted during 2025
Satkosia river system	59
Similipal river system	75
Ghodahada Reservoir	87
Total	**221**

Gharial crocodile

Location	No. of Gharial sighted during 2025
Mahanadi river system	16
Water bodies in Satkosia	0
Total	**16**

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 2025 census, a total of 710 nos. of Dolphin and other Cetacean species were found in Odisha.

Sl. No.	**Name of the Division**	**Species and number of Dolphins and other Cetaceans**	**Total**				
		Irrawaddy Dolphin	**Bottle-nose Dolphin**	**Humpback Dolphin**	**Spinner Dolphin**	**Finless Porpoise**	
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
1	Chilika Wildlife	159	0	15	0	0	**174**
2	Mangrove (WL) Rajnagar	22	5	470	8	0	**505**
3	Puri (WL)	0	7	0	0	0	**7**
4	Berhampur	0	0	13	0	0	**13**
5	Bhadrak (WL)	0	4	0	0	0	**4**
6	Balasore (WL)	7	0	0	0	0	**7**
Total	**188**	**16**	**498**	**8**	**0**	**710**	

Census of Blackbucks in Odisha

The population estimation exercise for Blackbuck (*Antelope Cervicapra*) for the year 2025 has been conducted in the State on 29.01.2025. Census was conducted in Ghumsur South Forest Division (Buguda, Badagada, Polosara and Aska Ranges), Berhampur Forest Division (Khallikote, Digapahandi and Berhampur Ranges), Ghumsur North Forest Division (Mujagada, Jagannath Prasad and Tarasing Ranges). The method of census adopted was individual total count of animals by direct sighting. The animals sighted were categorized in to males, females and young ones.

The Division wise details of Blackbuck estimated population is given below:

Sl. No.	Name of the Division	No. of Black-bucks during the year 2025 census			
		Male	Female	Young	Total
1	Ghumsur South	1108	3414	1105	5627
2	Ghumsur North	135	230	39	404
3	Berhampur	685	2028	45	2758
	Grand Total	**1928**	**5672**	**1189**	**8789**

8.3 Nandankanan Zological Park

Nandankanan Zoological Park, one of India's premier large zoos spanning over an area of 4.37 sq. km, is nestled amidst the serene natural surroundings on the outskirts of Bhubaneswar. Established on December 29, 1960, the zoo boasts a unique landscape of undulating terrain, lush moist deciduous forests, and pristine water bodies, creating an ideal environment for its diverse inhabitants to thrive in harmony with nature. A rare blend of in-situ and ex-situ conservation sets Nandankanan apart from other wildlife conservation centers, making it a significant hub for biodiversity protection.

With a vision to achieve global standards and emerge as a world-class zoological park, Nandankanan is committed to excel in wildlife conservation, research, education, and visitor engagement. Its mission encompasses best practices in animal welfare, enclosure design, aesthetic development, education, and conservation initiatives, fostering a deep connection between people and nature. Complementing its zoological significance, the 75-hectare State Botanical Garden, featuring 28 satellite gardens, further enhances its role as a vibrant centre for biodiversity conservation. Some of the key achievements of Nandankanan Zoological Park during the year are as follows:

Animal Collection: Nandankanan Zoological Park boasts the largest animal collection among Indian zoos, housing 3,980 individuals from 173 species as on 1st March 2025. During the year, the zoo successfully executed four animal exchange programs with various zoos to enhance its collection, acquiring a diverse range of species, including Royal Bengal Tigers, striped hyenas, fishing cats, giraffes, wild dogs, and reticulated pythons. Additionally, exotic primates like cotton-top tamarins, Siamangs, and Marmosets were introduced through the "Patrons of Nandankanan" initiative.

Animal Housing & New Enclosures: Significant infrastructural upgrades were made, including the construction of a 13,665.20 sq. ft. Exotic Primate Complex with multiple enclosures and feeding chambers. The Himalayan black bear enclosure was enriched with natural features, a state-of-the-art bird quarantine facility was developed, and a feeding cell and back kraal were added to the lion safari complex. The zoo's aquarium was also upgraded with thematic tanks, expanding its fish collection to 117 species.

Health & Veterinary Care: The veterinary hospital complex was renovated, and advanced medical equipment, such as an automatic blood biochemistry analyser and an animal transportation trolley, was procured. A total of 86 veterinary support camps were conducted in fringe villages, and 29 rescue cases

were addressed in neighbouring forest divisions. Two additional veterinary doctors were engaged, and the zoo supported an international workshop on human-wildlife conflict mitigation.

Rescue & Rehabilitation: Nandankanan provided treatment to 119 rescued animals and attended 49 wildlife rescue cases across the state. The zoo successfully released 25 blackbucks, 332 spotted deer, 5 common palm civets, and 24 barking deer into protected areas. A 10-member Rapid Response Team (RRT) was formed with advanced rescue technology, alongside a Quick Response Team dedicated to the Gharial recovery project in the River Mahanadi.

Visitors Footfall & Enhancement of Amenities: During 2024-25, as on 1st March, 2025, the zoo attracted 33,50,555 visitors, generating revenue of ₹195,348,512 with an additional ₹38,28,860 collected from the "Adopt-an-Animal" and "Patrons of Nandankanan" programs. Key infrastructure enhancements included upgraded safari gates, drinking water fountains, a new toilet block at Giraffe Square, and improved visitor pathways. The library was transformed into a 'Zoo Library & Digital Hub,' and interactive, educational signage were installed across the park.

Human Resources, Capacity Building & Staff Welfare: To strengthen its workforce, the zoo engaged an Assistant Biologist and Assistant Education Officer. A sports meet was organized exclusively for Nandankanan staff, where more than 200 staff participated. A two-day health camp on zoonotic disease screening was organized, benefiting 397 staff members.

Safety & Security: The zoo strengthened its securitywing by inducting a platoon of 35 officers from OISF, hiring ex-army personnel, constructing a dedicated security staff residential complex and constructing 400 meters of boundary wall.

Conservation Breeding & Research: Successful breeding efforts resulted in the birth of many rare and endangered species. A radio-tagged Indian pangolin was released in Similipal Tiger Reserve for habitat monitoring. The gharial species recovery project in River Mahanadi continued with habitat protection and community engagement. Additionally, the Centre for Conservation, Research & Training was established to facilitatemicrobiological and molecular disease diagnosis, histopathology, molecular sexing,reproductive & stress hormone monitoring and bio-banking.

Education & Outreach: The zoo hosted educational initiatives such as 'One Day at Nandankanan' for 5,200 students and outreach programs in 24 schools. Zoo ambassadors were selected from 71 schools, and 108 zoo volunteers contributed their time for services in the Zoo. Various citizen science activities, including bird walks, moth-watching sessions, and nature trails, engaged the public. Special programs such as "EkPedMaaKe Naam," "Van Mahotsav," and a "Seed Ball Workshop" promoted conservation awareness.

Development of State Botanical Garden: The arboretum and medicinal plant garden were upgraded with QR-based signage linked to an online database. The Forest Rest House-II was renovated, and the State Botanical Garden's Master Plan (2024-25 to 2034-35) received approval. The zoo won 125 awards in national and state-level flower and garden shows.

Habitat Management: De-weeding efforts were completed in Kanjia and Kiakani lakes to restore their ecosystems. A 3.1 km drainage outlet for Kanjia Lake, supported by the Special Relief Commissioner, Odisha, is under construction to rejuvenate Kanji and Kiakani lakes and to mitigate flooding in and around Nandankanan.

DIVERSION OF FOREST LAND

9.1 Diversion of Forest Land **under section 2 of the Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980.**

About 70352.811 hector of forest land has been diverted under the Van(Sanrakshan Evam Samvardhan) Adhiniyam, 1980 for 659 numbers of different development projects as on 31.12.2025, the details of such diversion are reflected below.

Name of the Sector	No. of Proposals	Forest Area Diverted (Ha)
Irrigation	96	12803.736
Industry	37	4493.000
Mining	211	36394.43
Energy	9	161.100
Road & Bridges	73	2007.205
Railway	38	3823.932
Defence	4	3865.250
Human Habitation	6	403.860
Transmission	101	4823.435
Others	84	1576.862
TOTAL	**659**	**70352.811**

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

The Scheduled Tribes & Others Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 secure individual or community tenure or both. The Ministry of Environment, Forests & Climate Change, Government of India have authorized Divisional Forest Officers to grant permission for diversion of forest land up to 1.0 ha in each case and this involves felling of trees not exceeding 75 numbers per hectare for small projects in 13 categories as envisaged u/s 3(2) of Forest Rights Act, 2006. About 2143.431 hectare of forest land has been diverted for 5320 number of different development projects under the above Act as on 31.12.2025.

Name of the Sector	No. of Proposals	Forest Area Diverted (Ha)
Anganwadi	24	2.246
Electric Line	675	343.419
Water Harvesting Structure	65	20.901
Tank & other minor water bodies	127	28.674
Drinking water supply & water pipe-line	1086	190.713
Irrigation	113	50.973
Road	1088	691.615
School	1344	604.977
Community Centre	293	81.386
Vocational Training Centre	102	56.929
Hospital	44	18.474
Telephone Line	271	17.448
Non-Conventional source of energy	5	4.044
Fair Price Shop	8	3.379
Others	75	28.253
TOTAL	**5320**	**2143.431**

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

The Ministry of Environment, Forests & Climate Change, Govt. of India have authorized the State Government to grant General Approval under Section 2 of Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980 for diversion of forest land up to 5.00 hectors in each case (in two lining of roads the area is not limited to 5.00 hectares) for creation of critical public utility infrastructure by Government Departments and this involves felling of trees not exciding 50 per hectare in Left Wing Extreme (LWE) affected districts in 15 categories. As on 31.12.2025, 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 Query	01	2.992
Police Establishment	04	3.972
Drinking water supply	04	6.241
Power Sub-Station	01	2.833
Irrigation	01	4.800
Transmission Line	01	4.261
School	01	4.160
TOTAL	**20**	**82.799**

DEVELOPMENT OF ECOTOURISM

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 Ecotourism" during the year 2011-12. Subsequently, Ecotourism gained momentum from 2016-17 onwards.

10.2 Eco Tourism Destinations

53 Ecotourism destinations have been developed in different Forest and Wildlife areas of Odisha covering 21 revenue Districts including important tribal areas of Mayurbhanj, Sundargarh, Malkangiri, Kalahandi, Koraput, Kandhamal, Bargarh, Nayagarh etc. 473 rooms are available to accommodate 1467 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 Jakam in Kalahandi South Forest Division

Boating at Sarafgarh in Sundargarh Forest Division

TABLE-1:Ecotourism Destinations in the State

District	ForestDivision	Destination	Location
MAYURBHANJ	DDSIMILIPAL(N)	Similipal Nature Camps	Gurguria
			Jamuani
			Kumari
			Ramatirtha
			Barehipani
NAYAGARH	MAHANADI(WL)	SatkosiaSandsResort	SatkosiaSandsResort (Badmul)
	NAYAGARH(T)	SidhamulaNatureCamp	Sidhamula
KENDRAPADA	RAJNAGAR(WL)	BhitarkanikaNatureCamps	Dangmal
			Gupti
			Habalikhati
ANGUL	SATOKOSIA(WL)	SatkosiaNatureCamps	Baghamunda
			Chhotkei
			Purunakote
			Tarava
			Tikarpada
BARGARH	HIRAKUD(WL)	DebrigarhNatureCamp	Debrigarh
	BARGARH(T)	Nrusinghnath Nature Camp	Nrusinghnath
KANDHAMAL	BALIGUDA(T)	DaringbadiNatureCamp	Daringbadi
	PHULBANI(T)	PhulbaniNatureCamps	Phulbani
			Mandasaru Valley
PURI	CHILIKA(WL)	ChilikaNatureCamps	Rajhans
			Manglajodi
			Berhampura
	PURI(WL)	NuanaiNatureCamp	Nuanai
	PURI (WL)	Mangrove Retreat Nature Camp	Mangrove Retreat
BALASORE	BALASORE(WL)	Bichitrapur Nature Camp	Bichitrapur
		ChandipurNatureCamp	Chandipur
		RissiaNatureCamp	Rissia
SUNDARGARH	BONAI(T)	KhandadharNatureCamp	Khandadhar
		TensaNaturecamp	Tensa
	SUNDERGARH(T)	SarafgarhNatureCamp	Sarafgarh
KHORDHA	CHANDAKA(WL)	ChandakaNatureCamps	Deras
	KHORDHA(T)	BerberaNatureCamp	Berbera
KEONJHAR	KEONJHAR(T)	SanghagraNatureCamp	Sanghagara
GANJAM	GHUMSURNORTH	GiantSquirrelNatureCamp	Kaliamba
		BlackbuckNatureCamps	Saluapali
			Bhanjanagar Dam
	GHUMSURSOUTH		Chermaria

	BERHAMPUR(T)	GhodahadaNatureCamp	Ghodahada
CUTTACK	ATHGARH(T)	AnsupaNatureCamp	Ansupa
JAJPUR	CUTTACK(T)	MahavinayakNatureCamp	Mahavinayak
		OlasuniNatureCamp	Olasuni
DHENKANAL	DHENKANAL(T)	SaptasajyaNatureCamp	Saptasajya
MALKANGIRI	MALKANGIRI (T)	ChitrakondaNatureCamp	Chitrakonda
		SatigudaNatureCamp	Satiguda
NUAPADA	KHARIAR(T)	PatoraDamNatureCamp	PatoraDam
KORAPUT	KORAPUT(T)	KoraputNaturecamp	Koraput(PineForest)
		Deomali Nature Camp	Deomali
KALAHANDI	KALAHANDI (N)	Rabandhara Nature Camp	Rabandhara
BOUDH	BOUDH (T)	Dambargarh Nature Camp	Dambargarh
KALAHANDI	KALAHANDI SOUTH(T)	Jakam Nature Camp	Jakam
GANJAM	BERHAMPUR (T)	Sonapur Beach Resort	Sonapur
GAJAPATI	PARALAKHEMUNDI(T)	Mahendragiri Eco Resort	Mahendragiri

TABLE-2: Footfall of Visitors & Income generated

Year	No. of Visitors	Income (Inlakh)
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	1,51,517	1517.05
2024-25 (Till 31st January 2025)	1,35,499	1537.25

10.3 Employment Generation

As of now more than 670 local community members are engaged for managing 53 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 sorely on forest for their survival by poaching, smuggling, fishing, collecting honey, firewood, etc. Indirectly, 5to6 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 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.
EDCShare (Online release to Community account)	10%	For developmental work in local villages
CorpusFund [With PCCF (WL) for remuneration of Hospitality Experts engaged in Nature Camps etc.]	20%	Remuneration of professional consultants engaged in different Ecotourism Destinations & other contingencies etc.
Total	100%	

Hospitality Training by IHM Division

Souvenier Shop at Sarafagrh in Sundergarh Forest Management at Debrigarh in Hirakud 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, Stargazing, 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, watchtowers 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.

Nature Camp at Mahendragiri in Paralakhemundi Forest Division, Gajapati

Sunapur Beach Resort in Berhampur Forest Division

Jungle Safari at Debrigarh in Hirakud Wildlife Division

Yoga Activity at Debrigarh Nature Camp in Hirakud Wildlife Division

Boating Jetty at Deras in Chandaka Wildlife Division

Guests are being served by the Community Member

Cottages at Deomali Nature Camp, in Koraput Forest Division

10.5 Promotion of Ecotourism

Upscaling of Ecotourism activities going on in the State, better services and management through professionals are the priority for taking Odisha Ecotourismtonext level.

Forest &Tourism Department are signatory to a joint MoU till 7thJanuary 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 Upcoming Ecotourism Destinations

District	Division	Destination
Mayurbhanj	Similipal North	Nawana
Mayurbhanj	Similipal North	Talabandha
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 locals and 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.

ETG Members at Khandadhar Nature Camp in Bonai Forest Division

FORESTRY RESEARCH

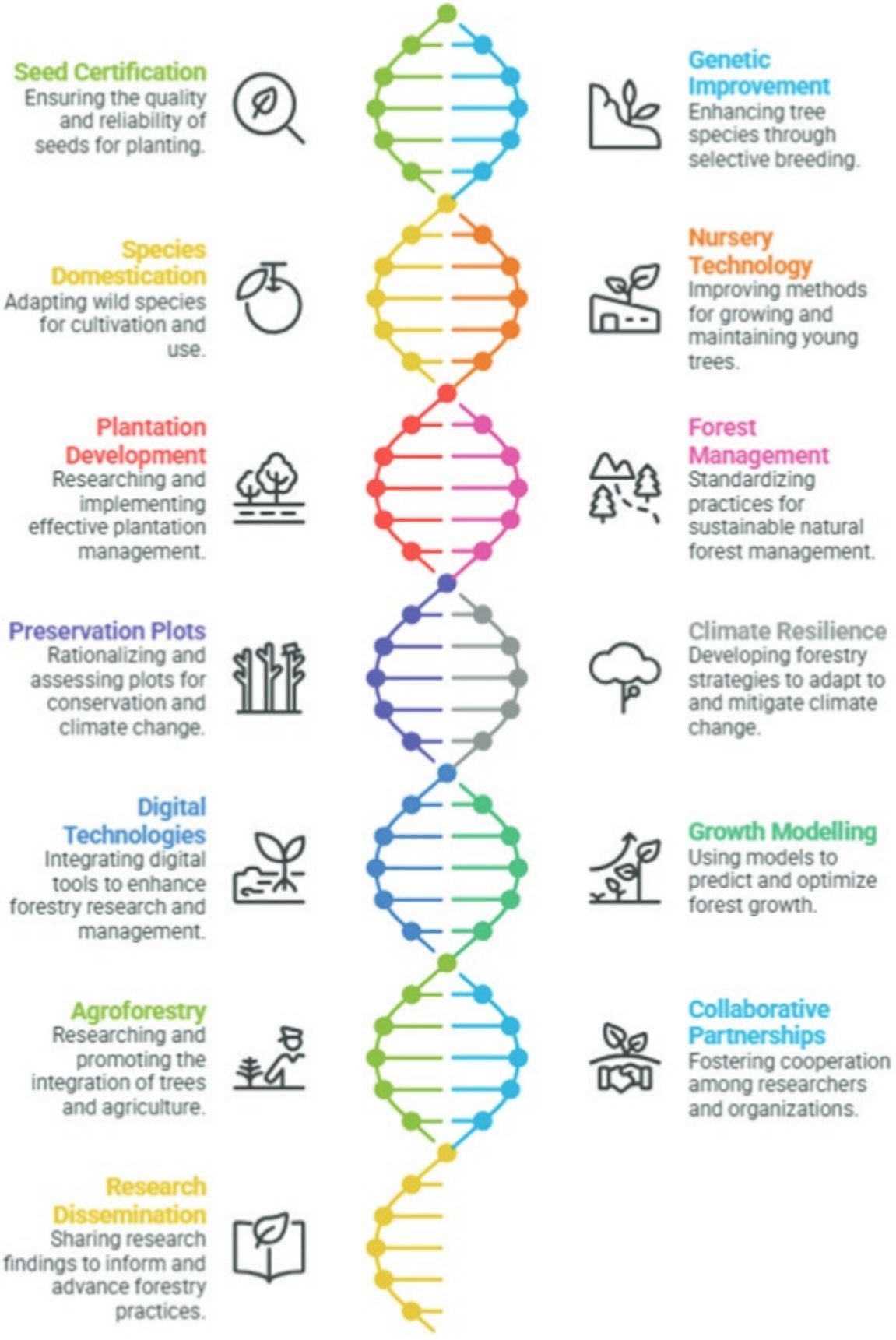
11.1 Introduction

The Odisha Forest Department recognizes that sustainable forest management in the 21st century requires integration of scientific research with operational forestry practice. In recognition of this imperative, the Department has established a comprehensive research framework spanning multiple disciplines and ecological zones within the State.The research program encompasses fundamental and applied research addressing critical forest management challenges. From genetic improvement and seed quality assurance to digital technology integration and climate change adaptation, the Department's research activities reflect a strategic approach to building forest ecosystem resilience while enhancing productivity and livelihood benefits. The program is organized around thirteen research pillars, each addressing specific aspects of sustainable forest management.The contributions of the Research Wing across all thirteen pillars, documenting methodologies, progress, achievements, and future directions are presented below in detail. The report serves as a reference document for the Odisha Forest Department, contributing agencies, research partners, and forest sector stakeholders in understanding the current research landscape and strategic direction of forest science advancement in Odisha. The research framework is based on the following pillars.

S.N.	Research Pillar
1	Seed Certification – Establishment of Seed Development Cell
2	Genetic Improvement Programme
3	Species Domestication
4	Nursery Technology Enhancement
5	Research on Plantation Development
6	Standardization of Natural Forest Management Interventions
7	Rationalization of Preservation Plots and Climate Change Assessment
8	Climate-Resilient Forestry and Carbon Sequestration
9	Integration of Digital Technologies in Forestry
10	Forest Stand Growth Modelling and Plantation Optimization
11	Agroforestry Research and Livelihood Enhancement
12	Collaborative Research Partnerships
13	Research Outputs and Dissemination

1. SEED CERTIFICATION

The Seed Development Cell represents a cornerstone initiative of the Research Wing, established to ensure the availability and distribution of quality seeds for all afforestation programmes across Odisha. This cell operates as a comprehensive facility responsible for multiple critical functions spanning the entire seed supply chain from collection through storage and distribution.


Seed Certification
Ensuring the quality and reliability of seeds for planting.
Genetic Improvement
Enhancing tree species through selective breeding.
Species Domestication
Adapting wild species for cultivation and use.
Nursery Technology
Improving methods for growing and maintaining young trees.
Plantation Development
Researching and implementing effective plantation management.
Forest Management
Standardizing practices for sustainable natural forest management.
Preservation Plots
Rationalizing and assessing plots for conservation and climate change.
Climate Resilience
Developing forestry strategies to adapt to and mitigate climate change.
Digital Technologies
Integrating digital tools to enhance forestry research and management.
Growth Modelling
Using models to predict and optimize forest growth.
Agroforestry
Researching and promoting the integration of trees and agriculture.
Collaborative Partnerships
Fostering cooperation among researchers and organizations.
Research Dissemination
Sharing research findings to inform and advance forestry practices.

Organizational Structure and Functions

The Seed Development Cell is organized into two specialized units:

- Seed Development Unit – Handles collection, processing, grading, and distribution of seeds
- Seed Testing Laboratory – Conducts comprehensive quality assessment and certification

These units work in tandem to manage the complete lifecycle of forest seeds. The cell is responsible for collection and processing of seeds from identified sources, grading and quality assessment of seed lots, comprehensive testing and certification procedures, and safe storage and distribution of certified quality seeds for department programs.

Seed Testing Laboratory Protocols

The Seed Testing Laboratory implements a comprehensive battery of tests to ensure seed quality and viability. These protocols represent internationally recognized standards adapted to forest species:

- Purity Test – Determines the percentage of pure seed in a sample, removing contaminants and foreign matter
- Moisture Determination Test – Establishes moisture content critical for seed longevity and germination potential
- Viability Tests – Including conductivity tests to assess seed vigour and physiological quality
- Tetrazolium Test – A biochemical viability test using tetrazolium staining to assess living tissue in seeds
- Germination Test – Conducted in a dedicated germination room to determine germination potential

Establishment of Seed Production Areas

A significant achievement has been the identification and conversion of old trial plots into formal Seed Production Areas (SPAs) and the identification of natural SPAs from existing forest stands. These areas serve as source orchards for quality seed production, ensuring genetic purity and optimal seed characteristics for departmental afforestation programs. The SPAs represent long-term investments in seed security and genetic resource management that will benefit future generations of forest managers and communities. Apart from this new seed production areas are also being identified to ensure a repository of resources from which forest reproductive material is being sourced.

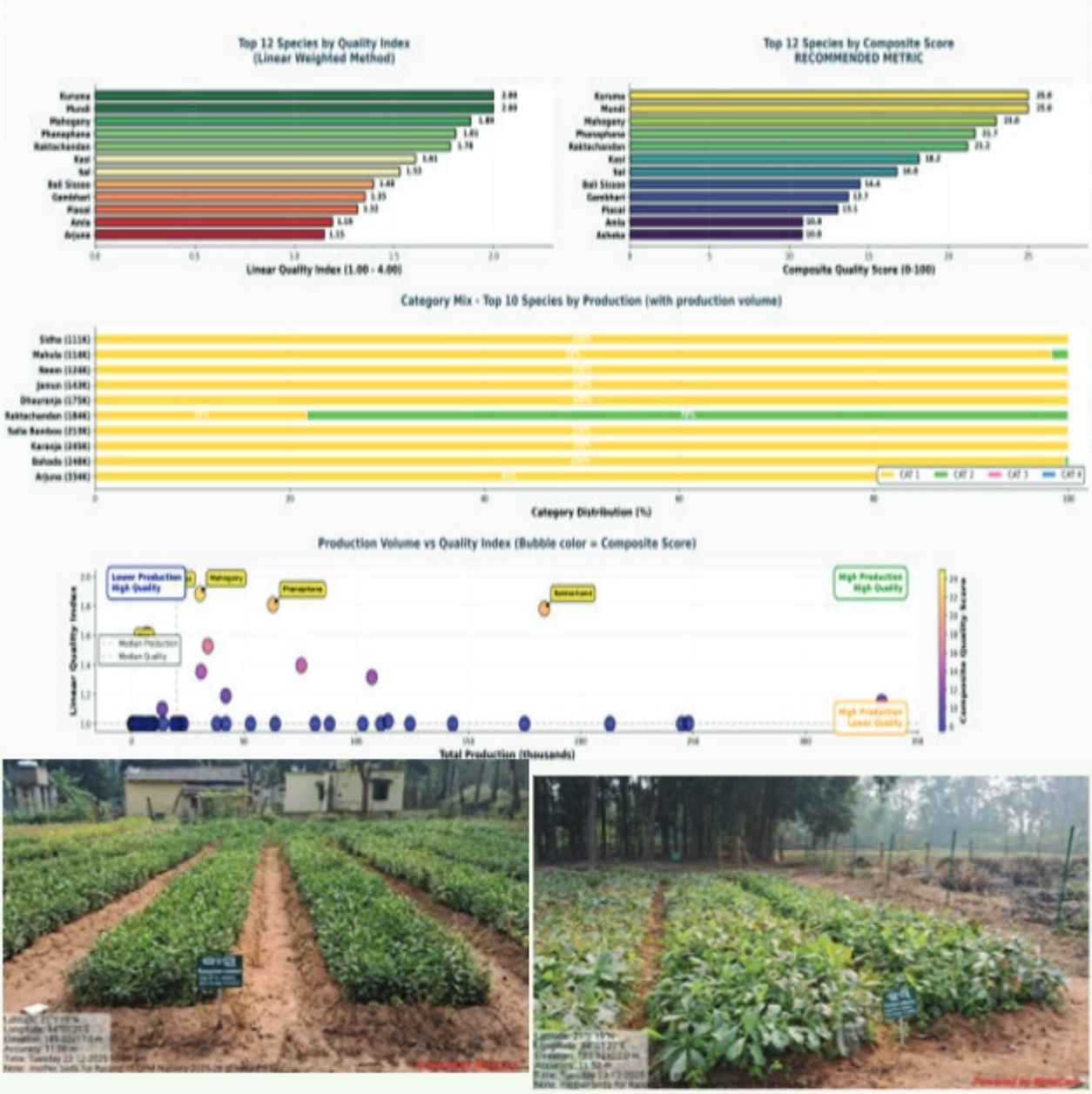
Production of Quality Planting Material

During the financial year 2025–26, a total of 60,00,000 high-quality planting materials of indigenous species were raised in the Bhubaneswar and Rayagada Silviculture Divisions. These FRM are being systematically distributed to forest divisions across the state to support afforestation programmes, ecological restoration projects, and biodiversity conservation initiatives.

To ensure quality assurance and traceability, a standardized procedure has been formulated to assess the degree of FRM (Forest Reproductive Material) certification of planting stock. The procedure covers identification of source, verification of seed origin, documentation of collection protocols, nursery handling practices and field inspection of seedlings at different growth stages so that each batch of planting material can be linked to its genetic source and production process. This enables classification of material into defined certification categories and ensures uniformity, authenticity and accountability in distribution to field formations.

Further strengthening quality evaluation, the Institute of Forest Biodiversity (IFB), Hyderabad has developed a methodology to quantify the "Q" component in QPM (Quality Planting Material) through measurable parameters such as seedling vigour, root–shoot ratio, collar diameter, height growth, physiological health

and overall morphological stability. The grading system allows objective scoring and benchmarking of nursery stock across divisions, facilitating standardization and continuous improvement in nursery practices. Together, these measures establish a scientific quality assurance framework that enhances field survival, improves plantation performance, and supports long-term sustainability of restoration efforts.



Production of Quality Planting Material

2. GENETIC IMPROVEMENT PROGRAMME

The Genetic Improvement Programme represents a critical component of long-term forestry sustainability, focusing on the identification, maintenance, and selective breeding of superior genetic materials from indigenous forest species. This program ensures that future plantations are established with genetically superior material adapted to local conditions and climate scenarios.

Trial Plots of Indigenous Species

The Department has established comprehensive trial plots for various indigenous species of significant ecological and commercial importance. These species have been selected based on their ecological

importance, commercial value and suitability for afforestation programs in Odisha's diverse forest ecosystems:

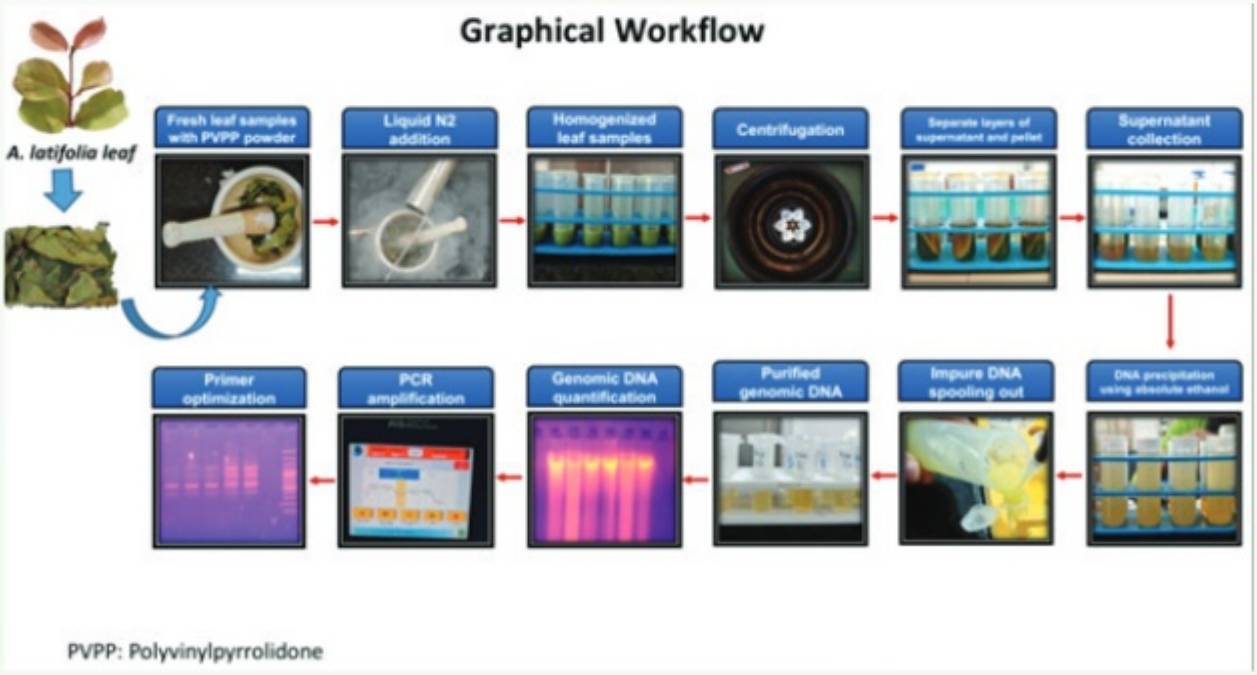
Trail Plots of Indigenous Species

Multilocational F1 Progeny Trials

The Department has initiated comprehensive multilocational progeny trials across twelve indigenous species. These trials represent the results of controlled crosses and superior genetic material selection, tested across multiple ecological zones in Odisha to assess their adaptability and performance across site variations. This multilocational approach ensures that recommended genetic materials demonstrate robust performance across diverse environmental gradients.

Genetic Diversity Studies

Advanced biodiversity and genetic diversity studies have been completed in designated preservation plots. Genetic diversity studies of *Anogeissus latifolia* across 10 populations in 13 districts have been conducted using DNA fingerprinting and isozyme studies, conducted in collaboration with the Siksha O Anusandhan (SOA) University, Bhubaneswar, ensuring scientific rigor and external validation. The identification of Candidate Plus Trees (CPTs) represents another significant achievement, enabling the Department to maintain superior genetic materials for propagation and selective breeding programs.



Genetic Diversity Studies

3. SPECIES DOMESTICATION

The species domestication program focuses on bringing wild and semi-wild plant species under human cultivation, enabling sustainable utilization and commercial development. Domestication represents an important pathway to utilizing forest genetic resources sustainably while providing economic benefits to forest communities.

Ficus Species Domestication

Seventeen Ficus species have been identified and brought into cultivation as part of the domestication program. These species demonstrate considerable ecological potential, with applications including ornamental, medicinaland ecological functions. Ongoing research focuses on propagation techniques and commercial viability assessment.

Establishment of Ficus Propagation Centre

A dedicated Ficus Propagation Centre has been established to study the propagation response of various Ficus species to different auxins and varying concentrations. This facility advances vegetative propagation techniques, enabling rapid multiplication of superior Ficus varieties for ornamental, medicinal and other applications.

Nursery of Fruit-Bearing Species

A comprehensive nursery has been established to cultivate thirteen fruit-bearing species of traditional importance in Odisha. These species represent valuable nutritional resources and livelihood enhancement opportunities for forest-dependent communities and provide multiple ecosystem services beyond fruit production, including soil conservation, watershed management, and wildlife habitat provision.

4. NURSERY TECHNOLOGY ENHANCEMENT

Advanced research in nursery technology aims to improve seedling quality, optimize resource utilization and develop sustainable alternatives to conventional inputs. Two major initiatives exemplify the Department's commitment to innovation in nursery operations and environmental sustainability.

Microfine Neem Biopesticide Unit

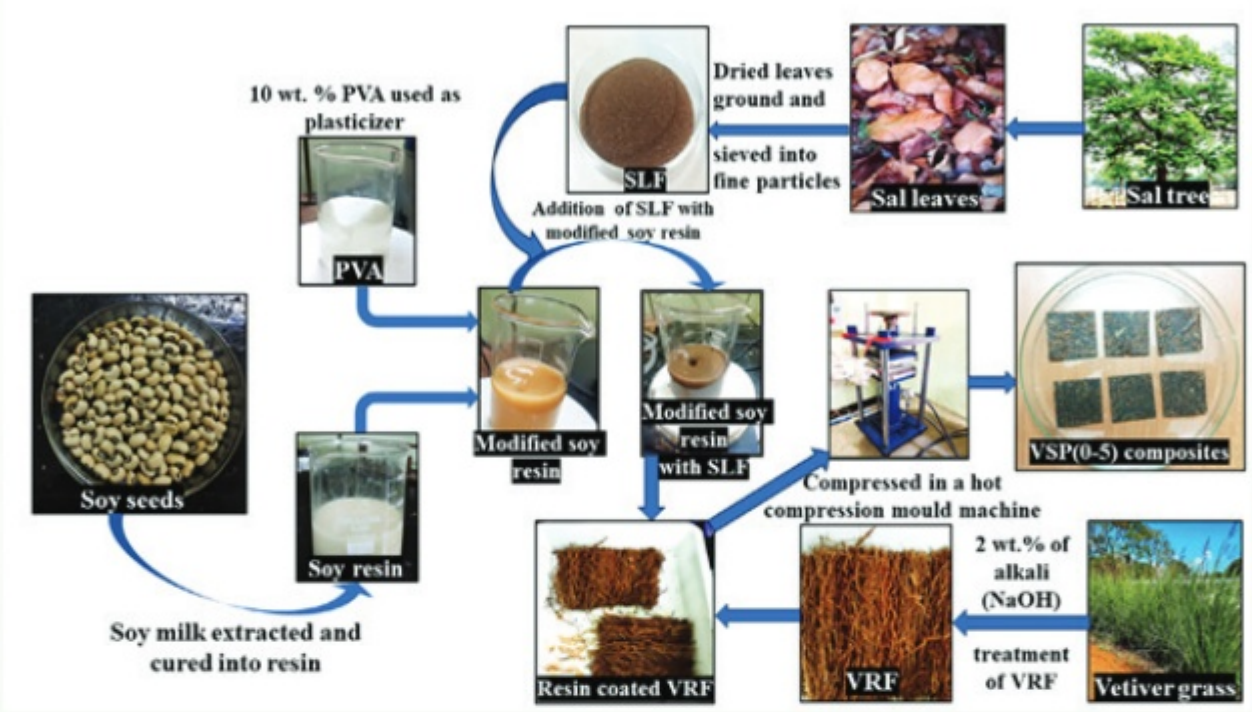
In collaboration with the Bhabha Atomic Research Centre (BARC), Mumbai, the Silviculture Divisionis designing to established a Microfine Neem Biopesticide production unit. This facility represents a significant advancement in organic pest management for forest nurseries and agricultural applications across the State. The biopesticide will be prepared from 10 litres of water and 200 grams of neem mix powder, utilizing whole dried neem fruits, ritha seeds and dolomite to create an effective, environmentally benign formulation without synthetic chemical content.

This biopesticide will serve multiple advantages: it is cost-effective compared to chemical alternatives, supports organic certification requirements for forest produce and the microfine formulation enhances penetration and efficacy against common nursery pests including spider mites, scale insects and whiteflies. It is expected that department nurseries that will adopt this technology will report significant reductions in pest-related seedling losses. This project is being implemented as part of technology transfer from BARC, Trombay, Mumbai.

Eco-Friendly Biodegradable Sapling Pots

An innovative research initiative conducted in collaboration with Utkal University, Bhubaneswar, has led to the development of eco-friendly biodegradable sapling pots as sustainable alternatives to conventional polythene containers. Modified sal leaf-based composites have been fabricated and characterized, with comprehensive material testing including tensile strength, flexural strength, microhardness and moisture absorption studies.

The developed pots are completely biodegradable, eliminating plastic waste from nursery operations while maintaining structural integrity for optimal sapling growth. This innovation represents a significant stride toward circular economy principles in forest nursery management, addressing environmental concerns while maintaining operational efficiency. The use of sal leaves, a forest byproduct, transforms waste into a valuable resource, exemplifying integrated forest resource utilization.



Development of Eco-friendly biodegradable Sapling Pots

5. RESEARCH ON PLANTATION DEVELOPMENT

The Division's plantation development research encompasses two major program areas representing complementary approaches to forest expansion and ecological restoration. These programs support the Department's target of increasing forest cover while ensuring livelihood benefits for local communities and ecosystem service enhancement.

Sal Plantation in VSS Areas

Sal (Shorea robusta) plantations have been established in VSS managed areas to strengthen community forest resources. Research focuses on optimal planting techniques, survival rates, growth performance and community engagement strategies for long-term sustainability. Sal represents an economically valuable and ecologically appropriate species for Odisha's deciduous forest zones, providing timber and other forest products.

Teak Enrichment Plantations

Teak enrichment plantations represent a strategy to enhance economic value and species diversity in existing forest stands. The research program evaluates growth performance, yield potential, and ecological impacts of teak enrichment across diverse site conditions in Odisha. Teak enrichment provides economic returns to the Department and local communities while maintaining ecological functions of existing forests.

Teak Enrichment Plantations

6. STANDARDIZATION OF NATURAL FOREST MANAGEMENT INTERVENTIONS

Advanced silvicultural thinning research has been initiated to optimize forest stand management using contemporary analytical methodologies. Evidence-based thinning protocols enhance forest productivity while maintaining ecological integrity and long-term forest health.

Machine Learning Applications in Silvicultural Thinning

A pioneering research initiative demonstrates the application of machine learning methodologies to silvicultural thinning optimization, utilizing Red Sanders (*Pterocarpus santalinus*) as a case study species. This represents one of the first applications of machine learning to silvicultural decision-making in Indian forestry and demonstrates the Division's commitment to technological innovation.

This data-driven approach employs R programming for predictive model development and analysis of growth responses to different thinning intensities and frequencies. By optimizing stand density and spatial arrangement for enhanced productivity, forest managers can make informed decisions regarding thinning schedules, thereby optimizing timber yield, forest health and carbon sequestration potential. The resulting management guidelines are transferable to other species and geographic regions.

7. RATIONALIZATION OF PRESERVATION PLOTS AND CLIMATE CHANGE ASSESSMENT

Preservation plots serve as reference ecosystems for long-term ecological monitoring and climate change assessment. The Division has undertaken comprehensive initiatives to rationalize and strengthen this important research infrastructure for long-term ecological monitoring.

Rationalization of Preservation Plots

A systematic effort is underway to identify and establish preservation plots representing all eighteen forest subtypes recognized in Odisha. This comprehensive approach ensures that monitoring and research activities cover the full spectrum of Odisha's forest diversity. The identification of representative forest subtypes utilizes forest type maps from the Forest Survey of India (FSI) as well as the forest canopy density maps, with ground truthing of plot identifications using geospatial technology and field surveys.

Climate Change Assessment Using Preservation Plots

An innovative research initiative employs preservation plots to assess climate change impacts on Odisha's forest ecosystems through advanced statistical and geospatial methodologies. This approach utilizes Non-linear Autoregressive Distributed Lag0(NARDL) analysis to examine temporal changes in vegetation health, analyzing data from 2020-2024 to capture recent climate and vegetation dynamics.

The research integrates geospatial technology for continuous monitoring across multiple preservation plots, analyzing correlation between Normalized Difference Vegetation Index (NDVI) and Land Surface Temperature (LST). NDVI serves as a proxy for vegetation vigour and green biomass, while LST indicates thermal conditions. The correlation between these parameters provides insights into temperature-driven vegetation stress and climate change responses in forest ecosystems, informing adaptive management strategies and species selection.

8. CLIMATE-RESILIENT FORESTRY AND CARBON SEQUESTRATION

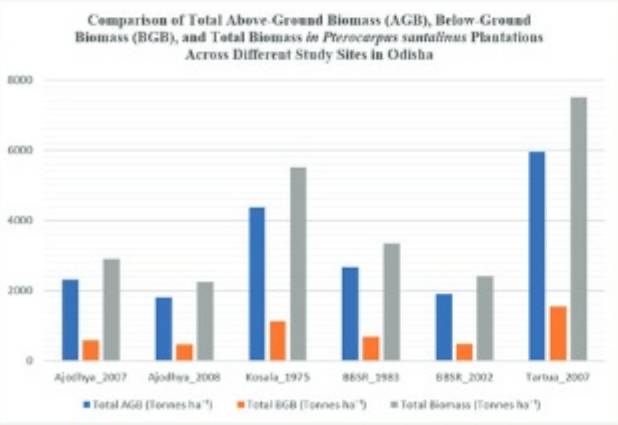
With increasing recognition of climate change impacts on forest ecosystems, the Division has prioritized research on climate-resilient tree species and carbon sequestration potential. Two major studies exemplify this strategic focus toward adaptive forest management in a changing climate.

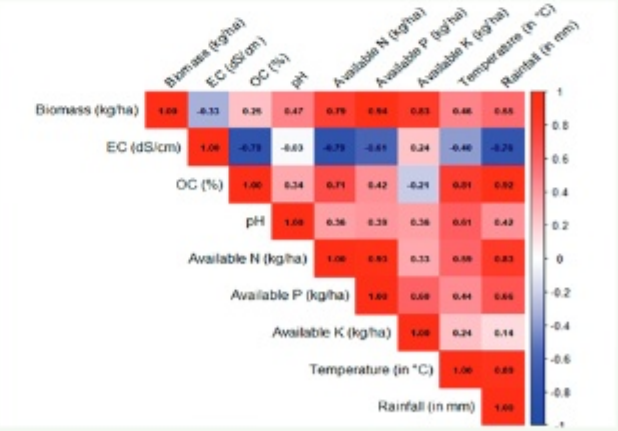
Ecological Niche Modelling of Climate-Resilient Species

Ecological niche modelling (ENM) has been applied to two economically and ecologically important species: *Pterocarpus marsupium* and *Anogeissus latifolia*, to identify optimal distributions under changing climatic conditions. This research identifies geographical areas currently suitable for these species under present climate conditions and projects future suitable areas under climate change scenarios using global circulation models, enabling identification of tree species better adapted to new climatic conditions for strategic afforestation planning.

Biomass Production and Net Primary Productivity Studies

Detailed research on Pterocarpus santalinus (Red Sanders) quantifies biomass production and net primary productivity (NPP) across varying edapho-climatic conditions in Odisha. The research assesses biomass





Biomass production and Net Primary Productivity Studies

production potential under different soil and climatic regimes and quantifies net primary productivity, representing the rate of organic matter production available for growth and reproduction. These studies enable identification of site-species matching for optimized productivity and carbon sequestration.

9. INTEGRATION OF DIGITAL TECHNOLOGIES IN FORESTRY

The Department is advancing the integration of digital technologies and data analytics to modernize forest management operations and enhance research capability. Two cutting-edge initiatives exemplify this technological transformation.

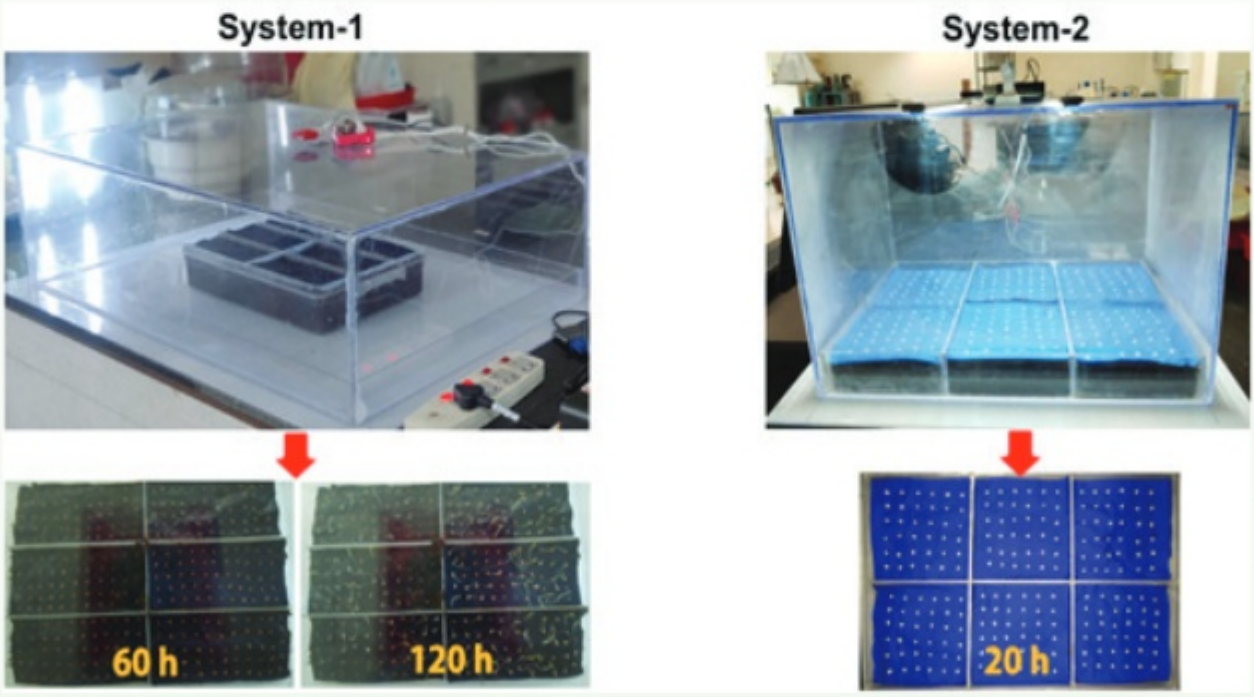
IoT-Based Monitoring in Nursery Management

Internet of Things (IoT) technology deployment in nursery operations represents a paradigm shift toward data-driven nursery management and real-time operational optimization. This technology enables unprecedented precision in nursery environmental management through deployment of IoT sensors for continuous monitoring ofcritical nursery parameters including nutrient levels, growth metrics, soil moisture, temperature, and humidity.

Real-time data collection enables automated control systems for environmental optimization, with integration of data analytics for evidence-based nursery management decisions. Benefits include enhanced seedling quality, reduced water and nutrient waste, early detection of stress conditions, and improved nursery productivity through optimized environmental management.

Advanced Seed Germination Phenotyping

In collaboration with IIT Bhubaneswar, the Division is developing advanced automated methods for seed germination assessment using computer vision and machine learning technologies. An automated seed imaging platform enables consistent, objective seed characterization, with machine learning-based phenotypic analysis extracting multiple morphological parameters including seed area, perimeter, major/minor axis ratio, convex hull area, extent, and circularity. Predictive models correlate morphological traits with germination potential, enabling rapid, cost-effective assessment of large seed lots supporting quality assurance and genetic improvement programs.



Advanced Seed Germination Phenotyping

10. FOREST STAND GROWTH MODELLING AND PLANTATION OPTIMIZATION

Advanced growth modelling techniques are being applied to optimize plantation design and enhance long-term productivity and carbon sequestration potential. These methodologies provide quantitative guidance for plantation design decisions.

Spacing Trial Studies for Optimization

Comprehensive spacing trial studies of *Pterocarpus marsupium* and *Dalbergia latifolia* have been established at Bhasma Hi-tech Nursery, Sambalpur Research Range, covering 2.16 hectares. The trial evaluates four spacing options: 2 m × 2 m spacing (2,500 trees/hectare) for high density early commercial thinning, 3 m × 3 m spacing (1,111 trees/hectare) for medium-high density, 4 m × 4 m spacing (625 trees/hectare) for medium density, and 5 m × 5 m spacing (400 trees/hectare) for lower density maximum individual tree growth.

Research objectives include assessment of volume optimization and maximization potential across spacing treatments, evaluation of carbon sequestration efficiency at different planting densities, and provision of evidence-based recommendations for plantation design in Department programs.

Spacing Trial Studies

Growth Modelling Approaches

Forest stand growth modelling employs sophisticated statistical approaches to predict tree and stand growth under varying conditions. Approaches include GADA (Generalized Algebraic Difference Approach) models for flexible growth curve fitting, ADA (Algebraic Difference Approach) models for polymorphic growth projections, R programming for statistical analysis and model development, and integration of long-term trial plot data for model validation and refinement.

Urban Forestry Growth Modelling

Statistical models of height growth in urban forestry plantations incorporate various environmental factors, generating probability assessments of plantation success under specific site conditions. This research guides species selection and site preparation strategies for urban greening initiatives across Odisha's major cities.

11. AGROFORESTRY RESEARCH AND LIVELIHOOD ENHANCEMENT

The Department recognizes the critical interface between forest management and livelihood enhancement for forest-dependent communities. Research initiatives combine productive forestry with livelihood diversification opportunities for sustainable rural development.

Casuarina Hybrid Evaluation Research

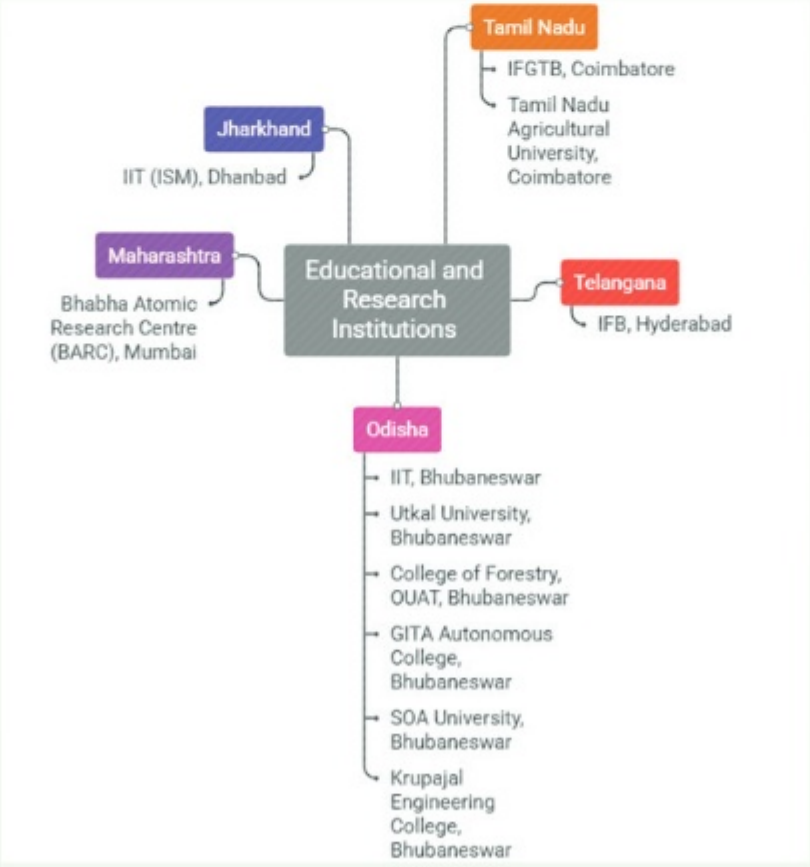
In collaboration with the Institute of Forest Genetics and Tree Breeding (IFGTB), Coimbatore, the Department has undertaken field trials to evaluate improved Casuarina hybrid clones for enhanced productivity and wood quality. Four trial sites have been established across both Silviculture Division locations: Tartua High-tech Nursery (HTN), Ajodhya HTN, Bhasma HTN, and Bolangir Research Garden.

The research focuses on evaluation of Casuarina hybrid clones adapted to Odisha's diverse agro-climatic zones, assessment of wood quality parameters, growth rates, and market suitability. Casuarina represents significant agroforestry potential, providing rapid biomass accumulation, nitrogen fixation benefits through symbiotic bacterial associations, and multiple product utilization opportunities including fuelwood, pulpwood, and timber applications. This species is particularly valuable for marginal and degraded lands.

Casuarina Plantations taken up in collaboration with IFGTB, Coimbatore

12. COLLABORATIVE RESEARCH PARTNERSHIPS

The Department's research vision is substantially strengthened through strategic collaborations with premier academic and research institutions. These partnerships leverage complementary expertise and resources to advance forest science and management innovation across disciplinary boundaries.



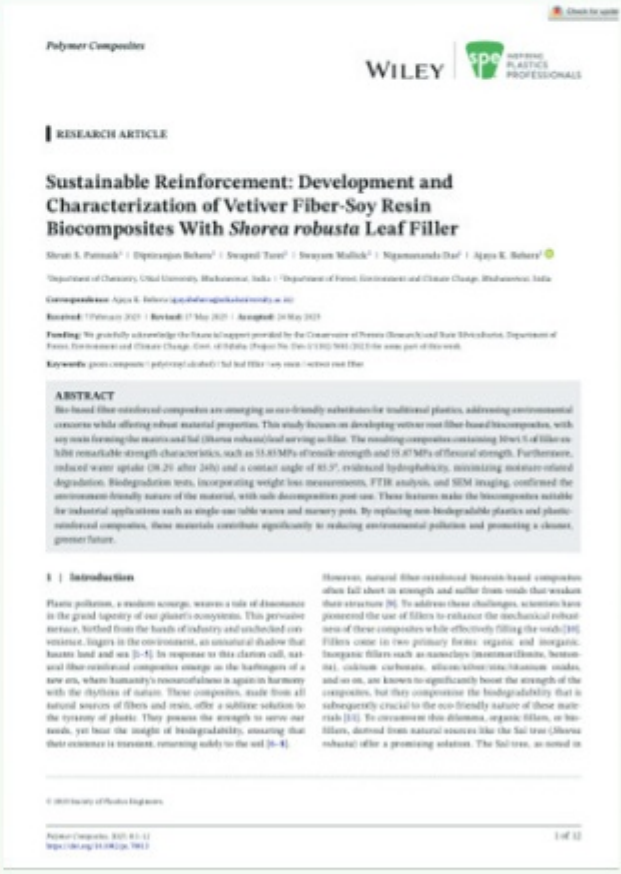
Active institutional collaborations include:

- Institute of Forest Genetics and Tree Breeding (IFGTB), Coimbatore, Tamil Nadu
- Institute of Forest biodiversity, Hyderabad
- Indian Institute of Technology (IIT) Bhubaneswar
- IIT(ISM), Dhanbad
- Utkal University, Bhubaneswar
- Tamil Nadu Agricultural University, Coimbatore
- SoA University, Bhubaneswar
- Bhabha Atomic Research Centre (BARC), Mumbai
- College of Forestry, Odisha University of Agriculture and Technology (OUAT), Bhubaneswar

13. RESEARCH OUTPUTS AND DISSEMINATION

The Research Wing demonstrates strong commitment to knowledge dissemination and practical application of research findings. Multiple research outputs have been generated and are being integrated into Department operational guidelines and management practices, ensuring that science translates to improved outcomes.The quinquennial research programme for the Department was recently approved for the period from 2025-26 to 2029-30. This will serve as the guiding document to put on track research activities of the Department.

Quinquennial Research Programme (2025-26 to 2029-30)



Sustainable Reinforcement: Development and Characterization of Vetiver Fiber- Soy Resin Biocomposites with Shorea robusta Leaf Filler

14. FUTURE RESEARCH DIRECTIONS

The Department has identified strategic research priorities including strengthening seed certification through NIR Spectroscopy, establishment of field gene banks, nursery technology enhancement, eco-restoration models, natural forest management standardization and climate resilience research. These priorities reflect commitment to continuous advancement of forest science and technological innovation.

The Research Wing stands committed to continuous advancement of forest science, technology integration, and knowledge translation, thereby advancing the Odisha Forest Department's strategic objectives and contributing to India's broader sustainable forest management agenda. Through evidence-based management practices grounded in rigorous research, Odisha's forestry sector is positioned to provide enhanced ecosystem services, economic returns, and livelihood support for dependent communities in perpetuity.

TRAINING, RECRUITMENT AND AWARDS

Foresters Training School, Ghatikia, Bhubaneswarstarted from the year 1987 in a rented house and subsequently shifted to this place in the year of 1994. Apart from conducting the regular Forester, Forest Guards, Sectional Supervisor, Field Assistants of OFDC Ltd. Induction Course Training is also looking after various Refresher Training Coursefrom the rank of Deputy Range Officers to the rank of Forest Guards which is being sponsored by the Forest, Environment and Climate Change Department, Government of Odisha.

During 2024-25 finance years, this institute has accomplished the 12 MonthsForesters Induction Course Training of 37 trainees of state forest department along with an Induction Training Course batch of Sectional Supervisor, newly recruited by the Odisha Forest Sector Development Ltd. Furthermore the institute has received another Batch of 41 directly recruited Field Assistant Grade- III (F.A) of OFDCtrainees from dt.27.01.2025 scheduled to get completed on 28.04.2025.

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 trainees; regular field exposure tour, trekking, combat tactics and Jungle survival training were conducted in house as well as in collaboration with the institutes of BijuPatnaik State Police Academy (BPSPA), National Disaster Response Force (NDRF), various National Parks & Sanctuaries inside the state .

During the financial year 2024-25, this institute has successfully conducted exposure tour for its regular trainees to differentforest divisions like Nawrangpur, Koraput, Kalahandi, Phulbani, Paralakhemundi, Baliguda, Ghumuser (N), Nayagarha, Berhampur and interacted with counterparts working in these areas and visited various Forestry Activities. They have also visited Debrigarh, Similipal, Kuldiha, Hadgarh, Chilika, Bhitarkanika, Dhuanali and Barbara areas and witnessed the treasure of Odisha Forest. Wherever trainees have gone, the field officers right from Forest Guard to the rank of RCCF has interacted and has imparted field knowledge. The trainees have also been exposed to the unique natural phenomenon of Arribada-massnesting of Olive RidleyTurtlesat Rushikulya River mouth followed by its management.On Saturday local tours are conducted in and around Bhubaneswar making exposure to renounced institutions and places of importance such as Nandankanan Biological Park, Patrapada Medicinal Nursery, State Tribal Museum, Ekamra Van, Natural History Museum, etc. with the available funds under MV the trainees were exposed to different divisions and protected areas.

In connection with various refresher course training meant for frontline staff, this institute has conducted Six (06) Refresher Course Training during the financial year 2024-25. This includes a 04nos. of 03 days Refresher Training on Forest Fire Protection & Prevention measures with First Aid, Man Vs Animal Interface, GPS/GIS Survey and Mapping of Forest Resources& Nursery Techniqueand 02nos. of 06days Refresher Training on Soil Moisture Conservation Measures&Forest Relevant Acts and its Implementation.

With regards to infrastructural development within the institute during the financial year 2024-25,a vermi compost unit, funded by the Odisha Forestry Sector Development Sector, Bhubaneswar is newly built inside the campusaiming to teach the trainees the scientific method of making compost by using earthworms. In addition to that,the computer lab has been upgraded with 04 nos. of new computer system with the provision of high speed internet and anInteractive Smart Board in the training classroom for enhances the teaching model to more practical & digital.

STATE MEDICINAL PLANTS BOARD, ODISHA

State Medicinal Plants Board, Odisha was constituted to ensure sustainable availability and use of medicinal plants. SMPB's main objective is development of medicinal plants sector through developing a strong coordination between various Ministries/ Departments/ Organization for implementation of policies / programmes on medicinal plants. SMPB is implementing various schemes under financial support received from State Government under State Plan and under Central Sector Scheme from National Medicinal Plants Board (NMPB), New Delhi.

- The SMPB, Odisha celebrated International Yoga Day on 21st June, 2025 in the campus of SMPB, Odisha
- One Training programme on cultivation of medicinal plants was conducted at Semiliguda, Koraput from 11th to 12th July , 2025.
- SMPB, Odisha conducted one training programme on "Good Manufacturing Practices and Quality Control of Herbal Drugs" at Conference Hall of Aranya Bhawan on 26th August, 2025 chaired by the PCCF & HoFF,Odisha. About 60 nos. of participants including Traditional Healers, Medicinal Plant Farmers took part in the Conference.
- One outlet of SMPB, Odisha was opened at IDCO Ekamra Haat, Bhubaneswar on 15th September, 2025 for display & sale of herbal drugs and to create awareness among the masses.
- The SMPB, Odisha participated in the celebration of the Ayurveda Day organised at Jaydev Sikhya Kendra, Patia, Bhubaneswar on 23rd September, 2025. During this celebration, a quiz competition on uses & identification of medicinal plants was organised among students.
- 6th Executive Body Meeting was conducted on 25th September, 2025 under the Chairmanship of ACS, Forest, Environment & Climate Change Department, Govt.of Odisha

During this meeting a comprehensive Five-Year Action Plan (2025–2030) has been approved as including the stakeholders of 23 districts of Odisha with the ethics of Conservation, Cultivation and Commercialization:. The details are as follows.

- Conservation and spatial mapping of key medicinal plant species
- Large-scale cultivation through VSS and FPOs in 22 identified districts
- Promotion of natural farming and livelihood generation
- Processing, branding and marketing through our own brand 'Odisha Herbs' platform
- Active collaboration with reputed institutions like MSSRF, FRLHT, and IRMA /other business schools.
- Phased financial outlay of ₹120 Cr over 5 years

The SMPB, Odisha organised one National Conference on 20th November, 2025 on Bamboo & Medicinal Plants at Convention Hall of Lok Seva Bhawan, Bhubaneswar. 3 nos. of MoU has been signed with FRLHT, Bangalore, IRMA, Anand, Gujrat & MSSRF, Jeypore. 466 nos. of stakeholders participated & 18 nos. of Resources persons made their deliberation on different topics related to Conservation, Cultivation and Commercialization of Medicinal Plants.

18th State level Kalinga Herbal Fair was organised at IDCO Exhibition Ground, Unit – III, Bhubaneswar from 10th to 16th December, 2025 containing 130 nos. of stalls. In this state level event various Ayurvedic Manufacturing Companies, Ayurvedic Traditional Practitioners, SHGs, Traders, Yoga, Govt. organizations etc. from four corners of the State participated. Services of workshops were conducted on various themes for the Traditional Healers, Quiz & Debate competition among the school students, Women's meet on rooftop medicinal garden to create awareness on of medicinal plants amongst the larger section of the society. The total turn over was Rs. 1,09,28,551/-.One book namely ***"Ousadhiya udvidara uttam chasa***

pranali"has already been published and distributed among the public, students, farmers, traditional healers, plant lovers etc during 18th State Level Kalinga Herbal Fair.

Two nos. of Regional Level Kalinga Herbal Fairs at Rairangpur & Keonjhar have been conducted through the concerned DFOs during the month of January, 2026.

The SMPB, Odisha participated in 11th International Herbal Fair at Bhopal held from 17th to 23rd December, 2025.

15 nos. of participants including 13 medicinal plants farmers & two nos. of officials have been sent to FRLHT, Bangalore from 2nd February, 2026 to 7th February, 2026 as a gesture of exposure visit to learn and upgrade their skill in medicinal plants.

SMPB, Odisha funded to 29 nos. of Forest Division towards establishment of 1 ha. Of herbal garden in 30 districts @ Rs. 5.00 lakh to each division. Out of which 23 divisions have been carried out the activities.

SMPB, Odisha funded to the OUAT, Sambalpur towards establishment of 1 ha. Of herbal garden at Chiplima. The total cost of the herbal garden is Rs. 5.00 lakh.

18th State Level Kalinga Herbal Fair, Bhubaneswar

Signing of MoU during National Conference on Bamboo & Medicinal Plants

Celebration of 10th Ayurveda Day, 2025

Conducting quiz competition among the school students during 18th State Level Kalinga Herbal Fair

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

14.1 Backdrop

Pursuant to the 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. The Authority was established with the primary objective of ensuring conservation, protection, regeneration and scientific management of forests, wildlife and their habitats in the State.

The key objectives of State CAMPA include:

- Raising site-specific Compensatory Afforestation, Penal Compensatory Afforestation, and other forestry interventions.
- Restoration and enhancement of degraded forest lands.
- Wildlife conservation and habitat improvement measures.
- Effective utilization of funds deposited towards Net Present Value (NPV) and other levies arising out of diversion of forest land for non-forestry purposes under the Forest (Conservation) Act, 1980 now called as Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980.

The Compensatory Afforestation Fund Act, 2016 was enacted on 3rd August, 2016, followed by notification of the Compensatory Afforestation Fund Rules, 2018 on 10th August, 2018, providing a statutory framework for transparent and efficient management of CAMPA activities.

Since its inception, the State CAMPA, Odisha has formulated 16 Annual Plans of Operation (APOs), starting from APO 2009-10. The latest APO 2025-26 is under implementation from April, 2025.

- A total receipt of ₹2644.15 crore was received from Ad-hoc CAMPA, against which ₹2630.68 crore was spent up to APO 2019-20.
- After constitution of State Authority CAMPA, Odisha in 2019 as per CAF (Act) 2016 & CAF (Rule)2018 an amount of ₹9580.86 crore has been received from National CAMPA, New Delhi and is maintained in the Public Account for implementation of forthcoming APOs i.e. from APO 2019-20.
- The total expenditure of State CAMPA through budget provisions in APO 2019-20 to APO 2024-25 stands at ₹4717.93 Crore.

14.2 Achievement during APO 2024-25

14.2.1 Afforestation Activities

The following interventions under various afforestation components have been achieved.

Site specific Compensatory Afforestation, Penal Compensatory Afforestation etc. include 549.23 ha. of Block Plantation, 3531.29 ha. of ANR, 284.88 ha. of Bald Hill, 155.80 Ha. of ANR without gap, Avenue Plantaion1.6 RKM and 61042 nos. of tall tree plantation.

The Following activities have been taken up during the aforesaid period under NPV.

SSO bamboo 16408.55 Ha., Block Plantation 986.5 Ha., ANR Plantation 17057 Ha., Bald Hill Plantation 560 Ha., Casuarina Plantation 59.50 Ha., Mangrove Plantation 20 Ha., SMC activity over 2307 Ha. & raising and maintenance of 433 Lakh of 18 month old seedlings

CA Block Plantation @ Angul

Fish Bone Plantation @ Rajnagar

Check Dam @ Angul Division

14.2.2 Forest Protection Activities

Engagement of 4,040 rural unemployed youth for protection and conservation of forests and wildlife, Deployment of 261 Firefighting Squads for prevention and control of forest fires and Deployment of 665 (Protection + Fire) vehicles for strengthening forest protection, patrolling and enforcement duties in 51 Forest and Wildlife Divisions.

Protection Squad @ Keonjhar Division

14.2.3 Infrastructure Development

To strengthen office and residential infrastructure for frontline Forest staff 5 Range Offices, 5 Range Officer's Residences, 58 Forester Quarters, 167 Forest Guard Quarters have been constructed, Maintenance of 644.228 Km of forest roads for accessibility, patrolling, and connectivity has been done. Besides 9 nos of Anti-Poaching Barracks and 9 nos of Watch Towers have been constructed to strengthen wildlife protection measures.

Barrack @ Nayagarh Division

FGQr. @ Nayagarh Division

FG Qr. @ Keonjhar Division

Watch Tower @Ghumsur North

14.2.4 Wildlife Management

- Rs. 306.57 crore has been utilized for undertaking the following activities:
- Management of wildlife in Protected Areas, including:
- Protection and anti-poaching measures
- Human–wildlife conflict mitigation and anti-depredation activities
- Strengthening of communication systems
- Habitat improvement works
- Infrastructure development
- Implementation of the Elephant–Train Collision Mitigation Plan

- Implementation of Site-Specific Wildlife Conservation Plans.
- Implementation of activities prescribed under the Regional Wildlife Management Plan for the State.
- Relocation of families from 3 villages in Hadagarh Wildlife Sanctuary in accordance with approved rehabilitation norms.

14.2.5 Highlights for APO 2025-26

The CAMPA Annual Plan of Operation (APO) 2025-26 is under implementation since April, 2025. Against the proposed financial outlay including Additional APO of ₹1201.68 crore (1078.10+123.85), the National Authority, CAMPA has approved an outlay of ₹1136.21 crore.

The progress of activities under APO 2025-26 is as follows:

- Site-specific Compensatory Afforestation (CA), Penal Compensatory Afforestation (PCA), CATP, etc. completed over 5525.5045 ha.
- Block Plantation over 662.5 ha.
- Assisted Natural Regeneration (ANR) Plantation over 10925 ha.
- Bald Hill Plantation over 480 ha.
- Fruit and Fodder Plantation over 2093 ha.
- RET / Medicinal Plantation with Gap Plantation over 3991 ha.
- Regeneration of Degraded Bamboo Forests over 45000 ha.
- Raising and maintenance of 3.86 crore seedlings (18-month-old) for various plantation activities.
- Soil Moisture Conservation (SMC) works over 5500 ha – *under progress*.

14.2.6 Forest Protection & Prevention of Forest Fire

- Deployment of 261 firefighting squads in 51 Forest and Wildlife Divisions.
- Engagement of 3170 rural unemployed youth in 51 Divisions for protection and conservation of forests and wildlife.
- Deployment of 317 hired vehicles for whole year and 261 hired vehicles for 5 months in 51 Forest and Wildlife Divisions for forest protection, fire prevention, patrolling, and enforcement duties.
- Creation and maintenance of 24500 km of fire lines in forest areas and Protected Areas to prevent and control forest fires.

14.2.7 Infrastructure Development

- Construction works of 4 Range Offices, 4 Range Officer's Residences, 34 Forester's Quarters, 50 Forest Guard Quarters, 10 WatchTowers are under progress. Besides maintenance of 976 Km of Forest Roads has been done.

14.2.8 Wildlife Management

- Protection and anti-poaching measures, anti-depredation activities, strengthening of communication systems, habitat improvement works, infrastructure development and implementation of the Elephant–Train Collision Mitigation Plan.
- Implementation of Site-Specific Wildlife Conservation Plans covering 272 projects.
- Implementation of activities under the Regional Wildlife Management Plan.
- Relocation of families from 2 villages located in Satkosia Tiger Reserve.

14.2.9 Other Programmes

- Maintenance of Research Gardens and implementation of related research activities, including Adaptive Research, Tree Improvement Programmes, and production of Quality Planting Material (QPM).

Monitoring Mechanism (e-Green Watch)

A web-based monitoring portal, 'e-Green Watch', has been launched for real-time monitoring and evaluation of all CAMPA activities in the State. The portal allows for uploading geo-referenced data of all ongoing and completed activities, which facilitates effective monitoring by the Forest Survey of India (FSI) and the National Informatics Centre (NIC).

In addition to the portal, the following mechanisms have been implemented to ensure transparency and accountability:

- Third-party monitoring of CAMPA activities completed up to APO 2022-23. Evaluation of APO 2023-24 is under progress.
- Deployment of Flying Squads a part of Internal Vigilance to monitor and check ongoing CAMPA activities.

These initiatives aim to strengthen accountability, transparency, and efficient utilization of funds in all CAMPA interventions.

Successes Story-1.

Fish Bone Channels: Solution to the high land dilemma: A case study in Bhitarkanika mangrove forests of Odisha

Mangrove forest act as a guardian of the Odisha coast. But these mangroves require tide for their survival. In many degraded coastal zones—such as abandoned aquaculture ponds or elevated mudflats (high lands)—the ground level has risen or hardened, cutting off the natural flow of seawater. Without this regular tidal inundation, the soil becomes too hard and hypersaline to allow the seeds to grow.

The breakthrough came with an indigenous hydrological engineering solution known as the **Fish Bone Channel Model**.

The Fish Bone technique has revolutionized mangrove restoration for three critical reasons:

1. **Restoring the "Breath" of the Soil (Tidal Inundation):**

The channels act as artificial arteries, bringing tidal water deep into the elevated "high lands" that were previously dry. This regular wetting and drying cycle is essential for mangrove roots to breathe and grow.

2. **Flushing Out the Poison (Salinity Leaching):**

In dried-up high lands, salt accumulates to toxic levels. The Fish Bone channels facilitate a "washing" mechanism. Incoming tides dissolve the excess surface salt, and outgoing tides flush it away. This lowers soil salinity to a level where mangrove seeds can survive.

3. **Seed Transport and Nutrient Flow:**

The channels naturally carry floating mangrove seeds (propagules) from healthy forests into these barren lands, allowing natural regeneration to take over alongside manual plantation.

In Bhitarkanika National Park (Odisha), the technique has been a game-changer in reclaiming the natural saline highlands and to restore degraded land. The impact of this technique is visible and measurable in the demolished illegal prawn gherris (aquaculture ponds).

Once these illegal ponds were demolished, the land was often too high and toxic for natural recovery. By digging Fish Bone channels, the Forest Department successfully restored thesebarren lands into lush mangrove forests.

Areas that were once barren mudflats are now dense green thickets of *Avicennia* and *Rhizophora* species, serving as a shield against cyclones.

The Fish Bone Channel is more than just a digging method; it is a lesson in working *with* nature.By simply reconnecting the severed link between the land and the sea, this technique has turned barren "high lands" back into thriving bio-shields. It proves that if we provide the water (the veins), nature will provide the forest (the life). As per the India State of Forest Report (ISFR) 2023 Odisha showed a significant increase mangrove Cover a 1.55 sq km rise, attributed to regeneration and conservation, with Bhitarkanika being a key area for this positive trend due to natural growth and plantation efforts.

Fish Bone Plantation at Kanika, Rajnagar Wild Life Division

Success Story-2

The Vantage Point – The Wooden Watch Tower of Bhitarkanika

In the heart of India's second-largest mangrove ecosystem, often dubbed the "***Mini Amazon of India"*** stands a strategic wooden watchtower. Constructed to blend seamlessly with the dense green canopy of Bhitarkanika National Park, this structure has emerged as a game-changer for forest management. Unlike concrete structures that stand out, this wooden sentinel respects the fragile estuarine ecosystem while serving as the "**Birds Eye view**" for forest guards and a "window to the wild" for thousands of visitors.

Operational Successes

A. Monitoring Fire Incidents: The First Line of Defense

The dense mangrove forests of Bhitarkanika may prone to seasonal fires, which can be devastating for the unique flora and fauna.

- **Success Narrative:** The wooden tower's strategic height (approx. 15–20 meters) provides a 360-degree panoramic view of the forest blocks. In recent summer seasons, forest guards stationed at the tower have successfully detected rising smoke plumes from fringe villages and dry patches deep within the sanctuary.
- **Impact:** The early visual detection allowed Rapid Response Teams (RRT) to be deployed immediately, containing potential wildfires before they could spread to the core nesting grounds of the sensitive Saltwater Crocodiles and migratory birds.

B. Watch and Ward: Curbing Poaching & protecting Wildlife

Bhitarkanika is home to the endangered Saltwater Crocodile, Spotted Deer, and Wild Boar, making it a target for opportunistic poaching.

- **Success Narrative:** The tower serves as a crucial vantage point for forest surveillance. Equipped with binoculars and high-range radios, guards monitor the movement of trawlers in the nearby creeks and suspicious human activity on the forest floor.
- **Key Achievement:** The persistent vigil from the tower has acted as a strong deterrent. Ground reports suggest a significant reduction in the illegal trapping of deer and wild boar in the tower's visibility radius. It also ensures the safety of the reptiles by monitoring their basking mudflats, ensuring no human interference disturbs their basking or nesting.

C. Visitor Entertainment: A Window into the "Mini Amazon"

For tourists, the dense mangroves can often hide their secrets. The wooden tower has transformed the visitor experience from a simple boat ride to an immersive aerial adventure.

Success Narrative: Since its opening/renovation, the tower has become the park's most Instagrammed location. It offers a safe, elevated platform for tourists to spot the elusive Kingfisher, huge Estuarine Crocodiles basking on mud banks, and herds of Spotted Deer grazing in the meadows below. It is very significant to view the areal sighting of colonial birds of Heronry without disturbing to visit near the site of colony.

Visitor Feedback: Tourists have praised the structure for allowing them to observe wildlife without "intruding" on their territory. The thrill of walking above the canopy and spotting wildlife from a "bird's eye view" has led to a surge in repeat visits and positive word-of-mouth promotion for Odisha Tourism.

The wooden watchtower at Bhitarkanika National Park is more than just a viewing deck; it is a multipurpose asset that successfully bridges the gap between conservation and tourism. By using eco-friendly materials, it preserves the park's aesthetic integrity while ruthlessly performing its duty as a guardian against fire and poachers. Its success stands as a model for other protected areas, proving that infrastructure, when designed thoughtfully, can protect nature while inviting the world to admire it.

Wooden Watch Tower of Bhitarkanika

Success Story-3

Installation of AI-Based Surveillance Towers for Real-Time Elephant Movement Monitoring in Angul Division of Odisha.

Efforts to protect the elephants and prevent the unnatural death are hindered by long delays between data collection and analysis. Real-time data can help solve this issue but significant technical barriers exist. Images captured by the camera trap are instantly labelled by an artificial intelligence model and an 'alert' containing the image label and other metadata is then delivered to the end-user within minutes over the satellite network.

Based on this principle, AI-based surveillance towers have been installed across the Division to strengthen real-time monitoring of elephant movement and enhance wildlife protection measures. Of these, **two towers are positioned in Jarapada Range**, while **Talcher Range and Chhendipada Range** have been equipped with one tower each.

These AI-powered camera systems are designed to support **wildlife movement surveillance, early warning and conflict mitigation**. The system integrates advanced sensors, automated detection capabilities and seamless communication tools to improve field-level response.

Key Features of the AI-Based Surveillance System

1. **Thermal Sensor Cameras** installed at a height of 35 meters, offering up to **3 km detection range** for enhanced situational awareness.
2. **360° rotational cameras** with tilt functionalities for complete area coverage.
3. **AI-driven object and event detection**, including:

- Wild animal detection (elephant and other species)
- Human detection
- Vehicle detection
- Train detection

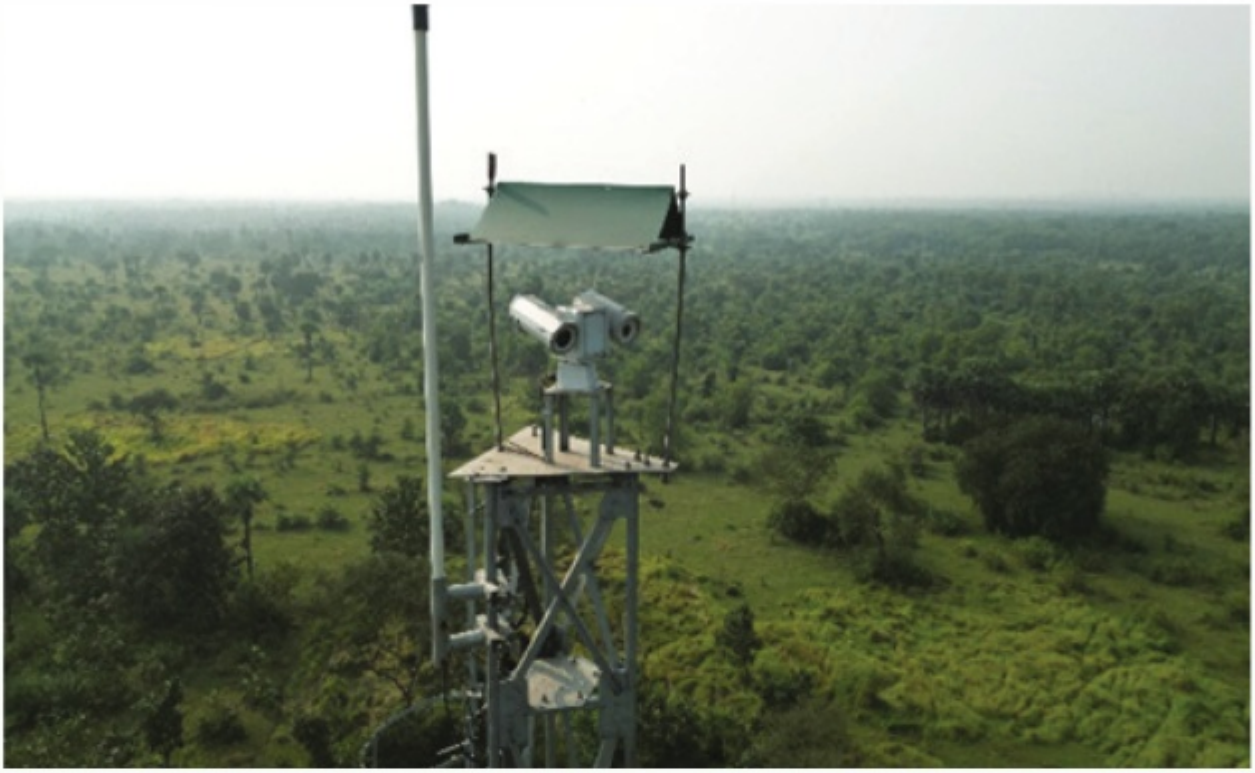
4. **Automated PTZ (Pan-Tilt-Zoom) Tracking** enabling the system to intelligently follow and focus on moving subjects.
5. **24×7 surveillance**, fully integrated with a **centralized control-room management platform**.
6. **Automated WhatsApp alert system** ensuring instant notifications to field staff for rapid response.
7. **Live camera monitoring interface** for real-time field and control room surveillance.
8. **Solar-powered backup system** with battery storage to ensure uninterrupted operation during power outages.
9. **Night vision capability** with high-resolution IR and thermal imaging for clear monitoring during low visibility, darkness or adverse weather conditions.

Installation of these AI cameras in strategic locations help the department in 24-hour real-time monitoring of the elephant movement and preventing the death due to train accidents in the district.

Success Story-4

Voluntary Village relocation in Satkosia tiger Reserve

Spread over an area of 1136.7 Sq km Satkosia Tiger reserve of Odisha is a home to majestic elephants, leopards and many more endangered animals. Presence of 134 villages in the core and buffer areas of



AI-Based Surveillance Towers at Ganthigadia of Angul Division

the tiger Reserve not only puts a serious anthropogenic pressure on the wildlife habitat, but increase the incidences under Human-wildlife conflict.

Hence voluntary relocation of villages from these areas is the only viable alternativefor betterment of people as well as the wildlife and their habitats. The basic principle of voluntary relocation is to reduce human animal conflict and minimize the loss of their property as well as creation of inviolate space for wildlife.

Accordingly, the voluntary relocation of these villages was initiated duringthe year 2017, with State funding following the Guidelines issued by NTCA.However, from 2021 this was supported by State CAMPA.

Till now,927 families of 7 different villages i.e. Raigoda, Katranga,Asanbahal, Tulka, Bhrukundi, Tikarpada&Gopalpur situated within Satkosia Tiger Reserve/ area connecting to wildlife habitat have been successfully relocated. Out of this, 5 villages have completely been relocated and the process is under way for the rest of two villages.

Before relocation of the villages the people were badly suffering in their normal life, and deprived of minimum facilities for their better living. Their development was stagnated due to imposition of restriction as per provisions of Wildlife (Protection) Act 1972 and the Rules thereof. Thefamilies who opted for cash with subsidiary benefits areresettled in the selected places outside the Protected Area with all facilitieslike:

- Providing Temporary sheds with toilets facilities till completion of theallotted Pucca Ghar under Awas Yojana and fooding facilities for 1month
- 10 decimals of homestead land to each family
- Drinking water facilities like digging of borewell, dug well, connectionof supply water pipelines from overhead tank
- Electricity supply to individual household as well as to the commonutilities.
- Construction of Anganwadi centre

- Development of road connectivity to the resettlement site
- Development of Playground, Ponds, worship places for the deities
- Development of Cremation ground

Further different training and capacity building programmes are conducted for upliftment of their knowledge in different livelihood support activities like, bee keeping, mason, tailoring training etc. apart from this they are also provided with financial support for goat farming and other subsidise schemes like pisciculture, poultry farming etc.

After relocation of villages, they have not only overcome the hindrances of availing all Government facilities with the basic requirements, but also got the opportunity of living a better life in a socially, economically, educationally and technologically advanced society.

Relocation of villages from the wildlife habitat of Satkosia Tiger Reserve brought a remarkable change in the population of wildlife and improvement of their habitat by adding large areas of inviolate space.

- Due to relocation of the above said villages an area of 816 Ha. has been added to the wildlife habitat and the cultivated lands have been developed as to good meadows.
- Anthropogenic pressure and human-wildlife interference have been reduced to almost nil in these areas and inviolate wildlife habitats have been created in these areas.
- The pressure of thickly populated and mostly forest dependent domestic cattle on forest and habitat will be reduced to zero which resulted in increase of fodder for the wild herbivores and reduction in risk of spread of diseases from domestic cattle to wild animals.
- Relocation of villages enhances the hope of successful reintroduction of tiger in Satkosia Tiger Reserve by reinstating the suspended project tiger.

Village relocation at Dhauragothin Satkosia WL

Meadow development at Tulka, Satkosia WL Division

ODISHA FORESTRY SECTOR DVELOPMENT SOCIETY

15.1Background:

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.

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, thereby improving environment and alleviating poverty. The total project cost agreed as per the above agreement is Rs 659.70 Crore (16,429 JPY million) with JICA loan of ₹559.69 Crore (13,937 JPY million) and Government of Odisha contribution of ₹100.12 crore (492 JPY million). Subsequently, the total project outlay was revised and worked out to be ₹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 ₹790.26 crore till 31st March 2015. The reimbursement claims have been submitted for ₹627.69 crore and total disbursement made by JICA up to March 2015 is ₹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).

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.

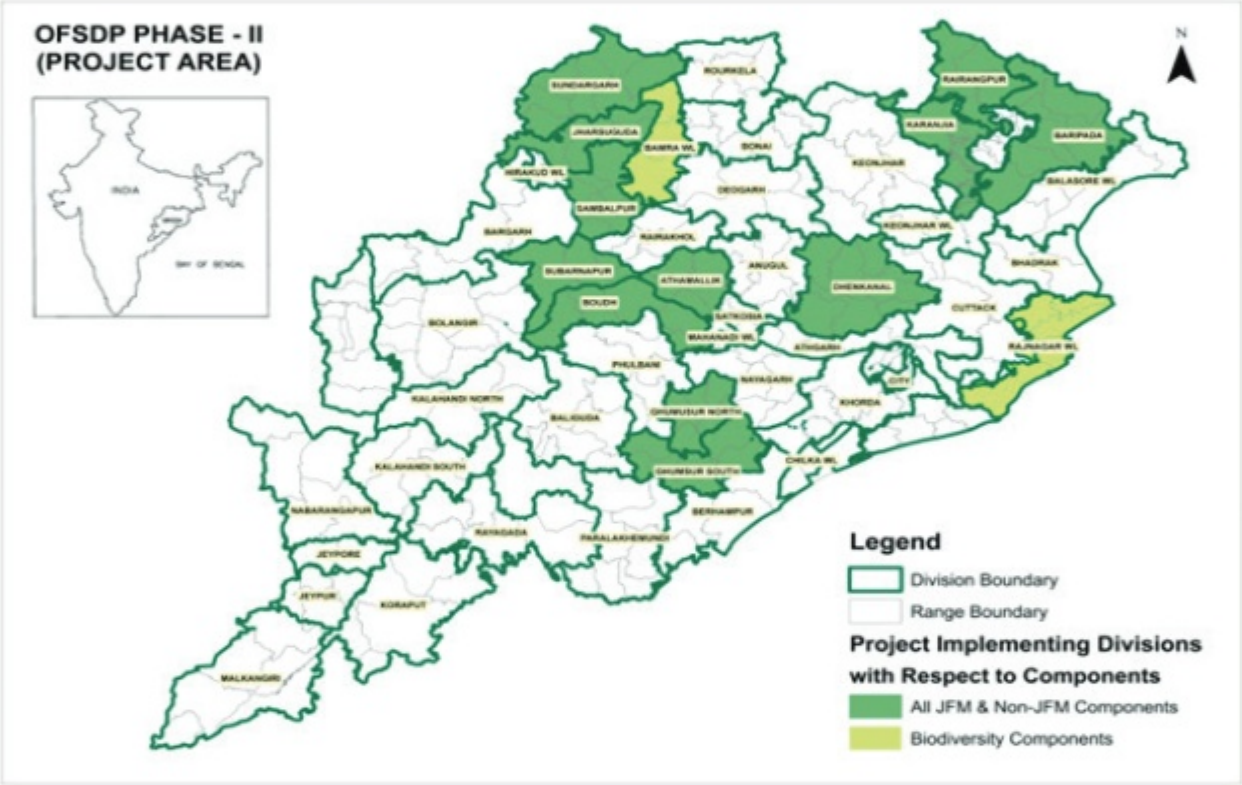
Odisha Forestry Sector Development Project, Phase-II is an externally aided project being implemented in Odisha with the loan assistance from Japan International Cooperation Agency (JICA). The Executing Agency of the OFSDP- II is the Department of Forest, Environment & Climate Change, Govt. of Odisha, 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.1000.30 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 Bhittarkanika Conservation Area in Mangrove (Wildlife) Division, 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.



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.

2.1 Project Outlay and Components:

COMPONENTS	OUTLAY (₹ in Crore)
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
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

2.2 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 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

2.3 PROGRESS OF ACTIVITIES:

Major activities implemented under OFSDP-II are indicated below.

2.3.1. Preparatory work:

Preparatory work across the 1210 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 1210 VSSs and 10 EDCs were prepared by the Communities during the preparatory phase.

2.3.2. Sustainable Forest Management Plan:

Under this component, OFSDP-II has made the following progress in2025-26 (till January 2026).

Under these components, OFSDP-II has made the following progress in 2025-26 up to January 2026

Compo-nent	Activities	Target & Achieve-ments during 2025-26 (up to January 2026)	Cumulative Achieve-ments up to January 2026	
		Targets	Achieve-ments	
Drain-age Line Treat-ment	DLT Maintenance JFM Mode	26 Ha.	26 Ha.	1504.5 Ha.
	DLT Maintenance Non-JFM Mode	13 Ha.	13 Ha.	756.29 Ha.
SMC	Fire line maintenance	28.5 Kms	28.5 Kms	1710.39 Kms
	Consolidation of Forest Boundary Maintenance	32 Kms	32 Kms	1898 Kms
Planta-tion	ANR Maintenance	915 Ha.	915 Ha.	51006 Ha.
	AR Maintenance	293 Ha.	293 Ha.	6286 Ha.
	Farm Forestry Plantation	230 Ha.	230 Ha.	8885.5 Ha.
Estab-lish-ment of Hi-tech Nurser-ies	6 Hi-tech Nurseries have been established in Athamallik, Baripada and Ghumsur (North), Sam-balpur, Subarnapur&Sundargarh Forest Divsiions with a capacity to raise 2.2lakhs of Poly-pot Seed-lings and 2.2. lakhs of Hyco-pot Seedlings in each Nursery every year.			


SMC WORK MAINTENANCE DURING 2025-26


ESTABLISHMENT OF FIRE LINES IN 2025-26


PLANTATION ACTIVITIES IN 2025-26

Sustainable Biodiversity Management:

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

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.

Implementation of Satoyama Initiatives:

Satoyama Initiative, a landscapebased 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. Revisit of Micro Plan of each EDC has been completed
2. Avenue Plantation across the village
3. Training on Bio-fertilizer& Bio insecticides preparation and its use
4. Establishment of nutri garden through convergence in 32 households.
5. Supply of Smokeless Chullha to all households
6. Mushroom Cultivation, Apiculture, Livestock rearing etc. promoted through SHGs
7. Repair of Angan Wadi Centre and making it to functional
8. Clearance of invasive weed in the forest and SMC Measures: Gully Plugging, LBCD in all Nalas
9. Fire line construction and community driven protection of forest from fire
10. Solar Fencing for elephant depredation / reduction in man-animal conflict
11. Approach Pucca Road of 1 Km constructed through Rural Development Department, Govt. of Odisha
12. Revival of traditional equipment like Belana (Thrashing Equipment) and Dhinki (For Processing
13. Declaration of plastic free - Eco friendly and open defecation free village.
14. 155 farmers of the project area marketed paddy of two different varieties about more than 19 metric tons at a cost of Rs.4.8 lakhs during 2025-26.



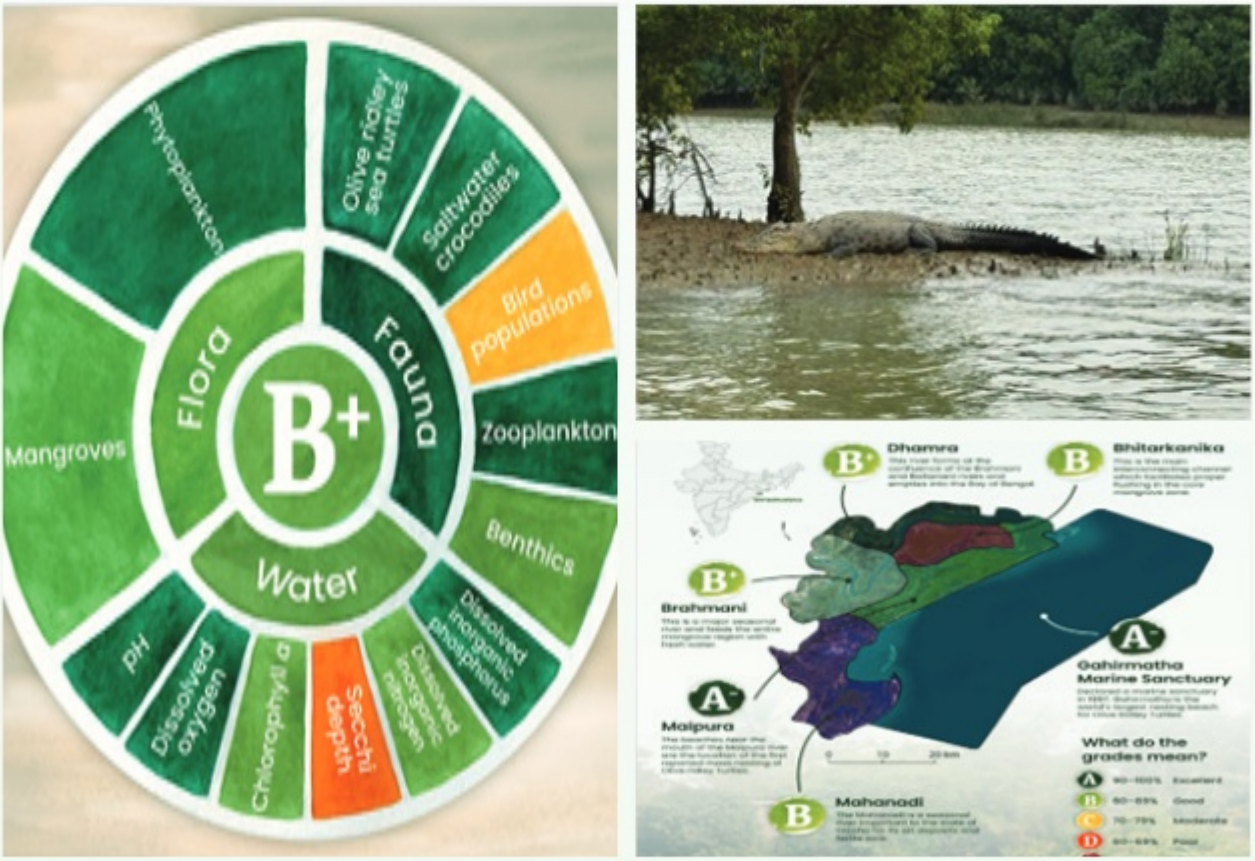

Satoyama Initiatives

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 Costal 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

3.1: 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.

4.1: Livelihood Improvement Initiatives

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 2026, a total of 1210 buildings have been constructed and constructions of the rest of the buildings are in progress and expected to be completed shortly.

VSS Building-cum-IGA facilitation centre constructed in Project Area

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 1210VSSs 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 1210 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. 756.21crore have been mobilized through inter-sectoral convergence, covering about 26.83 lakhsnumber of beneficiaries in the project villages till January 2026.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 werealso 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 SurakshyaSamities. 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 2026 under OFSDP-II			
Sl. No	**Departments**	**Beneficiaries**	**Funds mobilised (Rs. in Lakh)**
1	Agriculture & Farmers' Empowerment	89289	1833.64
2	Corporate & Bank	22612	2960.04
3	Department of Water Resource	11762	953.56
4	Dept. of Mission Shakti	15374	1510.28
5	Dept. of Energy & OREDA	2334	124.02
6	Dept. of Industry	783	105.25
7	Dept. of Youth Services & Sports	901	6.20
8	District Mineral Foundation	2120	122.80
9	Finance Department	783	4.47
10	Fisheries and ARD Department	84583	2416.90
11	Forest, Environment & Climate Change	178493	2116.51
12	Handloom & Textile Dept.	297	48.14
13	Health & FW Dept.	129667	437.33
14	Horticulture Dept.	75002	2095.29
15	Irrigation	28009	2362.03
16	Labour Dept.	690	25.70
17	Ministry of Communication	1861	1072.60
18	Ministry of Food Processing	268	3.56
19	Ministry of Petrolium& Natural Gas (IOCL and others)	17947	289.60
20	MP/ MLA LAD	8012	117.40
21	MSME	788	22.99
22	NABARD	2950	8.05
23	NGO	21776	225.16
24	NHAI	63	3.61
25	OLM	1902	162.29
26	Others (Municipality, CSR, MP Lad Fund etc.)	3594	32.28
27	Panchayati Raj & Drinking Water	1747830	45000.27
28	PWD	10046	1535.27
29	Railway Dept. (Skill Development)	24	2.40
30	Revenue & Disaster Management	259	8.56
31	Rural Development	41460	3473.15

32	SC & ST Dev. Dept.	84833	2487.90
33	School & Mass Education	5117	64.50
34	Sericulture	751	96.86
35	Skill Development & Technical Education	6153	207.67
36	Social Security & Empowerment	275	4.21
37	Soil Conservation Dept.	42806	3013.61
38	Urban Development.	4690	244.38
39	Western Odisha Development Council	212	5.00
40	Women and Child Development	35631	389.80
41	Planning & Convergence	456	27.80
Grand Total (Convergence)		**2683469**	**75621.09**

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.

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 three more Multi-product Clusters are under progress.

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.

The Revolving Fund to the tune of Rs.2 lakhs have been provided to each VSS of the Project to carry out small business, entrepreneurship in Agriculture and Non-Agriculture Sector under IGA. One Loan Apprisal Committee have been constituted with proper RF Guidelines for providing funds to SHGs, CIGs, PoPs of the VSS. There is a good response in this regard from the VSS members. Till January, 2026 total 46,784 members of VSSs have been benefited including SHGs-3062, CIGs-484& PoPs-13090. During this period Rs.30.72 Crores amount of RF fund have been disbursed to various members to support IGA activities and Rs.21.75 Crores have been refunded by the members.

IGA Activities in VSS through Revolving Fund

Initiative of Marketing and Management Support Agency:

For Establishing and Opertionalizing 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 themulti-product clusters developed under OFSDP-II.

5.1: 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 2026,a total of 5116 numbers of trainings/ orientation programme / exposure visits of primary and secondary stake holders have been conducted under OFSDP-II covering about 208876 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
14. Forest Conservation & Management
15. SMC & DLT Measures & Forest Protection Mgt at VSS
16. Communication & Management for senior staff

Capacity Building Programme at different level

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

6.1: Monitoring Activities:

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.

Concurrent Monitoring:

GIS based Information Management System has been established under OFSDP-II to for concurrent monitoring of project interventions at filed 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.

7.1: 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.

8.1: Geomatics Centre established at PMU:

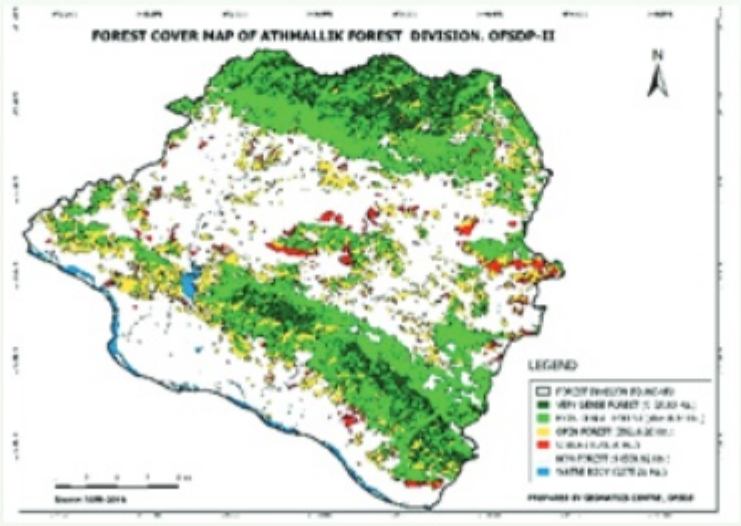
The Geomatics Centre of OFSDS established in Project Management Unit of OFSDP at SFTRI, Campus, Ghatikia, Bhubaneswar. The centre is primarily involved in providing Geographic Information Management (GIS) solutions and Management Information System (MIS) reports, which facilitates in advanced planning & 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.

GIS Application of OFSDP-II

Activities in Geomatics Centre

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.



Forest Classification Map

AMA JANGALA YOJANA

AmaJangalaYojana (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 SurakshyaSamities (VSSs) in Joint Forest Management (JFM) mode. State CAMPA & State Plan are the major source of funding for Ama Jangala Yojana.

PROJECT AREA OF AMA JANGALA YOJANA

Total 4601 nos. of VSSs have been covered under the Scheme. 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, 2026), AssistedNatural Regeneration (ANR)- Without Gap Plantation has been carried out in 2,09,543 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. 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 managed 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 2,75,117 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. Partner NGOs have been engaged in the field level as support organizations for community mobilization and livelihood promotion activities under the scheme. During the year 2025-26, 10 numbers of Partner NGOs have been engaged in the field. 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 2026, Rs.1453.92 Crores have been mobilized from other Line Departments benefitting about 42,35,024 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 46 numbers of Line Departments and CSR/other 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 (VB-G RAM-G) 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.

Prevention and Control of forest fire:

Community participation in forest protection and management is one of the prime objectives of AJY. Hence, protection of forests from fire incidences is as important as forest regeneration activities. Forest fire incidences not only affect the forest resources and ecology, also a number of houses belonging to forest fringe communities reportedly get damaged due to fire menace as they live in close proximity of the forests. Forest fire incidences are more common in the tropical dry deciduous forests of Odisha during the leaf shading months, i.e. from January-May each year where AJY is under implementation.

The role of AJY stakeholders in forest fire management is very crucial. The forest fire management under AJY involves timely creation & maintenance of fire lines, awareness generation among local people, involvement of local public and Community Based Organizations (CBOs) in early detection, message dissemination and control of forest fires in the assigned areas, and engagement of fire watchers in the forest areas assigned to each VSS. These activities are performed with the active involvement of VSS members and Forest Department staff. The awareness generation through meetings at community, School and college level, organizing awareness rallies and street plays, inter-Departmental coordination meetings for forest fire prevention, involvement of women SHGs and swift action by the fire response team by the project has a great impact on forest fire prevention and control in the Assigned Forest Areas under AJY. During this year, the fire incidences could be handled by commendable contributions of the proactive VSS members and responsive project team for which no major fire menace has been noticed in the project areas under AJY. Hence, a lot of resources have been saved by timely management of forest fire.

Forest Protection and Fire prevention meeting at Tentulipada VSS, Kalahandi South Division

Forest Protection and Fire prevention meeting at Buchiaguda VSS, Nabarangpur Division

Forest fire prevention awareness vehicle engaged in all Ranges under Keonjhar Division

Forest fire prevention oath taking by the VSS members under ManoharpurVSS of Keonjhar Division

Block level coordinated Forest Fire prevention meeting at Kuarmunda Block, Rourkela Division

Forest fire awareness rally by the VSS members under Rourkela Forest Division

Fireline creation at Ghatgumar VSS, Jeypore Division

Fire Line creation work at Atei ANR Site, KeonjharForest Division

Fire Line creation work at Kasada VSS, Bamra WL Division

VSS members fire control mock drill atGupteswar Range, Jeypore Forest Division

VSS GB meeting at Jakam VSS, Kalahandi South Division

VSS EC meeting at Hariharpur VSS, Rourkela Division

ANR with Gap Plantation at Handibhanga VSS of Keonjhar Division

ANR without Gap Plantation- Buchiaguda VSS of Nabarangpur Division

Vegetable harvesting by the members of Maa Laxmi SHG, Mandalapadar VSS, Baliguda Division

Watermelon cultivation at Tando VSS, Keonjhar Division

Goatary support to VSS members at Birsapada VSS, Rourkela Division

Agarbati Making by SHG members at Misrapalli VSS, Rourkela Division

Goat shed support through Convergence with Veterinary & AW Dept. to Maa Indira SHG, Nabarangpur Division

Layer Bird rearing by Siraguda VSS members, under Nabarangpur Division

OFSDS-OMBADC

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:

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.

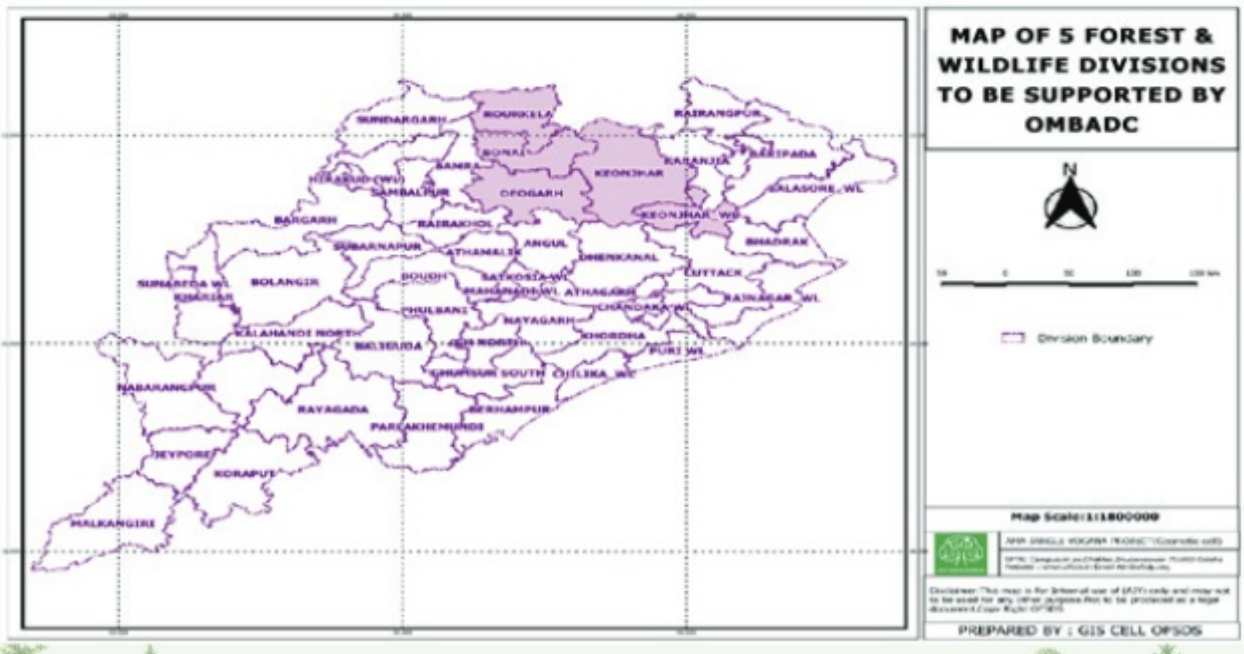
To enhance the skill (technical, managerial and decision making) of the forest dependent communities including ST & SC population on various Income Generation Activities.

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 Jt. Project Director (AJY) 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

1. The project has the following components:

1.1. Livelihood Promotion

1.2. Convergence with line Departments

1.3. Promotion of Income Generating Activities

1.4. Development of multi- product Clusters

2. Business Development Service

Institution Building and Capacity Building

Major Activities initiated under the OFSDS- OMBADC Livelihood Promotion Project up to January, 2026:

The major activities initiated under the OFSDS- OMBADC Livelihood Promotion Project up to January, 2026 are 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 5181 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& Approval at DMU Level is completed in 900 VSSs.
12. Financial assistance to all project VSS for Income Generation Activities have been released.
13. Till January 2026, total27,302 numbers of various meetings conducted at VSS level.
14. Till January 2026, 56,182 numbers of participants of 5810 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.14156.40 Lakhs have been mobilized through convergence of 32 Line Departments up toJanuary, 2026 benefitting 4,62,601 Persons in OFSDS-OMBADC Project Divisions.
16. During the year 2025-26 preparation of Business Plan as well as training on Income Generation Activities at VSS level is going on under OFSDS-OMBADC Livelihood Promotion Project.

17. The status of revolving fund support to VSS for promotion of income generation activities is as follows:

a. Total Rs. 1790.35 lakhs has been disbursed to 898 VSS as revolving fund support.

b. Income Generation Activities have been carried out through 2671 numbers of women SHGs, 86 Common Interest Groups (CIG) and 3593 numbers of Poorest of the Poor beneficiaries.

c. Out of the total amount of RF disbursed, the repayment till January, 2026 is Rs. 7,30,01,012/- that depict the success rate of the IGAs under OFSDS-OMBADC Livelihood Promotion Project.

PHOTOGRAPHS

1. Community Mobilization

Meeting at Talabahali VSS, Deogarh Division

EC meeting at Sajanapal EDC, Keonjhar WL Division

2. Capacity Building Initiatives

CBT by Janasikhyan Sansthan at Natigotha VSS of Keonjhar Division

Tailoring Training by Janasikhyan Sansthan at Sinduaria VSS, Keonjhar Division

3. Livelihood Promotion

Goat Farming by Maa Tulashi SHGs at Talabahali VSS, Barkote Range, Deogarh Division

Vegetable cultivation at Bandal VSS of Barasuan Range, Bonai Division

Community meeting and Livelihood planning at Raigoda VSS, Keonjhar Forest Division

Collective cultivation of Arrow root crop at Raigoda VSS, Keonjhar Forest Division

Grocery shop by Maa Sarala SHG at Talabahali VSS, Deogarh Division

Tailoring unit by Maa Brundabati SHG at Harekrushnapur VSS, Deogarh Division

4. Convergence and IGA Activities

Seed distribution to SHGs of Tiadiposi VSS, Keonjhar Division

Labour card registration in convergence with Labour Department, at Patilo G.P, Keonjhar Division

Broiler Farm at Putujhari VSS, AnandapurFMU inKeonjhar WL Division

Convergence with ITDA for Farm equipment Distribution at Mishrapali VSS, Rourkela Division

Convergence with Horticulture Deptt. for vegetabe seeds distribution at Manko VSS, Rourkela Division

Pond renovation at Lamsi VSS, Bonai Division PR & DW Deptt. through MGNREGS

FOREST INFORMATION TECHNOLOGY AND GEOMATICS CENTRE (FITGC)

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 Forest Land Information &Decision Support System.
2. To develop, upgrade and maintain web basedForest 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 Equipmentthrough 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.
9. Development & maintenance of all official Websites & Social Media accounts.

16.2.2 Activities:

1. Official Website for the State Forest: Official Website of PCCF &HoFF ,Odisha in the domain name www. odishaforest.inand www.campa.odisha.gov.in are managed & updated by FITGCand 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 forestlands 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.

Forest, Environment & Climate Change, Dept. Govt. of Odisha 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 gazette notify a Standard Operating Procedure in July 2017.

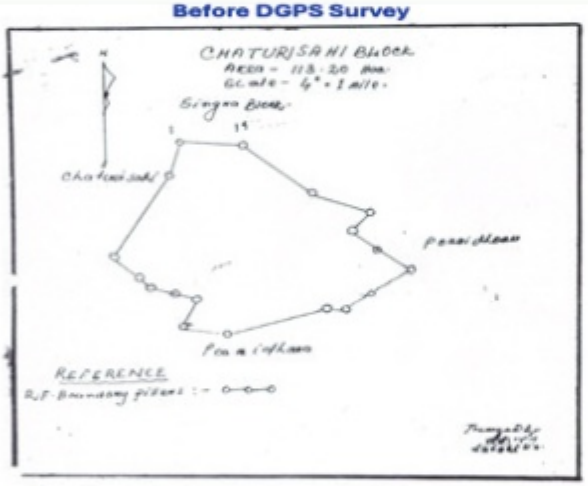
The project aims to prepare geo-referenced forestland records of about 60,991 Sq.Km. of forestland i.e. 39% of the state's geographic area, duly reconciled and integrate with the revenue land records on a cadastral scale.

Till now DGPS Survey completed in 4341 FBs of 41260.19Sq. km. area.Re-notification published by FE & CC Department for 1844 Forest Blocks with DGPS surveyed area of 1423594.00 ha in Angul, Athamallik, Jeypore, Jharsuguda, Kalahandi North, Karanjia, Khordha, Koraput, Phulbani, Rourkela, Sambalpur, Similipal North,Sundargarh,Athgarh, Boudh, City, Cuttack,KalahandiSouth, Keonjhar, Rairangpur, Rajnagar, Redhakhol, Subarnpur, Baleswar WL&Baripada, Forest Divisions.

DGPS Survey in the Forest Blocks

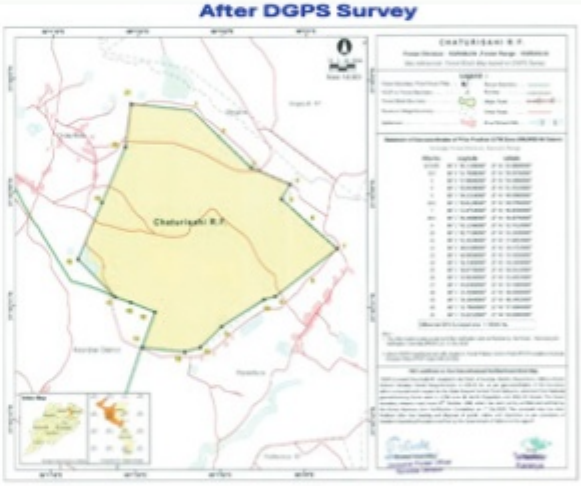
Division Level Training on GRFL

Before DGPS Survey



- Approximate Scale
- Not Possible to Corelated on Ground
- Forest Block Boundary disputes cannot be resolved
- Cross-referencing with Cadastral is difficult

After DGPS Survey

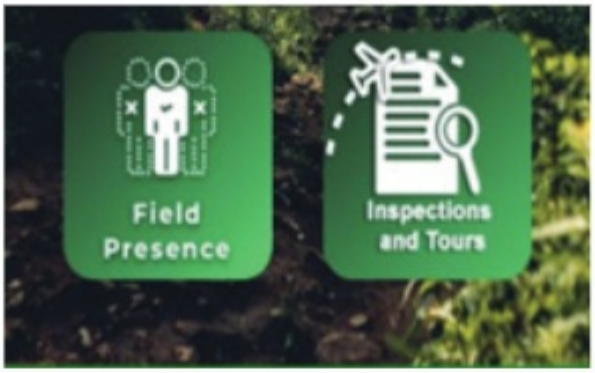


- To the Scale with precise boundary description
- Easy to corelate on ground and read with Cadastral maps
- Enclosed with Latitude & Longitude of each Boundary Pillar

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@ 175Mbps &1 Gbps 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.



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, Fire line etc.

B. **Afforestation Land Selector**: This application helpsforselection 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. **OFMS Report**: Module is used to check the Afforestation with SWMC report.

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 enables 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.

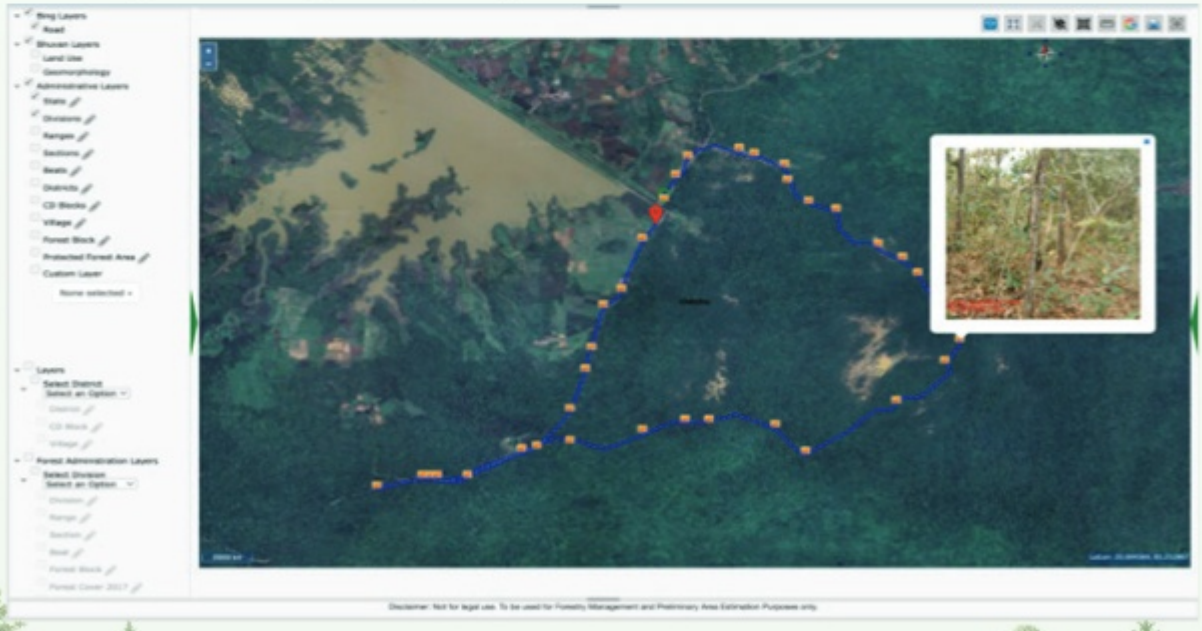
Z. **Inspections and Tours**: Field inspections used to be captured by the field officers for successful monitoring of the Departmental activities.

AA. Graphical Representation of Odisha Forest Monitoring System Web Portal

A. Map View of an capturedANR Plantation:

A. Map View of an capturedANR Plantation:

Foot Patrolling Data Showing on Google image in OFMS Web Portal



5. Development of mobile apps: Two numbers of mobile applications has been developed and made available in Google Play Store & App Store for use by the Citizens & Department staffs is as follows:

KYFL @ Odisha(Know Your Forest Location in Odisha): The user can get the 30 + Locational details including ROR, forest administrative boundary details, mining area details, industrial area details, soil taxonomy, slope, aspect etc. provided for proper planning and execution of multiple activities.

Mo Jungle: My Odisha Forest- To bring transparency in afforestation & Fire mitigation activities, Mo Jungle: My Odisha Forest mobile application has been developed and made available both in Android & iOS App store. Using this App citizen can view the details of Afforestation activities, FSI Fire point occurrences/ mitigation and give feedback on the activity.

Online Odisha Timber Transit Permit System: Under ease of doing business in Odisha (single window portal) the offline TT Permit process has been made online to help the citizens and the institutions to apply for TT Permit online. Citizens and institutions are using Online Odisha TT Permit Applications for hassle free process of timber transit permit. Assistance is being provided to field staffs/public for use of the online application in the portal https://ttpermitodisha.in/. General public & departmental officers/ staff use iOS &Android mobile Application to apply for TT permit in Odisha from anywhere in the world. The web application has been notified under BRAP & ORTPSA guidelines.

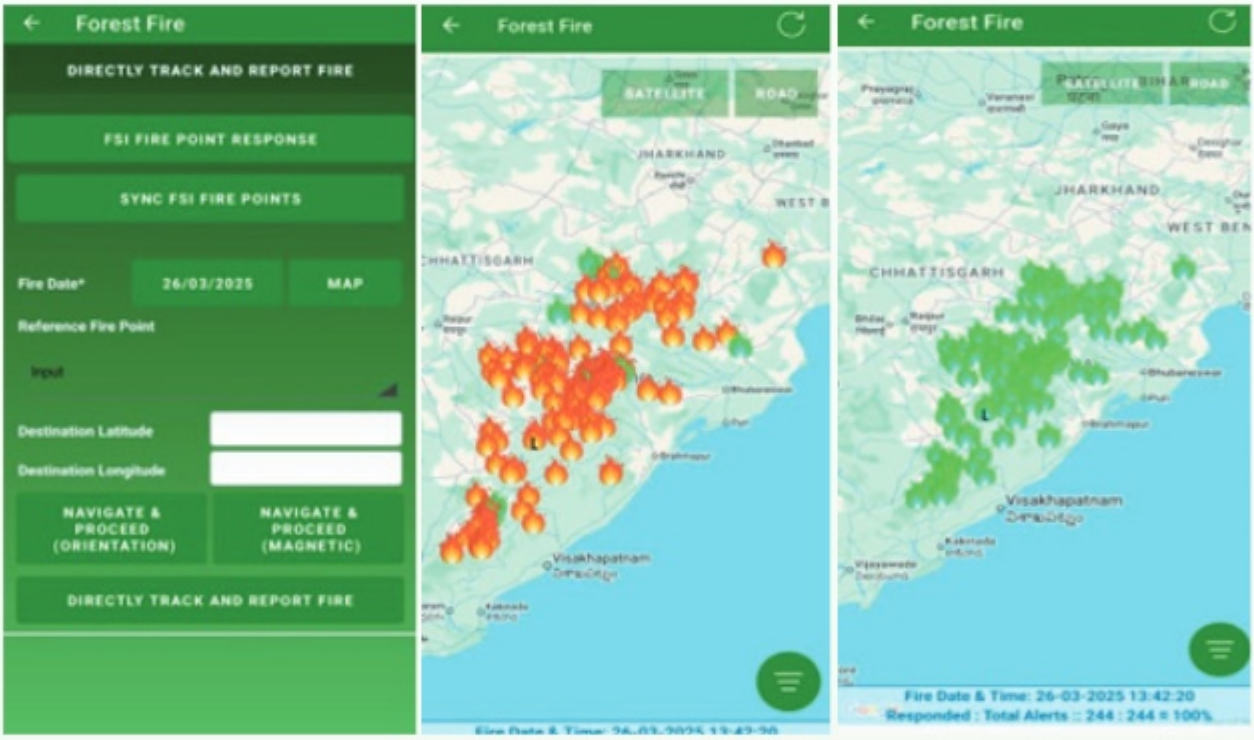
Annual Maintenance Contract and Purchase of IT equipment: This Centre has taken up the task of Annual maintenance of Computers and peripherals. The FITGC has also been assigned the task of procurement of IT items throughGeM portal.

Video Surveillance System in the Office of the PCCF, Odisha: There are **23** IP-based CCTV cameras set up at Aranya Bhawan, which are networked and operate **24 × 7**for safeguard of the office.

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 field 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. During the year 2025, out of 29709nos. of fire incidences, 29694 nos. fire points have been responded online by the frontline field staffs.

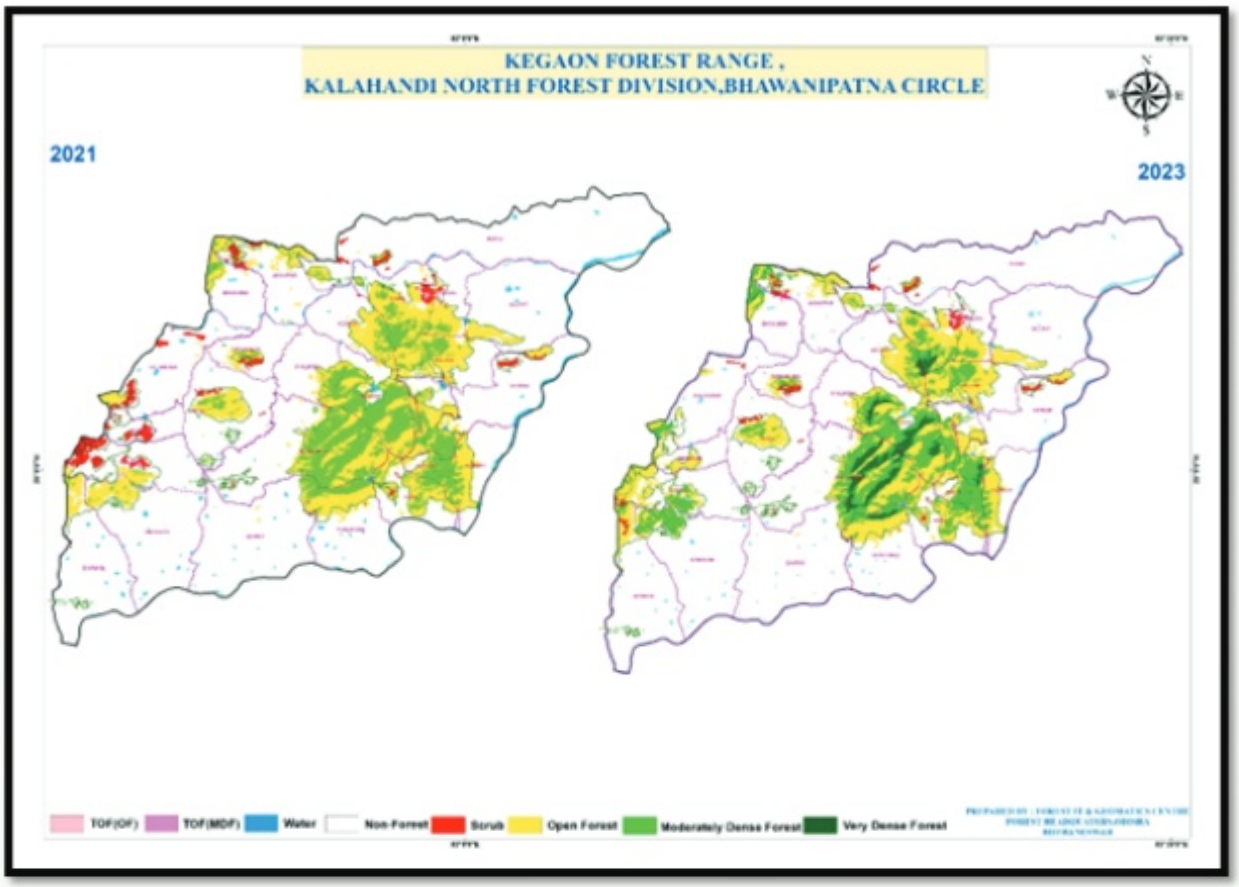
(Screen display of fire app showing the auto fetching fire point from FSI server, navigating to the fire spot, responding through App. and syncing to the server for monitoring.)

OFMS@ Mobile (Odisha Forest Fire Management System)



Maintenance &updationof 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 stack with 14 application servers, 3 storage devices, 2 firewalls, 1 load balancing and 10 switches are managed & updated by FITGC 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. It is planned to host all Forest Department Data from the Data Centre.

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 our OFMS web portal for ready reference of the field staffs.


KEGAON FOREST RANGE ,
KALAHANDI NORTH FOREST DIVISION,BHAWANIPATNA CIRCLE
2021
2023
TOF(OF)
TOF(MDF)
Water
Non-Forest
Scrub
Open Forest
Moderately Dense Forest
Very Dense Forest

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 generate 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.

Principal Chief Conservator of Forests (KL) Odisha

- **CCF Cuttack Circle--5 Division--13 Sub Division--41 Ranges**
- **CCF Balangir Circle--8 Division--16 Sub Division--59 Ranges**
- **CCF Sambalpur Circle-6 Division-13 Sub Division-49 Ranges**

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 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 kenduleaves. During the time of processing, the leaves are graded into different qualities fromGrade- I to IV as per the specification of colour,texture, size and leaf condition and 5 Kgbundles are produced. 12 such bundles are packed in gunny bags which makes one bag of 60Kg and 100 such bags equivalent to 60 qtls are delivered to OFDC for sale as KL lots. Around21,000 binding labourers and 18,000 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 deregulatingKL trade in entire Nabarangpur (KL) Division comprising entire Nabarangpur district and Borigumaand Kotpad Block of Koraput district followed by further deregulation in the entire Malkanagiridistrict of Jeypore (KL) Division during 2014. Now, the pluckers in the deregulated areas havethe option of selling Kendu leaves either to Govt or to private traders. In further developmentof deregulation, recognizing the rights of forest dwelling tribal communities, 19Gramsabhas inKalahandi district were vested with Community Forest Right under the provisions of ForestRights Act'2006 during 2017,2018 and 2021 providing right of ownership, access to collect, use,and dispose Kendu leaves by Gramsabhas.

Achievement of KL during last 5 years

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

Crop Year	No. of Kerry Pur-chased In Crore	Physical achieve-ment in lakh Qtl	Financial achievement in crores	Sale value in crores	Mandays generat-ed in lakhs	OFDC commis-sion in crore	Trade Surplus in crore
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	493.80	100.00	60.00	80.00
2024	115.39	2.457	478.89	605.45 (Provisional) As on 31.01.2026	100.00	55.00 (Provi-sional)	34.36 (Provi-sional)
2025	125.13	2.649	513.87 (As on 04.01.2026)	557.48 (As on 31.01.2026)	100.00	55.00 (Provi-sional)	00.00

17.5. Welfare Measures

Besides the wages and dues, the entire trade surplus obtained from disposal of Kenduleaves is ploughed back again to the beneficiaries in form of various welfare measures likeBonus to Pluckers, Incentives to Binders and Seasonal staff, financial assistances, various otherWelfare allowances- Water bottle, Chappal, Headcap, Kerri procurement Cloth to Pluckers, Blanket& Mosquito net to Binders. In fact, Rs 250.75 Crores were distributed to more than 8.0 lakhbeneficiaries during 2023 (for the crop year 2022). Government has also distributed Rs. 108.60Cr. of bonus and incentives to about 9.00 lakhs beneficiaries during the year 2024. (For Crop year2023).

Sl. No	Crop Year	Bonus to Pluckers (Rs in Cr)	Incentives to Binders (Rs in Cr)	Incentives to Seasonal Staff (Rs in Cr)
1	2022	77.41	3.48	2.45
2	2023	98.00	4.29	6.34
3	2024	52.60	1.93	4.99

N.B: -Welfare Measures includes payment of Cost of Chappal @Rs 160/-per Unit, Kerry Procurement Cloth @Rs 200/- per Unit, Cost of Head Cap @Rs 100/-per Unit, Cost of Blanket & Mosquito Net @Rs 700/-per Unit and Cost of Water Bottle @Rs 200/-per Unit.

17.6. Compassionate Grant

The compassionate grant @ Rs 2 Lakhs is transferred from welfare trust fund for payment to eligible nominees in case of death and permanent disability of KL beneficiaries.

Sl. No.	FY	Amount of Compassionate Grant Paid (Rs in Cr)	No. of KL Beneficiaries
1	2023	11.23	587
2	2024	24.06	1216
3	2025	24.63 (As on 07.02.2026)	1235

17.7. Initiatives taken

1. Employment Generation

Kendu leaf provides huge employment opportunity for poor people. The tradegeneratesmore than 100 lakh mandays annually. Pluckers are major stake holders Most of thebeneficiaries are tribals and women folk.

2. 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 Crores has been released during 2024-25 and 91.17 Cr is released during 2025-26 FY in Annual Budget under Programmeexpenditure.

3. Women empowerment

85% of total beneficiaries are women folk and about 98.8% of the beneficiaries belong to SC, ST & SEBC category.

4. 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 at least once in 2 years benefiting around 8.5 pluckers in the state. The Kerri price which was Rs0.34 per Kerri during 2010 has increased by 300 % and presently the Kerri rate is Rs 1.60per Kerri for the 2025 crop in Process area and Rs 3.20 per Kerri in Phal area.

5. Geo tagging of Bush Cutting command areas

Around 6.5 lakh Ha Bush cutting command areas are coppiced annually to get fresh Kenduleaf shoots generating about 10 lakh mandays. Initiativeshave been taken to have geo-tagging of all such areas with GPS sets.

6. Universalization of Pluckers & Binders cards, Aadhar based bank payment

Aadhar-linked Pluckers & Binders Cards has been implemented to enable seamless mobility of workers across regions, centralized wage access, and serve as a unified identification for all convergence scheme benefits. All payments given to beneficiaries based on Aadhar link bank payment.

7. Local Community participation

Minimum 30% of the locals has been engaged in binding through various capacity building activities. 10% to 15% Lady Munshi have been engaged in Kendu Leave operation.

8. Educational Initiatives for Children

New initiatives have been taken to educate the children of Kendu Leave binders at work place.

9. Upgradation of Existing Infrastructure

376 no. of Phadies has been upgraded from Semi-Permanent, Temporary, and Seasonal Phadies to Permanent status with enhanced facilities during 2025.

10. Academic Partnership

Research activities are linked with IIM, Sambalpur for advance research.

11. Convergence with other schemes

Convergence with PR & DW Deptt. For Phadi construction, 433 no. of Phadi with water facilities, 544 no. of Phadi with Toilet facility, Health Camps with SBI Foundation and other welfare development programmes.

ODISHA FOREST DEVELOPMENT COOPERATION

Prior to 1962 forests operations were being worked by private contractors. It was noticed that contractors were not adhering to the prescription of Working Plan leading to unscientific exploitation forest growth. There were instances of evasion of payment of taxes and non payment of royalty to Government timely & also to labourers. Contract system did not contribute towards systematic employment of local labourers specially the forest dependent tribal communities. Hence, the State Government took the decision for creation of Orissa Forest Corporation with the mandate of "Working of State's vast forest resources scientifically without sacrificing the apparent forest values, ensuring 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".

The Orissa Forest Corporation Ltd. was then incorporated on 28th September 1962 by the Government of Odisha to replace the 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 a commercial wing of Forest Department. It is the first Forestry based Corporation in the country. It was incorporated with a paid up capital of Rs 10,00,000/- only which has been 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 and at present there are 9 saw mills in operation at different parts of the state.

While timber, firewood and allied products remained its main activity, it entered into Kendu Leaf trade partly 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 as per the provisions of the Orissa Kendu Leaves (Control of Trade) Act 1961. Further, in the year 1983 sal seed was nationalized and the corporation was entrusted with the task of collection of sal seeds from major forest divisions of the state as per the provisions of the Orissa Forest Produce (Control of Trade) Act 1981. Further OFDC 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 another two forestry-based corporation namely Similipal Forest Development Corporation Ltd (SFDC) which was operating in the Similipal Biosphere region of the state and Orissa Plantation Development Corporation Ltd (OPDC) 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 etc.
- To buy, sell, export, import, process, manufacture, distribute or otherwise deal in all kinds of forest plants, trees, kendu leafs and other forest products
- To establish depots at convenient places for supply of timber, firewood and other forest products to the local people and meeting their sawing need.
- 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 and following operational units as follows:

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

18.2.1 TIMBER & FIRE WOOD

Timber and firewood working is the primary activity of the Corporation from where major quantity of timber and firewood are obtained from coupe working based on the prescriptions of Working Plans. In addition, timber is also received by salvaging on forest floor and irregular stocks relating to different types of offence cases (UD/OR), clearance of tree in developmental projects, from mining areas and also from tenants too. Till 1990, selection coupe working and coppice working 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.

Meanwhile, 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 imposed total ban on green felling of trees in forests of all Divisions. Thus, coupe working in the forest came to a standstill resulting reduction of availability of timber outturn significantly and corporation suffered badly. After lifting of ban from theyear 2005–06, the coupe working was resumed but under new conservation oriented prescriptions, as a result

Firewoodatdepot

Timber lots atdepot

Tractor mounted timber crane with 3 point linkage

many coupes have become economically non-viable. Many of forest areas are also affected with extremist problems where working was not congenial and these coupes have also not been 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 average 0.25 lakh cubic meter per annum. 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 upto 30% of coupe timber to local people on retail basis limiting to 35 cft. per family per year. With effect from 2008–09, Government 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 the 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 (in Cum)			
		Coupe	Salvag-ing & UD Case	Other Sources	Total
2020-21	119	16069	3970	5994	26033
2021-22	100	12528	3436	4666	20630
2022-23	144	20346	3431	5919	29696
2023-24	130	16648	2310	7480	26438
2024-25	122	16301	2277	7624	26202

Firewood Production (in Stacks)

Working Year	No.of Coupes Worked	Timber Production			
		Coupe	Salvaging & UD Case	Other Sources	Total
2020-21	119	6402	1112	12232	19747
2021-22	100	7014	2228	12402	21644
2022-23	144	8724	1929	1410	24760
2023-24	130	8239	1061	23223	32523
2024-25	122	8662	1424	14553	24639

Forest coupe working

Automated sawmill

18.2.2 SAW MILL OPERATION

OFDC Ltd is operating 9 Saw Mills of its own at Berhampur (Ganjam), Khapuria (Cuttack), Jeypore (Koraput), Maithali (Malkanagiri), Nowrangpur, Remed (Sambalpur), Muniguda(Raygada), Kantabanjhi (Bolangir), and Rourkela (Sundargarh) 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 of4nos. existingunitswithinstallationofautomatedsawmill units, shifting from conventional operation to automation, thereby improving the quality of sawing and reduction of wastage.

Sawn sizes at OFDC sales centre

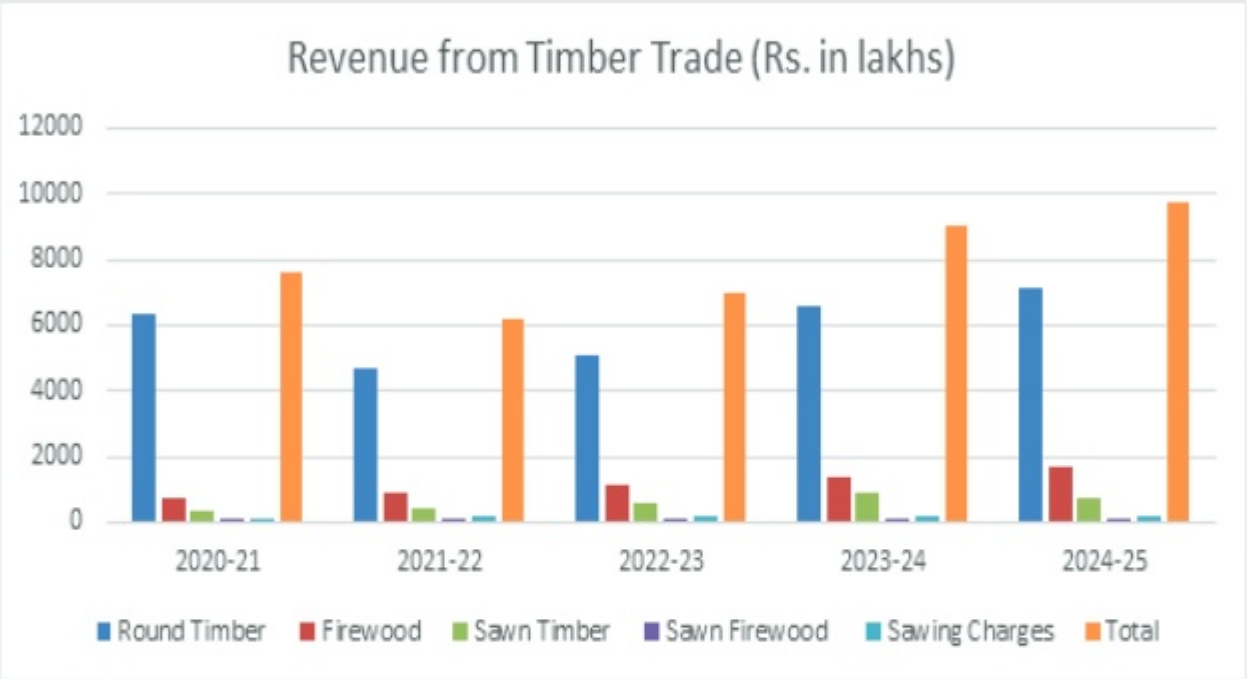
	OFDC's own sawing (Quantity in cum)			Private Sawing (in cum)			
F.Y.	RT Fed to Sawmill	Sawn timber obtained	Quantity Sold	Sale Value (Rs. In lakh)	RT Fed to Saw-mill	Sawn timber obtained	Sawing Charges Realized (Rs. In lakh)
2020-21	1329	725	760	374.15	5021	3774	132.83
2021-22	1791	940	874	410.62	5041	3704	172.27
2022-23	2235	1212	1251	577.99	5071	3863	184.89
2023-24	2616	1470	1676	891.19	5409	4248	192.34
2024-25	2359	1268	1508	716.45	5908	4596	208.16

Conventionalsawmill

Automatedsawmill

TURN OVER FROM TIMBER TRADE FOR LAST 5 YEARS IS AS UNDER

Financial Year	Round Timber	Firewood	Sawn Timber	Sawn Firewood	Sawing Charges	Total
2020-21	6356.10	707.78	374.15	16.14	132.83	7587.00
2021-22	4679.18	865.80	410.62	25.13	172.27	6153.00
2022-23	5067.42	1114.96	577.99	39.00	184.89	6984.26
2023-24	6580.49	1357.28	891.19	48.47	192.34	9069.77
2024-25	7112.60	1695.70	716.45	47.99	208.16	9780.90



18.2.3. HARVESTING OF RED SANDERS

1262 Red sanders trees were damaged/uprooted during "Titli" Cyclone in October 2018 in Paralakhemundi Forest Division. All the 1262 trees have been harvested and total outturn of 11,106 pieces = 1306.0116 cum transported to depot located at Berhampur. Fashioning of Red sanders wood logs have been done and 729.9265 cum of heartwood obtained.

The total saleable heartwood is 922.3797 MT out of which 38.7082 MT have been sold through global e-tender cum e-auction sale held on 17.02.2023, 03.03.2023 and 17.03.2023 and balance of 883.6715 MT is yet to be sold.

The Ministry of Environment, Forest & Climate Change, Wildlife Division, Govt of India has 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 prohibition on export of Red sanders wood in log form for export of 810.1894 MT Red sanders wood in log form by Forest, Environment & Climate Change Department, Government of Odisha within the extended period of 02.09.2025. Extension of further lifting period on relaxation of prohibition from the competent authority is awaited.

Red Sanders Lot

18.2.4. KENDULEAF

Kendu leaf is an important 'Non-Timber Forest Produces (NTFP) of Forest Department which is used as wrapper of bidi. In Odisha these leaves are collected, stored, processed and bagged by Kendu Leaf wing of the Forest Department. There are two different types of kendu leaf (i) 'Phal' leave which are dried and bagged in unit of standard bags, each weighing about 40 kg. Such type of collection is common in other states like Andhra Pradesh, Bihar, Chhatisgarh, Jharkhand, Madhya Pradesh, Maharastra, Rajasthan, and U.P. and (ii) processed leaves which are dried, treated and bundled at Phadi house into different grades of quality and each bundle weighs net 5 Kg and bagged weighing to net 60 Kg in each. Production of processed leaves is the monopoly of Odisha State only and the best quality processed leaves are nowadays exported to countries like Sri Lanka & Bangladesh. This trade creates about one crore man days of job mostly during peak summer season.

After collection, processing and bagging, the leaves are delivered at Central Godown to Corporation by the Kendu Leaves Organisation and the Corporation put them in suitable lots for sale through tender or auction at regular intervals. The manual tender and auctions for sale of Kendu Leafs are now being replaced with e-tender and e-auction mode through its own e-tender/e-auction portal. For kendu leaves working in the field, Corporation arranges payment of working fund advance to Kendu Leaves Organisation which are subsequently recovered from the sale proceeds. Corporation gets commission on realised sale value. After realising the taxes, working fund advance and commission etc., balance amount is paid to Kendu Leaf Development Fund as trade surplus. The information for last 5 years is as below.

Kenduleaf Trade- sale value, working fund, OFDC Commission & KLDF share

Financial year	Crop year	Crop year-wise Quantity delivered (in Lakh Qntl)	Quantity sold including ar-rear stock (in Lakh Qntl)	Realised Sale Value (Rs. in Cr.)	Working Fund (Rs. in Cr.)	Selling com-mission (Rs. in Cr.)	Amount paid to KLDF (Rs. in Cr.)
2020-21	2020	1.915	2.356	460.84	270.03	41.20	120.80
2021-22	2021	2.649	2.804	591.77	367.93	55.75	167.10
2022-23	2022	2.785	2.721	570.00	413.22	53.33	95.75
2023-24	2023	2.636	2.574	533.58	407.11	49.29	104.33
2024-25	2024	2.474	2.562	595.29	479.05	56.14	87.36

18.2.5. BAMBOO

Like Kendu leaves, Bamboo is also a nationalised forest produce in the State in the year 1988. 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' under the chairmanship of Additional Chief Secretary, FE & CC Department. Bamboo working is done either directly by OFDC Ltd or through Raw Material Procurers (RMP) as per modalities approved by the Empowered Committee. Most of the Bamboos in form of Industrial Bamboo [I.B] are sold to different industrial units whereas Commercial Bamboos [C.B] are supplied to local people and bamboo artisans at concessional rate and unsold stocks disposed through tender/auction.

Till 2016, the paper Mills were major procurers and consumers of Industrial bamboo but now they have adopted new technology for paper manufacturing replacing bamboo with soft wood as raw materials. Thereby, the requirement of bamboo by the paper industries have been reduced to minimal resulting drastic reduction on the demand of Industrial Bamboo. The information for last 5 years is as below:

Financial Year	No. of Coupes Worked	Production		Sale Value (IB+CB) Rs. in Lakh	OFDC's Revenue Rs. in Lakh
		Industrial Bamboo (in SU)	Commercial Bamboo (in Pcs.)		
2020-21	38	4873.47	375821	497.56	84.71
2021-22	29	5510.19	239328	366.99	57.39
2022-23	29	6386.00	169947	442.32	32.43
2023-24	34	6071.39	281622	422.60	31.55
2024-25	42	8051	139141	720.84	51.90

Industrial bamboo at depot

18.2.6. COMMERCIAL PLANTATION

Commercial Plantations such as 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.

The Rubber Plantations have been raised in three sites 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 are not leased out.

18.2.7. CANNING CENTER

OFDC is processing MFP items like honey. It also produces pickles from mango, lemon, green chili etc. and squash and 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 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 with annual capacity of 15 MT.

Processed MFP products

18.2.8. ECOTOURISM AND THEME PARK

OFDC has been appointed as the Nodal Agency for promotion of Ecotourism in the State to provide one stop solution for this purpose to online bookings. OFDC is operating the ecotourism portal (www.ecotourodisha.com) and doing advance booking for all the accommodation facilities available at 53 numbers of Eco-tourism Destinations. OFDC is also doing advance booking for safari vehicles and boating facilities wherever available in these sites. During the financial year 2024–25, 80558 nos of visitors have visited the ecotourism destinations through 17831 nos. of online booking for accommodation, safari & cruise with total value of Rs. 15.04 Crore. The information for last 5 years as placed below:

	No. of Bookings	No. Of Visitors	Accommodation Booking	Safari Booking	Cruise Booking	Entry Fees	Total	OFDC Commission (Net)
2020-21	6536	34557	58442500	2036100	-	2824475	63309075	5309590
2021-22	8381	42311	74666000	2539500	-	2943035	80150535	6854936
2022-23	10795	57586	97659670	5894400	-	3483655	107037725	8951028
2023-24	14567	65705	105713510	7263000	360120	3347197	116683827	9643010
2024-25	17831	80558	132162851	13509587	853675	3881425	150407538	12109663

OFDC Ltd has developed a natural park at Jaydev Batika in the outskirt of Bhubaneswar. It 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 is being taken up on a continuous basis for providing better facilities to the visitors. During the FY 2024–25 earnings of Rs. 195.14 lakhs has been made by OFDC from the Park.

Various spots at Jayadev Batika

	No. of Visitors	Revenue (in **lakh** Rs.)
2020-21	151415	59.20
2021-22	192992	77.20
2022-23	314185	169.40
2023-24	264939	157.50
2024-25	337206	195.14

With the reduction of timber working, bamboo working and reduction in sale of kendu leaf due to more than one external reasons, OFDC 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. OFDC Ltd is the one specialized agency in removal of trees for site preparation for any infrastructure developmental project.

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 reforesting mining area, degraded lands, industrial zones and establishing several eco parks and landscaping stadiums and institutional campus.

OFDC Ltd is also engaged in raising avenue and block 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 Jaydev Batika 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 partner in green developer of the State.

Achievement during last five financial years ((Rs. in Crore)			
Financial Year	Nos of seedling planted (in No.)	Value of work done	Establishment Cost earned
2020-21	5,28,805	43.48	7.84
2021-22	4,22,604	53.70	8.81
2022-23	5,33,432	74.05	10.91
2023-24	4,84,538	99.51	14.82
2024-25	4,22,456	85.88	14.01

Development offootballstadium

Blockplantation

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 communication, power supply for safety of life & property of public and thereby ensuring immediate assistance and relief to the people of the affected area in association with District Administration and Forest Department. The Corporation has enhanced its capacity for its disasters management activity with financial assistance of State Relief Commissioner. The untiring, dedicated service of its staffs and officers in bringing normalcy among the people of the affected area during cyclonic storms and kalabaisakhi etc. have been well appreciated at various quarters.

Roadside tree clearance work

18.2.9. CORPORATE SOCIAL RESPONSIBILITIES

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. During FY 2024–25, the Corporation has spent a sum of Rs. 66.85 lakhs for implementing various CSR projects in accordance with Schedule VII of the Companies Act, 2013, viz. Providing study materials to school children, conducting health camps at each sub-divisional area of OFDC, improvement of condition of livings of inmates of old age home & orphanages, promotion of environment, sports and for promotion of Chhau Dance of Mayurbhanj.

18.2.10. HUMAN RESOURCES

In recent years, a large number of employees have retired from OFDC service, resulting vacancies in both operational and ministerial positions at all levels of different cadres. To tide over the deficit in manpower & to manage its affairs, the Corporation has re-engaged some retired staff from both the operational and ministerial cadres on consolidated remuneration basis, with the approval of the Government. Additionally, the Corporation has appointed 08 candidates as Accounts Assistant-Grade II, 59 candidates as Assistant-Grade III, 11 candidates as Executive Assistant-Grade III (Junior Stenographer), 47 candidates as Field Assistant-Grade II (Sectional Supervisor) and 221 candidates as Field Assistant-Grade III to fill the vacancies during the year. The cadre management and manpower restructuring plan of OFDC fixing the overall employees in regular cadre to 1253 has been approved by the Government.

During the period under report, the overall industrial relations remained smooth and harmonious owing to periodical discussion and close liaisoning of the management with the employees' unions/federations & no man-days were therefore lost due to strikes or lockouts etc. The Directors and other executives from all ranks of the Corporation have undergone training on various management and skill development programs organized by different Central and State Government institutions. During FY 2024–25, Eight (08) nos of Assistant Managers have been deputed for 2 years Diploma for State Forest Services Course training to Central Academy for State Forest Service (CASFOS), Coimbatore, Tamilnadu and 26 nos of Junior Manager (Operations) have undergone 12 months training at Himachal Pradesh Forest Academy, Sundernagar, HP. The Corporation is also imparting 3 months training to all its Field Assistant and Sectional Supervisors in Foresters Training School, Ghatikia, Bhubaneswar. Till now 39 nos of Field Assistant Grade-II (Sectional Supervisors) and 128 nos of Field Assistant Grade-III (Field Assistant) have undergone such training.

Passing out ceremony of Field Assistants at Foresters Training School, Ghatikia

18.2.11. Contribution to Ex-Chequer

One of the objectives of the OFDC is to provide maximum tax and non-tax revenue to the State Exchequer in a transparent manner. Towards this OFDC pays to the Government in form of Royalty, Dividend, Working Fund Advance for Kendu Leaf Operation in addition to tax revenues at the incidence of sale of its products and other statutory levies. Details of payment made by the OFDC to the Government during the last Five years is summarised below:

FY	Royalty			KL Royalty/ KLDF	Total trade related payment	Working Fund Advance for KL	Dividend	GST	Grand Total
	Timber	Bamboo	Total						
2020-21	17.51	0.68	18.19	120.80	130.99	270.76		110.19	511.94
2021-22	17.06	0.75	17.81	167.10	184.91	368.03	1.58	125.09	679.61
2022-23	19.73		19.73	95.75	115.48	413.74	3.01	133.02	665.25
2023-24	17.09	-	17.09	114.20	131.29	442.04	6.08	147.32	726.73
2024-25	18.33	2.98	21.31	87.36	108.67	487.53	7.49*	147.47	751.16

*Dividend for the FY 2023-24 amount to Rs. 7.49 crore has been deposited during FY 2025-26.

It is a fact that in spite 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 not only earned profits consecutively for last 15 years and paying cash dividend to Government every year complying to the direction of the Government but also exceled 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	Total Income from operation	Profit for the year (Before Tax)
2020-21	611.75	141.21	25.58
2021-22	740.58	221.09	27.42
2022-23	754.04	256.23	30.02
2023-24	807.03	304.62	70.95
2024-25	860.97	314.80	107.60

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 likely 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 sustainance. 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 suitable land for taking up plantation/revival of existing plantations from its own resources to meet the requirement of people and Industry and generate sustained revenue to the Corporation on long term basis. The plantation raised by OFDC on Forest lands from its own resources in the past are yet to be harvested.

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 compared 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, multidimensional and multi-disciplinary developmental activities are being carried out by the Chilika Development Authority for appropriate restoration measures of the lake. The following are the main activities taken up.

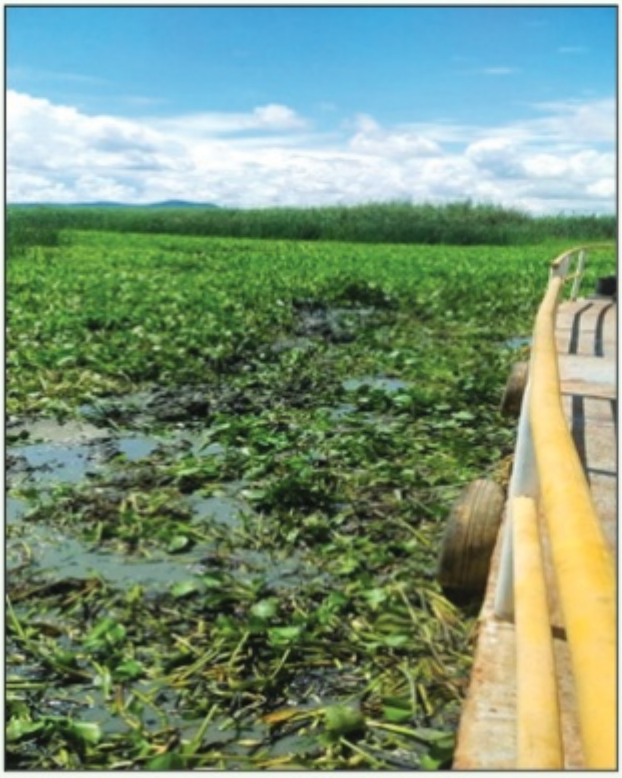
19.1 PREPARATION OF DETAILED PROJECT REPORT FOR ALL-ROUND DEVELOPMENT OF THE LAKE

The Chilika Development Authority is in the process of developing a DPR for the holistic development of Chilika Lake in technical collaboration with the Department of Ocean Engineering, IIT Madras, which covers the following aspects

1. Restore tidal exchange by opening a new mouth
2. Improve hydrodynamic circulation across the lagoon.
3. Enhance salinity balance for brackish water ecology.
4. Increase fish recruitment from the Bay of Bengal and develop modern fishery infrastructure.
5. Develop and strengthen tourism infrastructure in Chilika
6. Reduce flood vulnerability in adjoining agricultural catchments.
7. Provide a scientific basis for long-term management of the lagoon.

19.2. Excavation of Feeder Channel:

CDA has been carrying out creek excavation works to facilitate the navigation of the Tourist and fishermen boats to Chilika Lake.



19.3. 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 the lagoon every month. The spread of seagrassesand phytoplankton, zooplankton, and benthic organisms is also monitored.

19.4. 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.

	2012	2014	2016	2017-18	2019-20	2021-22	2023-24
Overall	B	B	B	A-	A	A	B+
Southern Zone	B	B+	B	B+	A	A	A
Central Zone	B+	B	B	A	A	B+	B
Northern Zone	B	B-	B-	B+	B	B	B
Outer channel Zone	B	B	B	A	A	A	A

WETLAND CAMPAIGNING & AWARENESS

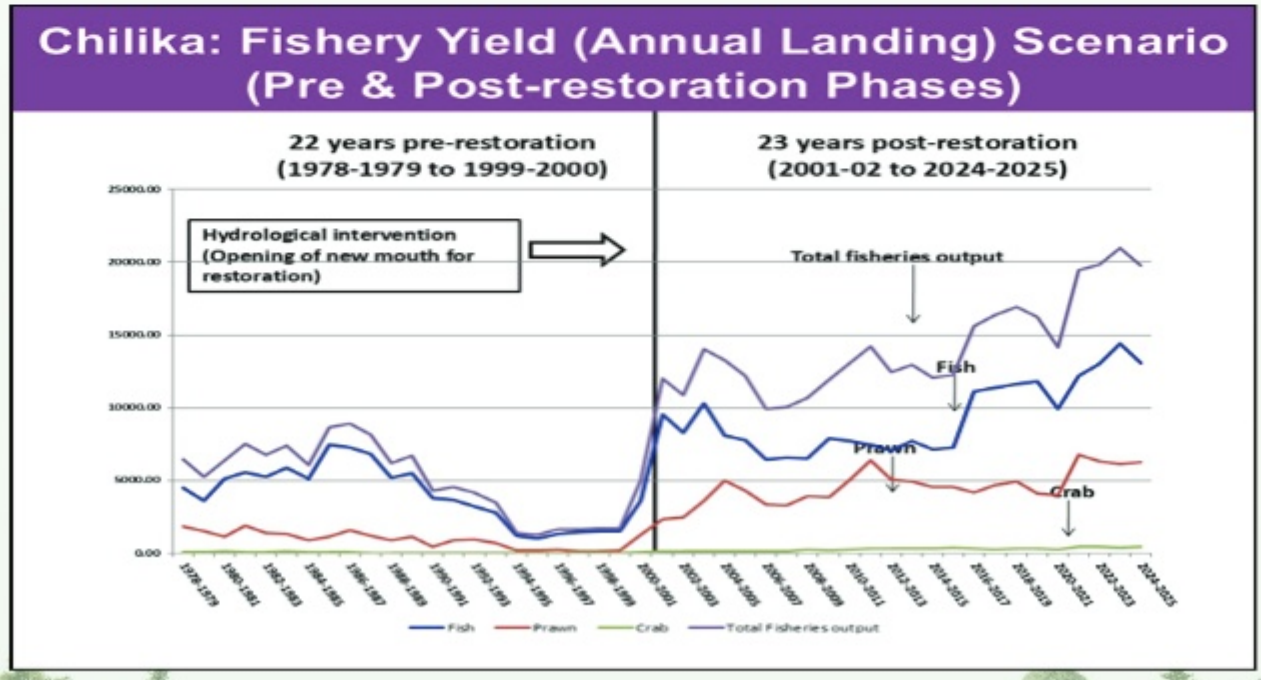
Chilika Development Authority is identified as one of the Knowledge partners by the Ministry of Environment, Forest & Climate Change, Govt. of India, under the Save Wetland campaign and Amruta Dharodhar Programme. Awareness programmes are conducted every year for the protection and conservation of migratory birds, dolphins, fishing cats, smooth-coated and Eurasian otters, and other marine mammals, flora, and fauna.

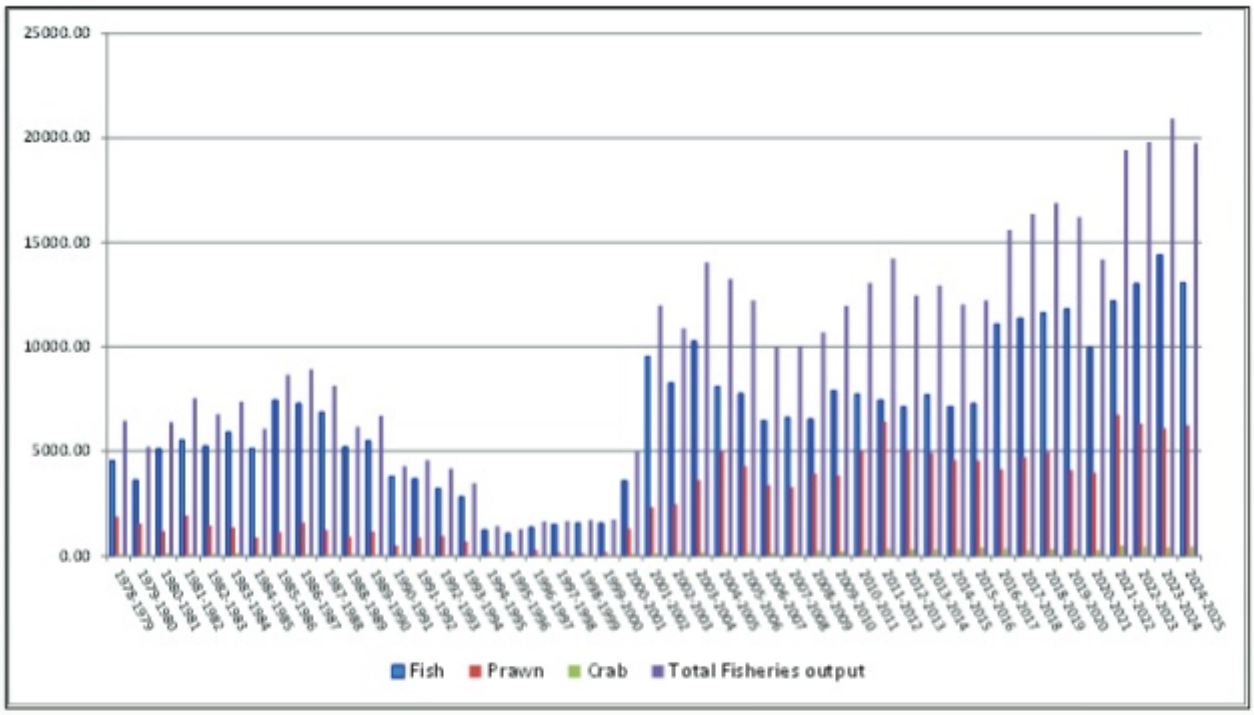
6. NATIONAL CHILIKA BIRD FESTIVAL

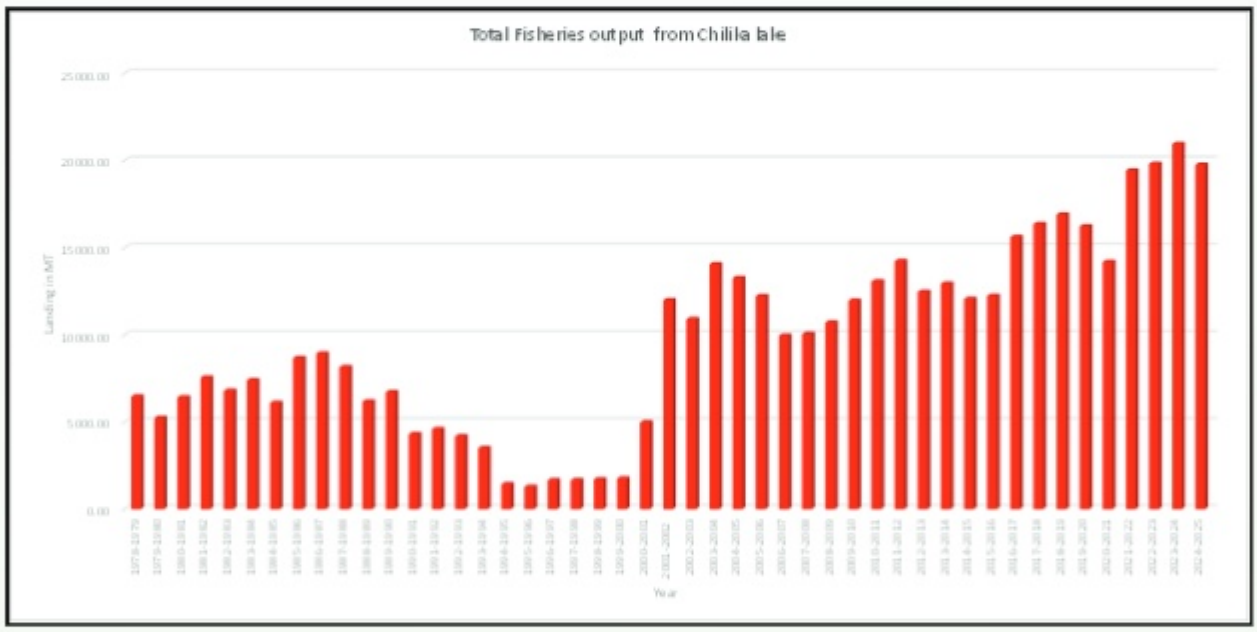
Every year Chilika Bird Festival is organized by the Tourism department in collaboration with the CDA and Wildlife Wing for greater awareness of the Chilika's residential and migratory bird species and their habitat in Chilika. Boating tours are conducted for the registered visitors to the Chilika Wildlife Sanctuary and Managalajodi bird habitat, which serve as the prime attractions in the festival.

7. FISHERY RESOURCE DEVELOPMENT

CDA has been collecting the landing data from 34 landing centers, which include two Godowns. The total estimated Fish, Prawns, and Crabs from Chilika during the years 2024-25 were 13059.839, 6254.998, and 439.47 MT, respectively, and the total recorded fish landing was 19754.31 MT. The total calculated market







value of fish catch was INR 390.26 Crores. For the fishery resource development, various activities for the community are taken up, such as the creation and maintenance of jetties, the construction of multiutility community halls, the development of approach roads, solar lighting systems, and boat sheltering yards. Fishermen have also been supported with value addition initiatives and soft loans. CDA also provides data regarding illegal gherry to the district administrations of Khordha, Ganjam, and Puri as per the directions of the Hon'ble High Court of Orissa, and also provides manpower, boats, excavator-mounted barges, and other logistic support for gherry eviction by the District Administration.

CONSERVATION OF SEAGRASS AND SALTMARSHES-

CDA under the ECRICC project is doing the monitoring of the seagrasses and salt marshes for their biomass, diversity, and distribution in Chilika Lagoon. CDA is also taking proactive actions to identify potential threats (anthropogenic and natural)for their conservation.

SEAWEED FARMING FOR PROVIDING ALTERNATIVE LIVELIHOOD FOR LOCAL VILLAGERS AROUND CHILIKA

Under the ECRICC project, CDA is implementing pilot-scale seaweed farming in peripheral villages around Chilka and also bahuda estuary for providing an alternative livelihood to coastal fishermen communities.

10. FERRY SERVICE FROM SATAPADA TO JAHNIKUDA

For the convenience of the people, there is a ferry service run by CDA on Chilika Lake between Satapada and Jahnikuda (4.1km). This is the only mode of transportation for passengers and vehicles in Chilika Lake from Satapada to Jahnikuda. Two new ferries have also been procured in 2024 and operationalized on the same route for the convenience of the people.

8. POPULATION ESTIMATION OF CHILIKA FISHING CAT

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

9. ANNUAL POPULATION ESTIMATION SURVEY OF THE IRRAWADDY DOLPHIN

The Irrawaddy dolphin is the flagship species inhabiting Chilika Lake. The annual population estimation survey of the Irrawaddy dolphin has been started and conducted by CDA since 2003 using the "LineTransect Survey Method" followed worldwide for population estimation of aquatic mammals. Each survey team is equipped with binoculars, GPS, a rangefinder, data recording sheets, and other necessary items. The Population estimation of dolphins has been conducted by the Chilika Wildlife Division since 2015 in association with CDA.

MANAGEMENT OF ANSUPA LAKE

For the long-term sustainable development of Ansupa Lake, declared as a Ramsar site in 2021, many important activities have been undertaken by the Chilika Development Authority (CDA).

DE-WEEDING OF ANSUPA LAKE;

To decrease the excessive weeds in the lake, the De-weeding work has been taken up in the lake. The process

is ongoing through a mechanical weed harvester. This intervention helps in the overall improvement of the water quality of the lake and additionally helps in the navigation of fishermen and tourist boats.

DE-SILTATION WORK

The sediments come to Ansupa Lake from the catchment area as well as from the Mahanadi River system. Over the years, the lake bottom gets silted up, resulting in shallowness of the lake. De-siltation work has been undertaken, 318 cubic meters of silt have been taken out, which is facilitating fishing and tourism in the lake.

DEVELOPMENT OF ECO GARDEN FOR FACILITATING TOURISM AND INTERPRETATION

For the benefit of the tourists coming to the lake, one eco garden with facilities of watchtowers, cafeteria, waiting room, children's play area, boating facility, parking, signages and toilets has been developed by CDA. It also includes 307 sqmt of paved road as a nature trail, a temporary bamboo bridge, sitouts, gazebos, selfie points, a bambusetum, etc. Further upgradations are in progress from time to time to facilitate nature interpretation, and it serves as a must-visit site for tourists.

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 releases yearlings of various Indian carps and Grass carps into the lake annually.

WATER QUALITY MONITORING OF ANSUPA LAKE

Wetland Research and Training Centre (WRTC), Barkul, is also monitoring the ecological health of Ansupa on a seasonal basis. The monitoring program measures vital biological and chemical parameters, which are bioindicators of the lake's 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 13 stations of the lake on seasonal basis.

Activities Photos of Ansupa Lake

Eco-park,Ansupa

Monitoring Centre at Eco-park, Ansupa

Repairing of OTDC Hall at Ansupa

Watch Tower No-2 at Ansupa

Watch Tower No-2 at Ansupa

REGIONAL PLANT RESOURCE CENTRE (RPRC)

Bhubaneswar

Research and Development Back Ground

Regional Plant Resource Centre (RPRC), an autonomous R&D institute of Forest, Environment & Climate Change Department, Govt. of Odisha,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 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, Hibiscus and Rose Gardens etc.to produce and conserve plant genetic resources. 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.

The major research areas comprised of re-introduction of RET and other important special group of plants including Mangroves and Orchids, domestication and evaluation of wild edible fruitsand medicinal plants for active bio-molecules, nutraceuticals, antioxidants, useful secondary metabolites from fungi, proteomics on banana ripening, micro-propagation of edible mushroom, banana, forest species, plantation crops and endangered plants.

A total of 3 external funded, 19 state plan funded projects have been implemented during the financial year 2024-25, engaged around 35 research fellows under faculty Scientists, published 25 research papers, annual 'Research & Activity Report', trained 2M.Sc. Biotech students for their PG degrees, awarded 5 Ph.D. Degrees affiliated to various Universities.

20.1 Highlights of Research Achievements during FY 2024-25

20.1.1 Microbiological Applications

20.1.1.1 Bioprocess optimization for enhanced recovery of glutaminase free L- Asparaginase of fungal origin

Process optimization for enhanced recovery of three numbers of fungal isolates has been done. Mass scale production, purification and characterization of fungal extracts has been completed. Detection of molecular weight of protein was conducted using gel electrophoresis.

20.1.1.2 Bioactive lead molecules from fungal endophytes: Extraction, Purification and Characterization

Extraction, partial purification and characterization of bioactive secondary metabolites from two numbers of fungal endophytes has been completed. Antimicrobial activity of solvent extracts of fungal endophytes against three *Fusarium sp.* has been done.

20.1.1.3.Documentation of Micro-fungi in Forest Soils of Odisha

More than 200 numbers of fungi have been isolated from different forest soils of Odisha. Isolated fungi weremorphologically characterized and tested for cellulase production.

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

20.1.2.1.Standardization of propagation Methods for *Bulbophyllum* Orchids through Tissue Culture.

Conservation of *Bulbophyllum* species is crucial due to their rapid decline in natural habitats. For conservation purpose, seeds of *Bulbophyllum crassipes and Bulbophyllum cariniflorum*were collected and successfully germinated under tissue culture conditions.

20.1.2.2.Generation of Genetic Variants for *Dendrobium, Cattleya, Cymbidium and Spathogloottis* orchids through Mutation Breeding towards Development of Novel Flowers

Research works are carried out for the genetic improvement of orchids such as *Dendrobium, Cattleya, Cymbidium and Spathoglottis* by treating Ethyl Methanesulfonate (EMS) and Gamma Radiation. These physical and chemical mutagens induce genetic mutations in orchid tissues, resulting in desirable traits such as improved flower color, shape, and size. The mutated explants are propagated and evaluated for their stability and expression of the desired traits in the laboratory and currently the explants are on observation in the culture room of Regional Plants Resource Centre.

20.1.2.3.Standardization of efficient Tissue Culture Based Propagation Methods for *Pomatocalpadecipiens* (Lindl.)J.J. Sm. and *Cymbidium bicolour* (Lindl.): Rare Orchids of Odisha.

Pomatocalpa decipiens and *Cymbidium bicolor,* tworare orchids of Odisha; populations are confined only to few parts of the state. Seedlings of both the orchid were successfully produced through tissue culture technology.

20.1.2.4.Developing efficient micropropagation methods for some important RET listed forest tree species of Odisha.

An uncommon and endangered forest tree *Pterocarpus santalinus* L. belongs to the family Fabaceae, referred as red sanders, is extremely important both ecologically and economically.

Due to a hard seed coat and low viability, seed propagation is frequently quite challenging.In addition, Fabaceae family's members have proven challenging to propagate*in vitro* because of their recalcitrant nature. In vitro propagation through (i). induction and growth of shoot, (ii) induction and growth of multiple shoots, and (iii). Rooting has been successfully done through establishment of the protocol for the shoot induction and growth and multiple shoot induction and growth (Fig.1A-D & Fig.2A-D).Further, efforts are on in induction of root for both the tree species.

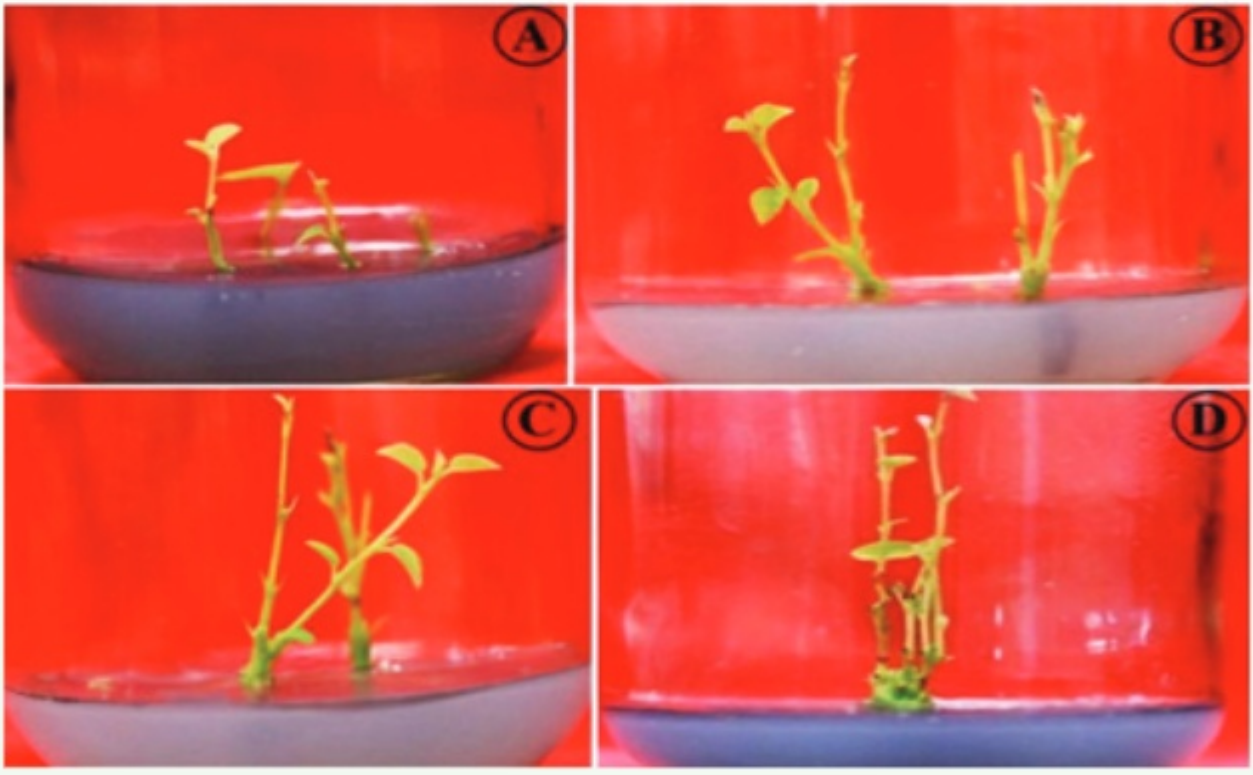


Fig.1A-D: Shoot induction and growth, and multiple shoot induction and growth in *P. santalinus*. (A-C) shoot induction and growth on MS+ BAP1.0mg/L +0.5 mg/L NAA +additives and +activated charcoal, (D) multiple shoot initiation and growth on MS + BAP 1.0mg/L + NAA 0.5 mg/L + additives + activated charcoal.

20.1.2.5. Molecular characterization and assessment of genetic variability in Diospyros meloanoxylon Roxb. (kendu) tree populations in Odisha.

With recent developments in molecular biology, many options are now available to undertake such research. Molecular markers (such as ISSR and SSR) have become part of a repertoire of tools needed to assess the amount of genetic variation in populations of important and endangered species and to address the ever-increasing loss of biodiversity. Further, until now no investigation has been carried out to assess the genetic diversity of kenduusing molecular markers. This study would be highly useful in quantifying genetic variation within and among populations of kenduexists in Odisha.

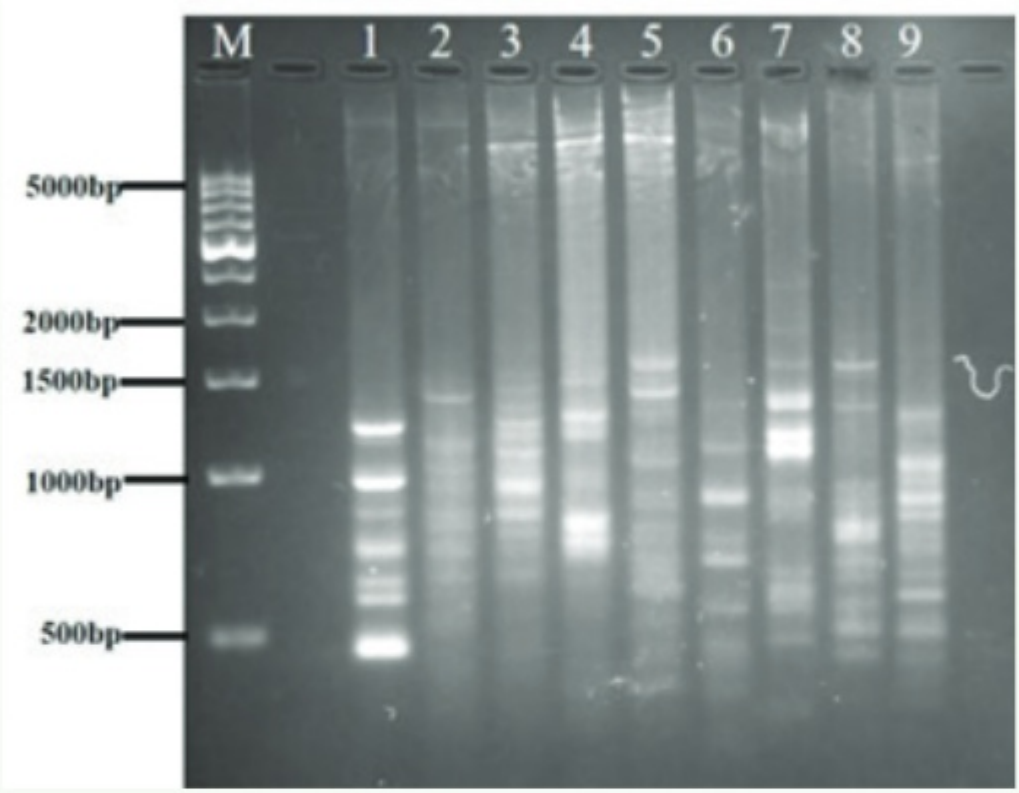


Fig.2.ISSR fingerprinting profile of *Diospyros melanoxylon*Roxb. (kendu) using primer1-9 i.e., $(AC)_8C$, TGG $(AC)_7$, ACG$(GT)_7$,$(CA)_8RG$, $(CA)_8G$, $(GA)_8YG$, $(AC)_8YT$, $(AC)_8T$ and $(AC)_8AA$ and 'M' is a molecular size marker (500bp).

20.1.2.6. Developing protocols for spawn production and cultivation of few selected wild edible mushroom species in Odisha.

Wild mushroom species, *Calocybe indica*, has been selected for reintroduction efforts. The spawn developed in sorghum bottles under laboratory conditions and were used for reintroducing the species in areas like Sanaghagara, Badaghagara, Khandahara Falls, and several locations in Koraput district, Odisha. Additional species, including *Russula*, *Amanita loosi*, and *Tuber rufum*, were also collected from local markets. After observing mycelial growth in spawn bottles, the species were ready for bed preparation. This reintroduction aims to conserve forest resources while providing nutritional and food value to local communities.

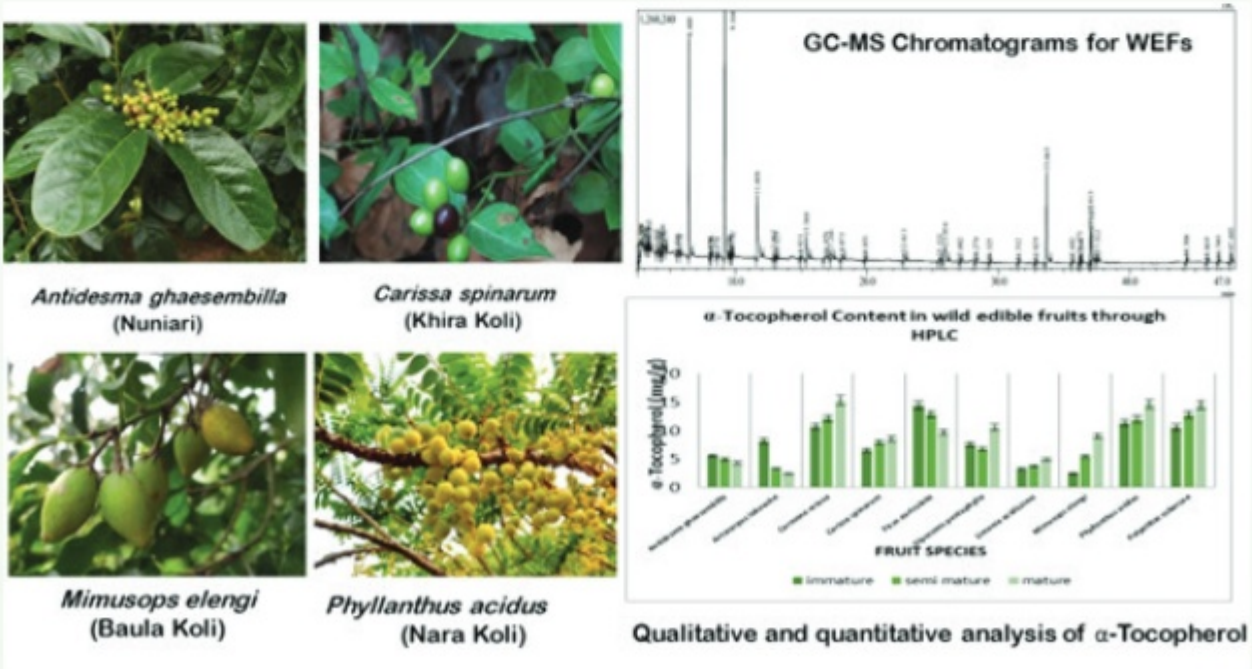
20.1.2.7. Developing a protocol for the control of lethal browning of tissue culture plantlets of the commercial banana variety cv. Red Banana.

Thestudy aimed to identify the causes and contributing factors of lethal browning in tissue plantlets and to develop and optimize a protocol for its prevention and control in cv. red banana plantlets. The culture room conditions & chemical required were standardized.Activated charcoal in the growth media prevented lethal browning but caused tissue death and no further growth.

Rooting stage of ascorbic acid treated tissues

20.1.3. Wild Edible Fruits : Nutraceutical analysis

20.1.3.1. Characterization of α-Tocopherol and Polyphenols in some immune boosting wild edible fruits used by Tribal communities for the therapeutic value. This research aimed to isolate, analyze and characterize α-tocopherol (Vitamin-E) and Polyphenols (antioxidants)in ten wild edible fruits, traditionally consumed by various tribal communities, to identify potent and immune-boosting species from various agroclimatic zones of Odisha. Amongst studied species,*Antidesma ghaesembilla (nuniari), Carmona retusa (kujipana), Carissa spinarum (khira koli), Ficus auriculata(raja dimiri), Limonia acidissima (kaitha), Mimusops elengi (baula),* and *Phyllanthus acidus (nara koli)* exhibited high polyphenol content and bioactive compounds with potential immune-enhancing properties.

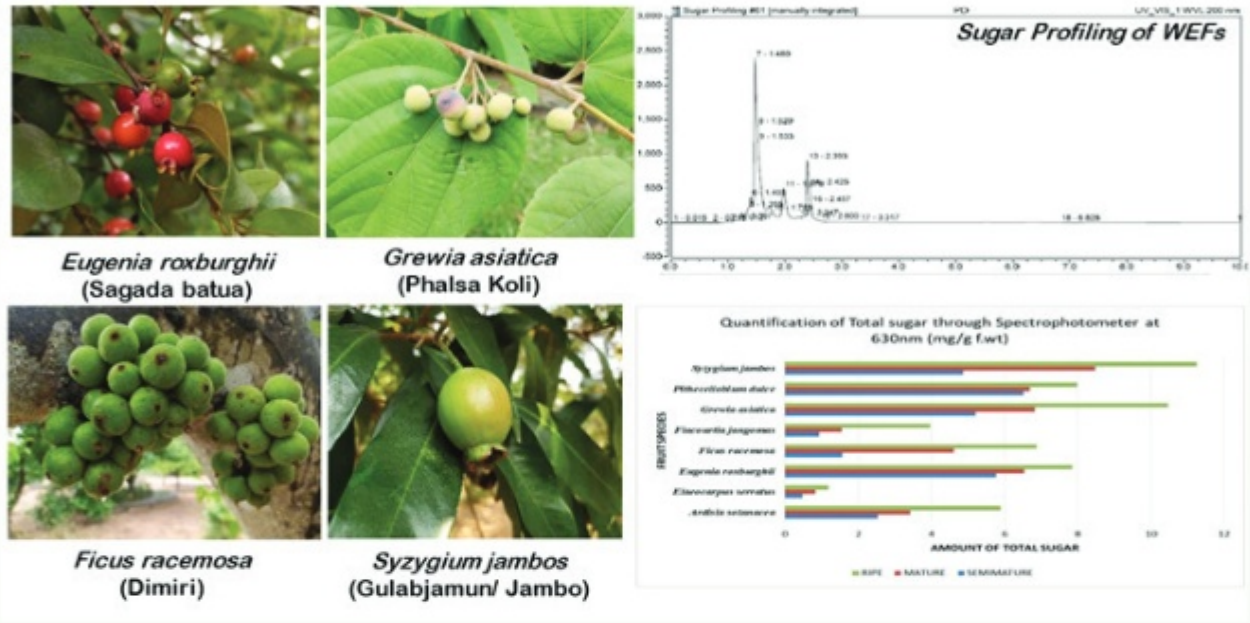


Qualitative and quantitative analysis of α-Tocopherol

20.1.3.2 Sugar Profiling and Antinutrient Analysis of Some Unexplored Wild Edible Fruits of Odisha.

Sugar profiling and anti-nutrient analysis was conducted on eight wild edible fruits at their three maturation stages to assess their sugar and anti-nutrient content for safe consumption. Total, reducing and non-reducing sugar along with oxalate, tannin, phytate and saponin were quantified using spectrophotometer and HPLC. FT-IR analysis identified the functional group in the fruit samples.

20.1.4. Propagation and reintroduction of Mangrove plants



20.1.4.1. Conservation of rare mangrove species of *Xylocarpus* through vegetative propagation & re-introduction in protected areas of Odisha.

Rare mangrove spp. of*Xylocarpus* have been vegetatively propagated and trialed for re-introduction in Bhitarkanika National Park (BKNP) for establishment and sustainable adaptation.

20.1.5. Medicinal plant and its application

20.1.5.1.The protective diabetic neuropathy effect of Buchananialanzan in streptozotocin-induced type 2 diabetic rats and its effectivity in comparing the bioactivates of scorpoletin, magnoflorin and betulin.

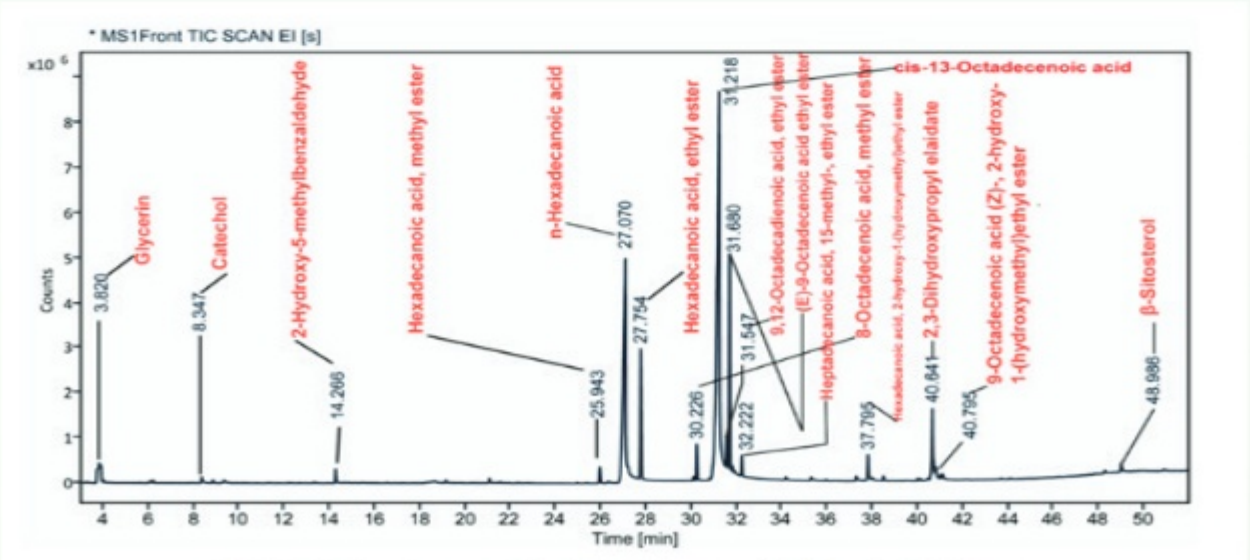


Fig. 1. GC-MS chromatograms and list of identified compounds in the seeds of *B. Lanzan.*

The investigation supports the potential role of *B. lanzan* in the antidiabetic neuropathy condition of type 2 diabeticMiletus. The status of hyperglycemia, oxidative stress, and inflammationassociated with T2DM is evidenced by the histological architectureof pancreatic islet cells. Investigation of hydroalcoholic fraction of *B. lanzan*has potential antioxidant effect (MDA, SOD, CAT, and GSH) in cellular levels and improving type 2 diabetes-induced neurodegenerative condition by inhibition of α-amylase, α-glucosidase and cholinesterase (AChE and BChE) and β-secretase (BACE1 and BACE2) activity in streptozotocin-induced Wister rat model is going on. Future investigations such as QSAR analysis of compounds, various signalling pathways, and mechanism of action of lead compounds in the cortex region of the brain are necessary to further validate its therapeutic use in Alzheimer's disease.

Besides, following other projects are also being implemented:

20.1.5.2.Anticholinesterase effect of Carnosic acid on sodium azide –induced memory impaired in rat model .

20.1.5.3.Development of Pentylcurcumene as cholinesterase inhibitor for the treatment of alzheimer's disease (AD).

20.1.6. Propagation and reintroduction of RET plants

20.1.6.1.Conservation of a few endemic and endangered plants in Odisha.

To conserve selected endangered plant species such as *Rademachera xylocarpa*, *Cryptocarya amygdalina*, *Nothopegia racemosa*, and *Alphonsea madraspatana*, mass propagation was carried out using various methods, including air layering, stem cutting propagation, and seed germination.

In this project, 3,500 *Cryptocarya amygdalina* plants and 2,000 *Lasiococca comberi* plants have been raised, which were maintained in polybags with regular spraying of half-strength MS media to promote plant elongation and new leaf formation. Additionally, 1,000 *Lasiococca comberi* plants were successfully propagated from mature stem cuttings treated with 5,000 ppm IBA.

Fig. Showing the 2 years old plants of Cryptocarya amygdalina in polybag

20.1.7. Taxonomical Studies

20.1.7.1.Taxonomic revision of the family Leguminosae in Odisha.

As of now,the research related to re-describing species, confirming valid names and synonyms, and conducting field studies on selected Caesalpiniodeae species, including ethnobotanical surveys and herbarium specimen preparation have been completed.

a. *Acacia auriculiformis*, **b**. *A.elata* **c**. *A robusta*, **d**. *A. ferruginea*, **e**. *Albizia chinesis*, **f**. *A. amara*, **g**. *A. luicide*. **h**. *A. procera*, **i**. *A. odoratissima*.

20.2. Celebration of Van Mahotsav 2024 in RPRC

Van Mahotsav 2024 was celebrated with a new initiative to introduce Orchids and create Ashok Vatika in the RPRC premises of the Botanical Garden

20.3. Annual Flower Show 2025

RPRC had organised the Annual Flower Show 2025 in the premises of its Botanic Garden) from 7th -12th January, 2025 in association with Plant Lovers' Association (PLA), and Odisha Rose Society, Bhubaneswar and Shri Mohan Charan Majhi, Hon'ble Chief Minister, Odisha had inaugurated the Annual Flower Show, 2025 as the Chief Guest in the august presence of Shri Ganesh Ram Singhkhuntia, Hon'ble Minister, FE&CC Dept., Govt. of Odisha as Guest of Honour. Hon'ble Chief Minister also inaugurated i.Gate Complex,ii. Multicoloured Garden Complex,iii.Cactus House and released Research and Activity Report 2023-24 of RPRC. Around 70 stalls (includes 49 covered stall of nurseries, institutions & food) and 21 open space plant bazaar stalls) were participated and exhibited ornamental plants for display and sale. Lakhs of visitors including NRIs visited the unique Mega Flower Show of RPRC.




Annual Flower Show 2026, *Ekamra Kanan, Bhubaneswar*

The **Annual Flower Show 2026**, held from **9–11 January 2026** at Ekamra Kanan, Bhubaneswar, transformed the Botanic Garden of the **Regional Plant Resource Centre (RPRC)** into a living celebration of flowers, culture and public imagination. Conceived under the theme **"Prakruti, Parampara o PushparaParba :A Festival of Nature, Tradition and Flowers,"** the event emerged as one of Odisha's most visually striking and experientially engaging public showcases in recent years.

Event Highlights & Strong Demarcation

- Never before scale & visual impact
- Over 10 lac footfalls over 3 days
- 50,000+ sq. Ft. Of stunning floral installations
- High-impact selfie zones integrated into the garden layout
- 65+ stalls operating as mini nurseries had record footfall
- 4.2 million digital reaches within one week over social media
- 3 strategic MoUs signed

Annual Flower Show 2026 emerged as a high-impact public eventstrategically planned, culturally rooted and experientially superiorsetting a new benchmark for botanical and cultural festivals in Odisha.

A Garden Reimagined Through Flowers

At the heart of AFS 2026 was its bold floral imagination. **Large-scale installations**crafted primarily from fresh flowersrose organically from the landscape, creating immersive walk-through experiences rather than distant visual displays. Floral structures were designed with depth, height and proportion, allowing visitors to move through them, pause within them and engage at close quarters.

Stunning selfie zones, thoughtfully distributed across the garden, became natural congregation points. These were not isolated props but carefully integrated into the garden's spatial flow, ensuring continuous movement while offering moments of wonder and memory-making. The floral language remained consistent, structures were not**only decorative add-ons, but extensions of the garden itself**. All flower structures and Selfie Zones were designed almost entirely using floral elements and botanical motifs.

The complete set-up did not compete with the garden; instead, it complemented itbecoming a seamless blend of nature and culture. Assorted flowers, layered textures and **culturally rooted design sensibilities** came together to create a backdrop that was both elegant by day and luminous by evening.

The experience evolved with time. Daylight revealed botanical detail, colour and form, while evenings transformed the garden through intelligent lighting and cultural ambience. This day-to-evening transition encouraged repeat footfall and extended dwell time, turning Ekamra Kanan into a full-day destination.

Culture, Learning and Public Participation

Beyond visual splendour, the Flower Show integrated **culture and knowledge as core components**, not parallel attractions. Every evening from 5:30 pm to 7:30 pm, the garden became a cultural canvashosting Odisha folk traditions, classical dance and contemporary performances that resonated with the show's theme.

Equally significant was the **Workshop on Floriculture**, which turned the show into a learning platform. Expert-led sessions on dehydrated floral craft, orchids, floriculture prospects in Odisha, rooftop and home gardening, hydroponics, bonsai and rose cultivation attracted students, practitioners and citizens alike. The flower show thus became a **confluence of blooms and minds**, reinforcing RPRC's role as a knowledge institution.

The **Plant Bazaar**, featuring over **65 stalls operating as mini nurseries**, further deepened public participation. Visitors were not just spectators; they became participantsbuying plants, tools and saplings, and carrying home a piece of the experience.

Strong Public Response and Digital Reach

Public engagement was overwhelming. Drone visuals and on-ground cues reflected **high crowd density, long pause times at installations, repeat visits and strong emotional connect**. Families, gardeners, tourists and students engaged across all three days.

A structured **10-day pre-promotion campaign**, supported by high-impact countdowns and on-ground content, resulted in a **digital reach of over 4.2 million within a week**, extending the show's influence far beyond the physical venue.

Institutional Outcomes

AFS 2026 also delivered **tangible institutional outcomes**. Three significant Memorandums of Understanding were signed during the event:

- With **CSIR–NBRI** for conservation of RET plant species
- With **CSIR–IMMT** for ecological restoration and afforestation in mining areas
- With **ICAR–National Research Centre for Orchids** for research and large-scale orchid adaptation for farmers

Governance & Leadership Engagement

- Visits by Hon'ble Ministers, Members of Parliament and senior IAS/IFS officers
- **Smt. Anu Garg, IAS, Chief Secretary, Odisha** visited on Day 3
- Accompanied by Secretary, Forest Department; hosted by CEO, RPRC
- Prizes and certificates distributed to nurseries and partner institutions

Key Outcome&Benchmark for the Future

AFS 2026 now stands as a **benchmark for future botanical and cultural events in Odisha**, offering a scalable model where beauty, learning, governance and public joy come together in harmony.

The **Annual Flower Show 2026** demonstrated how a public event can successfully blend **aesthetic excellence, cultural identity, scientific knowledge and citizen engagement**. It was not merely a display of flowers, but a thoughtfully curated public experience**strategically stronger, culturally rooted and experientially superior**.

Research and Development Background

Regional Plant Resource Centre, an autonomous R&D institute of Forest, Environment & Climate Change Department, Govt. of Odisha. Regional Plant Resource Centre, 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.

The centre 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.

A total of 3 external funded, 19 state plan funded projects have been implemented, engaged around 35 research fellows under faculty Scientists, published 25+ research papers, annual 'Research & Activity Report', trained 8 M.Sc. Biotech students for their PG degrees, awarded 5 Ph.D. Degrees affiliated to various Universities.

Highlights of various research activities implemented in Regional Plant Resource Centre are summarized below:

Microbiological Applications

Bioprocess optimization for enhanced recovery of Glutaminase free L –asparaginase of fungal origin

This study optimized extracellular L-asparaginase production from a novel Fusarium sp. for cancer treatment. Researchers purified the enzyme using ammonium sulphate precipitation and chromatography. Peak yields occurred at pH 8.0 and 37°C using Lactose (0.5%) and L-asparagine (0.5%). These specific nutritional and physical parameters establish a robust framework for large-scale, high-purity enzyme synthesis via continuous fermentation.

Harnessing the potential of endophytes of Piper longum as an alternate source for piperine production: optimization of protocol for laboratory production

This research explores the pharmaceutical potential of fungal endophytes isolated from Piper longum L., a plant known for its diverse pharmacological properties and minimal side effects. The study specifically targets the production of piperine, a pungent alkaloid with significant medicinal value. By employing solvent extraction and UV spectrophotometric analysis, researchers screened various isolated fungi, discovering that 7-day-old cultures provided the most substantial alkaloid yields.

To maximize output, the one-factor-at-a-time (OFAT) method was utilized to optimize nutritional and environmental conditions. The highest concentrations of piperine-like compounds in both culture filtrate and biomass were achieved using a specific combination of lactose, peptone, and glycine. This optimized medium significantly outperformed the control, a result validated through rigorous HPLC and GC-MS analysis, which identified key piperine derivatives.

Structural verification was conducted using FTIR, confirming functional groups—such as hydroxyl, aliphatic, and aromatic groups—consistent with standard piperine. Beyond production, the purified compound demonstrated potent biological activity, achieving a 50% growth reduction in antifungal assays against *Fusarium sp.* This study establishes an efficient, scalable fungal-based method for piperine synthesis, offering a promising alternative for drug development and human health applications.

Bioactive lead molecule from fungal endophytes: Extraction, purification, characterization

This research investigated Aspergillus fumigatus, an endophyte isolated from *Terminalia catappa*, as a sustainable source of bioactive metabolites to combat rising drug resistance. Utilizing ITS gene sequencing and MEGA11 for evolutionary analysis, the study optimized cultural conditions, identifying a 6-day incubation period with maltose and potassium nitrate as the superior carbon and nitrogen sources for maximizing antifungal yields.

The resulting metabolites, particularly the n-butanolic extract, demonstrated potent, dose-dependent growth inhibition against phytopathogenic *Fusarium* species (*F. proliferatum, F. fujikuroi, and F. oxysporum*). Purification via column chromatography and TLC revealed bioactive bands comparable to standard drugs like Amphotericin-B and Ketoconazole.

Chemical profiling through GC-MS identified six primary antifungal compounds, while FT-IR spectroscopy confirmed diverse functional groups responsible for these pharmacological activities. Quantitative MIC values further validated the extract's efficacy, proving its potential as a natural alternative to synthetic fungicides. Ultimately, this study highlights *A. fumigatus* as a high-potential model for pharmaceutical and agricultural applications, providing a robust framework for the large-scale production of novel, eco-friendly bioactive agents to improve human and environmental health.

Documentation of micro-fungi in forest soils of Odisha

Soil samples (122No.) from different forest region of Odisha were collected and treated for isolation of microfungi and physicochemical properties. In all 210 no. Of fungal isolates recovered, morphologically segregated through microscopic observation of slide cultures. These isolated fungi belong Aspergillus, Cladosporium, Chaetomium, Colletotrichum, Cunnighamella, Curvularia, Fusarium, Geotrichum, Mucor, Penicillium, Paecilomyces, Scopulariopsis, Taleromyces, Trichoderma and mycelia sterilia. All fungi were screened for cellulose production and 53 no. Of fungi exhibited this potential. Detailed identification and recovery of cellulose from most potential fungal strain is in process.

Fungal cultures isolated from forest soils (plate culture)

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

Orchids represent one of the most diverse families of flowering plants, comprising over 30,000 species worldwide and it has been observed that many species are facing severe threats affecting their population growth. From Odisha so far 100 species have been reported and four number of species conservation approaches need to be implemented. In considering this the following activities have been implemented.

Bulbophyllum orchids

Bulbophyllum orchids are the largest genus of the orchid family, from Odisha eight species have been reported and population of these are under observation for their growth and development. Seven species have been recorded from Similipal National Park, out of which two are rarely confined to that place only. After several attempts, populations of *B. guttullatum* located near the Kutia hills of Koraput district, growing on the trunks of two mango trees. The plants were healthy in nature, however, not associated with flowers and fruits and confined only to that place in Odisha. These plants are under observation for the new recruitments and population growth. Similarly, the populations of *B. cariniflorum* have been located at Singaraj Hills of Gajapati, plants were found to be associated with fruits.For production of seedlings, seeds of *B. crassipes* were cultured on the nutrient medium along with required plant growth regulators under controlled conditions.

Pomatocalpa decipiens

The orchid is considered to be extremely rare and within India, populations are confined to different forest areas of the state, most populations of the species are confined to the Barbara Reserve Forest, Khordha.

So far three populations have been thoroughly examined and it was found that plants are producing flowers and fruits each year indicating the presence of pollinators. For production of seedlings, seeds were cultured on nutrient mediums and seedlings were produced under in vitro conditions

Dendrobium regium

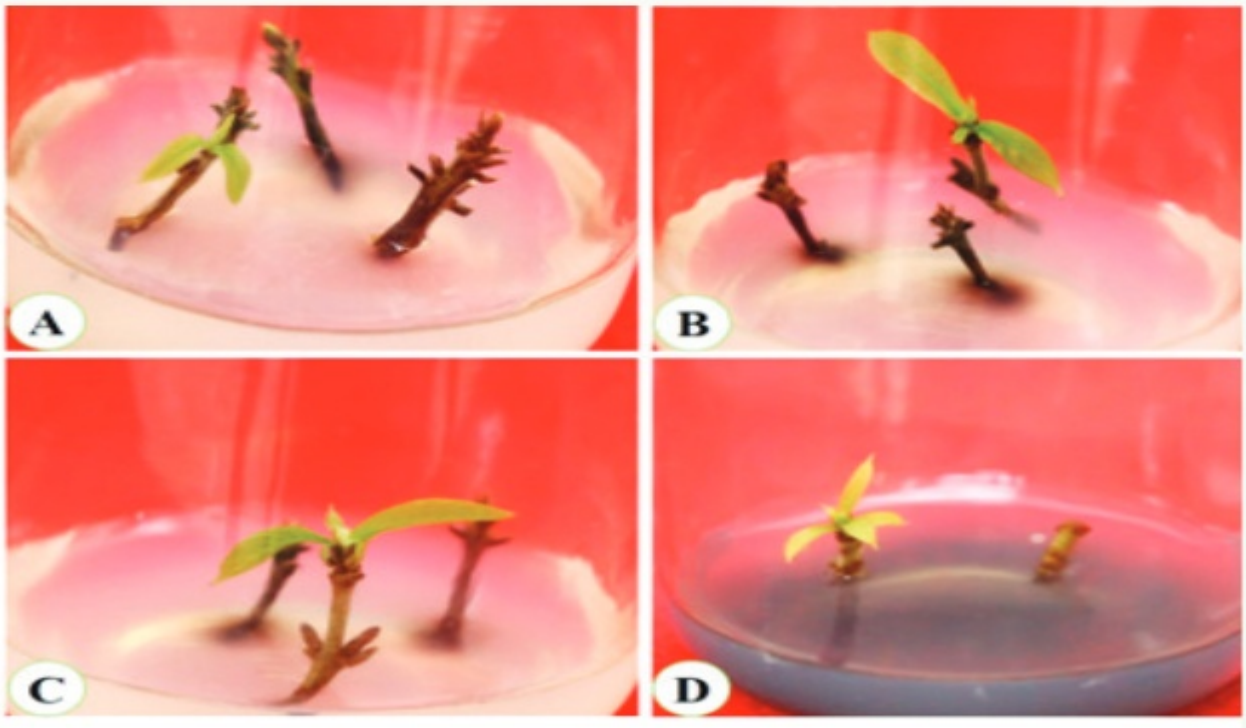
The orchid is considered to be endemic to India and major populations are confined to Odisha. Again within the state, populations are reported to be at the Similipal National Park. Field visits were made to different parts of the state and populations have been identified at Kutia hills of Koraput district, Rebana forest of Keonjhar and Daringbadi forest &Subarnagiri forest of Kandhamal district. The populations located at Kutia hills were healthy in nature and associated with fruits, whereas, the populations at Kendujhar were not healthy, leaves and fruits completely absent from the plants. Seeds were brought to the laboratory and successfully germinated on nutrient medium.

Cymbidium bicolor

Seeds of the orchid were successfully germinated on the nutrient medium containing plant growth regulators. Seedlings produced roots on nutrient medium containing growth regulator IBA 2.0 mg/l. Healthy seedlings, each had three leaves and roots were successfully transferred to the coconut husks for acclimatization and further growth and development.

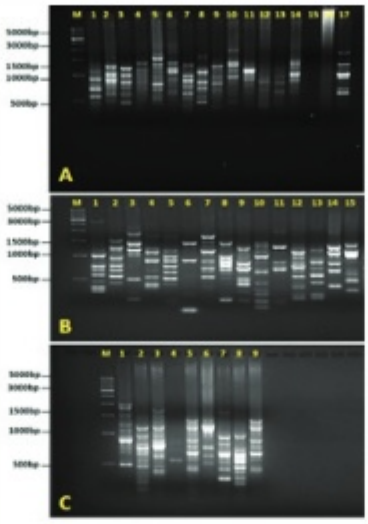
Developing efficient micro propagation methods for some important RET listed forest tree species of Odisha

An endangered forest tree *Lasiococca comberi* Haines belongs to the family Euphorbiaceae, referred to as a rare medicinal species, and holds significant ecological and pharmaceutical value. Due to poor seed viability and limited natural regeneration, seed propagation remains highly challenging. Additionally, as a member of the Euphorbiaceae family, it exhibits recalcitrant traits that complicate in vitro efforts. In vitro propagation through (i) induction and growth of shoots, (ii) induction and growth of multiple shoots, and (iii) rooting has been successfully achieved via establishment of protocols for shoot induction and multiple shoot proliferation.



Different stages of *in-vitro* propagation of *Lasiococca comberi* on varied combinations of plant growth regulators and additives.

Molecular characterization and assessment of genetic variability in *Diospyros meloanoxylon*Roxb. (kendu) tree populations in Odisha

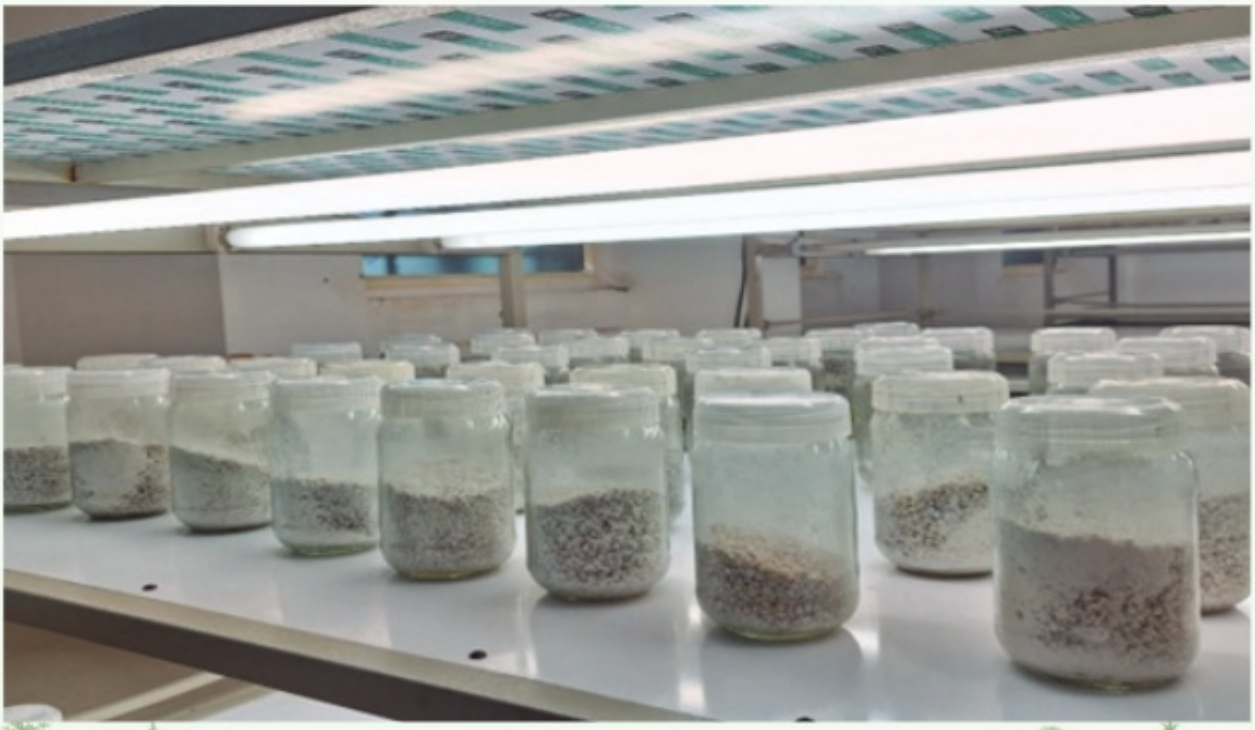


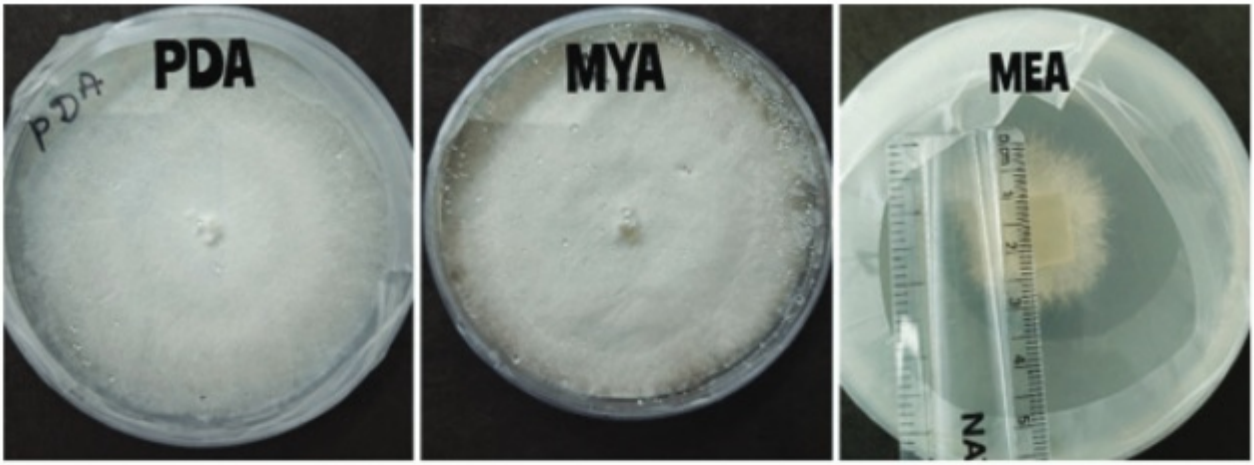
Recent advances in molecular biology provide tools like ISSR and SSR markers to evaluate genetic diversity in endangered species, helping combat biodiversity loss. No molecular marker study has assessed genetic diversity in kendu (*Diospyros melanoxylon* Roxb.) to date. This research would quantify variation within and among Odisha populations, supporting targeted conservation.

Development of spawn protocols and restoration techniques for selected wild edible mushroom species in Odisha

Ecological and habitat studies were conducted to understand the specific nutritional and environmental requirements of wild mushrooms, particularly mycorrhizal species, for developing suitable *in vitro* culture conditions.

Maintenance of *Tuber rufum* and *Calocybe indica* has been initiated, and pure culture and subculture of *Russula* species are being established using MYA, MEA, and PDA media for successful laboratory propagation.

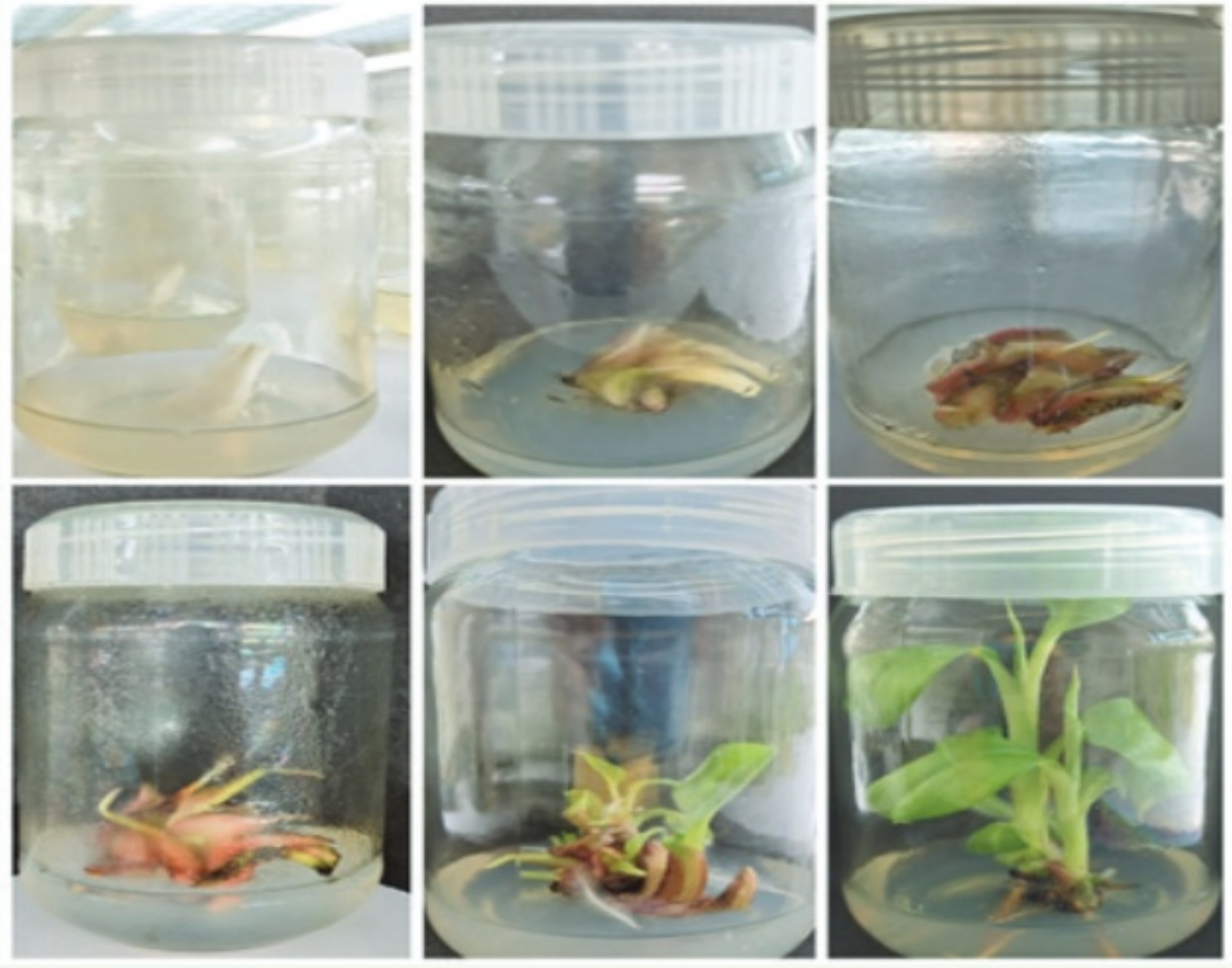




Developing a protocol for the control of lethal browning of tissue culture plantlets of commercial banana variety cv red banana, Robusta

An effective anti-browning strategy was developed through pre-soaking of explants in potassium citrate and citric acid (4:1) and supplementation of culture media with ascorbic acid, cysteine, and potassium citrate, which significantly reduced phenolic oxidation and tissue browning.

Optimization of culture conditions (23°C temperature, 1600 lux light intensity, and pH 5.7) along with antioxidant treatment enhanced explant survival, growth, and overall micropropagation efficiency of cv. Red Banana.



Pure culture and sub culture of *Russula* species prepared using MYA, MEA and PDA media.

Propagation and reintroduction of Mangrove plants

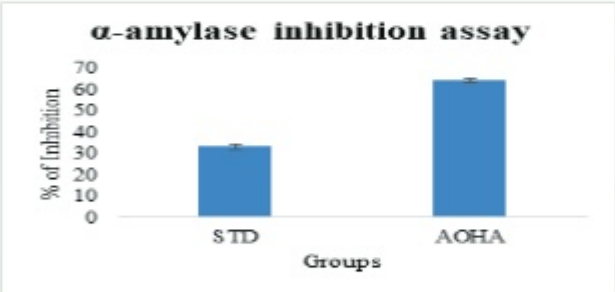
Field Evaluation of Eco-physiological Adaptations in Reintroduced Xylocarpus Species in Bhitarkanika: Implications for Mangrove Conservation in Coastal Odisha.

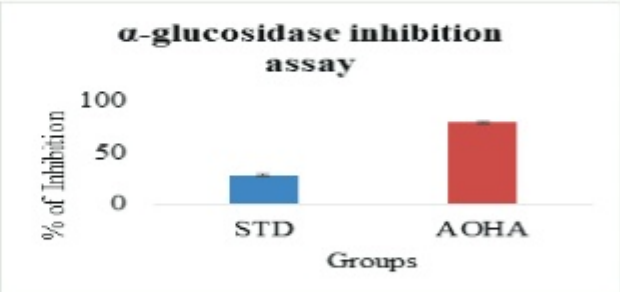
The standardized hardening protocol for vegetatively propagated *Xylocarpus* spp. ensures the acclimatization of rooted cuttings (5-15 cm radicles) to saline coastal environments through a structured 12-week nursery regimen. This regimen incorporates progressive salinity acclimationfrom weeks 1-2 to 13-15 ppt (weeks 6-10)alongside biweekly applications of NPK, fostering osmotic adjustment, Na^+ exclusion, and photosynthetic stability (OJIP transient >2750 a.u.) to achieve 60-75% survivorship and lignified saplings of 50 cm height with positive relative growth rate. Such protocols are essential for enhancing eco-physiological resilience prior to outplanting in Bhitarkanika's intertidal zones, thereby supporting mangrove conservation initiatives in coastal Odisha.

Medicinal plant and its application

Therapeutic potential of *Aporosa octandra* in high-fat diet-fed streptozotocin-induced type 2 diabetes mellitus in experimental rats

The therapeutic potential of *Aporosa octandra* was systematically investigated in a high-fat diet-fed streptozotocin-induced type 2 diabetic rat model. The study focused on validating the ethnomedicinal antidiabetic claims of the plant through *in vitro* α-amylase and α-glucosidase inhibition assays, including kinetic and mode-of-inhibition analyses. Acute toxicity studies were conducted to establish safe and effective dose ranges for *in vivo* experimentation. The bioactive fraction of *A. octandra* was evaluated for its effects on glycaemic control, insulin resistance (HOMA-IR), lipid profile, hepatic and renal function markers, and key biochemical parameters in diabetic rats. Histopathological examination of pancreatic tissue was performed to assess tissue-level protective effects. The findings provided scientific evidence supporting *A. octandra* as a promising plant-based antidiabetic therapeutic candidate and strengthened its relevance in medicinal plant-based drug discovery





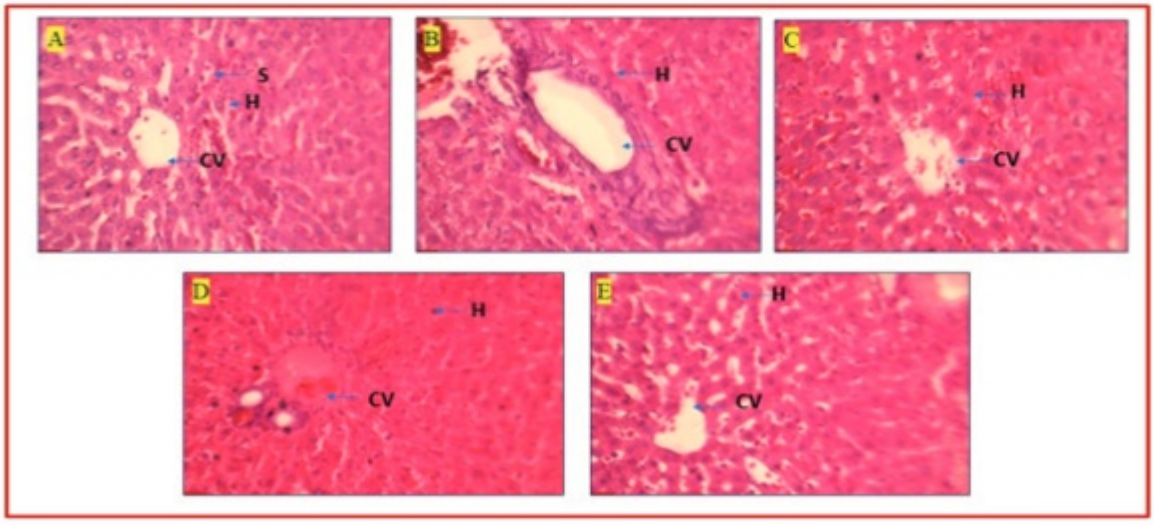
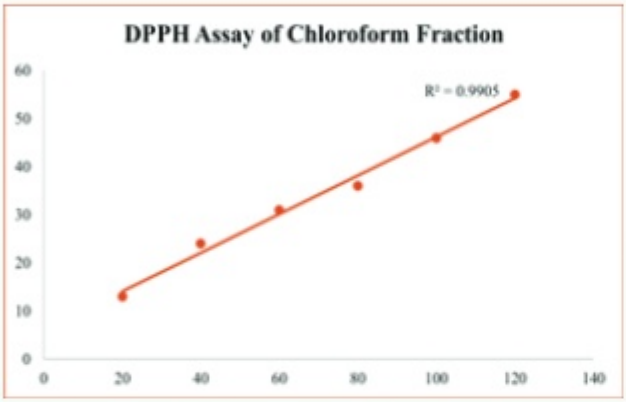
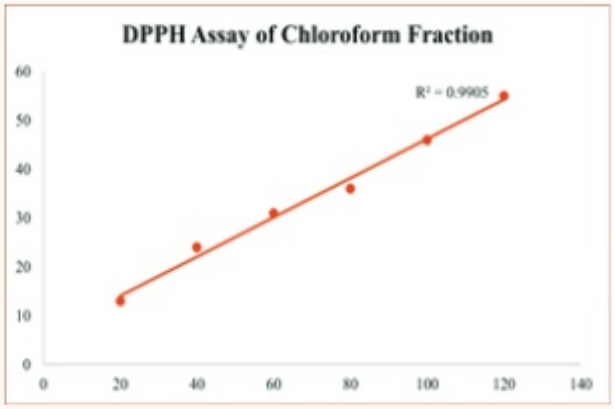


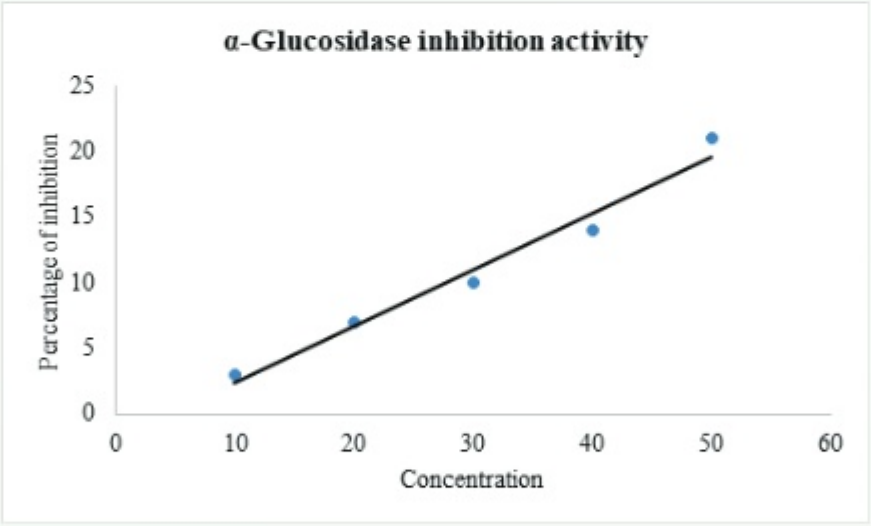
Fig. 3. Histological photomicrographs of liver of experimental rats (40X, LYNX NIB100, Lawrence & Mayo, India).

Extraction, isolation and characterisation of bioactive compounds of *Buchananialanzan* Spreng.

The hydroalcoholic extraction of *Buchananialanzan* seeds was carried out to obtain crude extracts for bioactive compound isolation. The extracts were subjected to column chromatographic separation, and the resulting fractions were monitored by Thin Layer Chromatography (TLC) to determine Rf values and assess purity. Some parts of hydroalcohol extracts were subjected to solvent-solvent fractionization for the isolation of bioactive compounds. Bioactivities of each separated fraction were determined by different assays like DPPH, alpha-amylase and alpha-glucosidase. Functional group and side-chain validation of the bioactive fractions were performed using Fourier Transform Infrared (FTIR) spectroscopy. The study generated foundational scientific evidence supporting *B. lanzan* as a potential source of therapeutically relevant natural bioactive compounds for drug discovery.

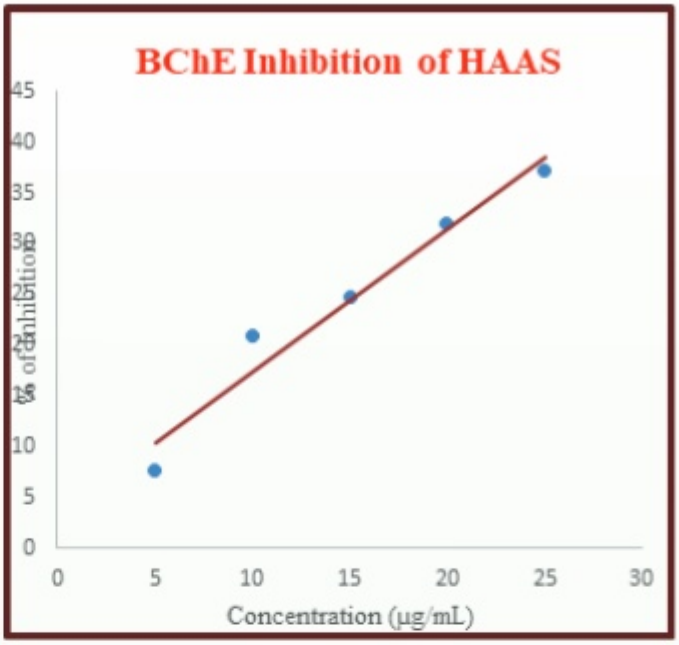


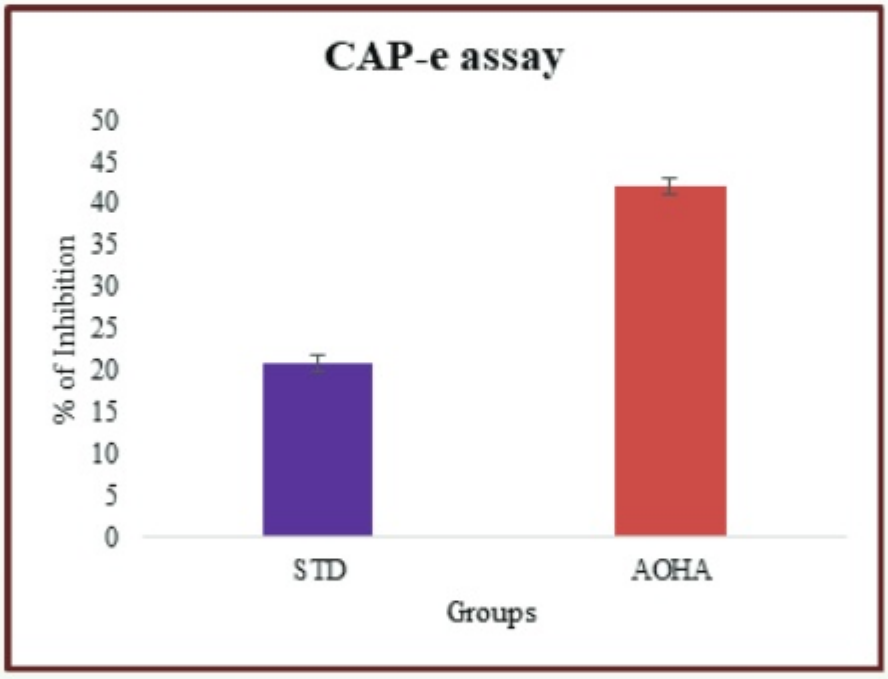




Neuroprotective effects of *Ardisia solanacea* in Streptozotocin-induced Type 2 diabetic rat model

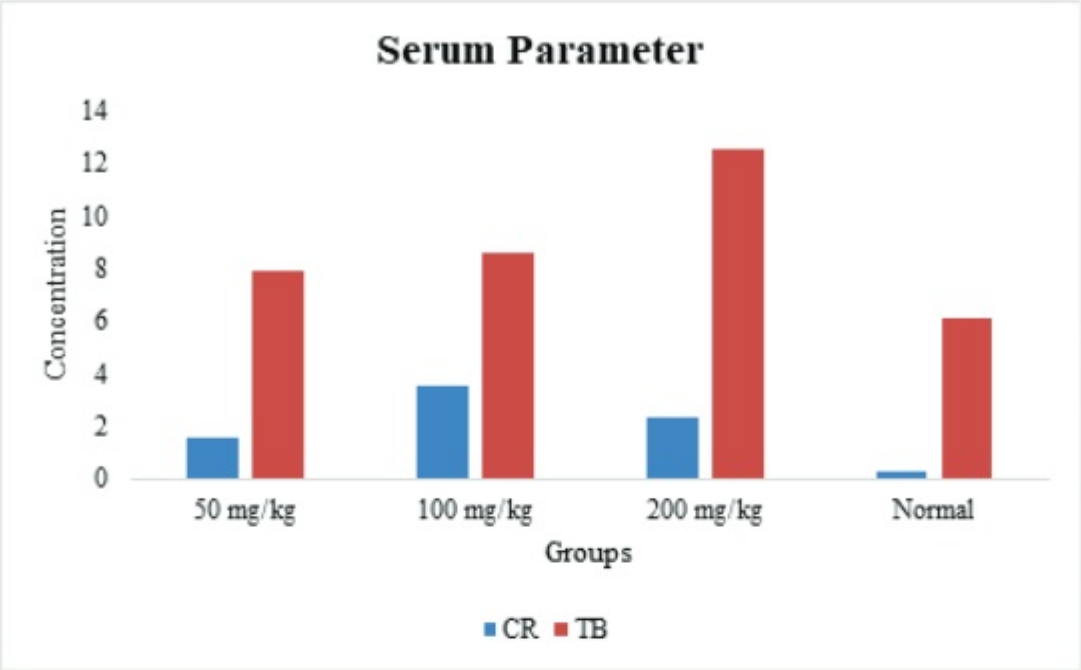
The neuroprotective potential of *Ardisia solanacea* was investigated in the context of diabetes-associated neuropathy through comprehensive *in vitro* studies. Leaves of *A. solanacea* were collected, authenticated, and extracted using solvents of varying polarity, followed by phytochemical estimation and complete biochemical profiling. The extracts were evaluated for antioxidant activity using DPPH, ORAC, and CAP-e assays, along with *in vitro* antidiabetic enzyme inhibition (α-amylase and α-glucosidase) and anticholinesterase activities (AChE and BChE) relevant to neurodegeneration. Enzyme kinetics and mode-of-inhibition analyses were performed using Lineweaver–Burk plots to elucidate mechanistic insights. The findings provided preliminary scientific evidence supporting the antioxidant, antidiabetic, and neuroprotective relevance of *A. solanacea*, thereby strengthening its ethnomedicinal significance in diabetic neuropathy management.

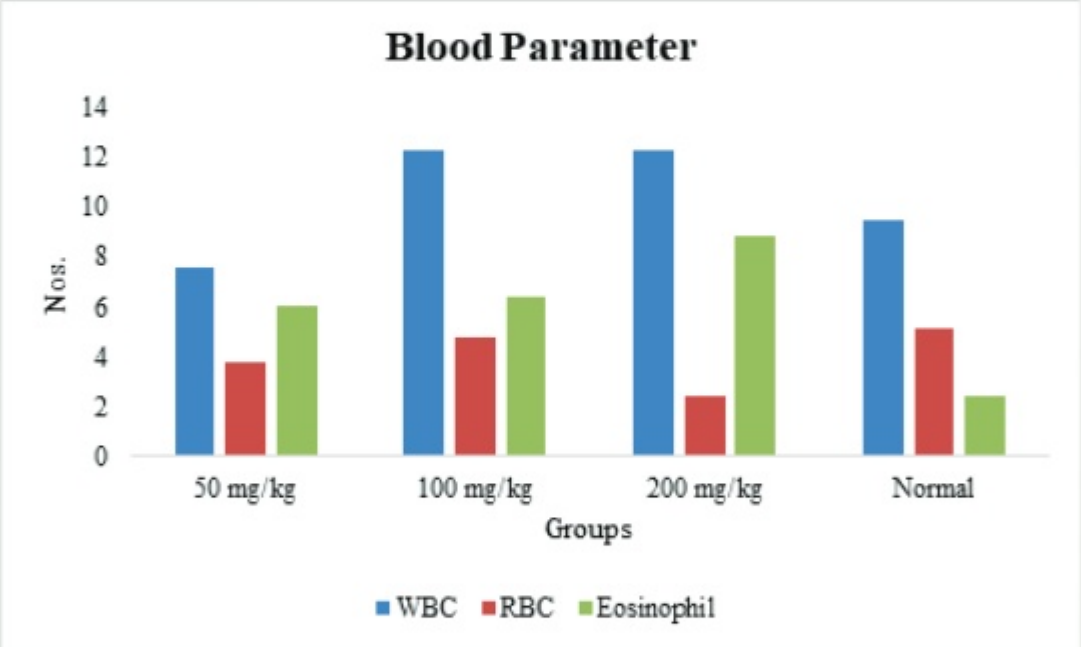




Neuroprotective Assessment of Pentylcurcumene against Sodium azide-induced Alzheimer's Disease (AD)

During the year 2025–26, the neuroprotective efficacy of Pentylcurcumene was evaluated in a sodium azide-induced Alzheimer's disease rat model. Cognitive impairment was successfully induced and assessed through standardised behavioural paradigms, followed by biochemical and molecular analyses of brain and serum samples. Pentylcurcumene treatment significantly modulated cholinesterase activities (AChE and BChE), attenuated oxidative stress markers (MDA, SOD, CAT, GSH), and reduced neuroinflammatory cytokines (IL-6 and TNF-α). The compound also demonstrated protective effects against neurodegenerative protein markers, including β-secretase, Aβ-42, and MAP-tau. Histopathological examination of brain tissues further supported the neuroprotective role of Pentylcurcumene. Overall, the study generated robust *in vivo* evidence supporting Pentylcurcumene as a promising plant-derived therapeutic candidate for the management of Alzheimer's disease.





Propagation and reintroduction of RET plants

Conservation and biotechnological strategies for micropropagation of selected endangered medicinal plants in Odisha

Large-scale restoration and conservation efforts were undertaken by maintaining 2,000 plants of *Cryptocarya amygdalina* and 150 plants each of *Lasiococca comberi* and *Saraca asoca*, along with successful ex vitro germination of *Rauvolfia serpentina*, *Andrographis paniculata*, and *Withaniasomnifera* under optimized treatments.

Standardized micropropagation protocols were developed for *Andrographis paniculata* and *Withaniasomnifera* using BAP, Kinetin, GA_3, and IBA, resulting in improved seed germination, shoot proliferation, rooting, and callus induction for effective conservation and mass multiplication.

2000 plants of *Cryptocarya amygdalina*

150 plants of *Saraca asoca*

150 plants of *Lasiococca comberi*

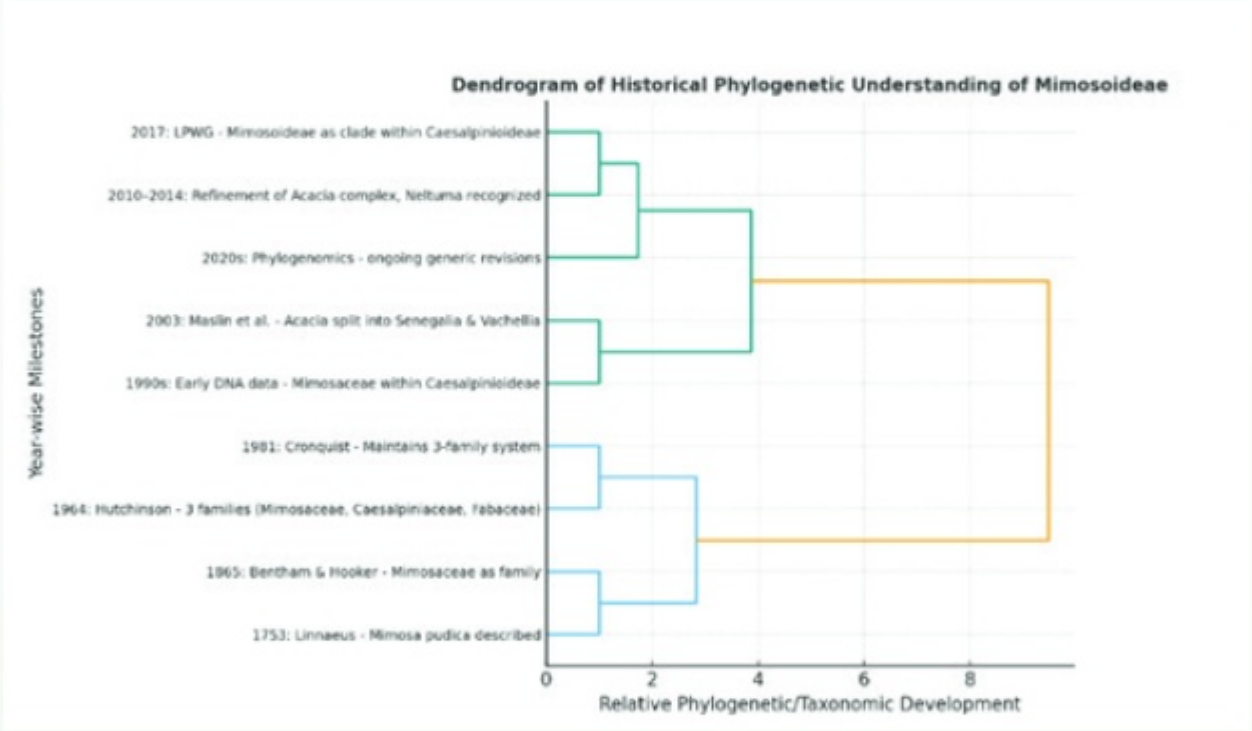
Taxonomical Studies;

Taxonomic and ethnobotanical significance of Leguminosae family in Odisha.

Comprehensive taxonomic studies on the *Caesalpiniodeae* and Mimosoideae subfamilies of Leguminosae in Odisha have been completed, covering species identification, classification, and ethnobotanical documentation.

The research outcome was strengthened through the successful publication of the book **"Odisha Mimosoideae"**, contributing valuable reference material for researchers, students, and conservationists.

Cajanus cajan



Celebration of National Unity Day2025 in RPRC

RPRC observed National Unity Day on 31st October 2025, marked by a mass plantation drive. This initiative reflects the organization's strong commitment to environmental conservation and fostering national unity and progress.

Celebration of National Farmers' Day 2025 in RPRC

On National Farmers' Day, RPRC Bhubaneswar hosted a workshop on "Prospects of Tissue Culture-Based Banana Cultivation" for Odisha farmers, in collaboration with the Livelihood and Alternative Programme.

Celebration of "Ek Ped Maa Ke Naam 2.0" in RPRC

RPRC hosted the "Ek Ped Maa Ke Naam 2.0" celebration on 17 September 2025 at its Botanic Garden.The

event engaged schools and institutions, inaugurated by Shri Ganesh Ram Singkhuntia, Hon'ble Minister, FE&CC Dept., Govt. of Odisha, with tree plantation activities

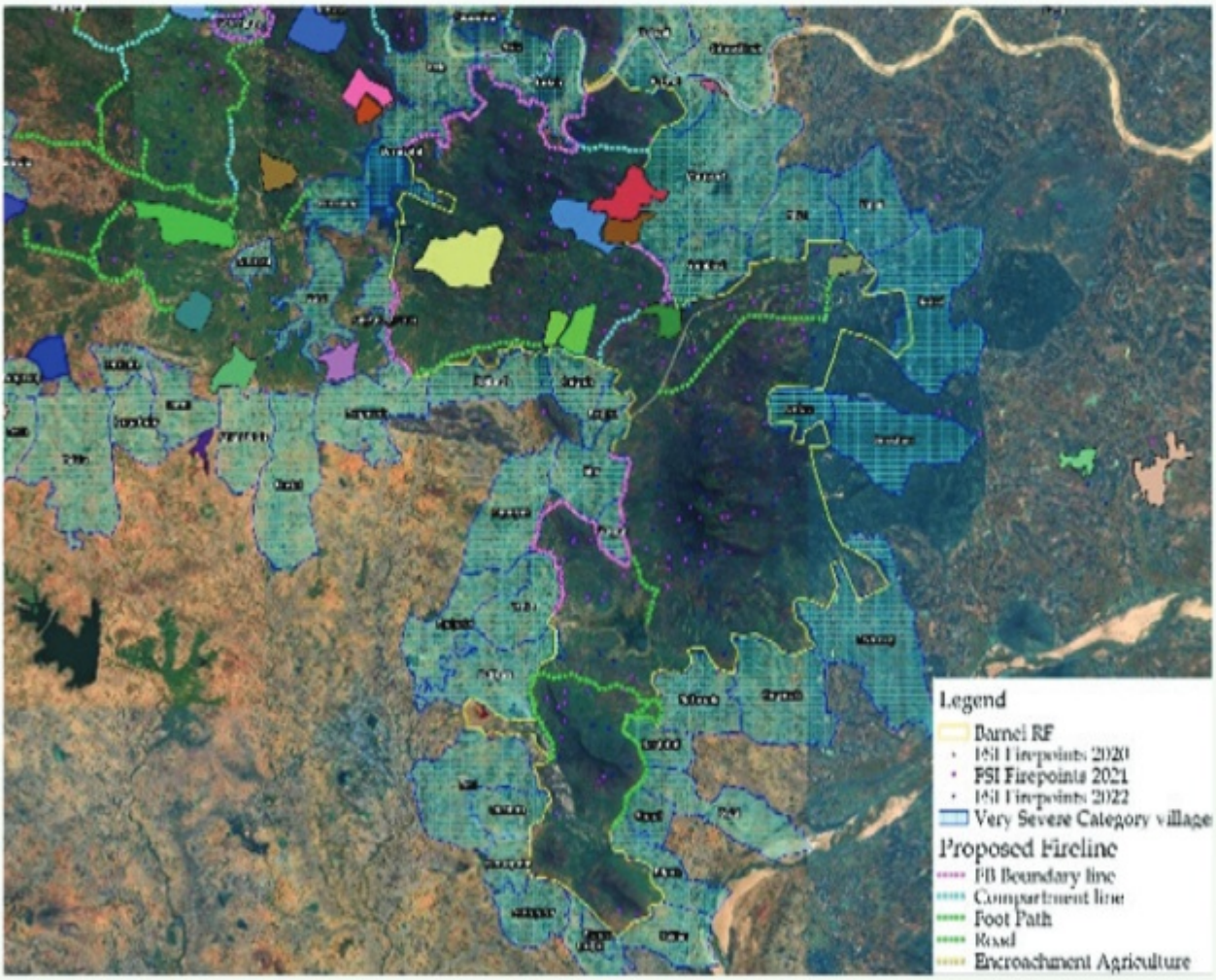
Outreach programmes at RPRC:

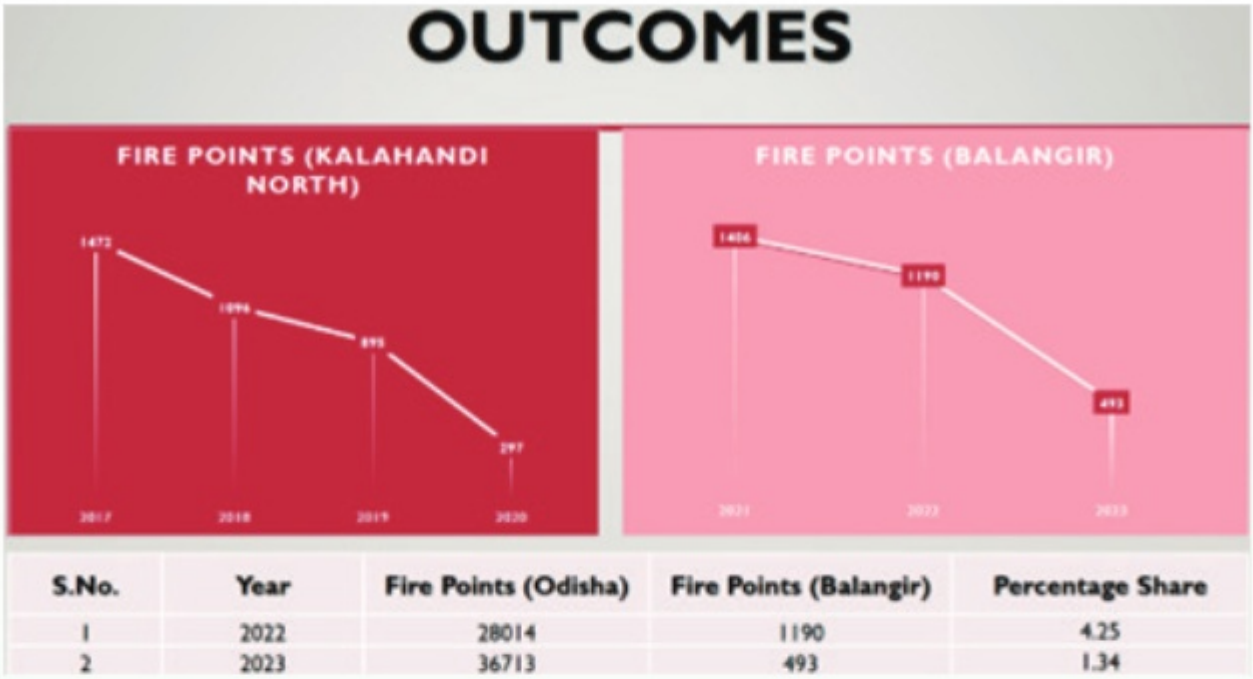
RPRC hosted numerous impactful outreach programs throughout 2025, engaging institutions such as XIMB, KIIT,Govt. Universities, Schools, Colleges,

FOREST & INNOVATIONS

Fire Control Rapid Response System was developed to control the forest fire in the Kalahandi North and Balangir Forest Division. Various measures were taken under these initiatives few of which are given below: -

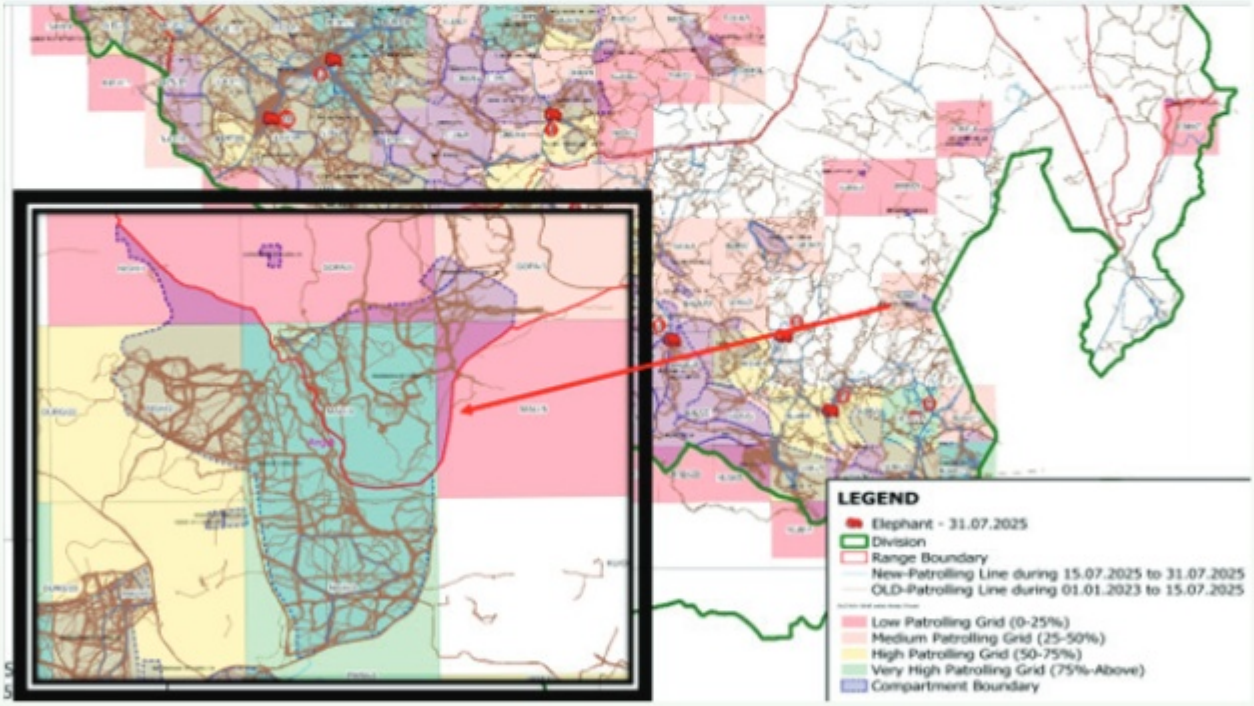
- Subscription on the FIRMS (Fire Information for Resource Management System) for getting the fire related data for timely analysis
- FIRMS provides fire alert data from **five instruments** but Forest Survey of India Provide the fire alerts data from **three instruments** only.
- Strategic fire lines were created by Mapping of all Roads, Nallah, and Old Fire Lines, Plantation Fire lines, Forest Block and Compartment boundaries
- Nallah, Foot paths and roads were simply cleaned using the fire blowers and fire lines were created strategically.
- Due to these initiatives forest fire reduced upto a great extent. The number of Forest Fire reported by the FSI during the period of interventions as provided by the OFMS (Odisha Forest Management System) are given above. The percentage share in the state's fire points of the Balangir Forest Division was also reduced from 4.25% to 1.34% as shown above.





S.No.	Year	Fire Points (Odisha)	Fire Points (Balangir)	Percentage Share
1	2022	28014	1190	4.25
2	2023	36713	493	1.34

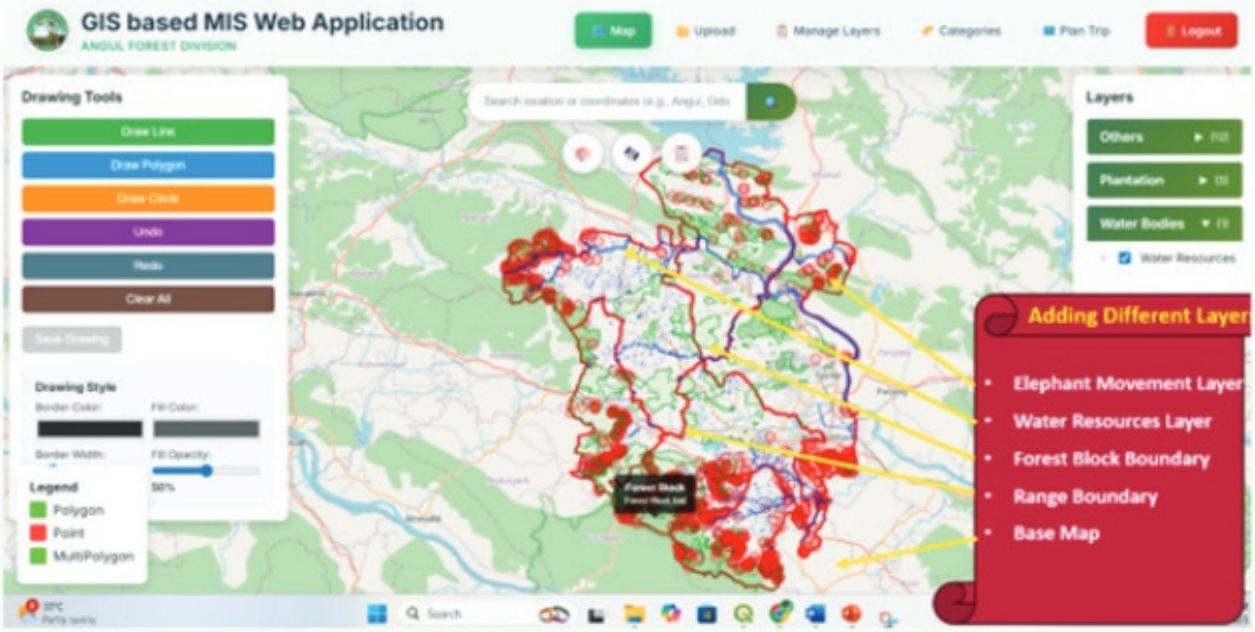
Integration of GIS and remote sensing to create dynamic forest maps, monitor habitat quality, and track changes in land use and vegetation cover over time, enabling data-driven decision-making.This system was utilized to do the grey area analysis of the Foot Patrolling data of the Angul Forest Division. It improved the quality of the foot patrolling.



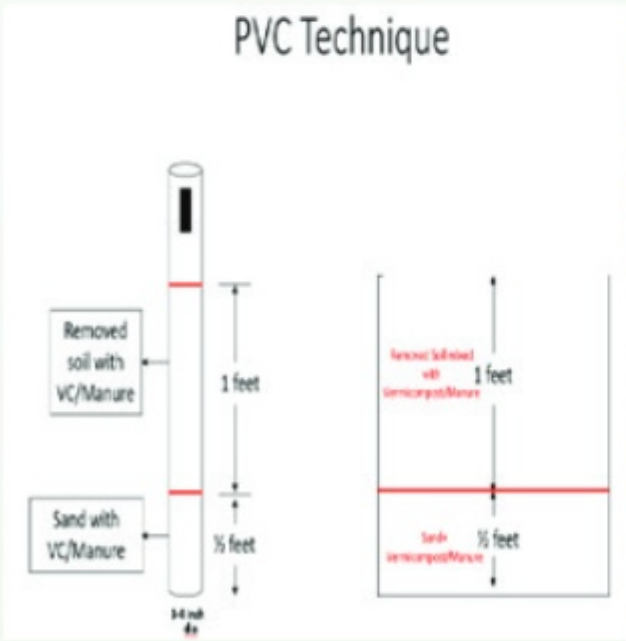
Development of a GIS-based MIS Portal to support decision-making for all activities within the Angul Forest Division. The system offers various customization options, allowing users to analyze data through a web-based GIS platform similar to ArcGIS. It also supports real-time, layer-by-layer analysis, functioning similarly to standalone GIS software. Various features of the system are given below: -

- GIS Data – Elephant movement, Wildlife Depredation, SMC Waterbody, Plantation, etc
- Dynamic (GIS data is updated almost on a daily basis)

- Layer by Layer analysis and Asset navigation
- Any layman can use it - No need of GIS software learning
- Login access up to Forest Guard (Beat) level
- Scientific Decision Making - Better Forest & Wildlife Management
- App Integration with the Web based MIS Portal



Use of AI-based e-Eye cameras and sensor networks for real-time wildlife monitoring, behavior analysis, and movement tracking—especially in sensitive tiger and elephant corridors. Four nos. AI cameras, mounted on a tower are installed in the Angul Forest Division



Development of digital platforms such as the *"Sabuja Angul"* mobile app and the official website of the Angul Forest Division (www.dfoangul.org) for citizen reporting, request seedlings,Pollution control, staff coordination, and wildlife rescue logistics—significantly improving transparency and operational efficiency.

Implementation of rootzone irrigation techniques to improve plantation outcomes while utilizing the limited resources of the Forest Department. This method ensures water reaches the plant's rootzone directly, improving efficiency and survival rates.

ROOT ZONE IRRIGATION USING WASTE BOTTLE

- In this method, holes will be made in the bottom half of a waste plastic bottle
- The bottle will then be placed in the pit as shown
- Watering will be done directly through the mouth of the bottle, and the holes will discharge water directly to the root zone

Installation of the Drip Irrigation system –In order to boost plantation growth while optimally utilizing the limited resources of the Forest Department, drip irrigation techniques were used at more than 11 plantation sites during 2024–25. Furthermore, in the current financial year i.e. 2025-26, drip irrigation installation is in progress at more than 25 plantation sites.

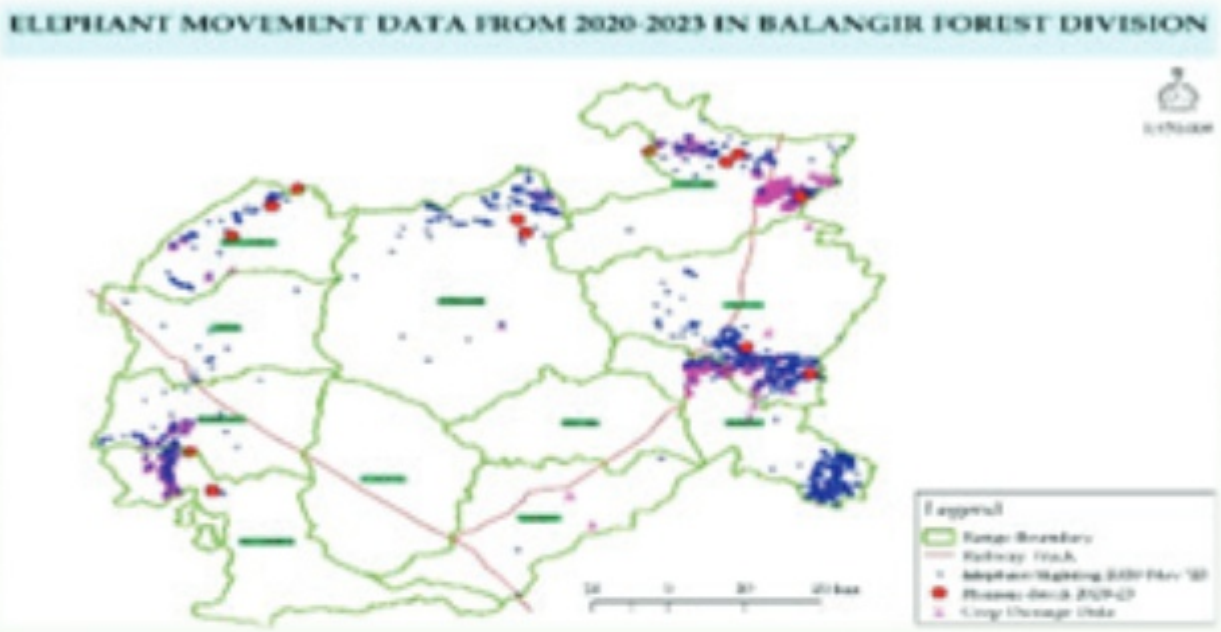
These initiatives showcase a forward-thinking approach to conservation, merging ecological insight with scientific innovation. These efforts have resulted in measurable improvements in forest protection, biodiversity conservation, and on-the-ground governance.

The above-mentioned work exemplifies how technological advancements can be harmonized with ecological goals to create resilient and sustainable conservation models.

Habitat Status and Improvement Measures

In ecology, a habitat is the natural environment in which a particular species of organism lives, characterized by both physical and biological features. A species' habitat is where it can find food, shelter, protection, and mates for reproduction. Habitats are closely tied to specific species, as what may be suitable for one species may not be suitable for another. For instance, Polar Bears inhabit the North Pole, where the annual average winter temperature is -40 degrees Celsius, making it a suitable habitat for them. However, most wildlife in Odisha would not survive in such a harsh climate.

Habitats with moderate climates throughout the year are generally suitable for most species, earning them the designation of Biodiversity hotspots.



Elephant Movement cum Density of the Balangir Forest Division

Various methods can identify whether a habitat is in good condition or not. Canopy density is a major factor; a forest with good canopy density can be considered a favorable habitat. However, a good canopy density must also exhibit rich biodiversity to qualify as an excellent habitat. Information on canopy density can be obtained from the

ISFR reports published by the FSI every two years. The presence of bamboo in a habitat signals forest degradation, while natural regeneration in a forest patch indicates a healthy habitat. Additionally, the presence of megaherbivores and top carnivores serves as indicators of a good habitat.

Strong wire mesh fencing at the AR Plantation site

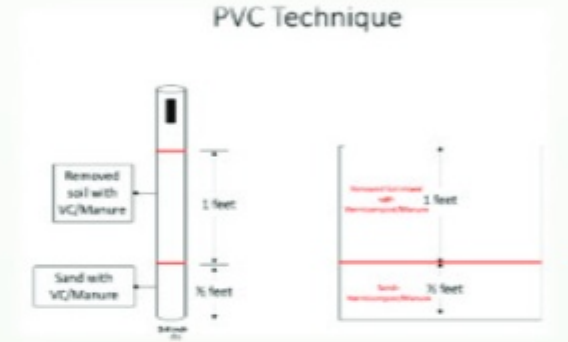
A suitable wildlife habitat must have sufficient fodder and water for the entire population. Insufficient resources lead to negative interspecific and intraspecific competition, potentially hampering the population growth rate and, in extreme cases,

causing the extinction of entire species. As foresters, it is our responsibility to ensure that critical wildlife habitats have ample fodder and water.

Fodder availability can be enhanced by establishing various types of fodder and fruit plantations in all critical habitats. For the success of a plantation, it is crucial to ensure the planting of quality material, and the entire plantation area must be fenced before planting. Wire mesh fencing is preferable

over brushwood fencing, as it is more effective and has a longer shelf life. The existing cost norms for plantations include provisions for fencing, allowing the adoption of any type of fencing based on the perimeter of the plantation site. In the Balangir Forest Division, we have implemented strong wire mesh fencing in all block plantations, yielding excellent results.

Timely post-planting operations also play a significant role in the success of the plantation. While the current plantation cost norms include watering provisions for Urban and Avenue Mode plantations only, it is essential to extend watering provisions to all types of plantations. The conventional method of using a water tanker for watering, as per the cost norm, is outdated and expensive. Modern methods, such as a 'Solar pump fitted with a Drip irrigation system,' have shown promising results in experimental plantations in Balangir. Another innovative method, the 'water-conserving rootzone irrigation technique,' has been tested in the Balangir Division, demonstrating effective water delivery directly to the plant's root zone, significantly enhancing plant growth. Implementing these watering techniques will substantially improve the growth and success of plantations.To ensure proper watering in all the AR Plantation sites one Hand pump has been installed in the Balangir Forest Division. It has been installed utilizing fundsfrom the drinking water facility and the plantation contingency.



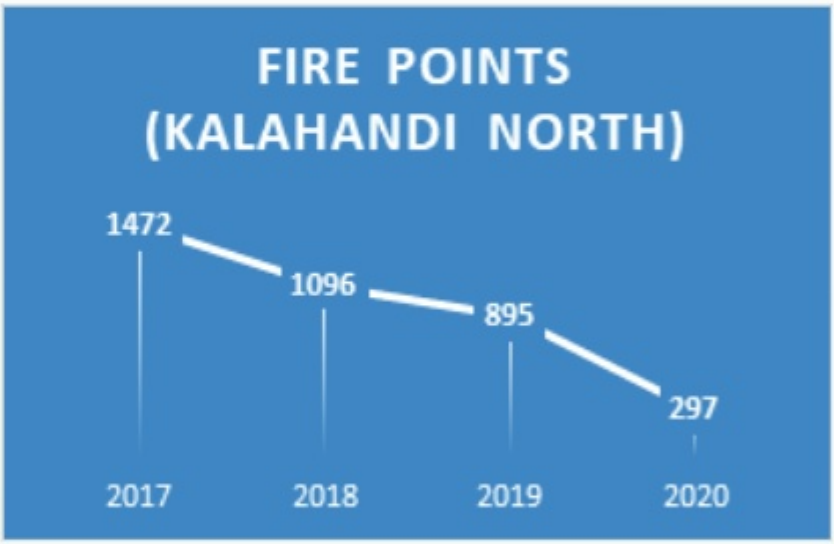
Drip Irrigation system at the Experimental site

Furthermore, soil and moisture conservation (SMC) plays a crucial role in improving the moisture regime of a site. Each plantation site should incorporate soil and moisture conservation measures based on the site's edaphic conditions. For effective SMC measures, drone elevation mapping is of immense importance. A drone survey can create a 3D elevation profile of a site, and based on that data and mapping, effective soil and moisture conservation measures can be finalized.

To enhance the wildlife habitat in the Kalahandi North and Bolangir Forest divisions, extensive soil and moisture conservation efforts were undertaken from 2018 to 2022 in all Critical Wildlife Habitats. A target of over Twenty Crores for Soil and Moisture Conservation was set for the elephant habitat area. Drone mapping played a crucial role during the planning stage of the work. Utilizing drone technology, plant health, 3D, and elevation mapping were conducted. The analysis of drone spatial data, combined with

Check Dam constructed after analysing the Drone Data

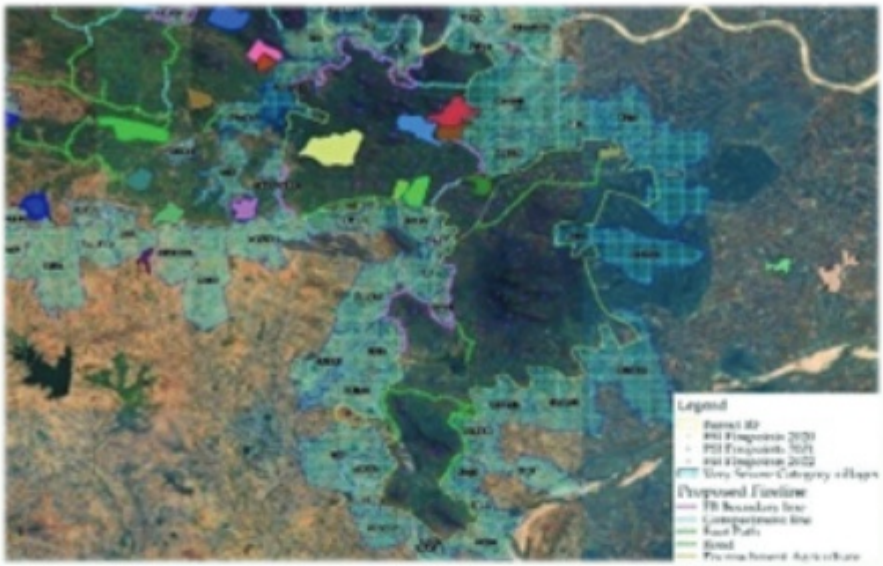
feedback from field staff, determined the type of Soil and Moisture Conservation treatment finalized for the wildlife habitat.



Construction of various water bodies was carried out based on the analysis of the previous six years' elephant movement data and elephant density mapping. For fodder plantation within the elephant habitat, elephant density mapping was performed using data from the previous six years of elephant movement. Sites for habitat enrichment were selected based on this data, along with forest cover change analysis using QGIS software. These measures have contributed to the increase in the elephant population in the Kalahandi North Division, with more than 70 elephants sighted many times in a year.

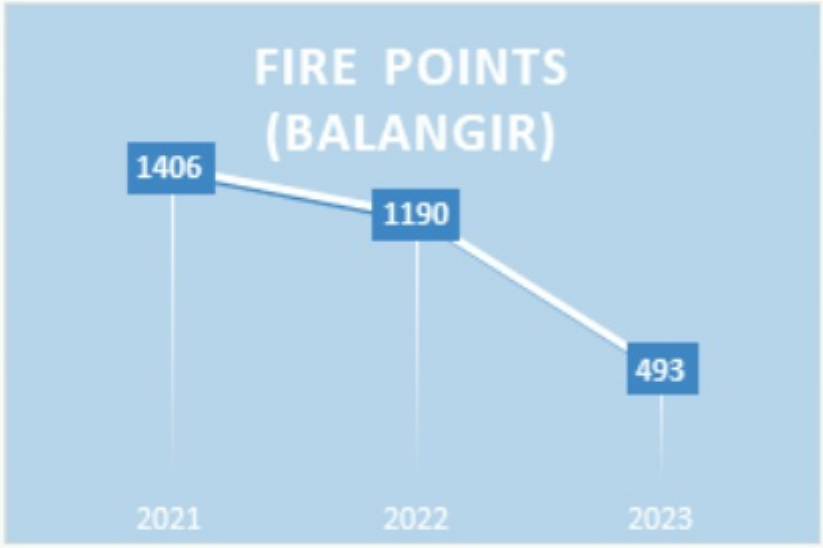
If Fodder and water are available sufficiently in the forest then Forest Protection measures are to be placed strongly on the ground otherwise their sustainability will be in question. Forest fire is a major agent of degradation and it hampers natural regeneration very badly. It is a major cause of wildlife habitat degradation so to protect the environment and the natural resources of the Kalahandi North and Bolangir Forest Division, FIRE CONTROL RAPID RESPONSE SYSTEM was started in both divisions. NASA is providing fire data from four satellite instruments which are – Terra MODIS, Aqua MODIS, SNPP-VIIRS, and NOAA-20 (JPSS-1). But FSI is considering only the first three instruments. However, the fourth instrument is detecting more fire points which all of us are missing.

Hence, the Fire Control Room of Kalahandi North and Bolangir Forest Divisions analyzed fire-related data directly from the NOAA-20 Satellite, as it detected many fire points not identified by the first three instruments. Data from all four instruments are available in the public domain with a time lag of 3-4 hours after detection, which can be further minimized by subscribing to NASA's FIRMS fire email alert system. This rapid



response system analyzes fire points and their locations, generating topo images that show the fire points' locations. Finally, these images, along with other details, are communicated to the field staff.

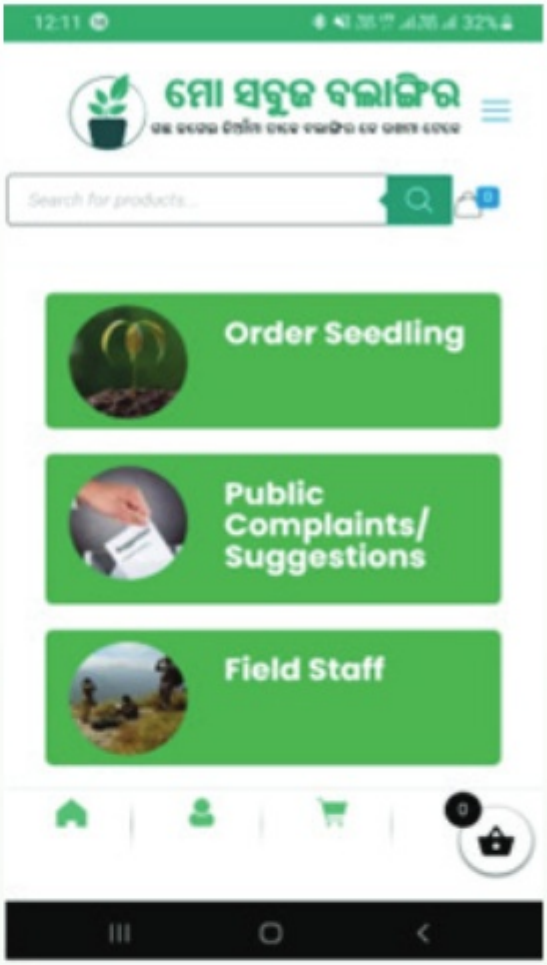
All these interventions have continuously improved the forest fire scenarios in both divisions (Number of Kalahandi North Division's Fire Points - Year 2017: 1472, Year 2018: 1096, Year 2019: 895, Year 2020: 297). It has facilitated better understanding, quick identification, and response to fire points by the field staff in the Bolangir Forest Division also. Additionally, we have initiated a unique fire line mapping in the Bolangir Forest Division. All fire lines created during the 2023 fire season were strategically finalized using GIS and drone technology, analyzing the last 13 years of fire data for the division (Number of Bolangir Division's Fire Points - Year 2021: 1406, Year 2022: 1190, Year 2023: 493). During the 2022 fire season, the Bolangir Division contributed 4.25% to Odisha State's total fire points, but due to innovative interventions and mass awareness, this figure has reduced to only 1.34% in the 2023 fire season.



Last but not least, the success of all interventions done by the forest department depends on public participation. To enhance public involvement, Balangir Forest Division has created an innovative online platform in the form of the "MO SABUJA BALANGIR" Android App, utilizing available technology to meet the seedling demand of the people of Balangir District. Through this app, individuals can order seedlings at their convenience and will be informed about the nearest nursery from where they can collect the seedlings.

In addition to enabling the general public to get their desired seedlings for planting in their residential or farmland, it will create awareness and love for forests among the general public.

After clicking "order seedling," different plant species are displayed on the screen along with the nursery-wise PDF and the PCCF & HoFF guidelines on the distribution of seedlings for the information of the general public. They can select the number of seedlings of different species, add them to the cart, fill in details like name, Aadhaar number, address, and mobile number, upload the Aadhaar or requisition copy, and then place the final order.



Apart from ordering seedlings, individuals can provide suggestions or file complaints directly through the app, with the option to upload audio, video, photos, documents, etc. This feature enables the Division Office to promptly address their concerns in alignment with the 5T Charter of the Government of Odisha.The third option is specifically for the field staff of Balangir Forest Division, each equipped with a unique ID and password. This allows them to log in individually and report their grievances or any pending issues directly to the Division Office for necessary redressal.

Forest and wildlife management is a very complex process, and its complexity is increasing day by day due to the fragmentation and degradation of the habitat. Man-animal conflicts and changes in wildlife behavior are expected to increase in the future due to the growing population and unplanned development. More challenges lie ahead; hence, we must explore all avenues to address the problem. The application of the latest technology in forest and wildlife management is very promising and is yielding good results. In this era of modernization, development is inevitable, so the only option is to plan for sustainable development by using various technologies and efficiently utilizing the resources we have.

Observations of Important Days

SWEET MEMORIES OF OBSERVATION OF DIFFERENT DAYS IN PHOTOGRAPHS FOR THE YEAR 2025-26

WORLD WETLAND DAY (02.02.2026)

WORLD PANGOLIN DAY (14.02.2026)

WORLD WILDLIFE DAY (03.03.2026)

WORLD VETERINARY DAY (26.04.2025)

WORLD ENVIRONMENT DAY (05.06.2025)

WORLD CROCODILE DAY 2025-ONE DAY WORKSHOP ON THE OCCASION OF 50 YEARS OF CROCODILE CONSERVATION

VAN MAHOTSAV (01.07.2025-07.07.2025)

WORLD SNAKE DAY (16.07.2025)

INTERNATIONAL TIGER DAY (29.07.2025)

WORLD LION DAY (10.08.2025)

WORLD ELEPHANT DAY (12.08.2025)

INTERNATIONAL VULTURE AWARENESS DAY (06.09.2025)

71STWILDLIFE WEEK (02.10.2025-08.10.2025)

Tree walk at Arboretum Story Telling session at Zoo Library

Nukkad Natak performed by Zoo Volunteers
Workshop for Zoo Volunteers

Workshop for Zoo Volunteers

Poster presentation by Zoo InternsPlantation Drive

66THNANDANKANAN BIOLOGICAL PARK FOUNDATION DAY (29.12.2025)

OTHER ACTIVITIES OF NANDANKANAN

Keepers Talk

Great Backyard Bird Count 2026

Sunday Bird Walks


Health Checkup Camps


Nandankanan Sports Meet


Seedling Distribution ceremony


Internship Programme at Nandankanan


Zoo Ambassador Programme


Zoo Outreach Programme at Schools


One Day at Nandankanan


Species Recovery of Gharial (Gavialis gangeticus) in river Mahanadi

FOREST HEAD QUARTERS, ODISHA

BHUBANESWAR

Glimpses of Aranya Bhawan