Highlights of
ODISHA FORESTRY SECTOR
2025

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

HIGHLIGHTS OF

ODISHA FORESTRY SECTOR

2025

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

ARANYA BHAWAN, CHANDRASEKHARPUR
BHUBANESWAR - 751 023

ମୋହନ ଚରଣ ମାଝୀ
ମୁଖ୍ୟମନ୍ତ୍ରୀ, ଓଡ଼ିଶା

ଲୋକସେବା ଭବନ
ଭୁବନେଶ୍ୱର

ବିଶ୍ୱ ବନ ଦିବସ ୨୦୨୫ ପାଳନ ଉପଲକ୍ଷେ
ମାନ୍ୟବର ମୁଖ୍ୟମନ୍ତ୍ରୀଙ୍କ ବାର୍ତ୍ତା

'ବିଶ୍ୱ ବନ ଦିବସ' ଅବସରରେ ରାଜ୍ୟବାସୀଙ୍କୁ ମୋର ଶୁଭେଚ୍ଛା।

ପ୍ରତ୍ୟେକ ବର୍ଷ ମାର୍ଚ୍ଚ ୨୧ ତାରିଖ ଦିନଟିକୁ 'ବିଶ୍ୱ ବନ ଦିବସ' ରୂପେ ପାଳନ କରାଯାଏ। ଚଳିତ ବର୍ଷ ଏହି ଦିବସର ବିଷୟବସ୍ତୁ ହେଉଛି "ଜଙ୍ଗଲ ଓ ଖାଦ୍ୟ"।

ଜଙ୍ଗଲ ସମଗ୍ର ବିଶ୍ୱ ପାଇଁ ପ୍ରକୃତିର ଏକ ବରଦାନ। ଏହା ପ୍ରତ୍ୟକ୍ଷ ଓ ପରୋକ୍ଷ ଭାବେ ଆମର ସେବା ଅବିରତ କରିଆସୁଛି। ଦୃଶ୍ୟମାନ ଭାବରେ ଆମର ଖାଦ୍ୟ, ଇନ୍ଧନ, ଔଷଧ ଇତ୍ୟାଦି ସହିତ ଦୈନନ୍ଦିନ ଜୀବନରେ ପ୍ରତ୍ୟେକ ମୁହୂର୍ତ୍ତର ଆବଶ୍ୟକତାକୁ ଜଙ୍ଗଲ ପୂରଣ କରୁଛି। ପରିବେଶର ପ୍ରଦୂଷଣକୁ କମ କରିବା ସଙ୍ଗେ ସଙ୍ଗେ, ଜଙ୍ଗଲ ବାୟୁମଣ୍ଡଳରେ ଅମ୍ଳଜାନର ସ୍ତରକୁ ବଜାୟ ରଖେ। ଅଦୃଶ୍ୟ ଭାବରେ ଏହା ଆମର ଜଳକୁ ନିର୍ମଳ କରୁଛି, ବାୟୁକୁ ଶୁଦ୍ଧ କରୁଛି ଏବଂ ଜଳବାୟୁ ପରିବର୍ତ୍ତନର ପ୍ରଭାବକୁ କମ କରୁଛି। ଜଙ୍ଗଲର ଏହି ସେବାଗୁଡ଼ିକୁ ଚିରନ୍ତନ ଭାବେ ପାଇବା ନିମନ୍ତେ ଜଙ୍ଗଲର ଯଥୋଚିତ ବ୍ୟବହାର ସହିତ ଏହାର ଅବକ୍ଷୟକୁ ରୋକିବା ଆମର ପରମ କର୍ତ୍ତବ୍ୟ ହେବା ଉଚିତ।

ଆନନ୍ଦର ବିଷୟ, ଜଙ୍ଗଲ ସୁରକ୍ଷା ପାଇଁ ସରକାରଙ୍କ ପ୍ରୟାସ ସହିତ ଲୋକମାନଙ୍କର ଏବଂ ବିଶେଷକରି ବନସୁରକ୍ଷା ସମିତି ମାନଙ୍କର ଉତ୍ସର୍ଗୀକୃତ ସହଯୋଗ ପାଇଁ ବିଗତ ବର୍ଷଗୁଡ଼ିକରେ ଆମ ରାଜ୍ୟରେ ଜଙ୍ଗଲ ଆଚ୍ଛାଦିତ ଅଞ୍ଚଳରେ କ୍ରମଶଃ ବୃଦ୍ଧି ଘଟିଛି। ସଦ୍ୟତମ India State of Forest Report ୨୦୨୩ ଅନୁସାରେ, ଆମ ରାଜ୍ୟର ଜଙ୍ଗଲ ଓ ବୃକ୍ଷ ଆଚ୍ଛାଦିତ ଅଞ୍ଚଳ ୩୭.୬୩ ପ୍ରତିଶତ ଅଟେ। ଏଥିମନ୍ତେ ମୁଁ ବନ ସୁରକ୍ଷା ସମିତି ତଥା ନିକଟବର୍ତ୍ତୀ ଗ୍ରାମବାସୀ ଏବଂ ଜଙ୍ଗଲ ବିଭାଗକୁ ସାଧୁବାଦ ଜଣାଉଛି। ଏହି Report ଅନୁଯାୟୀ, ବିଗତ ଦୁଇ ବର୍ଷ ମଧ୍ୟରେ ଆମ ରାଜ୍ୟରେ ଜଙ୍ଗଲ ଓ ବୃକ୍ଷ ଆଚ୍ଛାଦିତ ଅଞ୍ଚଳ ୫୫୮.୫୭ ବର୍ଗ କିଲୋମିଟର ବୃଦ୍ଧି ପାଇଛି, ଯାହାକି ଦେଶର ତୃତୀୟ ସର୍ବାଧିକ ବୃଦ୍ଧି। ଏହି Report ଅନୁସାରେ, ହେନ୍ତାଳବଣ ମଧ୍ୟ ୧୫୫ ବର୍ଗ କିଲୋମିଟର ବୃଦ୍ଧି ପାଇଛି। "ଏକ ପେଡ୍ ମା କେ ନାମ" ଅଭିଯାନରେ, ଆମ ରାଜ୍ୟରେ ବର୍ତ୍ତମାନ ସୁଦ୍ଧା Meri LIFE Portal ରେ ୫୫୦ ଲକ୍ଷରୁ ଅଧିକ ଚାରା ଅପଲୋଡ୍ କରାଯାଇଅଛି। ଏଥିପାଇଁ ସମସ୍ତଙ୍କୁ ସାଧୁବାଦ ଜଣାଉଛି।

ଆଗାମୀ ଦିନରେ ଜଙ୍ଗଲ ଅଭିବୃଦ୍ଧି ସହ ପରିବେଶ ସୁରକ୍ଷା ପାଇଁ ସରକାରଙ୍କର ବିଭିନ୍ନ ଯୋଜନାକୁ କାର୍ଯ୍ୟକାରୀ କରିବା ନିମନ୍ତେ ମୁଁ ରାଜ୍ୟବାସୀଙ୍କର ସହଯୋଗ କାମନା କରୁଛି।

(ମୋହନ ଚରଣ ମାଝୀ)

ଭୁବନେଶ୍ୱର

ଗଣେଶ ରାମ ସିଂଖୁଣ୍ଟିଆ
ରାଷ୍ଟ୍ରମନ୍ତ୍ରୀ (ସ୍ୱାଧୀନ)
ଜଙ୍ଗଲ, ପରିବେଶ ଓ ଜଳବାୟୁ ପରିବର୍ତ୍ତନ,
ଶ୍ରମ ଓ କର୍ମଚାରୀ ରାଜ୍ୟ ବୀମା, ଓଡ଼ିଶା

ବିଶ୍ୱ ବନ ଦିବସ ୨୦୨୫ ପାଳନ ଉପଲକ୍ଷେ ମାନ୍ୟବର ଜଙ୍ଗଲ ଓ ପରିବେଶ ମନ୍ତ୍ରୀଙ୍କ ବାର୍ତ୍ତା

ପ୍ରତ୍ୟେକ ବର୍ଷ ମାର୍ଚ୍ଚ ୨୧ ତାରିଖ ଦିନଟିକୁ 'ବିଶ୍ୱ ବନ ଦିବସ' ରୂପେ ଆମେ ପାଳନ କରିଥାଉ। ଚଳିତ ବର୍ଷ 'ବିଶ୍ୱ ବନ ଦିବସ' ଉପଲକ୍ଷେ ଚୟନ କରାଯାଇଥିବା ବିଷୟବସ୍ତୁ ହେଉଛି "ଜଙ୍ଗଲ ଓ ଖାଦ୍ୟ"। ଏହି ସନ୍ଦେଶଟିକୁ ସାର୍ବଜନୀନ କରି କାର୍ଯ୍ୟକ୍ଷମ କରିବା ଏହି ଦିବସ ପାଳନର ମୁଖ୍ୟ ଉଦ୍ଦେଶ୍ୟ।

ଭବିଷ୍ୟତ ପାଇଁ ଜଙ୍ଗଲର ସୁରକ୍ଷା ସହ ଜଙ୍ଗଲ ଜାତ ଦ୍ରବ୍ୟର ସ୍ଥାୟୀ ଉତ୍ପାଦନ, ବାଣିଜ୍ୟ ଓ ବ୍ୟବହାର ଉପରେ ରାଜ୍ୟ ସରକାର ଗୁରୁତ୍ୱ ଦେଇ ଆସୁଛନ୍ତି। ଜଙ୍ଗଲ ପରିଚାଳନା ନିମନ୍ତେ ପ୍ରାକୃତିକ ଜଙ୍ଗଲର ପୁନରୁଦ୍ଧାର, ଜୈବବିବିଧତା ଓ ଜଙ୍ଗଲର ସୁରକ୍ଷା, ନୂତନ ଜଙ୍ଗଲର ସୃଷ୍ଟି ଏବଂ ଜଙ୍ଗଲ ଆଖପାଖରେ ବସବାସ କରୁଥିବା ଅଧିବାସୀ ମାନଙ୍କର ଜୀବନ ଜୀବିକାର ଉନ୍ନତି ଆଦି ବିଭିନ୍ନ ଯୋଜନା ମାନ କାର୍ଯ୍ୟକାରୀ କରାଯାଉଅଛି। ଏହି ଯୋଜନାଗୁଡ଼ିକୁ ଲୋକାଭିମୁଖୀ କରିବା ପାଇଁ ବନ ସୁରକ୍ଷା ସମିତିମାନଙ୍କର, ସଶକ୍ତିକରଣ କାର୍ଯ୍ୟକ୍ରମ ଉପରେ ପ୍ରାଧାନ୍ୟ ଦିଆଯାଉଛି। ସ୍ଥାନୀୟ ଲୋକଙ୍କର ଜୀବିକା ନିର୍ବାହ ପାଇଁ ଓଡ଼ିଶା ବନାଞ୍ଚଳ ଉନ୍ନୟନ ସଂସ୍ଥା, ଆମ ଜଙ୍ଗଲ ଯୋଜନା, କାମ୍ପା ଏବଂ ଅନ୍ୟାନ୍ୟ ଯୋଜନା ମାଧ୍ୟମରେ ଔଷଧୀୟ, ଫଳ ଏବଂ ଅନ୍ୟାନ ଉପକାରୀ ଚାରାମାନ ଉତ୍ପନ୍ନ ଓ ରୋପଣ କରାଯାଉଅଛି ଓ ରୋଜଗାରକ୍ଷମ କାର୍ଯ୍ୟକ୍ରମରେ ବନ ସୁରକ୍ଷା ସମିତିମାନଙ୍କୁ ସାମିଲ କରାଯାଉଅଛି।

ଏହା ସହିତ, ଜଙ୍ଗଲ ସମ୍ପଦର ପୋଷଣୀୟ ବ୍ୟବହାର, ପରିବେଶ ଅବକ୍ଷୟ ଓ ପ୍ରଦୂଷଣର ମାତ୍ରା ହ୍ରାସ କରିବା ଦିଗରେ ବିଭାଗର ସହାୟକ ହେବାପାଇଁ ରାଜ୍ୟବାସୀଙ୍କୁ ମୋର ନିବେଦନ ରହିଛି। ଆସନ୍ତୁ ଆମ୍ଭେ ସମସ୍ତେ ଏକ ହୋଇ ଏ ଧରାପୃଷ୍ଠକୁ ସବୁଜ ସୁନ୍ଦର କରିବା।

(ଗଣେଶ ରାମ ସିଂଖୁଣ୍ଟିଆ)

Shri Satyabrata Sahu, IAS
Additional Chief Secretary
Forest, Environment and
Climate Change Department
Govt. of Odisha

Kharavel Bhawan, Bhubaneswar-751001
E-Mail: fesec.or@nic.in /
forestenv2016@gmail.com
Tel : 91 674 2536822

Message

United Nations General Assembly proclaimed 21st March the International Day of Forests (IDF) in 2012. The Day celebrates and raises awareness about importance of all types of forests. This year, the theme for International Day of Forests is "Forests and Food".

The International Day of Forests has gained global participation. Various Countries organize tree planting drives, educational programs and awareness campaigns to promote forest conservation.

Forests are crucial for human survival and environmental stability. Forests provide Food and medicines. They also support farming by improving the soil quality, checking soil erosion, maintaining water regime and providing habitat for pollinators which boosts crop production.

As per the latest State of Forest report, 2023 brought out by Forest Survey of India, Odisha Forest Cover has increased by 151.89 Sq. Km. in last two years. There has also been an increase of 406.68 Square KM of tree cover. Therefore, there has been a total increase of 558.57 Square KM of Forest and tree cover in the State. This has been made possible by effective plantation programmes, protection measures by the Department and the community.

I hope this year's report "Highlights of Odisha Forestry Sector 2025" will be a useful reference document for academicians, researchers, policy makers, different functionaries & citizens of Odisha.

(Satyabrata Sahu)

Suresh Pant, IFS
Principal Chief Conservator of Forests
& Head of Forest Force, Odisha

State Forest Headquarters, Odisha
Office of the Principal Chief Conservator of Forests
Aranya Bhawan, Bhubaneswar-751023
E-Mail: pccfodisha@gmail.com
Phone: 0674-2300853
Fax: 0674-2300049

FOREWORD

The International Day of Forests is celebrated every year since 2012 as per the United Nations declaration. This year the International Day of Forests is being celebrated on 21st March with the theme "Forests and Food".

Forests are extremely benevolent to the mankind. We get large number of tangible and intangible benefits from the forests. We are dependent on the forests for timber, firewood medicinal plants and many other non-timber forest produce which are primary source of sustenance for the poor people who live in and around the forests. Forests help prevent soil erosion and have recreational values. Forests also help in pollution control and climate change mitigation. Therefore it is needless to say that Forests and Food are inter-related.

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. This has been possible due to forest protection by field staff, large scale plantation programmes and effective participation of the Vana Samrakshan Samitees at the grass-root level.

I am delighted to note that the State Forest Department has published a comprehensive annual report titled "Highlights of Odisha Forestry Sector, 2025". This report focuses on important activities undertaken for afforestation and sustainable forest management. It also includes vital forest statistics and salient features of the works carried out in different wings of the Forest Department.

I am confident that this report will be of immense help to administrators, researchers, forestry personnel and the public. My sincere thanks to all the officers of Forest Headquarters for their untiring efforts in preparing this informative report.

(Suresh Pant)

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	
5,709.16	14,834.51	12,496.80	33,040.47	1,515.26	6,231.04	11,646.79	19,393.09	52,433.56
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 tonnes
Total Carbon Stock of Forest	444.83 million tonnes or 1631.04 million tonnes of CO2 equivalent (6.17% of the total forest carbon of the country)

1.5. Map of Forest Cover of Odisha

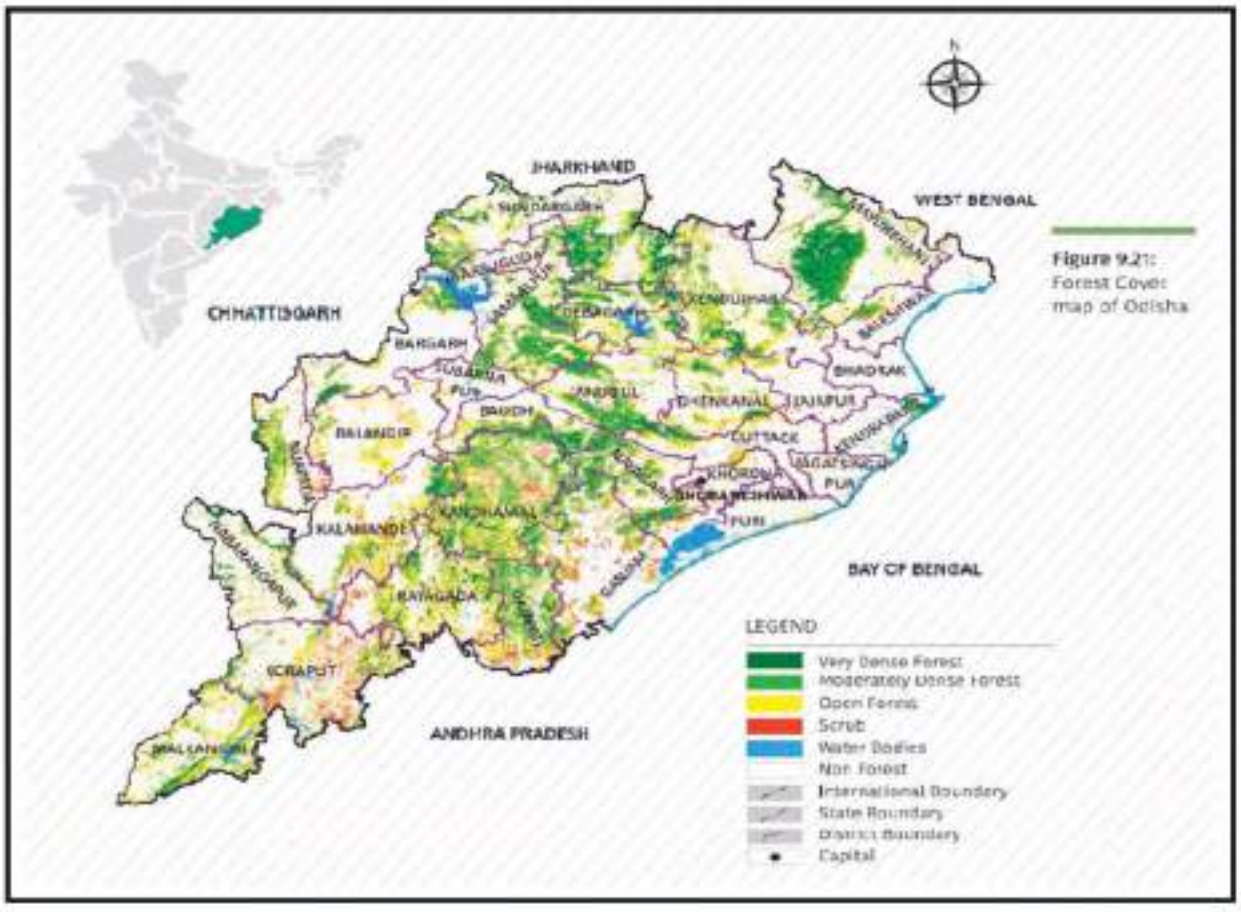
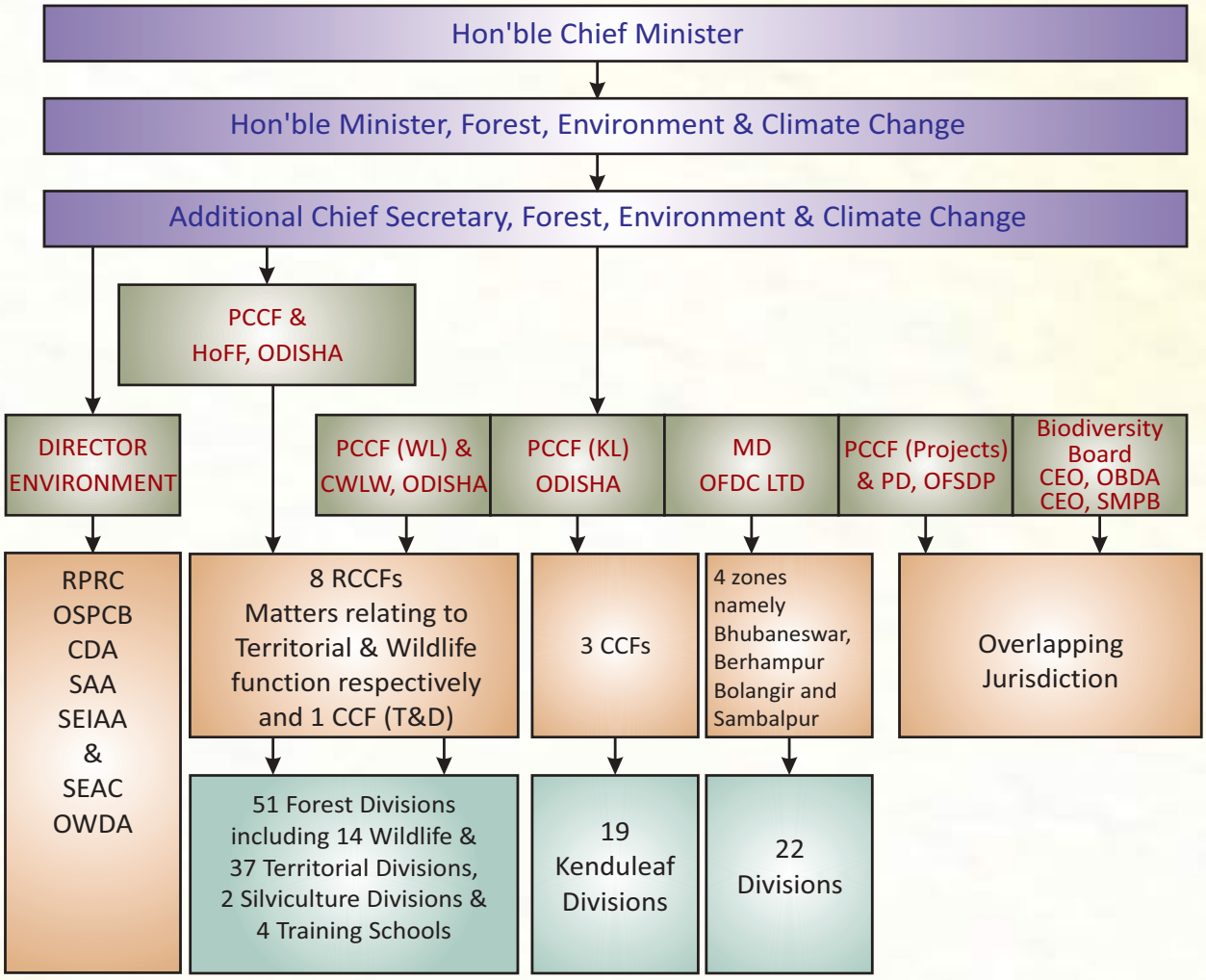


Figure 9.2: Forest Cover map of Odisha

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

- 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:

Year	Figures (Rs. in lakh)		
	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/ Administrative Expanditure	Programme Expanditure	
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

WORKING PLAN

4.1. Working Plans

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

Working Plan is generally revised every 10 years.

- For involvement and benefit of local stakeholders micro-plans are to be prepared within the ambit of working plan prescriptions for JFM areas and eco-development plan are to be prepared for eco-sensitive forest area sad joining the notified protected areas.
- The micro-plan of jointly managed forests is prepared by the members of the JFMC through participative Rural Appraisal (PRA) with the technical assistance of forest staffs of the territorial division as per MoU for sharing the responsibilities of implementation and equitable sharing of usufructs among stakeholders within the broad prescriptions of Working Plan.
- Micro-plan preparation should be incorporated in the JFM Overlapping Working Circle.
- The forest area of the state is being managed under fifty one (51) number of Forest and Wildlife (WL) Divisions; out of which seven (7) Wildlife Divisions namely Chandaka WL, Sunabeda WL, Satkosia WL, Mahanadi WL, Hirakud WL, Simlipal Tiger Reserve (North) and Simlipal Tiger Reserve (South) having only protected area are managed under approved Wild Life Management Plans. The Forest area of remaining seven Wildlife Divisions namely, Bamra WL, Rajnagar WL, Puri WL, Chilika WL, Balasore WL, Bhadrak WL and Keonjhar WL partly having protecte dareaare managed under WildLife Management Plans for protection of forest are as and outside protected area managed under Working Plans. Thus, altoge ther 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.	ApprovedWorking Plan	38	Angul, Athgarh, Athamallik, Baragarh, Chilika WL, Puri (WL), Baripada, Keonjhar (WL), Subarnapur, Khordha, Bonai, Jeypore, Deogarh, Dhenkanal, Nabarangpur, Gh.North, Berhampur, Bamra (WL), Cuttack, Jharsuguda, Rayagada, Karanjia, Rairangpur, Baliguda, Phulbani, Kalahandi North, Khariar, Kalahandi South, Nayagarh,

			Koraput, Malkangiri, Keonjhar(T), Rairakhol, City Forest, Bhadrak (WL), Sambalpur, Rajnagar (WL) & Bolangir
2.	Compliance report on the objection raised by MoEF & CC, Govt. of India regarding Draft Revised Working Plan yet to be submitted by DFO.	01	Balasore(WL) Division
3.	Working Plan not submitted	01	Parlakhemundi Division
4	One year Extension of Working Plan for the year 2024-25	04	Boudh, Ghumsur South, Rourkela, Sundargarh

4.2. Forest Working

4.2.1. Working of Coupes

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

Year	2019-20	2020-21	2021-22	2022-23	2023-24
Timber					
No.of divisions where timber operation taken up	29	26	25	24	27
No.of coupes worked out	129	119	111	137	203
No.of units worked out	55397	54687	50834	72376.99	64094.035
No.of trees felled	21089	21578	19055	25433	24075
Bamboo					
No. of divisions where bamboo operation taken up	18	21	21	18	12
SalLeaf					
No. of Divisions where sal leaf collection has been made	15	15	15	15	15

4.2.2. Rate of Royalty

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

Rate of Royalty (in Rs.)					
Year	2020-21	2021-22	2022-23	2023-24	2024-25
Timber(per unit)	2006/-	2086/-	2166/-	2250/-	2350/-
IrregularLots (per cft.)	305/-	317/-	329/-	342/-	355/-
Poles					
SalPole (per pc.)	60/-	60/-	60/-	60/-	60/-
TeakPole (per pc.)	50/-	50/-	50/-	50/-	50/-
OtherPole (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	255/-	255/-	255/-	314/-	314/-
CommercialBamboo (perPiece)	Salia=1/- Daba=2.50	Salia=1/- Daba=2.50	Salia=1/- Daba=2.50	Salia=2/- Daba=5.00	Salia=2/- Daba=5.00
SalLeaf (per Qtl.)	Royalty waived out	Royalty waived out	Royalty waived out	Royalty waived out	Royalty waived out

Boudh Forest Division OEMF Nursery

FOREST PROTECTION AND MANAGEMENT

5.1. Initiatives taken for Protection of Forest in the State

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

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

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

- The forest management units in the field comprise of 51 Divisions (37 Territorial Divisions + 14 Wildlife Divisions), 300 Ranges (223 Territorial Ranges + 77 Wildlife Ranges), 1068 Sections (827 Territorial Sections + 241 Wildlife Sections) and 3781 Beats (3082 Territorial Beats + 699 Wildlife Beats).
- Each Division, Range, Section and Beat is 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 2024-25 under CSS i.e FPM scheme and FCDR (Forest Conservation Development and Regeneration) scheme 5558 Km of Fire Lines have been created/ maintained in 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 2024-25 under CAMPA scheme: Forest Fire Prevention and Management 24507 Km of Foret Fire Lines have been created/maintained in 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 16,194 numbers of Vana Surakshya Samities have been formed in the State, wherein 20,10,676 numbers of families of 15,334 villages are involved and they have been assigned with 13,95,836.77 hectares of forest area for its protection and usufruct benefit.
- 590 numbers of Eco-Development Committees have been formed in the proximity of protected area to protect forest & wildlife with active involvement of local community.
- 590 numbers of VHF stations and 880 numbers of walky-Talky are in operation in the State for strengthening communication network to be used for monitoring protection activities.
- The details of forest offence cases detected & booked with timber and vehicles seized in different forest divisions during last 5 years are furnished below:

Year	Offences Detected	Offenders involved (nos.)	Timber seized Quantity (in Cum)	Vehicles Seized (Nos.)
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 (upto 31.01.25)	24350	18870	1538	669

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 2022-23 an amount of Rs.16,78,520/- has been deposited in the Bank Accounts by different Divisional Forest Officers towards Reward amount to the informers.
- In addition to this, for protection of Berbera and Dhuanali forests from the claws of forest mafia 25 number of Forest Guards and 04 number of Foresters have been recruited especially to assist the Odisha Special Striking 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 (Citizen or Institutions) to apply for transit permit for tenant timber from private holding land through online. An individual / applicant will apply through the internet facility available with Mobiles / Desktop/ Jana Seva Kendra in the website www.ttpermitodisha.in. Applicant can easily apply for timber transit permit from any place and track his application status at any point of time. The User Guidelines / Manual for applying application through online system in details is available at the 1st webpage of the

said website. To implement a transformational Action Point, the timeline for issue of timber transit permit is fixed to 42 days for disposal through Online Timber Transit Permit System (OTTPS) which was earlier 172 days. All the provisions such as, Joint Verification, Registration of Property Hammer Mark, Submission of tree enumeration list, issuance of T.T. Permit etc are streamlined through this online application system. Now NTPS (National Timber Transit Permit System) has been approval to be adopted, vide Govt. of Odisha FE&Cc Depat. Notification No. 26504/FE& CC, dated 27.12.2023.

5.4. Forest Fire Prevension and Management

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

Year	No. of fire incidences	No. of Fire point responded	Forest area affected (in Ha.)
2021	56,606	45011 (80%)	
2022	28,755	26348 (92 %)	8414.55
2023	36713	36321 (99%)	9550.86
2024	22868	22837 (99.86%)	4067.05
2025 (till 31.01.2025)	671	669 (99.70%)	125.61

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

- Information Technology intervention using Odisha Forest Management System (OFMS)
  1. Receiving of fire alerts from Forest Survey of India (FSI).
  2. Processing of Data in OFMS system and alerts sent directly to registered mobile up to the level of beat forest guards for immediate response in their jurisdiction.
  3. Offline navigation to fire alert points, data collection with geo tagged pictures and action taken are uploaded using OFMS mobile application.
  4. Centralized data sync from mobile to OFMS server for proper reporting of fire alerts status throughout the state.
- District Level Committee - In each district a District level Committee has been formed under the chairmanship of District Collector to facilitate inter- departmental coordination for effective prevention and management of forest fires.
- Annual District Action Plan is put in place well in advance.
- The Standard Operating Procedure (S.O.P.) for prevention and control of forest fire 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 blowers, nakes etc. and safety kits to Fire Fighting Squads for effective prevention and control of forest fire.
- Registering of Mobile numbers of all field staff starting from Forest Guards to the Divisional Forest Officer for receiving the fire alerts directly from Forest Survey of India.
- Control Rooms have been made functional both at State Forest Headquarters and Divisional Headquarters for monitoring of forest fire incidences. Control room at forest headquarters is dedicated with Toll Free Number 1800-3457-158 for use by public on 24x7 basis.
- Training & capacity building programmes are being regularly organized at different levels for field staff Mock Drill are conducted.
- Awareness campaign through distribution of leaflet, brochure, folk dance, road side play etc. and also through SHG groups are being organized to sensitize the forest fringe villagers on prevention of forest fire.

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

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

Sl.No.	Year	Name of the Scheme	Funds allotted (Rs. in Lakh)
1	2019-20	FPM under CSS (60:40) basis	661.36
2	2020-21	FPM under CSS (60:40) basis	866.59
3	2021-22	FPM under CSS (60:40) basis	754.81
4	2022-23	FPM under CSS (60:40) basis	769.15
5	2023-24	FPM under CSS (60:40) basis	245.30
6	2023-24	SDMF	762.26
7	2024-25	FPM under CSS (60:40) basis	636.2


Fire squad

5.5. Saw Mills

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

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

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

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

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

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

AFFORESTATION & PROGRAMME EXPENDITURE SCHEMES

6.1. Afforestation Activities

Year wise Afforestation activities taken up under different schemes from 2010-11 to 2024-25 in the State are given below.

Year Wise Afforestation Activities taken up under different schemes

Year	AR in ha	ANR with Gap Pltn in ha	ANR without Gap Pltn in ha	Total in ha	Avenue Pltn in RKM	Seedlings plnted in lakh	Seedlings distributed in lakh
2010-11	70842	60084	102519	233445	241	1086.10	128.34
2011-12	22950	10291	148946	182187	769	358.92	195.92
2012-13	18603	20230	68454	107287	3107	321.66	211.92
2013-14	25086	38050	54532	117667	4506	467.67	304.14
2014-15	24600	60253	114038	198891	4755	696.57	550.00
2015-16	16576	98540	241975	357091	4607	487.98	460.96
2016-17	15322	128009	258121	401452	5838.48	499.79	376.57
2017-18	5776.17	20366.94	356221.26	382364.36	3234.50	166.86	145.14
2018-19	6223.80	108747.28	133560.84	248531.92	3685.65	338.74	142.46
2019-20	13055.19	55303.12	71698.00	140056.31	3558	339.26	212.48
2020-21	12486.07	94837.10	0	107323.17	4164.70	392.47	465.77
2021-22	11225.30	99143	0	110368.30	4616.60	382.91	230.46
2022-23	11856.30	76341.67	0	88197.96	4069.30	351.59	211.74
2023-24	5828.71	37513.61	0	43391.09	3111.87	254.42	408.57
2024-25 (As on 31.12.2024)	4042.68	26676.66	170.80	30890.14	2020.70	195.34	233.73

6.1.1. Increasing Green Cover in the State

The scheme was introduced in 2013-14 by subsuming 11 continuing plan schemes. Since then, the scheme is under process. During 2024-25, Rs.3462.00 lakh Budget provision has been made for taking up different plantation activities under the scheme such as 330 ha AR Plantation, 3025 ha ANR with Gap Plantation, 3.12 lakh Urban Tree Plantation, Seedlings planted in 14.60 lakh (including UTP) & 82.11 lakh seedlings for Distribution.

Besides, the components implemented under this scheme during 2024-25 are (1) major components of "IGC" i.e raising of nurseries for plantation and distribution, creation (plantation) and maintenance of previous years plantations, (2) implementation of Medicinal Plants Knowledge Centre at Patrapada & (3) implementation of Ekamravana at Bindusagar.

UTP Plantation under IGC FY- 2024-25 at Malkangiri Forest Division

6.1.1.1. Medicinal Plants Knowledge Centre, Patrapada

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

A sum of Rs.243.75 lakh has been provided for development and maintenance of rare medicinal plant species and bamboo Setum in the center during 2024-25.






SMRUTIVAN

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

ANANDBANA

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

6.1.1.2. Ekamra Van at Bindusagar

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

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

A total budget provision of Rs.15.00 lakh has been made for maintenance and further Improvement of Ekamravan at Bindusagar in Bhubaneswar during the year 2024-25.

6.1.1.3. Artificial Regeneration (AR / Block Plantation)

The condition of growing stock in the forests of the State is being consistently improved through this scheme by raising block plantations (@ 1600 plants/ha) with economically important species such as Rosewood, Sisso, Mahogany, Bija, Gambhar, Kasi, 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 2024-25, 235 hectare plantation has been made under IGC scheme and maintenance works for previous plantations were also taken up.

IGC AR Block Plantation 2023-24 at Lahanda RF Rourkela Forest Division

AR Plantation at Rourkela Forest Division, Nuagaon during -2023-24 under GIM

6.1.1.4. Bald Hill Plantation

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

The scheme was started during 2009-10 by adopting special plantation techniques for restoration of green cover on bald hills in the districts of Cuttack, Jajpur, Ganjam, Koraput, Kalahandi, Khordha, Sundergarh, Mayurbhanj, Nuapada, Subarnapur, Bolangir, Rayagada, Gajapati and Nayagarh.

Bald Hill Plantation under CAMPA FY- 2024-25

UTP Plantation at Rourkela Forest Division during 2022-23, under GMM

During the year 2024-25, 95 ha Bald Hill Plantation by utilizing 1.52 seedlings have been achieved.

6.1.1.5. Assisted Natural Regeneration with Gap Plantation

During 2024-25, 2975 hectares of Assisted Natural Regeneration (ANR) with Gap Plantation @200 plants per hectare have been achieved. A target of 540 hectare has been provisioned for taking up ANR Plantations during 2025-26.

ANR Plantation under CAMPA at Deogarh Forest Division

6.1.1.6. Urban Plantation

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

During 2024-25, 3.12 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 2025-26.

UTP plantation at Bonai Forest Division, Pandurisila over under GMM during 2023-24

UTP Plantation under GMM at Rourkela Forest Division

6.1.1.7. Seedlings Distribution during 2024-25

During the year 2024-25, 82.11 lakh seedlings were distributed under IGC.

Distribution of Seedlings, Rourkela Forest Division

6.1.2. Green Mahanadi Mission (GMM)

Mahanadi is a lifeline of Odisha and in order to enhance water availability and to improve livelihood, the river Mahanadi needs to be protected and conserved for ensuring its perennial flow for benefit of the people of the state. In view of this, a new scheme namely "Green Mahanadi Mission was launched during 2018-19 with an aim to create a Green belt in 1 km width on both sides of the river Mahanadi, Tel & IB on all available and suitable Forest Land, Revenue Forest Land, DLC Area and Private Land through massive participation of peoples representatives and all stake holders. In order to spread the awareness amongst people towards the aim of the mission, wide publicity has been created through different awareness programmes, Mahanadi Seva Yatra, Pada Yatra by the people's representatives, stakeholders and general public etc.

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

Plantation under GMM, Sambalpur Forest Division

6.1.2.1. Achievement during 2024-25

Plantations over an area of 84 hectare of AR, 72 hectare of Casuarina, 65 hectare of Bald Hill, 1310 hectare ANR with Gap plantation, 2.00 lakh saplings under the scheme of Urban Tree Plantation (UTP) and distribution of 75.96 lakh seedlings have been successfully achieved under the mission during 2024-25.

6.1.2.2. Proposal during 2025-26

There is a proposal of taking up 195 hectare AR plantation, 94 hectare casuarina plantation, 30 ha Baldhill Plantation, 565 hectare ANR with Gap plantation, 3.00 lakh saplings under the scheme of Urban Tree Plantation (UTP) for the financial year 2025-26.

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

The Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) has been developed to reduce rural poverty through 100 days of guaranteed employment for each family per year. Using focus group methods, this scheme has been explored to provide rights based social protection through guaranteed employment for Scheduled Castes, Scheduled Tribes and women in our State. The main objectives of this scheme are: (1) social protection (2) the creation of durable assets such as water security, afforestation activities, soil moisture conservation measures, land productivity etc. through the manual labourers. The components of this scheme implemented during 2024-25 are:

6.1.3.1. Plantations under MGNREGS

During 2024-25, an area over 143 hectare of AR Plantations, 1440 hectare of ANR with Gap Plantations and 2019.1 RKM of Avenue Plantations & have been achieved under MGNREGS by planting 5.05 lakh seedlings of different species. There is a proposal for taking up of 32 hectare AR Plantation, 1530 hectare ANR with gap Plantation and 1700 RKM of Avenue plantation and 300 lakh seedlings to be distributed during the year 2025-26.

Raising of 6 months old seedlings for distribution under MGNREGS at Samantiapalli, Berhampur Forest Division

Avenue Plantation under MGNREGS, Berhampur Forest Division

ANR with GAP Plantation under MGNREGS, Berhampur Forest Division

6.1.3.2. Year wise Afforestation Programme under MGNREGS

The year wise afforestation programme taken up and the amount utilized under MGNREGS up to 2024-25 (up to 31.12.2024) is given below.

Year	Area afforested (in ha)	Avenue Plantation taken up (in RKM)	Water bodies created (in no.)	Amount utilized (Rs. in lakh)
2006-07	779	0	146	264.00
2007-08	2590	51	0	492.00
2008-09	233	14	0	842.00
2009-10	11219	112	024	1106.41
2010-11	9543	241	26	1849.69
2011-12	14021	746	32	2648.45
2012-13	15307	2477	6	3954.36
2013-14	38115	3506	108	8703.55
2014-15	198891	4755	0	30904.02
2015-16	28354	3340	0	9113.18
2016-17	17806	3714	0	8213.62
2017-18	14330	2477	0	7245.25
2018-19	15370	3114	0	8567.00
2019-20	7288	3280	0	9021.00
2020-21	28615	4061	0	29137.43
2021-22	25041	4557	0	30595.00
2022-23	12509	3912	65	18207.85
2023-24	4211	3022	05	9912.11
2024-25	1583	2019.10	0	12297.41

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

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

Plantation under OMC FY- 2024-25 at Malkangiri Forest Division

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

During 2024-25, AR plantations over an area of 367 hectare by planting 5.87 lakh seedlings have been achieved and districts like Malkangiri, Nabarangpur and Sambalpur are also covered under OMC plantation. There is a target of 125 hectare AR Plantations for the year 2025-26.

6.1.5. Miyawaki Plantation

During 2024-25, 4.50 ha Miyawaki Plantation (AR) has been achieved by utilizing 0.45 lakh seedlings in Jharsuguda, Angul and City Forest Division.

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

During 2024-25, 378 ha AR Plantation has been achieved by utilizing 8.54 lakh seedlings in different forest Division.

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 the State level, Forest Development Agencies (FDAs) at the forest division level, and Joint Forest Management Committees (JFMCs) or Eco-development Committees (EDCs) at the village level. The SFDA is the federation of 46 FDA divisions of the state. The Chairpersons and Member Secretaries of all FDAs of the State are members of SFDA, Odisha. No FDA has been formed in Chilika (WL), Sunabeda (WL), Mahanadi (WL), and STR (Baripada) divisions.

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

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

6.1.7.1. National Afforestation Programme (NAP)

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

ANR Plantation under GIM at Deogarh Forest Division

Reclamation of Podu Cultivated area under GIM, Balliguda Forest Division

Plantation site at Kharianal EDC of Kotagarh Range under GIM Scheme, Balliguda Forest Division

6.1.7.2. National Mission for Green India (GIM)

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

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

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

Plantation under GIM, Kharinal EDC of Kotagarh Forest Range, Balliguda Forest Division

During 2024-25, Advance work over 1850 hectare, 1st year maintenance over 1676 hectare, 2nd year maintenance of 2603.34 hectare and 3rd year maintenance over 1473.09 hectare have been proposed with an outlay of Rs. 1862.20 lakh for approval by Government of India. However, the approval order is still awaited.

Similarly, in 2025-26 maintenance work over 4279.34 hectare will be taken up.

Maintenance work under GIM, Balliguda Forest Division

Plantation under GIM, Rourkela Forest Division

6.1.7.3 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 observed with participation of Hon'ble Chief Minister, Hon'ble Forest Minister and other dignitaries. In all forest divisions, planting campaign was conducted

with participation of Hon'ble Ministers, People Representatives, Educational Institutions, Govt. Departments, Civil Society Organizations, local communities etc.

As on 25.02.2025, 5.60 crore seedlings have been uploaded in MeriLiFE Portal and Odisha is one of the leading State.

6.1.7.4 PALMYRA PALM (TALA) PLANTATION

The "Palmyra Palm" called Tala in Odisha is a socially and economically wide accepted tree found naturally grown in coastal areas as well as hilly lands along river systems of Odisha. The fruits are consumed by animals like Elephants, Bats, Rodents, Bears, Monkeys 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 are 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 living in and around the forest
7) Nesting place for weaving birds (Baya Chadhei).
8) Source of seed (Kernel) collection for future plantations

Keeping in view of the above factors, it is proposed to take massive Palmyra Palm (Tala) plantation along the Forest Block Boundaries and plantations during the next two planting seasons. There are 4479 nos of forest blocks covering boundary length of 68,602 KM. It is proposed to dibble four Palmyra palm stones near each boundary pillar along the boundary line of the Forest Blocks along with planting palm plants around the plantations.

During 2024-25, 19 lakh palm stones have been collected and dibbled around the Forest Blocks.

6.1.8. ODISHA BAMBOO DEVELOPMENT AGENCY

Odisha Bamboo Development Agency (OBDA) is a State level Mission aimed at development of Bamboo Sector in Odisha. The focus is on Bamboo resource generation by commercial

cultivation of Bamboo, promoting Bamboo products through value addition as well as setting up of Bamboo based industries with recent advance technology. The mission has special focus on adequate returns to farmers as well as promoting sustainable livelihood for tribal & rural poor people to engage in Bamboo sector with employment on women empowerment. It implements restructured National Bamboo Mission (NBM) a Centrally Sponsored Scheme with 60 % share of Central Government and 40 % share of State Government since 2018-19. Following activities have been achieved during 2024-25.

1. Odisha Bamboo Development Agency has achieved 43.89 Ha bamboo plantation raised in farmers' land during the year 2024-25.

Year	Achievement in ha.	No of Farmers
2024-25	43.89	44

2. 5 numbers of CFCs in Bargarh, Mayurbhanj, Dhenkanal & Jajpur district in Odisha are going to be completed by the IA, i.e Director, Handicrafts.

3. Completion of project for construction of bamboo Handicraft Training & Production centre at Sindurpur, Boudh Forest Division pertaining to NBM programme is under progress.

4. OBDA has participated in the 17th State Level Kalinga Herbal Fair 2024-25 at Unit - III, Bhubaneswar commenced from 06.11.2024 to 12.11.2024 in which six numbers of bamboo artisans participated for display and sale of bamboo handicraft products.

5. OBDA has participated in the "21st edition of Kerala Bamboo Fest during 7th to 12th December, 2024 at Marine Drive Ground, Kochi. Smt. Tilottama Mohanta and Sri Ananda Mohanta, Artisans had participated in the Mega Exhibition on behalf of the OBDA.

17th Kalinga Herbal Fair 2024 from 06.11.2024 to 12.11.2024 at IDCO Exhibition ground, Unit III, Bhubaneswar

"21st Edition Kerala Bamboo Fest 2024" from 07.12.2024 to 12.12.2024 at Marine Drive Ground, Kochi in Kerala.

6.1.9. Nagar Van Yojana (NVY)

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

The prime objectives of the scheme are for:

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

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

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

The Government of India has approved 40 projects (29 Nagar Vans with extent of area more than 10 ha./11 Nagar Vatikas area less than 10 ha.) to be implemented in 25 Forest Divisions falling under 20 districts. The Government of India has sanctioned a onetime grant amounting to Rs. 2905.95 lakhs and released an amount of Rs. 2034.19 lakhs as 1st installment for implementation of these projects under Nagar Van Yojana in the state during the Financial Year 2021-22 & 2022-23. Out of 40 projects, 34 projects are implanted 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.

Check dam under Nagar Van Yojana at Dhenkanal Forest Division

Ceremonial Plantation at Kadalimunda Nagar Vatika of Bolangir Division

Chain Link Fencing Work at Kadalimunda Nagar Vatika of Bolangir Division

UTP Plantation under NVY at Rourkela Forest Division

Development of Nagar Van Yojan, Phulbani Forest Division

6.1.10. School Nursery Yojana (SNY)

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

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

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

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

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

School Nursery Yojana at Nayagarh Forest Division

School Nursery Yojana at Keonjhar Forest Division

6.1.11. Forest Fire Prevention and Management (FPM)

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

The components of the scheme include creation of fireline, maintenance of fireline, construction of watch towers, engagement of fire watches, assistance to Joint Forest Management Committees, construction of water storage structure, setting up of fire fighting cells, procurement of fire fighting equipment, fire mapping & preparation of fire management plan, training & awareness control & management, strengthening infrastructure for forest protection, Working Plan preparation / survey and demarcation. During 2024-25, a total outlay of Rs.318.10 lakh has been received for taking up above activities.

Fire awareness rally at Bhalupani panchayat, Rourkela Forest Division

Mock Drill in Jarda Range under CAMPA, Rourkela Forest Division

6.2. Programme Expenditure Schemes

6.2.1. Intensive Protection of Critically Endangered Areas

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

Critically vulnerable belts of forests have been identified in 51 Forest Divisions where forest protection measures have been beefed up with the deployment of a squad in each belt. Avulnerable forest belt normally comprises of 3 contiguous Beats for detecting organized gangs of forest offenders / timber mafias/ poachers. Each squad consists of 10 local youth engaged on daily wage basis and stationed at strategic locations of each vulnerable belt through out the year for effective protection work. These squads not only carryout regular patrolling and monitoring the identified forest belts for surveillance on potential offenders operating in the area, but also act as a striking force to aid in search, seizure & raid operations. During the year 2024-25, an amount of Rs.2480.64 lakh has been provided for engaging 124 squads in 51 territorial & wildlife divisions of the state.

6.2.2. Training Programme

An outlay of Rs.249.60 lakh has been provided during the year 2024-25 for taking up the following activities under the Programme Expenditure Scheme "Training Programme".

6.2.2.1. Human Resources Development Programme

The Forest staff need to be oriented and trained both in technology and forest extension aspects. Imparting training to initial recruits is very vital. To augment the efficiency & skill of forest personnel, updating their knowledge on emerging and new topics on all aspects of forestry, forest management and forest research is essential. Presently, there are 4 Training Institutes i.e. Foresters' Training School, Ghatikia, Bhubaneswar, Odisha Forest Ranger's College, Angul, Nicholson Forester Training School, Champua and Forester Training School, G. Udayagiri where training programmes are being conducted regularly. During the current year, various training programmes have been carried out in these institutes. The infrastructure of the forest training institutes of the state needs to be further developed so as to make them well equipped for conducting training programmes smoothly. The Department also organizes Annual Forest Sports Meet for forest personnel at zonal & state level and select the best one for participation at National Level.

6.2.2.2. Policy Analysis & Strategic Planning Unit (PASPU)

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

6.2.3. Forest Research

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

i) Tree breeding /improvement activities of commercially important trees and important indigenous species including NTFPs,

ii) Standardization of nursery & establishment techniques of medicinal plants and NTFP species,

iii) Sustainable harvest techniques for NTFPs and medicinal plants,

iv) Propagation of improved varieties of Bamboo and Canes,

v) Development of agro-forestry models indifferent agro-climatic zones,

vi) Applications of bio-fertilizer and

vii) Development of seed production areas for major species.

The aim is to conduct Silviculture research on tree improvement, nursery and plantation techniques and plant ecological studies as per approved quinquennial Research Programme. A total outlay of Rs.35.00 lakh has been provisioned during 2024-25.

6.2.4. Construction of Buildings

This scheme was introduced in the State Plan Budget since 2008-09 to provide accommodation facilities to Divisional Forest Officers, Assistant Conservator of Forests & Ministerial Staff working in the division/regional offices. During 2024-25, the budget provision of 1500.00 lakh has been made for construction of (i)New Division Office building at Jharsuguda, Angul & Puri (WL) Divisions, (ii) Construction Annexe building at Khandagiri Research Station of State Silviculturist, Bhubaneswar, (iii) Solarization of Division office of Rourkela Division, (iv) Forest Rest House at Boudh Division and new FRH in Berhampur (v) 1 no. of RCCF residence, 1 no. of DFO residence, 6 nos of ACF Residences, 22 nos. of Ministerial Staff 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 2024-25.

6.2.5.2. Working Plan

Enumeration, stockmapping, estimation of growing stock, checking of boundary, procurement of maps and Survey of India toposheets, data entry in computer and print of book have been taken up under this scheme. The total out lay of Rs.200.00 lakh has been provisioned in Annual Plan 2024-25 for taking up the works.

6.2.6. Forest Conservation, Development and Regeneration

6.2.6.1. Working Plan

The main objective of the scheme is to carry out all working plan prescriptions & preparation of Working Plans. An out lay of Rs.400 lakh has been provisioned for Annual Plan 2024-25 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 2024-25.

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 2024-25.

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 2024-25.

6.2.6.5. Protection from Fire

A Fire Control Room at the State Forest Headquarters has been established & made fully functional for 24x7 hours under this scheme to monitor the forest fire incidences in the State. An outlay of Rs.942.00 lakh has been provisioned in the State Annual Plan 2024-25 under this component for Construction of Watch Tower, Purchase of Fire Blower, Creation & maintenance of fire line, Training on forest fire to frontline staff, Awareness Campaign & Logistic support for protection of fire of Divisions.

6.2.7. Drift & Waif wood and Confiscated Forest Produce

This scheme includes components like salvaging of drift & waif wood collection of A1 timber and transportation of seized timber of UD & OR cases with a total out lay of Rs.32.00 lakh during 2024-25.

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 2024-25 to implement the scheme.

6.2.9. Departmental Working of Forest Coupes and Depots

6.2.9.1. Departmental Working of Timber

The components of this scheme include demarcation and marking of timber coupes, departmental working of Car Timber etc. The total budget provision of Rs.180.00 lakh has been provided for 2024-25 works.

6.2.9.2. Departmental Working of Bamboo

Silviculture operations in bamboo coupes, cutting of broken, dead & dying clumps, thinning of congested clumps, thinning and putting earth around the clump, clearing and burning the debris, making half-moon trenches for water conservation structure at uphill side of clumps have been taken up during 2024-25 with a total outlay of Rs.20.00 lakh.

6.2.10. Information, Education and Communication

The Forest Department activity based programmes titled as "BANADARSHAN" in Door Darshan Odia are telecasted, creating public awareness in forest area & urban area through Slogans and Tin Signage on forest fire prevention and management during ensuing season 2024. The total outlay of Rs.10.00 lakh has been provided for 2024-25.

6.2.11. Relocation of Villages from Reserve Forests and Sanctuaries

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

During the year 2024-25, relocation of villages of Satkosia Tiger Reserve of DFO, Satkosia (WL) Division has been carried and exgratia payment to beneficiaries relocated out of Jhagadabehera Village earlier situated inside Debrigarh Wildlife Sanctuary of DFO Hirakud (WL) Division. An outlay of Rs.7000.00 lakh has been provided for 2024-25.

JOINT FOREST MANAGEMENT PROGRAMME

7.1. Implementation of Joint Forest Management Programme

In realizing the need for community participation in forest protection, the Govt. of Odisha was the pioneer to adopt a policy of JFM in August 1988, even before implementation of National Forest Policy, 1988 (w.e.f. 2.10.1988) in the country and initiated a step to involve the people in protection of forests adjoining their villages with assigning specific roles and in return granting certain concessions (under section 24 of the Odisha Forest Act 1972) for 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-fringe dwellers.

With the changing scenario of Forest Management, increasing awareness among people and experiences gained from the past management practices, such resolution on JFM, was revised and amended periodically 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

- 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.

Meeting in Banamunda VSS Members at Karanjia Forest Division

- A total of 13,95,837 hectare of Forests have been brought under Joint Forest Management through 16,194 Vana Surakshya Samities (VSSs) for protection under usufruct sharing mechanism. Besides, 590 Eco Development Committees (EDC) have been formed within and outside protected areas for protection of the Sanctuaries and National Parks.

JFMCs Formed (in No.)		Families Involved (No. in lakh)	Forest area assigned to VSS (Sq. Km.)
VSS/EDC	16194/590	20.11	13958.37

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 VSS Members of Manikishi VSS at Karanjia Forest Division

WILDLIFE MANAGEMENT

8.1. Wildlife Organization

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. 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, Satkosia Gorge, Hirakud, Ansupa and Tampara which are declared as Ramsar Sites.

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 now, 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.

590 nos. of Eco Development Committees (EDC) have been formed in and around the 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	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 Blackbucks during the year 2025 census			Total
		Male	Female	Young	
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**

Olive Ridley sea turtles in Odisha

Odisha has witnessed an unprecedented mass nesting of Olive Ridley sea turtles *(Lepidochelys olivacea)* in 2025, with a record-breaking 13.04 lakh turtles arriving at Gahirmatha and Rushikulya. This surpasses the 11.49 lakh from the previous record in 2022-23, marking a historic success in conservation. The nesting season, spanning from February to April, saw 6,06,933 turtles at Gahirmatha (5th to 8th March) and 6,98,718 at Rushikulya (16th to 24th Feb), reaffirming Odisha's position as a global leader in marine conservation. Strict protection measures, including a 20km no-fishing zone at Gahirmatha, joint patrolling by the Forest Department, Coast Guard, and Marine Police, and the deployment of 67 patrolling camps (62 onshore, 5 offshore) have significantly contributed to reducing turtle mortality to only 345 deaths at Gahirmatha, a major conservation milestone. Additionally, 24 illegal fishing vessels were seized, and 228 arrests were made at Gahirmatha to ensure marine protection laws. Additionally, two trawlers and two boats have been deployed for patrolling, along with six hatcheries established at Rushikulya Rookery to ensure the safe hatching of eggs. Furthermore, 5-km beach fencing has been installed to enhance protection and conservation efforts, providing a safer environment for mass nesting. Beach restoration efforts, including regular beach clean-ups and community-led conservation programs, played a key role in facilitating this record-breaking nesting. A satellite telemetry project is also underway, where 30 turtles (15 males, 15 females) will be tagged to study their post-nesting migration and oceanic behavior at Gahirmatha. To mitigate disturbances, lighting restrictions at Dhamara, Paradeep & Gopalpur Ports were strictly enforced, preventing turtle disorientation. Artificial hatcheries have also been set up to enhance hatchling survival. These scientific and community-driven initiatives, coordinated under the High-Powered Committee (HPC) and Chief Wildlife Warden, have reinforced Odisha's commitment to protecting this vulnerable species. The success of 2025 stands as a testament to the State's rigorous conservation planning, cross-departmental coordination, and community participation, ensuring a safe future for the Olive Ridleys in one of the world's most significant mass nesting sites.

Gahirmatha WL Marine Sanctuary & Rushukulya mass nesting site

8.3. Nandankanan Zoological Park

Nandankanan Zoological Park, one of India's premier large zoosspanning 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 "Ek Ped MaaKe 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 Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980.

About 68165.110 hectare of forest land has been diverted under the Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980 for 627 numbers of different developmental projects as on 31.12.2024, the details of such diversion are reflected below.

Name of the Sector	No. of Proposals	Forest Area diverted (ha)
Irrigation	94	12704.970
Industry	37	4493.000
Mining	205	35175.270
Energy	09	161.100
Road & Bridges	70	1980.690
Railway	34	3176.490
Defence	04	3865.250
Human Habitation	06	403.850
Transmission	92	4688.580
Others	76	1515.900
TOTAL	**627**	**68165.110**

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

The Scheduled Tribes & Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 secure individual or community tenure or both. The Ministry of Environment, Forests & Climate Change, 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 Government projects in 13 categories as envisaged u/s 3 (2) of Forest Rights Act, 2006. About 1901.181 hectare of forest land has been diverted for 4545 number of different developmental projects under the above Act as on 31.12.2024.

Name of the Sector	No. of Proposals	Forest Area diverted (ha)
Anganwadi	22	2.154
Electric Line	655	335.241
Water Harvesting Structure	64	20.861
Tank & other minor water bodies	111	26.441
Drinking water supply & water pipeline	885	161.484
Irrigation	103	46.484
Road	998	638.373

School	1035	495.902
Community Centre	254	66.862
Vocational Training Centre	89	48.291
Hospital	36	15.536
Telephone Line	218	10.728
Non-Conventional source of energy	05	4.044
Fair Price Shop	4	2.300
Others	66	26.482
TOTAL	**4545**	**1901.181**

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 hectares in each case (in two laning 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 exceeding 50 per hectare in Left Wing Extremism (LWE) affected districts in 15 categories. As on 31.12.2024, about 82.799 hectare of forest land has been diverted under the above Act for 20 numbers of different developmental projects in LWE districts, the details of such diversion are reflected below.

Name of the Sector	No. of Proposals	Forest Area diverted (Ha.)
Road	07	53.540
Stone Quarry	01	2.992
Police Establishment	04	3.972
Drinking Water Supply	04	6.241
Power Sub-Station	01	2.833
Irrigation	01	4.800
Transmission Line	01	4.261
School	01	4.160
TOTAL	**20**	**82.799**

9.4. Right to Tribal and other Traditional Forest Dwellers (OTFD)

The Tribal and other Traditional Forest Dwellers have been granted individual rights and community rights as per provisions of the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Rights) Act, 2006. The detail picture on the titles issued under individual and community right up to 31.08.2024 is given below.

Category of Right	Titles issued	Forest Area involved (In Hectare)
Individual	461013	272310
Community	8162	167067

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

DEVELOPMENT OF ECO-TOURISM

10.1. Eco Tourism Policy

As per Ecotourism Policy of the State, Forest, Environment & Climate Change Department (Wildlife Organization) is the Nodal Agency for development of ecotourism in the State. The department prioritizing the need of getting support of forest dependent communities for Forest & Wildlife Conservation initiated "Community Based 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: Eco-Tourism Destinations in the State

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

		Blackbuck Nature Camps	Saluapali
			Bhanjanagar Dam
	GHUMSUR SOUTH		Chermaria
	BERHAMPUR(T)	Ghodahada Nature Camp	Ghodahada
CUTTACK	ATHGARH(T)	Ansupa Nature Camp	Ansupa
JAJPUR	CUTTACK(T)	Mahavinayak Nature Camp	Mahavinayak
		Olasuni Nature Camp	Olasuni
DHENKANAL	DHENKANAL(T)	Saptasajya Nature Camp	Saptasajya
MALKANGIRI	MALKANGIRI (T)	Chitrakonda Nature Camp	Chitrakonda
		Satiguda Nature Camp	Satiguda
NUAPADA	KHARIAR(T)	Patora Dam Nature Camp	Patora Dam
KORAPUT	KORAPUT(T)	Koraput Nature Camp	Koraput (Pine Forest)
		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 (In lakh)
2016-17	11,500	157.00
2017-18	17,148	340.00
2018-19	29,024	561.00
2019-20	46,019	685.00
2020-21	56,962	832.27
2021-22	70,216	1051.43
2022-23	1,32,053	1379.12
2023-24	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. Ecotourism has been an alternative income for them as they earlier used to sorely depend on forest for their survival. Indirectly, 5 to 6 villages per Ecotourism project are now earning their livelihood by providing daily requirements to the Ecotourism projects(i.e.,

by selling vegetables, handmade articles, different food items, milk, non-veg products, travel facilities etc).All the community members have been trained on hospitality & Ecotourism services for proper management of the 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
Corpus Fund [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 at Debrigarh in Hirakud Wildlife Division

Souvenier Shop at Sarafagrh in Sundergarh Forest 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 Up-coming 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.

FOREST RESEARCH

11.1. Silviculture Research

Forest research has become critical for addressing challenges like deforestation, climate change and biodiversity loss while supporting livelihoods and sustainable development. The focus of the research is to grow, maintain and restore healthy forests spanning ecological, economic and social dimensions. It serves as a foundation for informed decision-making in forest management and conservation ensuring forests meet present and future demands.

The Forest Research Wing aims to analyse tree growth patterns, regeneration techniques, soil and seeds quality requirements while preserving ecological balance. The headquarters of the research wing in Odisha was created at Angul in the year 1936 with a vision to explore various strategies & provide scientific support for decision making on matters related to forestry with particular emphasis on conservation, sustainable utilization and scientific management of our forest resources in the state. Subsequently the head quarter was shifted to Bhubaneswar in the year 1993. For imparting focus on conservation strategy of forest wealth in KBK districts which have rich biodiversity one more Silviculture division was created with headquarters at Rayagada during the year 2003.

With increasing forest and tree cover of Odisha as per the latest ISFR, it is important to understand the interactions between forests and the wider environment demonstrating the possible effects of climate change simultaneously encouraging positive collaboration between forest managers and scientists. Accordingly focus of research has also been to address ever evolving and challenging problems that are being faced by the department. In view of the facts stated above, the research wing at Bhubaneswar has established 10 RGs and 3 HTNs, where in different research studies are being conducted under the guidance of experienced officers of the state and in collaboration with various research institutions of the state. The list of different assets of the wing that are existing are as follows:

During the year various studies were completed by the Division pertaining to diverse aspects. Some studies are also part of continued research programme of the Division. The various activities can be described as per details given below:

1. Rationalization of Existing Preservation Plots and Establishment of new Preservation Plots in Odisha as per Champion and Seth Classification of Forest Types

As per the Champion & Seth Classification of Forest Types (1968), the forests in Odisha belong to four major forest type which are further divided into 19 forest types excluding TOF. In order to represent different forest types of Odisha, 19 preservation plots need to be established in protected and unprotected forest areas of the state. It is seen that preservation plots have not been established representing all the forest types existing in the state. Accordingly new preservation plots needed to be established and the older needed to be rationalized. It is essential to protect the plot from grazing, forest fire and illicit cuttings. Preservation plots are valuable assets to conduct ecological studies. Growth data of miscellaneous species occurring

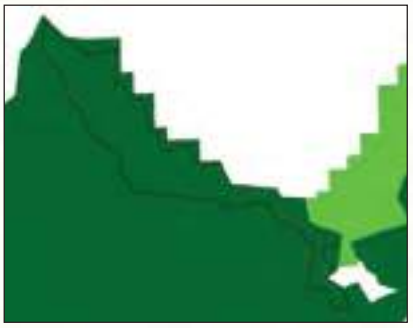
in natural forests have not yet been recorded but certainly can be recorded through these preservation plot. The preservation plots will serve the purpose to conduct growth and carbon sequestration studies.

The study of these preservation plots would be of vital importance for measuring potential of our forests to serve as not only a carbon offset (both above and below ground) and to determine the potential for mitigation of atmospheric CO2 emission but also successional pattern of different forest types of the state. Database on growth characteristics of naturally occurring miscellaneous species will also help to identify site specific species for plantation programmes and to determine the standing volumes of miscellaneous species in different edaphoclimatic conditions. As a first step 19 preservation plots were established in the GIS domain with the help of FSI Forest Type Maps 2020 and FSI Forest Density Maps 2021. This was aided by Google earth satellite images along with ground truthing in order to assess the ground reality. Below is shown the case of a preservation plot identified in Hatigam RF in Nawarangpur Forest Division.

Preservation plot in Hatigam RF, Nabarangpur Forest Division

Google Earth Image

FSI Forest Type Map



FSI Forest Density Map

2. Study on status of seed production areas in Odisha

Sustainable forest management in Odisha relies heavily on preserving virgin forest areas rich in valuable commercial timber species. These areas serve as crucial sources for collecting seeds and seedlings for future reforestation and rehabilitation efforts, especially as other regions degrade due to harvesting. While some planting stocks can be generated from wildlings and vegetative propagation, seeds remain the primary source, as many key tree species are difficult to propagate through cuttings.

To ensure a sustainable supply of high-quality forest tree seeds, designated seed production areas (SPAs) are vital. These SPAs can be established in existing virgin forests or partially logged-over areas with mature trees of target species. Additionally, for long–term perspective SPAs can be set up from conversion of open-pollinated progeny trials of the target species. Key considerations for SPA establishment include accessibility and security.

In essence, sustainable forest management in Odisha hinges on preserving virgin forest areas rich in valuable timber species and establishing SPAs for efficient seed procurement. This approach ensures the availability of quality planting materials for reforestation and rehabilitation efforts, safeguarding the region's forest ecosystems for the future.

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

In the year 2024, 7 SPAs were identified from 2 RGs of State Silviculture, Bhubaneswar covering a total area of 22.085 ha of different species such as *Terminalia arjuna, Lagerstoemia parviflora, Adina cordifolia, Mitragyna parvifolia, Terminalia tomentosa* & *Acacia catechu.*

Conversion of Old Trial Plots into Seed Production Areas:

3. Can silvicultural thinnings be modelled using a machine learning approach ? – a case study of *Pterocarpus santalinus* in Odisha

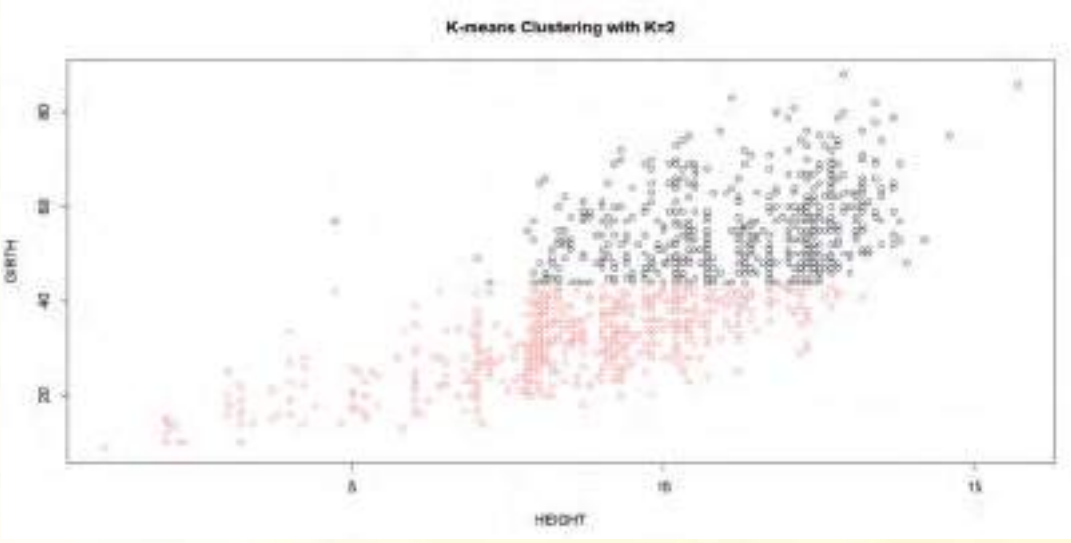
Focus of the research activities has also been to adapt to the usage of latest techniques that are developing in the technological sector. Accordingly this study presents a methodology for optimizing silvicultural thinning in *Pterocarpus santalinus* trial plots located in the state of Odisha through the integration of machine learning techniques. Data on individual tree attributes, including girth and height, were collected from six trial plots located in different agroclimatic zones of Odisha. Unsupervised techniques K Means clustering and hierarchical clustering algorithms were applied to group trees into two categories: those to be felled and those to be retained. The clustering results were validated through analysis of silhouette score and Calinski Harabasz index. This provided actionable insights into stand structure and dynamics of the said trial plots. The analysis suggested better clustering results due to K Means clustering rather than hierarchical clustering. The methodology thus offers a data-driven approach to inform decision-making in forest management, contributing to the sustainable utilization of red sandalwood resources and fostering ecosystem resilience in the region. The results of K Means Clustering and Hierarchical Clustering for the silvicultural thinning of trial plots of Pterocarpus

santalinus is shown in the following table. Some pictorial depictions of the calculations are shown in the following figures.

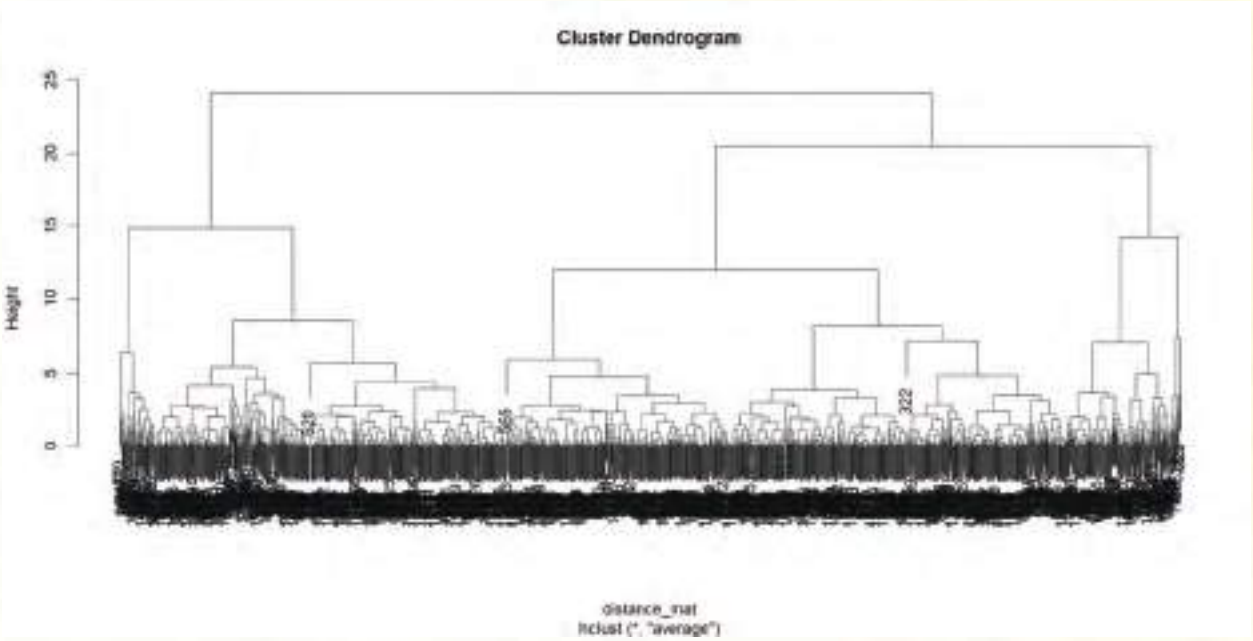
Results of K Means Clustering and Hierarchical Clustering for the silvicultural thinning of trial plots of Pterocarpus santalinus (K=2 or K=3)

Sl. No.	Location of the Trial Plot	Year of establishment	Total no of trees	K MEANS CLUSTERING			HIERARCHICAL CLUSTERING
				Size	Centres of the clusters		Size
					Height	Girth	
1	Ajodhya	2007	1228	581,647	11.3	55.5	781,447
					8.5	31.6	
2	Ajodhya	2008	499	107,254,138	9.4	59.1	385,101,13
					8.8	43.9	
					6.8	27.4	
3	Kosala	1975	260	160,100	16.1	59.8	232,28
					20.2	99.8	
4	Khandagiri	1983	623	333,290	6.5	25.4	407,216
					13.4	78.4	
5	Khandagiri	2002	881	474,407	11.6	60.4	530,351
					6.9	25.5	
6	Taratua	2007	240	94,146	5.7	21.5	142,94,4
					9.9	48.4	

K means clustering with K=2 of the data from trial plot of Pterocarpus santalinus at Ajodhya Research Station raised in 2007

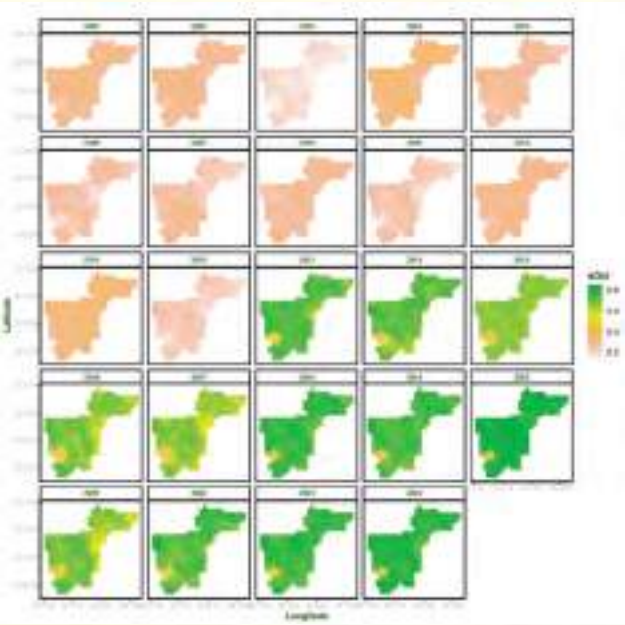


Dendrogram showing hierarchical clustering of the data from trial plot of Pterocarpus santalinus at Ajodhya Research Station raised in 2007

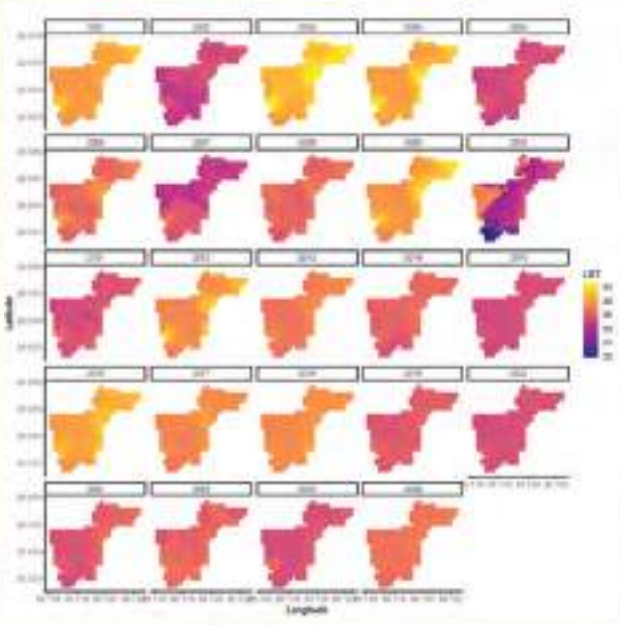


4. Analysis of changes in vegetation condition of Preservation Plots vis-à-vis long-term climate change - A nonlinear autoregressive distributed lag (NARDL) approach to the interaction between vegetation indices and surface temperatures in Odisha.

This study uses Landsat 7 and 8 satellite imagery to investigate the interaction between temperature and vegetation health in three preservation plots laid down in Bhuska PRF, Chandaka and Debrigarh Sanctuary (Debrigarh 2) located in Odisha. The preservation plots have been laid in the aforesaid forest areas hence bear the name of the forest area in which they are located. The analysis focuses on the Normalized Difference Vegetation Index (NDVI) and Land Surface Temperature (LST) as remote sensing indices, spanning the years from 2000 to 2024 to assess the impact of temperature variations on vegetation. A nonlinear autoregressive distributed lag (NARDL) model is used to study the interaction between NDVI and LST. The results suggest that that NDVI and LST have a long-term equilibrium relationship. The model also hints at a complex relationship between LST and NDVI, with both short-run and lagged asymmetries. The significant error correction term indicates that any short-run deviations from the equilibrium relationship between NDVI and LST are corrected fairly quickly. Positive and negative changes in LST have different impacts on NDVI, both in the short run and at different lags, reflecting nonlinear effects in the system. This study highlights the importance of using remote sensing data to monitor ecological responses to climate change. The patterns observed in different locations underscore the necessity of implementing tailored conservation efforts. The yearly NDVI and LST maps of a preservation plot in Bhuska RF and the error correction model have been calculated as shown below:



Yearly NDVI maps of preservation plot in Bhuska PRF



Yearly LST maps of preservation plot in Bhuska PRF

Error Correction Model for preservation plot in Bhuska PRF				
Dependent Variable: D(NDVI)				
Method: ARDL				
Sample: 2005 2024				
Included observations: 20				
Dependent lags: 4 (Automatic)				
Automatic-lag dual non-linear regressors (4 max. lags): LST				
Deterministics: No constant and no trend (Case 1)				
Model selection method: Akaike info criterion (AIC)				
Number of models evaluated: 20				
Selected model: ARDL(4,4)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
COINTEQ*	-0.9158	0.2488	-3.6799	0.0062
D(NDVI(-1))	0.2482	0.2142	1.1586	0.2800
D(NDVI(-2))	0.2617	0.1595	1.6404	0.1395
D(NDVI(-3))	0.3456	0.1532	2.2553	0.0541
@DCUMDP(LST)	-0.0104	0.0097	-1.0646	0.3181
@DCUMDN(LST)	0.0185	0.0086	2.1317	0.0656
@DCUMDP(LST(-1))	-0.0145	0.0145	-1.0027	0.3453

@DCUMDN(LST(-1))	-0.0100	0.0090	-1.1046	0.3014
@DCUMDP(LST(-2))	-0.0097	0.0114	-0.8497	0.4201
@DCUMDN(LST(-2))	0.0088	0.0076	1.1539	0.2818
@DCUMDP(LST(-3))	0.0034	0.0091	0.3803	0.7136
@DCUMDN(LST(-3))	-0.0199	0.0075	-2.6585	0.0288
R-squared	0.8874	Mean dependent var		0.0231
Adjusted R-squared	0.7327	S.D. dependent var		0.1274
S.E. of regression	0.0658	Akaike info criterion		-2.3177
Sum squared resid	0.0347	Schwarz criterion		-1.7202
Log likelihood	35.1772	Hannan-Quinn criterion		-2.2010
F-statistic	5.7359	Durbin-Watson stat		1.5910
Prob(F-statistic)	0.0099			
* p-values are incompatible with t-Bounds distribution.				

5. IOT based Monitoring – A new paradigm in nursery management

In the face of pressing need for sustainable forestry operations, the integration of Internet of Things (IoT) technology into forestry operations presents a transformative solution. This study explores the implementation of IoT-based monitoring systems in nursery operations. This concept can leverage real-time data collection and automate control to optimize operations in nurseries for seedling raising. By deploying sensors for nutrient monitoring, growth recording, soil moisture, temperature, humidity and other environmental factors, these systems can provide precise solutions tailored to the specific needs of different seedlings based on species and soil types. The data gathered by these sensors is transmitted to a central processing unit, which analyzes the information and triggers actions as needed, thereby minimizing resource wastage and simultaneously ensuring optimal conditions for the growth of the seedlings.

The IoT-based irrigation system offers numerous advantages, including remote monitoring and control via smartphones or computers and predictive analytics for better nursey management. Additionally such systems can significantly reduce labour costs and increase the efficiency of resource use contributing to both economic and environmental sustainability.

This study outlines the architecture and components of an IoT-based nursery monitoring system, discusses the benefits and challenges associated with its deployment in various forestry species nurseries. By providing a comprehensive overview of IoT-driven monitoring, this study aims to highlight its potential as a key innovation in modern forestry nurseries, capable of addressing critical management issues so far as irrigation control, nutrient management and growth monitoring is concerned.

IOT Unit

6. Establishment of A Soil Testing Laboratory

A pilot soil testing laboratory was established in the previous year to systematically analyse a range of critical soil parameters, including pH, electrical conductivity (EC), organic carbon (OC), and essential macronutrients such as nitrogen (N), phosphorus (P) and potassium (K). Soil samples are collected from diverse sites, allowing for a comprehensive understanding of soil health variations across different landscapes. This initiative is a significant step toward enhancing forest management and conservation efforts by providing scientific insights into soil quality and fertility. Recognizing the importance of soil health in successful afforestation programs, efforts are currently underway to institutionalize soil testing as a standard practice within the department. By integrating soil analysis into afforestation planning and execution, the department aims to improve seedling survival rates, optimize nutrient availability and create favourable growing conditions for different tree species. The establishment of this laboratory is expected to play a pivotal role in guiding evidence-based decisions for plantation management thereby ensuring the long-term sustainability of forest ecosystems. Furthermore, by systematically assessing soil conditions the laboratory contributes to fostering biodiversity, enhancing soil productivity and mitigating potential risks associated with nutrient deficiencies or imbalances. With a science-driven approach to soil management the initiative is poised to strengthen ecological resilience support sustainable forestry practices and promote healthier and more productive forest landscapes. Various sample of soil taken from different forest regions of Odisha were tested and sent back with different test reports to respective divisions. Typical test results have also been depicted below.

Establishment of a Soil Testing Laboratory

Test Report of *Pterocarpus santalinus* trial Plots (Rakta chandan)

Sl. No.	Name of the Research Range	Name of the Research Station	Year of plantation	pH	Electrical conductivity EC (µS/cm)	Organic carbon OC (%)	Nitrogen N (Kg/ha.)	Phosphorus P (Kg/ha.)	Potassium K (Kg/ha.)
1	Bhubaneswar	Khandagiri	1983	3.24	0.03	0.11	64	Low	Low
2			2002	3.24	0.02	0.16	88	1.6	Low
3		Tartua HTN	2007	4.18	0.04	0.17	93	Low	214.3
4	Angul	Koshala R.G.	1975	5.5	0.05	0.17	92	Low	72.8
5	Jashipur	Begunia R.G.	1974	7.12	1.01	0.23	128	12.4	501.4
6			1775	7.09	0.82	0.16	87	9	202.8
7			1976	6.03	0.86	0.13	71	4.3	371.6

8		Ajodhya HTN	2007	6.19	1.06	0.10	54	4.8	311.2
9			2008	5.6	1.23	0.08	43	9	245.5

7. Seed Testing Laboratory Activities

A seed testing laboratory had been established as a part of seed development cell during the financial year 2022-23. At present, testing is being carried out as per ISTA recommendation. Silviculture Division, Bhubaneswar has taken the responsibility of collection, processing, grading, certification and distribution of 2014 kg genetically superior seeds of 18 nos. of forestry seed species to the 12 Divisions of the State. There are 2 units to execute field works and carry out laboratory experiments namely Seed Development Unit and Seed testing and Certification Laboratory. These have been described as per details given below.

➢ Seed Development Unit:

The functions of the seed development unit would be:

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

➢ Seed Testing and Certification laboratory:

❖ Registration:

After submission of the seed samples to the seed testing laboratory, registration is done by mentioning the source (like RF, RRF, VF, SPA, T. Plot etc.) and GPS coordinates in a specific register for future reference.

❖ Physical Purity Test:

The purity test is done to evaluate whether the given seed samples conform to the prescribed purity standard. The working sample is separated into pure seeds, damaged seeds and inert matters by hand, seed divider or sieves and the percentage of each component is then calculated by weight to measure the purity percentage of the seeds.

❖ Germination Test:

In the germination test 4 replicates containing 25 seeds each are placed on a moist medium under favorable condition. Daily observation is recorded from first count to final count and germination percentage is calculated by taking the addition of all the 4 replicates. Knowing the germination percentage of the seed can give better idea of the survivability of the plants under favourable conditions.

❖ Moisture determination test:

Precise estimation of moisture content of seeds is essential for the determination of quality of seeds, storability and elongating life span of seeds. The higher percentage

of moisture (above than 12%) measured using moisture meter indicates the lower percentage of germination due to attack of fungus. In order to lower moisture percentage field staffs are directed to dry those seeds under sufficient sun rays to avoid such fungus attacks.

- Biochemical Test for viability:

  This technique is used to determine how many seeds are capable to produce normal plants that will reproduce under appropriate field conditions. The biochemical test includes Tetrazolium test and electrical conductivity test which are employed in the seed testing laboratory.

- Certification:

  After completion of all the laboratory procedures the seed certification of provenance and seed quality would be given to the divisions to whom the seeds are supplied. The laboratory has been strengthened by way of procurement of germinators and incubators to further aid seed certification.

- Seed Germinator:

  Seed Germinator provides artificial environment using temperature, humidity and light responsible for germination of seeds.

- Seed Incubator:

  Incubator is used to provide optional conditions for germination and early growth of seeds usually controlling factors like temperature, humidity, light etc.

Using the aforesaid facilities the supply of non teak indigenous seeds after following the seed certification procedure alongwith the certificate of provenance and seed quality is resorted to. This is depicted in the following diagrams. The pictures also depict the various tests that are being followed in the seed testing laboratory.

Supply of Non teak indigenous seeds after seed certification

Certificate of Provenance and Seed Quality

Sl. No.	CERTIFICATE OF PROVENANCE AND SEED QUALITY	
1	CERTIFICATE No. 40/2024	DATE : 20.06.24
2	SPECIES	Terminalia tomentosa (Asana)
3	DETAILS OF SOURCE	Kabanga V.F Section/Beat-Jantalia Range/Division-Sundergarh
4	MONTH/ YEAR OF COLLECTION	May-2024
5	QUANTITY OF SEED SUPPLIED	05 Kg. (Sunbalpur Research Range)
6	RESULT OF LABORATORY TEST	
7	(i) PURITY PERCENTAGE	95%
8	(ii) GERMINATION PERCENTAGE	46%
9	(iii)MOISTURE CONTENT	12%
10	REMARKS	Viability period: 4-6 months
11	SIGNATURE OF THE AUTHORISED OFFICER (Laboratory Incharge)	Subhasmita Sahoo Mohanty FC Seed Testing Laboratory O/o CF & State Silviculturist Bhubaneswar

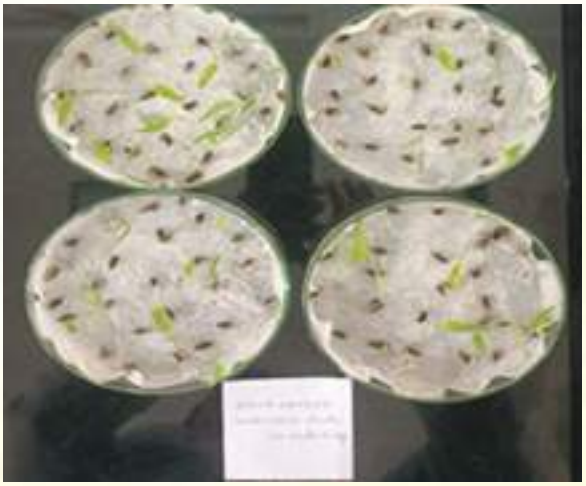
Sl. No.	CERTIFICATE OF PROVENANCE AND SEED QUALITY	
1	CERTIFICATE No. 39/2024	DATE : 20.06.24
2	SPECIES	Terminalia arjuna (Arjuna)
3	DETAILS OF SOURCE	Kabanga V.F Section/Beat-Jantalia Range/Division-Sundergarh
4	MONTH/ YEAR OF COLLECTION	May-2024
5	QUANTITY OF SEED SUPPLIED	50.3 Kg. (Sunbalpur Research Range)
6	RESULT OF LABORATORY TEST	
7	(i) PURITY PERCENTAGE	99%
8	(ii) GERMINATION PERCENTAGE	40%
9	(iii)MOISTURE CONTENT	11%
10	REMARKS	Viability period 2-3 months
11	SIGNATURE OF THE AUTHORISED OFFICER (Laboratory Incharge)	Subhasmita Sahoo Mohanty FC Seed Testing Laboratory O/o CF & State Silviculturist Bhubaneswar

Various seed testing procedures

Purity Test

Moisture determination Test using Hot air oven

Moisture determination using moisture meter



Germination Test

Germination Room

Viability Test

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

Viability & germination test report of seeds for the year 2024-25

Sl.no.	Local name of the species	Scientific name of the species	Purity %	Moisture %	Germination %	Seed certification no. & date
1	2	3	4	5	6	7
1	Ambeda	*Spondias pinnata*	80	15	25	No.78/2024, Dt.29.7.24
2	Anla	*Phyllanthus emblica*	96	10.75	12	No.21/2024, Dt.25.3.24
3	Arjuna	*Terminalia arjuna*	96	65	11.2	No.10/2024, Dt.11.6.24
4	Asan	*Terminalia tomentosa*	95	10.5	46	No.17/2024, Dt.25.6.24
5	Asoka	*Saraca asoca*	90	20.5	40	No.43/2024, Dt.29.7.24
6	Bahada	*Terminalia Bellirica*	80	13	42	No.16/2024, Dt.25.6.24
7	Bali sissoo	*Dalbergia sissoo*	70	6.9	43	No.07/2024, Dt.03.6.24
8	Barkoli	*Ziziphus marutiana*	85	9.5	30-35	No.36/2024, Dt.09.7.24
9	Baula	*Mimusops elengi*	95	11	40	No.41/2024, Dt.20.7.24

10	Chara	*Buchanania lanzan*	97	5.5	15	No.18/2024, Dt.25.6.24
11	Dhauranja	*Holoptelia intigrifolia*	94	10.01	65	No.37/2024, Dt.20.5.24
12	Dhobin	*Dalbergia paniculata*	92	6.5	45	No.50/2024, Dt.21.6.25
13	Gambhari	*Gmelina arborea*	96	11	38	No.24/2024, Dt.08.7.24
14	Harida	*Terminalia chebula*	83	15.5	20-25	No.15/2024, Dt.25.6.24
15	Jamun	*Syzygium cumini*	89	13.5	60	No.44/2024, Dt.29.7.24
16	Karanja	*Pongamia pinnata*	95	15.8	75	No.30/2024, Dt.03.7.24
17	Kasi	*Bridelia retusa*	85	15.5	50	No.69/2024, Dt.21.6.24
18	Kuruma	*Adina cordifolia*	80	8.5	40	No.81/2024, Dt.05.8.24
19	Kusuma	*Schleichera oleosa*	88	26.8	23	No.75/2024, Dt.29.7.24
20	Mahogany	*Swietenia macrophylla*	77	9.9	82	No.13/2024, Dt.21.6.24
21	Mahula	*Madhuca indica*	85	15.3	71	No.45/2024, Dt.29.7.24
22	Mundi	*Mitragyana parvifolia*	85	11	30	No.76/2024, Dt.29.7.24
23	Neem	*Azadirachta indica*	85	15	65	No.56/2024, Dt.29.7.24
24	Pahadi sissoo	*Dalbergia latifolia*	93	11	61	No.72/2024, Dt.29.7.24
25	Panasa	*Artocarpus heterophyllus*	91	16.5	45	No.55/2024, Dt.29.7.24
26	Patuli	*Lagerstroemia flos-reginae*	79	7.5	25	No.47/2024, Dt.20.7.24
27	Phanaphana	*Oroxylum indicum*	92	11.5	45	No.48/2024, Dt.15.8.24
28	Phasi	*Anogeissus acuminata*	80	7.8	35	No.31/2024, Dt.03.7.24
29	Piasal	*Pterocarpus marsupium*	98	8.3	43	No.19/2024, Dt.25.6.24

30	Raktachandana	*Pterocarpus santalinus*	96	11.2	30-35	No.34/2024, Dt.09.7.24
31	Ritha	*Sapindus emarginatus*	95	15.9	42	No.492024, / Dt.30.7.24
32	Rohini	*Soymida febrifuga*	85	11	25	No.79/2024, Dt.29.7.24
33	Salia Bamboo	*Dendrocalamus stictus*	96	10.4	80	No.03/2024, Dt.04.5.24
34	Sidha	*Lagerstroemia parviflora*	85	8.5	10	No.84/2024, Dt.29.7.24
35	Sunari	*Cassia fistula*	93	11.4	20-25	No.52/2024, Dt.21.6.24
36	Tentuli	*Tamarindus indica*	95	13	93	No.38/2024, Dt.08.7.24

8. Development of Trial Plots of Casuarina hybrid

State silviculture division in collaboration with IFGTB, Coimbatore has carried out the establishment of trial plots for assessment of improved hybrids of Casuarina species to evaluate the Casuarina hybrid clones for higher productivity and wood quality in the context of Odisha. The High-tech nurseries where the activity is carried out are Tartua HTN, Ajodhya HTN, Bhasma HTN and Bolangir Research Garden. Details of Casuarina hybrids/ Seed lots planted in clonal trial are given below:

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

Trial plots of Casuarina Hybrids sourced from IFGTB, Coimbatore

9. Spacing Trial Study

A spacing trial study of Pterocarpus marsupium and Dalbergia latifolia has been undertaken at the Bhasma Hi-Tech Nursery of Sambalpur Research Range, covering an area of 2.16 hectares. This study aims to evaluate the impact of different planting densities on tree growth, biomass accumulation and carbon sequestration potential. The trial includes four distinct spacing configurations: 2m × 2m, 3m × 3m, 4m × 4m, and 5m × 5m. By analyzing growth patterns over time this study will facilitate a time-series assessment of volume optimization and carbon sequestration efficiency under varying planting densities. The findings will provide valuable insights for developing scientifically informed afforestation and reforestation strategies, optimizing timber yield and enhancing ecosystem services. Additionally, the study will contribute to climate change mitigation efforts by identifying spacing regimes that maximize carbon storage while ensuring sustainable forest management.

Spacing trial studies

10. Enrichment Planting Inside Old Teak Plantation

Enrichment planting inside old teak plantation at Khandagiri Research Garden has been taken up to assess the growth of the Terminalia species and other species in the Teak plantation area over an area 1.0 ha. Enrichment plantation of Terminalia species within old teak plantations presents a sustainable approach to diversifying forest ecosystems and enhancing their resilience. Through strategic planning, these species contribute to soil enrichment, carbon sequestration and habitat restoration, while also offering potential economic opportunities.

Enrichment Plantation inside old Teak Plantation

11. Development of Trial Plots of Indigenous Species

The conservation and propagation of indigenous tree species have been prioritized through systematic seedling production and the establishment of trial plots in Research Gardens (RG) and Hi-Tech Nurseries (HTN). These efforts aim to preserve native genetic resources while promoting their large-scale cultivation. Seedlings of selected indigenous species are being raised using scientifically validated nursery techniques to ensure high survival rates and healthy growth. Trial plots are being created to assess the adaptability, growth performance and ecological benefits of these species under different site conditions.

In addition to new initiatives, maintenance activities for previously established plantations have been undertaken to ensure their continued growth and development. Regular monitoring, weeding, watering and protection measures are implemented to enhance survival and productivity.

The long-term objective of these efforts is to develop a substantial planting stock of indigenous species, which will serve as a sustainable source of high-quality seedlings. These seedlings will be supplied to various forest divisions, facilitating their large-scale propagation in natural forests. This initiative is expected to contribute significantly to ecological restoration, biodiversity conservation, and climate resilience by reinforcing native forest ecosystems and enhancing their capacity for carbon sequestration and habitat enrichment.

Trial Plots of Indigenous Species

12 Raising Root Trainer Seedling of Indigenous Species and various fruit bearing species.

A program for raising indigenous species was initiated to employ root trainer technology. The large-scale use of polypots for raising seedlings creates tremendous environmental hazards thereby inviting pollution in the vicinity of natural forests while carrying out massive plantation in the open forests. In order to minimize the pollution, steps have taken to introduce seedlings in hycopots permanently made for the purpose which are reusable and produce better quality planting material in comparison to polypots because of stronger root system of the seedling.

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

Root Trainer seedling of Indigenous species and fruit bearing species

13. Production of Quality Planting Material (QPM)

In an effort to diversify nursery production beyond teak, a focused initiative was undertaken to collect seeds of various indigenous tree species from natural forests. Special emphasis was placed on sourcing seeds from Seed Production Areas (SPA), Candidate Plus Trees (CPTs) and established trial plots to ensure the genetic superiority and adaptability of the planting material. Given the discontinuation of traditional teak stump production the collection of seeds from Shorea robusta (Sal) and its associated species posed a significant challenge. However through meticulous planning and strategic field operations efforts were made to secure a viable stock of high-quality seeds for propagation.

To enhance the success rate of seedling establishment and ensure better root development, nursery techniques such as root trainer propagation and stump planting in mother beds were introduced for various indigenous species. These advanced nursery practices aim to improve survival rates, optimize growth performance and facilitate the large-scale production of planting material suited for afforestation and ecological restoration efforts.

During the financial year 2024-25, a total of 40,00,000 high-quality planting materials of indigenous species have been raised in the Bhubaneswar and Rayagada Silviculture Divisions. These seedlings will be systematically distributed to different forest divisions across the state, supporting afforestation programs, ecological restoration projects and biodiversity conservation initiatives. By strengthening the supply chain of genetically superior indigenous species, this initiative is expected to play a vital role in enhancing forest resilience, enriching native ecosystems and contributing to long-term environmental sustainability.

Production of Quality Planting material

14. Ficus Conservation Garden Along with Ficus Propagation Centre

In the year 2018-19 for over 3.0 ha land at Khandagiri Research Garden a Ficus Conservation Plot has been established with 94 varieties of Ficus plant species and more than 50 species of Ficus bonsai. Ficus species are large old trees which are often recognized for the provision of variety of ecosystem services to humanity. But the fact remains that they are declining day by day.

It is pertinent to mention here that Ficus species perform very well with vegetative propagation. So exotic and rare species of Ficus can be multiplied and propagated along with few Bonsai plants. The study of growth and behavior of different species of Ficus is also being carried out in this garden.

A Ficus propagation center has been established to study the response of the various Ficus species to various types of auxins such as Indole Butyric Acid, ' Indole Acetic Acid, Napthalene Acetic Acid which were used in 4 dosages i.e. 2500 ppm ,5000 ppm ,7500 ppm and 10000 ppm. Thus, the best method of propagation would be derived which will be utilized for mass multiplication.

Ficus Propagation Centre

15. Maintenance of Candidate Plus Tree

Candidate plus trees of important indigenous species that have been identified in earlier years are being maintained and new candidate plus trees are being selected on the basis of exceptional rate of growth form and resistance to adverse factors to obtain significant amount of genetic gain as quickly as possible. Focus is to collect seeds from Plus trees of indigenous species.

Maintenance of Candidate Plus Trees

16. Medicinal garden

Medicinal garden was established in the year 2002 over an area of 2.5 Ha. It is situated inside Khandagiri Research Station which comes under Bharatpur D.P.F of Chandaka (Wild Life) Division, about 2 Kms from Khandagiri square towards NandanKanan road.

A gene bank of medicinal plants has been established during 2002 by collection of medicinal plants from different regions with objective of in-situ and ex-situ conservation of medicinal plants naturally growing in forests and to develop market facility to help the small farmers to sale their products under State Medicinal Plant Board scheme.

The medicinal garden houses have 140 nos. mother beds which is maintained regularly during this period.

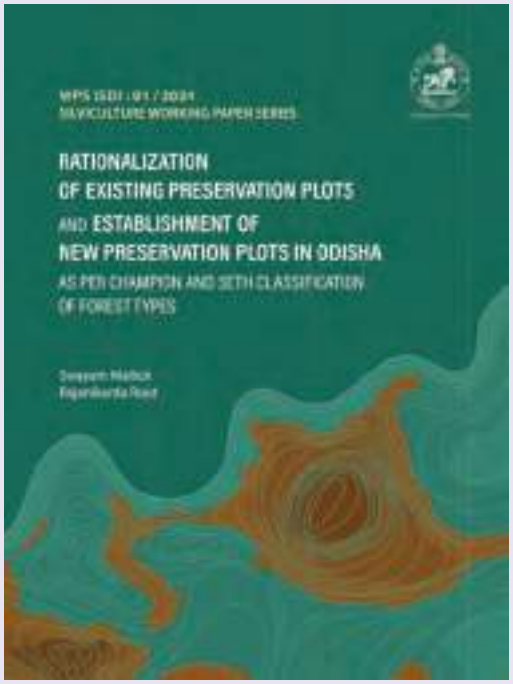
Medicinal Plant Garden at Khandagiri Research Garden

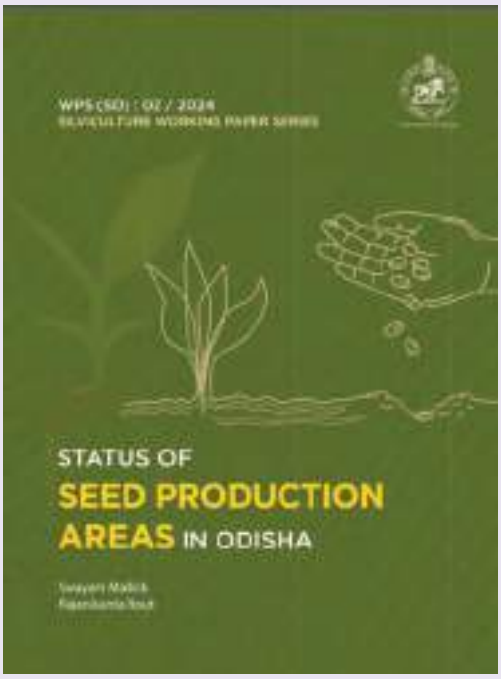
17. Publication of Journals

The Silviculture Division has actively contributed to scientific research and knowledge dissemination by publishing the findings of various experiments and studies conducted over the years. These research outputs have been documented in the form of journal papers, technical reports and working paper series providing valuable insights into forest management, tree improvement, nursery techniques and afforestation strategies. The published works have served as a knowledge base for forest practitioners, researchers and policymakers facilitating evidence-based decision-making in forestry and conservation.

A significant milestone was achieved with the publication of an article in a SCOPUS-indexed international journal, *Arboricultural Journal – The International Journal of Urban Forestry*. This marks the first time that research conducted by the Division has been featured in a prestigious global platform bringing international recognition to its scientific endeavors. The article based on extensive field studies and data analysis highlights innovative approaches and best practices in urban forestry, silviculture and sustainable forest management.

This achievement underscores the Division's commitment to high-quality research and its efforts to bridge the gap between practical forestry applications and academic scholarship. Moving forward, the Division aims to continue publishing its research findings in reputed national and international journals, fostering greater collaboration with academic institutions and enhancing the visibility of its work in the global forestry community.

Sl. No.	Experiment/study	Journal publication/Working Paper Series
1	Statistical modelling of height growth in urban forestry plantations	
2	Rationalization of existing preservation plots and establishment of new preservation plots in Odisha as per Champion and Seth classification of forest types	

Sl. No.	Experiment/study	Journal publication/Working Paper Series
3	Status of seed production areas in Odisha	
4	Can silvicultural thinnings be modelled using a machine learning approach – A case study of Pterocarpus santalinus in Odisha	

Sl. No.	Experiment/study	Journal publication/Working Paper Series
5	Analysis of changes in vegetation condition of Preservation Plotsvis-à-vis long-term climatechange-A nonlinear autoregressive distributed lag (NARDL)approach to the interaction between vegetation indices and surface temperatures in Odisha.	
6	IOT based Monitoring – A new paradigm in nursery management	

TRAINING, RECRUITMENT AND AWARDS

12.1. Training Programme

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

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

12.2. Training of Forest Range Officers and Frontline Staff

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

12.2.1. Odisha Forest Rangers College, Angul

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

During the financial year 2024-25, this Institution is conducting its 19th Batch FRO Induction Course Training (18 month duration) for 46 newly recruited FRO trainees of Chhattisgarh which is scheduled to get completed on 26th June, 2025. Further, during the financial year -2024-25, Odisha Forest Ranger's College, Angul become the 1st ever training Institute of the State to get accredited by the Capacity Building Commission under the concept of Mission Karmayogi of Central Government by National Standards for Civil Service Training Institutions (NSCSTI), New Delhi on Dt.24.04.2024. Furthermore, a MOU have been signed between OFRC, Angul and Revenue Officers, Training Institute (ROTI), Gothapatana, Bhubaneswar in order to initiate capacity building by Trainings and resource person exchange programme.

Being a Forest Officer, one must be physically and mentally fit for taking up any challenge in the field, in order to inculcate desired mental and physical robustness among the budding officer trainees; regular field exposure tour, trekking, weapon handling, combact tactics and Jungle survival training were conducted in house as well as in collaboration with the institutes of national repute such as STF, Tamil Nadu, IIFM, Bhopal, ZSI Zonal Centre, Jabalpur,NCPOR

(National Centre for Polar and Ocean Research), Goa, FSI, Dehradun, WLL, Dehradun, FRI, Dehradun and various National Parks & Sanctuaries of the country.

This year Odisha Forest Rangers' College, Angul have initiated to avail the facilities of week long certificate course training offered by leading institutions of national/ & international repute during exposure tours, such as a week long orientation course on "GeoInformatics for Field Foresters" by Indian Institute of Remote Sensing (IRRS), Dehradun, during North India field exposure tour.

Apart from the said regular Induction Course Training of Forest Range Officers, this year OFRC has conducted a 04 month long Induction Course Training for 38 Nos. of promotee Forester, of State Forest Department i.e from dt. 01.05.2024 to 31.08.2024. Further, this institution has been provided with the responsibility of conducting 08 No. of Refresher Course Training for the field officers of the State Forest Department i.e from the rank of Forest Guard to the ACFs, as per the scheduled below.

Refresher Course

SL. No	Name of the Course	Participant	No.of trainees	Duration
(1)	(2)	(3)	(4)	(5)
01	Wildlife Crime Investigation	Forest Rangers	20	06.01.2025 to 11.01.2025
02		Forest Guard	20	20.01.2025 to 25.01.2025
03		Foresters	20	27.01.2025 to 01.02.2025
04		Direct Recruit ACFs	20	03.02.2025 to 08.02.2025
05		Direct Recruit ACFs	20	10.02.2025 to 15.02.2025
06		Promote ACFs	20	17.02.2025 to 22.02.2025
07		Promote ACFs	20	03.03.2025 to 08.03.2025
08		Dy.ROs	20	17.03.2025 to 22.03.2025

12.2.2. Foresters' Training School, Ghatikia, Bhubaneswar

Foresters Training School, Ghatikia, Bhubaneswar started 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 Months Foresters 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 Biju Patnaik 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 04 nos. 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 Technique and 0 2nos. of 06 days 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.

12.2.3. Nicholson Forester Training School, Champua

Nicholson Forester Training School, Champua Nicholson Forest Training school was established in the year 1927 at Chamupa Town of Keonjhar District covering a total area of 7.76 acres by Late Dr. H.F. Mooney IFS, the-then advisor to the eastern states for imparting training in forestry to the foresters of the province of Bihar, Orissa and Eastern State Agency. Subsequently, the school was renamed as "Nicholson Forest Inauguration ceremony of Rangers Trainees (Outside State) Training School" in the year 1950, in recognition of the meritorious service rendered by Late Mr. J.W. Nicholson, IFS who was the first Conservator of Orissa. 3550 nos of trainees comprising of Foresters and Forest Guards have been passed out successfully from this institution

Duration of training & Course of Studies

The course of Promotee Foresters training is of four month duration.

The syllabus has been strictly followed according to training manual which includes the class room lectures in the 06 (six) subjects like Forest Wildlife & Management, Forest Utilization, Forest Law, Forest Survey & Mensuration, Forest Engineering and JFM & Extension Forestry. It includes all the practical aspects of Forestry and allied matters within limited source of facilities.

The course of Forest Guard training is of six month duration.

The syllabus has been strictly followed according to training manual which includes the class room lectures in the 11 (Eleven) subjects like General Siviculture, Survey Mensuration & Enginnering, Forest Utilization, Forest Botany, Forest Law, Wildlife Management, Account & Procedure, Environmental Conservation, Forest Management & Protection, Communication & Forest Extension, Computer & GIS Application. It includes all the practical aspects of Forestry and allied matters within limited source of facilities.

Distribution of Merit certificate 110th batch

Distribution of Medal and certificate 110th batch


PASSING OUT PARADE 110TH BATCH PROMOTEE FORESTER TRAINEES

12.2.4. Foresters' Training School, G. Udayagiri

This institution was created in the year 1982. It is situated in the lap of the nature. Due to its situation in a higher altitude, this institution provides a suitable climate throughout the year for imparting class room training. Also it is surrounded by number of hilly areas of Kandhamal District comprising part of Eastern Ghat Hills. Hence, it provides all type of practical training in the local forest areas to the undergoing sub-ordinate forest staffs in this area. Also this institution is situated in the central part of the southern Odisha, which facilitates to the staffs attending training in this institution from the Southern, Central & South westerns Divisions of the state. Good communication facility is there for reaching this institution and having all type Bus facilities to the above Division. It has rail link from Berhampur, which is 125kms away from this institution, communication to the Head office at Bhubaneswar is available Bus round the clock at a distance of 220kms.



12.3. Recruitment

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

1. 23 Assistant Conservator of Forests after completion of training in CASFOS Dehradun have joined during July-2024. Further recruitment process for another 45 Assistant Conservators of Forests has been initiated through OPSC.
2. After Induction of 27 Forest Range Officer recently, action has already been initiated for filling up of another 131 Forest Rangers through OPSC.
3. Similarly for filling up of 316 posts of Foresters, process has been intiated by OSSSC.
4. Out of 806 Forest Guards recruited during 2023 by OSSSC, 670 Forest Guards are now serving in respective Forest Divisions. For filling of another 1677 Forest Guards, action has already been initiated by OSSSC.
5. For recruitment of 377 posts of Junior Assistant for District Cadre, action has already been initiated and under process at OSSSC.
6. 09 Junior Assistant are sponsored by OSSC for appointment in the Forests Heads of Department Cadre to strengthen administration. Further, the recruitment process for 08 Junior Grade Stenographers for Forest Heads of Department has already been notified by OSSC.

12.4. State Forestry Awards

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

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.

During this financial year, 17th State level Kalinga Herbal Fair was organised at IDCO Exhibition Ground, Unit - III, Bhubaneswar from 6th to 12th November, 2024 containing 130 nos. of stalls. In this state level event, various Ayurvedic Manufacturing Companies, Ayurvedic Traditional Practitioners, SHGs, Traders, Yoga experts, Govt. organizations etc from different parts of the State were participated and workshops were conducted on different themes for the Traditional Healers, Senior Citizens, buyer-sellers, Ayurvedic & Homoeopathy Students to create awareness on conservation, use, cultivation and marketing of medicinal plants. 3 nos of Regional Level Kalinga Herbal Fairs at Keonjhar, Sambalpur &Karanjia with 50 nos of stalls are proposed to be conducted through concerned DFOs.

One booklet namely “Ousadhiya Udvidara Unnata Krushi Pranali O Bibhinna Chikischare Ehara Prayoga Padhatti” has been published and distributed among the public, students, farmers, traditional healers, plants lover etc during 17th State Level Kalinga Herbal Fair.

One awareness rally & meeting was conducted at Thakurmunmda, Mayurbhanj on medicinal plants on the occasion of 150th Birth Anniversary of Bhagawan Birsa Munda on Janajatiya Gourav Divas. SMPB, Odisha conducted two nos of plantation programme one at Maharatha High School, Naharkanta , Bhubaneswar for “EK PED MAA KE NAAM” campaign announced by Hon'ble Prime Minister of India which is a unique initiative that combines Environment conservation with cultural values and an another plantation programme at Nagarvan, Patrapada, Bhubneswar.

SMPB, Odisha has participated in the Ayurveda Parva conducted from 24th to 26th October, 2024 at Gopabandhu Ayurveda College, Puri. SMPB, Odisha has also participated in 10th International Herbal Fair at Bhopal during the month of December, 2024. OneExposure visit during this financial year from 28th February to 10th March, 2025 to Kerala Forest Research Institute, Peechi, Kerala with 10nos of farmers and 2 nos of SMPB officials has been planned.

17th State Level Kalinga Herbal Fair, Bhubaneswar

Participation in Ayurveda Parv-2024 at Gopabandhu Ayurveda College, Puri

Participation in International Herbal Fair-2024 at Bhopal, Madhya Pradesh.

"Ek Ped Maa Ke Naam" Plantation programme at Maharatha Vidyapitha, Naharkanta Bhubaneswar

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

14.1. Objectives

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

The Compensatory Afforestation Fund Act, 2016 has been enacted by the Hon'ble President of India on 3rd August 2016 and subsequently the rules framed in accordance to the Act as Compensatory Afforestation Fund Rules - 2018 on the 10th August, 2018 for smooth management of Compensatory Afforestation activities.

- The state CAMPA has formulated 15 Annual Plans of Operations (APOs) so far starting with APO 2009-10. The last one APO 2024-25 is being implemented from April, 2024.
- Since inception of State CAMPA in 2009, 09 (Nine) number of APOs have been implemented with total receipt of Rs.2644.15 Crore from Ad-hoc CAMPA and Rs.2630.68 Crore has been spent upto APO 2019-20.
- Further a total sum of Rs.8192.86 Crore has been received from National Authority, CAMPA, New Delhi and kept in the public account to meet the expenses against forthcoming APOs. Total expenditure of State CAMPA through budget provision upto APO 2023-24 is Rs.3702.70 Crore.

14.2. Achievement during APO 2023-24

14.2.1. Afforestation Activities

The following interventions under various afforestation components have been achieved.

- Site specification Compensatory Afforestation, Penal Compensatory Afforestation etc. include 297.503 ha. of Block Plantation, 3024 ha. of ANR, 393.067 ha. of Bald Hill, 159.32 Ha. of ANR without gap, and 29260 nos. of tall tree plantation.

Following activities have been taken up during aforesaid period.

- SSO bamboo over 83433 Ha.
- Block Plantation over 1527 Ha.
- ANR Plantation over28532 Ha.
- AR Bald Hill Plantation over 968 Ha.
- AR Casuarina Plantation over 32 Ha.

ANR (Other Indigenous) Plantation Keonjhar WL Division

AR Plantation 1600 Plants/Ham Keonjhar Division

Mangrove Plantation, Balasore WL Division

Casuarina Plantation, Balasore WL Division

- AR Mangrove Plantation over 20 Ha.
- SMC activity over 14572 Ha. forest area.
- Raising and maintenance of 455.79 Lakhs of 18 months old seedlings

Bamboo SSO Work in Sambalpur Forest Division

SMC Activity, Bargarh Division

Raising of 18 Months old seedlings

SMC Activity, Bamra Division

14.2.2. Forest Protection & Prevention of Forest Fire

Under this head following activities have been undertaken for protection of Forest of the State.

- Deployment of 200 fire fighting squads in 51 Forest& Wildlife Divisions.
- Deployment of 4010 nos. of rural unemployed youth for protection& conservation of forests & wildlife in 51 divisions.
- 261 nos. vehicles in 51 Forest and Wildlife divisions engaged for forest protection duties.

Forest Fire Prevention Squad

Protection Squad

14.2.3. Infrastructure Development

The following activities have been taken up under this component for office and residential accommodation of frontline Forest Staff.

- Construction of 06 nos. of Range Office, 04 nos. ofRange Officer's Residence, 51 nos. of Forester Quarter &182 nos. of Forest Guard Quarters.
- Construction of 147 numbers of Culverts,53 nos. of Causeways and 25 nos. of Seizure Yard.

- Maintenance of 1606.2 KM Forest Road.
- Anti-poaching Barrack - 10 nos.

Range Officer Residence, Silviculture Division

Range Office, Nayagarh Division

14.2.4. Wildlife Management

Under this component an amount of Rs.185.28 Cr has been utilised for following activities such as:

- Management of Wildlife in Protected Areas including protection activities, Anti depredation activities, Communication, Habitat improvement, Infrastructure development, Zoo management & Implementation of Elephant Train Collision Mitigation Plan.
- Implementation of Site-Specific Wildlife Conservation Plan.
- Implementation of activities prescribed inComprehensive Wildlife Management Plan for the State.
- Relocation of families from Debrigarh WL Sanctuary.

Voluntary Relocation of villages

Saltlick

14.2.5. Other Programmes

It includes the following activities:

- Maintenance of Research Garden& other research activities like Adaptive Research / Tree Improvement Programmes/Production of QPM.
- Construction of "State Forest Academy" at Shyamsundarpur, Chandaka, Bhubaneswar.

14.3. Highlights for APO 2024-25

The CAMPA Annual Plan of Operation 2024-25is in operation since April, 2024.Out of proposed financial outlay of Rs.1287.84 Crore the National Authority has approved the APO at Rs.1112.93 Crore. The progress of activities in APO 2024-25 are as follows:

14.3.1. Afforestation Activities

- Site specific Compensatory Afforestation (CA), Penal Compensatory Afforestation (PCA), CATP etc. completedover3939.51 ha.
- Block Plantation over 1395 Ha.
- ANR Plantation over 20627 Ha.
- Bald Hill Plantation over 968 Ha.
- Fruit and Fodder Plantation over 184 Ha.
- RET/Medicinal with Gap Plantation over 7905 Ha.
- Regeneration of Degraded Bamboo Forests over 19027 Ha.
- Raising and maintenance of 4.33 Crore 18 months old seedlings for various Plantation activity.
- Soil Moisture Conservation (SMC) over 2571 Ha. under progress

AR Plantation in Subarnapur Division

AR Plantation in Bargarh Division

14.3.2. Forest Protection & Prevention of Forest fire

- Deployment of 261 fire fighting squads in 51 Forest Divisions and Wildlife Divisions.
- Deployment of 4040 nos. of rural unemployed youth for protection& Conservation of forests & Wildlife in 51 Divisions.
- 227 nos. of hired vehicles used in 51 Forest and Wildlife Divisions for forest protection duties.
- Creation & Maintenance of 24507 KM Fireline in Forest and Protected Areas.

14.3.3. Infrastructure Development

- Construction of 05 nos. of Range Office, 05 nos. of Range Officer's Residence, 60 nos. of Forester's Quarters &170 nos. of Forest Guard Quarters are under construction.
- Construction of watch tower in WL Movement area. 10 nos. of watch tower are under construction.
- Maintenance & Repair of 725 KM Forest Road.

14.3.4. Wildlife Management

- Activities are taken up for management of wildlife including Protected Areas for protection activities, Anti depredation activities, Communication, Habitat improvement, Infrastructure development, Zoo management & Implementation of Elephant Train Collision Mitigation Plan.
- Implementation of Site-Specific Wildlife Conservation Plan in 243 projects.
- Implementation of activities under Regional Wildlife Management Plan.
- Relocation of families in 14 villages of Similipal, Satkosia Tiger Reserve& Kapilash WL Sanctuary is under progress.

14.3.5. Other Programmes

- Maintenance of Research Garden & other research activities like Adaptive Research / Tree Improvement Programmes/Production of QPM.
- Construction of “State Forest Academy” at Shyamsundarpur, Chandaka, Bhubaneswar.

14.3.6. Monitoring Mechanism (e-Green Watch)

Web based monitoring portal ‘e-Green Watch’ has been launched for monitoring and evaluation of all activities taken up under CAMPA in the State. The process of uploading the geo-reference of all activities undertaken in the portal has already been initiated and likely to be completed soon for their monitoring and evaluation by Forest Survey of India (FSI) & National Information Centre (NIC). Apart from that 3rd party monitoring and deployment of flying squads as internal vigilance have been set up for effective monitoring & checking of all CAMPA activities. Third party monitoring has been completed upto APO 2022-23 and action is being taken to take up 3rd party evaluation of activities in APO 2023-24.

ODISHA FORESTRY SECTOR DEVELOPMENT SOCIETY

15.1. Background

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

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

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

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

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

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

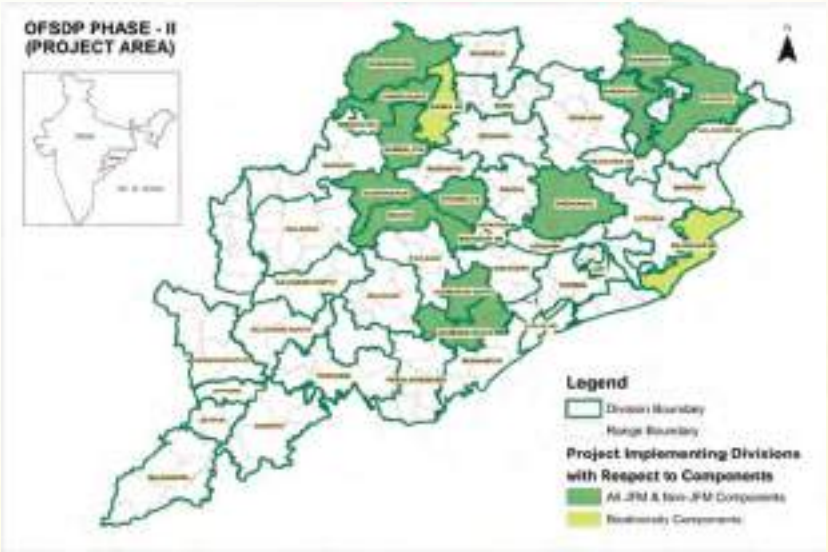
Odisha Forestry Sector Development Project, Phase-II is an externally aided project being implemented in Odisha with the loan assistance from Japan International Cooperation Agency (JICA). The Executing Agency of the OFSDP- II is the Department of Forest, Environment & Climate Change, Govt. of Odisha,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



15.3.1. Project Outlay & Components

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

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

15.3.2. Key Interventions under the project

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

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

PROJECT SCOPE

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

15.3.3. Progress of Activities

Major activities implemented under OFSDP-II are indicated below.

15.3.3.1. Preparatory work

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

15.3.3.2. Sustainable Forest Management Plan

Under this component, OFSDP-II has made the following progress in 2024-25 (till December 2024).

Component	Activities	Target & Achievements during 2024-25 (up to December 2024)		Cumulative Achievements up to December 2024
		Targets	Achievements	
Drainage Line Treatment	DLT Maintenance JFM Mode	502.5 Ha.	502.5 Ha.	1504.5 Ha.
	DLT Establishment Non-JFM Mode	13 Ha	13 Ha	756.29 Ha.
	DLT Maintenance Non-JFM Mode	251.29 Ha.	251.29 Ha.	756.29 Ha.
SMC	Fire line maintenance	28.5 Kms	28.5 Kms	1710.39 Kms
	Consolidation of Forest Boundary	32 Kms	32 Kms	1898 Kms
Plantation	ANR Maintenance	18645 Ha.	18645 Ha.	51006 Ha.
	AR Maintenance	3166 Ha.	3166 Ha.	6286 Ha.
	Farm Forestry Plantation	763.95 Ha.	763.95 Ha.	8650.65 Ha.
Establishment of Hi-tech Nurseries	6 Hi-tech Nurseries have been established in Athamallik, Baripada and Ghumsur (North), Sambalpur, Subarnapur & Sundargarh Forest Divsiions with a capacity to raise 2.2.lakhs of Poly-pot Seedlings and 2.2. lakhs of Hyco-pot Seedlings in each Nursery every year.			

SMC WORK in 2024-25

ESTABLISHMENT OF FIRE LINES in 2024-25

PLANTATIONS IN 2024-25

15.3.3.3. Sustainable Biodiversity Management

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

15.3.3.4. Experiments on Bio-diversity Management

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

A. Implementation of Satoyama Initiatives

Satoyama Initiative, a 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. Formulation of Micro Plan of each EDC has been completed
2. Avenue Plantation across the village
3. Revival of traditional variety Paddy (Bhajana) in 1 ha land (pilot) of 14 farmers
4. Training on Bio-fertiliser & Bio insecticides preparation and its use
5. Establishment of nutri garden through convergence in 32 households.
6. Supply of Smokeless Chullha to all households
7. Mushroom Cultivation, Apiculture, Livestock rearing etc. promoted through SHGs
8. Repair of Angan Wadi Centre and making it to functional
9. Clearance of invasive weed in the forest and SMC Measures: Gully Plugging, LBCD in all Nalas
10. Fire line construction and community driven protection of forest from fire
11. Solar Fencing for elephant depredation / reduction in man-animal conflict
12. Approach Pucca Road of 1 Km constructed through Rural Development Department, Govt. of Odisha

13. Revival of traditional equipment like Belana (Thrashing Equipment) and Dhinki (For Processing

14. Declaration of plastic free - Eco friendly and open defecation free village.

15. 6 EDCs including 65 farmers marketed paddy of 15 different varieties about 20 metric tons at a cost of Rs.4.08 lakhs during 2024.

Satoyama Initiatives

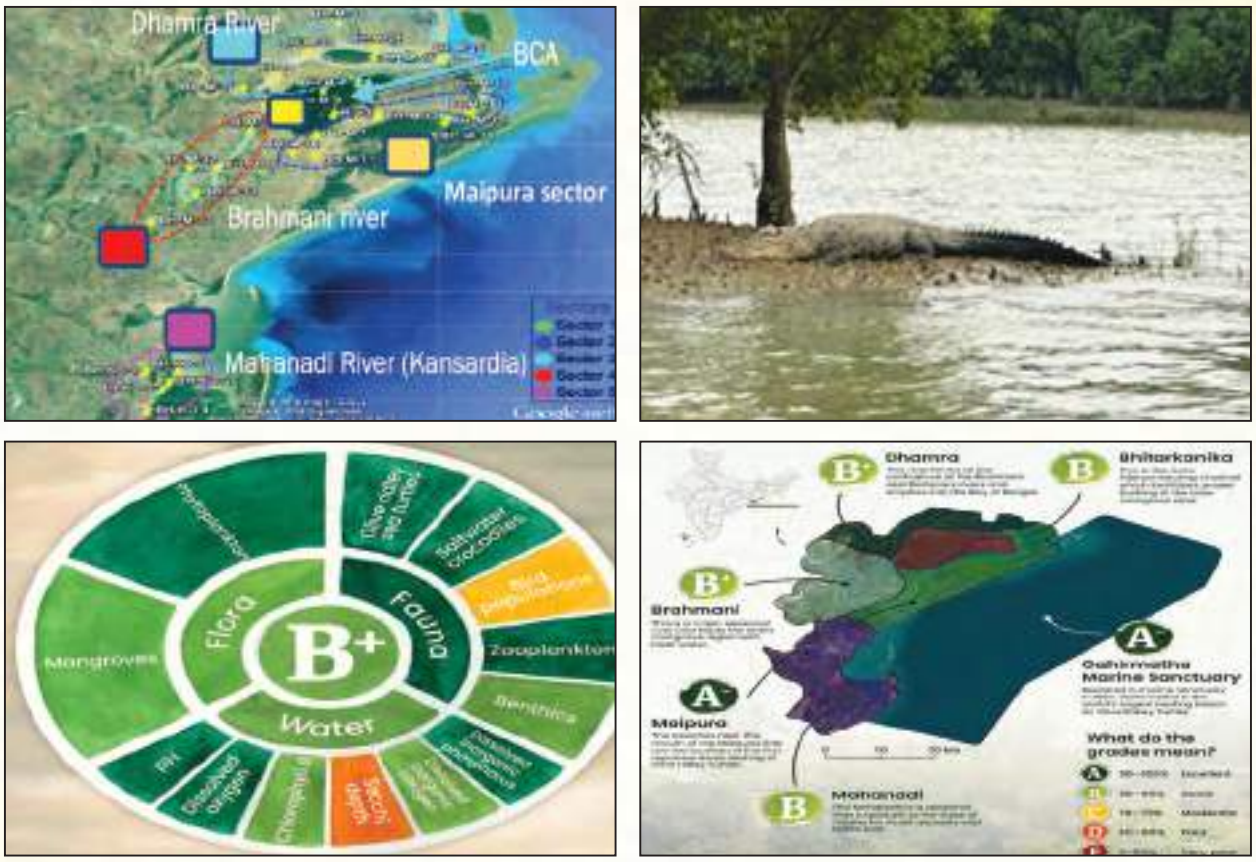
B. Establishment of Scientific Monitoring System at Bhitarkanika:

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

National Centre for Sustainable 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

C. Crosscutting Issues

a. REDD + Readiness- CMRV

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

The drivers of forest degradation in 12 Project Divisions have been identified and the activities to address the drivers have been planned as part of the planning process. Some of the interventions that are being supported during the project include introduction of the

alternative means of livelihood and household energy sources, sustainable harvesting of NTFPs, augmentation of forests, restoration initiatives, etc. Indicative options for the interventions linked with international scientific framework (REDD+) have been framed. These activities are planned and carried out under the JFM mode and livelihood support.

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

b. Gender Mainstreaming

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

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

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

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

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

Environmental and Social Safeguard system under the OFSDP II is to follow proper procedures including the free, prior and informed consultations with the stakeholders such as

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

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

D. Livelihood Improvement Initiatives

a. VSS Building cum IGA Facilitation Centre

Under Community Development component, a multi-purpose community building "VSS Building cum IGA Facilitation Centre" is being constructed in each VSSs covered under the Project. Till end of December 2024, 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

b. Community Development through Inter-sectoral Convergence:

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

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

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

Since the beginning of implementation of OFSDP-II, a sum of Rs. 598.37 crore have been mobilized through inter-sectoral convergence, covering about 22.52 lakhsnumber of beneficiaries in the project villages till December 2024.The activities taken undertaken in all the VSSs covered under OFSDP-II through various Departments include supply of drinking water, provisioning of toilets, supply of seeds of pulses, cereals, vegetables, distribution of LPG connection, financial and technical support to the SHGs for development of Micro enterprise, series of capacity building activities, field demonstration etc. have been facilitated through convergence. Similarly, kitchen garden, Nutri-garden, supply of horticulture seedlings were alsofacilitated 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 December 2024 under OFSDP-II

Sl. No.	Departments	Beneficiaries	Funds mobilised (Rs. in Lakh)
1	Agriculture & Farmers' Empowerment	78874	1507.15
2	Corporate & Bank	19489	2131.07
3	Department of Water Resource	5158	419.86
4	Dept. of Mission Shakti	14977	1183.94
5	Dept. of Energy & OREDA	1119	83.24
6	Dept. of Industry	728	90.08
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	76831	1922.80
11	Forest, Environment & Climate Change	174430	2021.10
12	Handloom & Textile Dept.	47	4.40
13	Health & FW Dept.	118811	367.57
14	Horticulture Dept.	68210	1857.99
15	Irrigation	17670	1770.75
16	Labour Dept.	653	21.90
17	Ministry of Communication	1535	867.60
18	Ministry of Food Processing	268	3.56
19	Ministry of Petrolium& Natural Gas (IOCL and others)	17947	289.60
20	MP/ MLA LAD	5055	44.75
21	MSME	788	22.99
22	NABARD	2950	8.05
23	NGO	19054	174.62
24	NHAI	63	3.61
25	OLM	1902	162.29
26	Others (Municipality, CSR, MP Lad Fund etc.)	3411	31.43
27	Panchayati Raj & Drinking Water	1408861	35342.10
28	PWD	7323	886.26
29	Railway Dept. (Skill Development)	24	2.40
30	Revenue & Disaster Management	213	8.21
31	Rural Development	38976	2898.33
32	SC & ST Dev. Dept.	76906	2107.93
33	School & Mass Education	2235	40.06
34	Sericulture	30	39.00
35	Skill Development & Technical Education	5720	161.48
36	Social Security & Empowerment	249	3.10
37	Soil Conservation Dept.	38238	2663.88
38	Urban Development	4467	191.38
39	Western Odisha Development Council	212	5.00
40	Women and Child Development	34522	336.40
41	Planning & Convergence	456	27.80
	Grand Total (Convergence)	2252206	59837.15

c. Income Generation Activities

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

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

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

e. Livelihood Resource Cell:

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

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 December, 2024 total 38083 members of VSSs have been benefited including SHGs-2605, CIGs-423 & PoPs-10630. During this period Rs.24.82 Crores amount of RF fund have been disbursed to various members to support IGA activities and Rs.15.37 Crores have been refunded by the members.

IGA Activities in VSS through Revolving Fund

f. 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.

E. Capacity Building:

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

Customized Capacity Building Modules along with corresponding power-point presentation are prepared for the trainings and are shared with the field staff for conducting the second round of trainings at field level. Till December 2024,a total of 4940 numbers of trainings/ orientation programme / exposure visits of primary and secondary stake holders have been conducted under OFSDP-II covering about 202575 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
17. Operational Guideline of Revolving Fund
18. Skill Development of SHG members on Sal Leaf Processing & Machine Sewing at Cluster

19. Skill Building training on IGA Through Convergence
20. Training on CMRV, Gender Mainstreaming & ESMSF Framework
21. Training on Re-visit of Micro-plan
22. Accrual & Trading of Carbon Credits

Capacity Building Programme at different level

F. Monitoring Activities:

1. Baseline Survey on Socio economic and Physical situation:

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

2. Concurrent Monitoring:

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

G. Communication & Publicity:

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

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

H. Geomatics Centre established at PMU:

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

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

Activities in Geomatics Centre

1. Developing and maintenance of all in-house GIS based decision support system.
2. Developing an archive of consistent and accurate geographic data and integrate up-to-date MIS for all forest activities within the project divisions.

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

15.4. Ama Jangala Yojana (AJY)

Ama JangalaYojana (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.

Total 4601 nos. of VSSs have been covered under the scheme by December, 2024. As a major policy under the project, participatory village micro-plans have been prepared, approved in Gram Sabha and implemented in all villages under the Scheme. In addition to this, 14,263 women self-help groups are linked with various Income Generation Activities (IGAs) under inter-sectoral convergence with Line Departments. During the Project period (as on December, 2024), Assisted Natural Regeneration (ANR)- Without Gap Plantation has been carried out in 2,09,568 ha of forest area and ANR-With Gap Plantation in 19,975 ha under the Scheme. Apart from these, Block Plantations have also been raised over 1005 ha of forest land. Out of the above, maintenance activities are being carried out in 42737 ha of Assigned Forest Area during the present year i.e 2024-25. 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.

EC Meeting at Kambinaju VSS, Phulbani Division

Public Awareness Rally at Keonjhar Division

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 F.Y. 2024-25 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 December 2024, Rs. 1148.78 Crores have been mobilized from other Line Departments benefitting about 34,30,246 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 42 numbers of Line Departments and CSR agencies. Additionally, many activities pertaining to community infrastructure development have been undertaken under convergence initiatives. Livelihood promotion activities such as skill development of rural youths, support to individuals/groups for entrepreneurial activities, construction/repair/renovation of roads, water bodies and other community assets, drinking water supply, linkage to Govt. welfare schemes, construction of individual houses and MGNREGS based activities have been implemented through inter sectoral-convergence by which the quality of living of the forest fringe dwelling communities has been improved remarkably.

Raksha Bandhan at ANR With Gap Plantation siteJatiguda VSS, Jeypore

ANR With Gap Plantation site, Kondelguda VSS, Malkangiri Division

Vegetable cultivation support at Kasirapatna VSS under Keonjhar Division

Vegetable cultivation support at Kandaposi VSS under Keonjhar Division

Turmeric farming support to VSS members at Talaguda VSS, Koraput Division

Cabbage cultivation support to Bishnu Patarani SHG, Chemana VSS, Keonjhar Division

Goatary support to VSS members at Makarmunda VSS, Deogarh Division

BackyardChicken farming of the SHG members of Tulasi SHG at Kumurapalli VSS, Deogarh Division

Vegetable seed support to farmers at Jarapada Range, Angul Division

15.5. OFSDS-OMBADC Livelihood Promotion Project

About the Project

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

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

Objectives

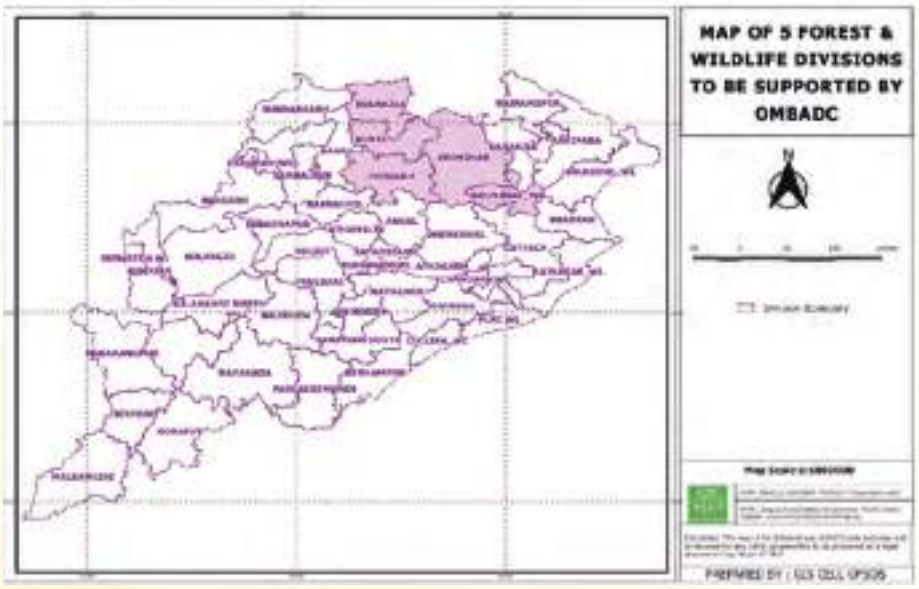
The primary objectives of the Livelihood Promotion Project, OFSDS-OMBADC are:

i. To provide alternative livelihood opportunities of the forest dependent and forest fringe dwelling communities so as to reduce their dependency on forests and provide additional/ alternative source of income.

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

Location of the Project

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



Institutional Framework

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

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

Project Components

The project has the following components:

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

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

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

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

1. VSS identification and Community mobilization has been completed in all 900 number of VSS.
2. The reconstitution of VSS as per the JFM resolution has been completed in 900 VSSs.
3. 900 numbers of community level training programme at VSS level completed.
4. Executive Committee of all the 900 VSSs have been resolved as sub-committee of Gram Sabha for compliance of FRA.
5. Survey, Demarcation and pillar posting of the forest area assigned to the VSSs completed.
6. Identification and approval of the products for IGA completed.
7. Identification of 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 December 2024, 23,750 numbers of various meetings conducted at VSS level.
14. Till December, 2024, 47,615 numbers of participants of 5090 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.7255.31 Lakhs have been mobilized through convergence of 29 Line Departments up toDecember, 2024 benefitting 1,87,597 Persons (96,634 Male & 90,963 Female) in OFSDS-OMBADC Project Divisions.
16. During the year 2024-25 preparation of Business Plan as well as training on Income Generation Activities at VSS level is going on under OFSDS-OMBADC Livelihood Promotion Project.

1. Community Mobilization

SHG Meeting at Kandraposi VSS, Keonjhar Division

E.C Meeting Kharuasahi VSS of Bonai Division

GB Meeting at Raiberna VSS of Kuarmunda Range, Rourkela Division

GB Meeting at Manigiri VSS of Deogaon Range, Keonjhar (WL) Division

2. Capacity Building Initiatives

One day Capacity Building Training at Deogarh Division

Range Level Capacity BuidlingTrainig at Patna Range, Keonjhar Division

Millet SMI training at Kundheidiha VSS under Jarda FMU, Bonai Division

General Body meeting at Manko VSS of Rajgangpur Range, Rourkela Division

3. Livelihood Planning

Mushroom Cultivation Training on Kandarposi VSS under Keonjhar Division

Broiler Training at Balani VSS of Barkot range under Deogarh Division

Discussion about IGA at Purunaghati VSS of Hadagarh Range under Keonjhar(WL) Divison

Discussion of different livelihood activities with RaibernaVSS members of Kuarmunda Range of Rourkela Division by State OMBADC Team

4. Convergence and IGA Activities

Potato distribution to farmers under Sole Range under Bonai Division

Goat Farming of Makarmunda VSS of Barkot Range, Deogarh Division.

Goat Farming at Sajanapali EDC of Hadgarh Range under Keonjhar (WL) Division

Pig farming at Jamberna VSS of Bisra Range of Rourkela Division

Marigoldfarming at Tangarpali VSS of Bisra Range of Rourkela Division

Broiler Farming Sujaunapal EDC of Hadgarh Range, Keonjhar(WL) Division

Poultry Farming of Gopinathpur VSS of Ghatagaon Range, KeonjharDivision

Vermicompost Packing & Stitchingof Pratappur VSS of Banki Range of Rourkela Division

Mesta Seeds Distribution at Bangurusuni VSS of Brahmanipal Range under Keonjhar(WL) Division

Vermicompost Preparation of Sisoodihi VSS, Tamra Range of Bonai Division

FOREST INFORMATION TECHNOLOGY AND GEOMATICS CENTRE (FITGC)

16.1. FIT & Geo-matics Centre

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

16.1.1. Objectives

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

16.1.2. 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.

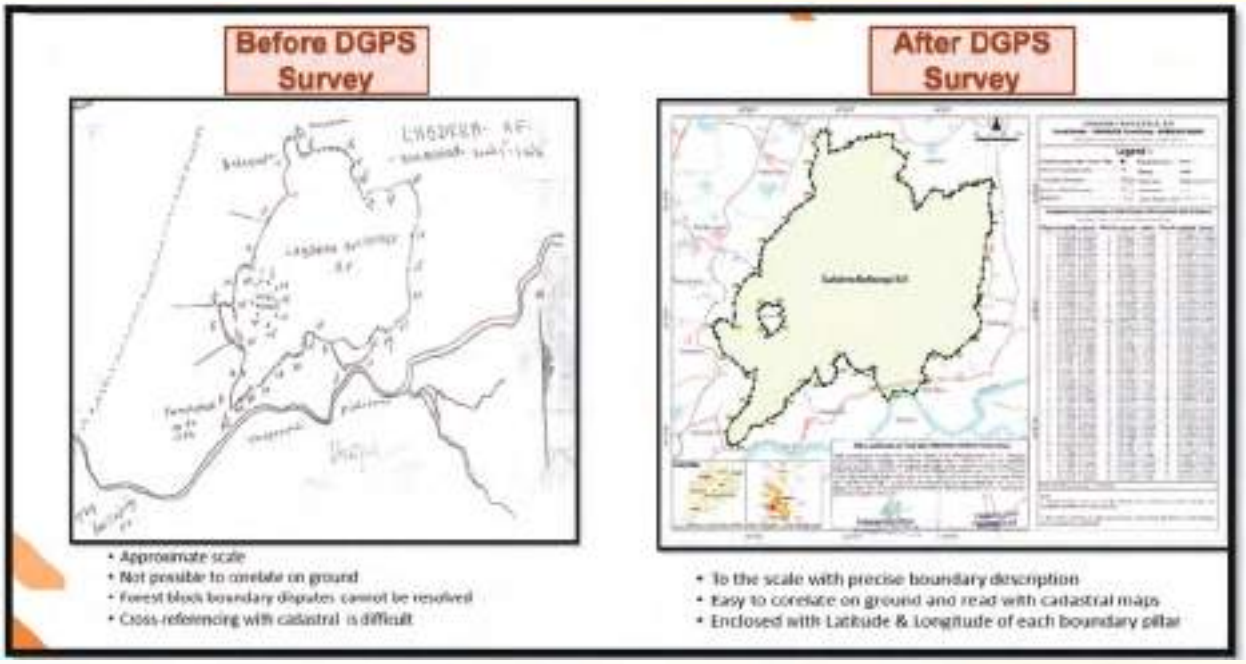
Forest, Environment & Climate Change, Dept. Govt. of Odisha has taken up geo-referencing of all kinds of forestlands (RF, PF, Revenue forests, and deemed forests) and preparation of forest cadastres for the entire State as per directives of Hon'ble Supreme Court of India using DGPS, GIS & RS. Acting on the directives and with joint efforts of Forest and Revenue Departments, Odisha is the pioneer state to date to gazette notify a Standard Operating Procedure in July 2017.

The project aims to prepare geo-referenced forestland records of about 60,991 Sq.Km. of 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 4280 FBs of 39963.47Sq. km. area, DLC/ROR validatedin 304 Tahsilshas been completed. Re-notification published by FE & CC Department for 373 Forest Blocks with DGPS surveyed area of 263172.72 ha in Angul, Athamallik, Jeypore, Jharsuguda, Kalahandi North, Karanjia, Khordha, Koraput, Phulbani, Rourkela, Sambalpur & Sundargarh Forest Divisions.

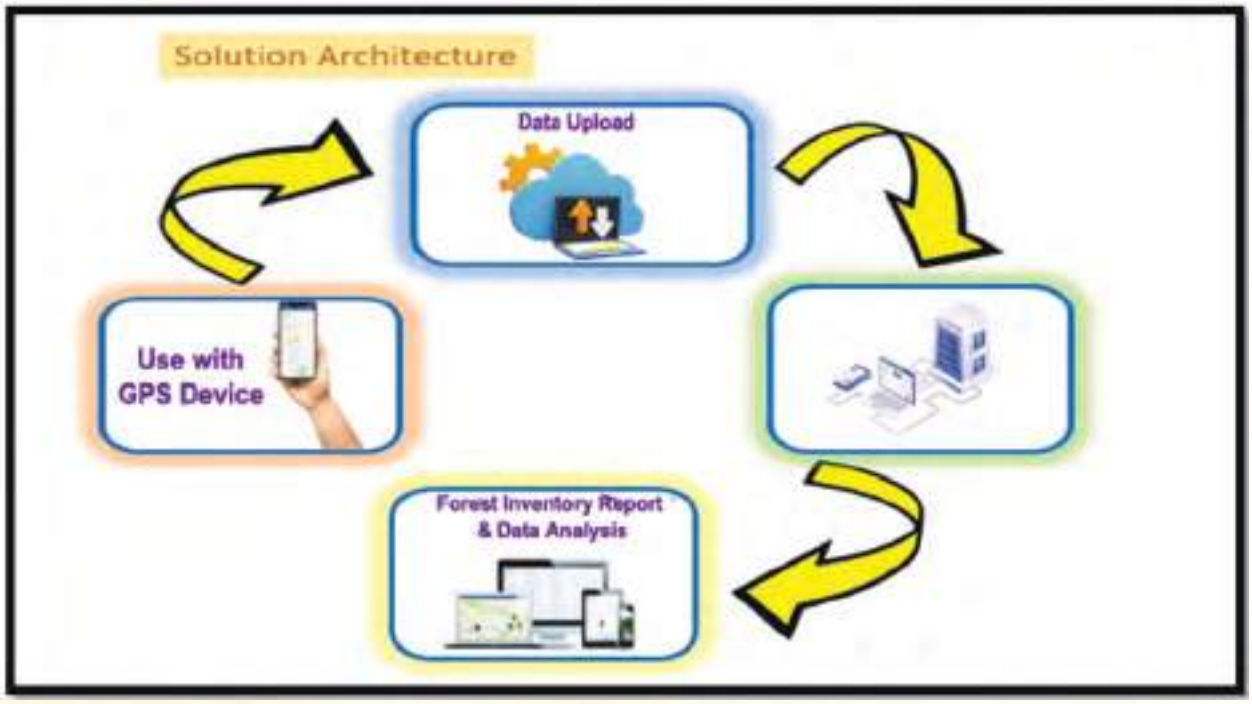
DGPS Survey in the Forest Blocks

Division Level Training on GRFL



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 @195Mbps & 300 Mbps respectively.

4) Digital monitoring of forestry activities:



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

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

A. **Forest Assets:** Module is used to map any asset geospatially to project it on map with images. Assets include all types of Plantations, Nurseries, buildings, Rest sheds, Roads, Waterbodies etc.

B. **Afforestation Land Selector:** This application 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. **Forestry Inspection:** Used to digitally capture the inspection report in the field by one Forest Officer.

J. **Tree Felling & Salvage:** To report regarding illicit felling of tree & salvage of tree.

K. **Forest Right Act Survey:** The application is used for survey of individual rights and community rights issued to the Tribal and Traditional Forest Dwellers as per provision of the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Rights) Act, 2006. This module also enable us to capture the data regarding rejected FRA cases.

L. **Threats to Wildlife:** To capture wildlife vulnerability.

M. **Forest Encroachment:** Forest land encroachment survey is carried out with the help of this module.

N. **Tall Plant Monitor:** Monitoring of tall tree plantation in habitation areas.

O. **Vanmahotsav:** Using this module Vanmahotsava sites are reported along with number of participants & photographs.

P. **Damage by Wildlife:** Wildlife Depredation reported using this module.

Q. **Animal Reporting:** Animal sighting is reported along with Death & Injury.

R. **Forest Fire Controller:** Reporting of day to day fire incidents received from FSI portal to the field and feedback reporting from field are carried out using this application.

S. **GNSS Skymap:** Function as GPS aids and used for tracking and arriving at any desired location.

T. **Locator:** To know about the present location in field.

U. **Navigation:** Which function as GPS aids and used for tracking and arriving at any desired location.

V. **Data Trans:** Used to sync the captured data from field to FITGC Server and vice versa.

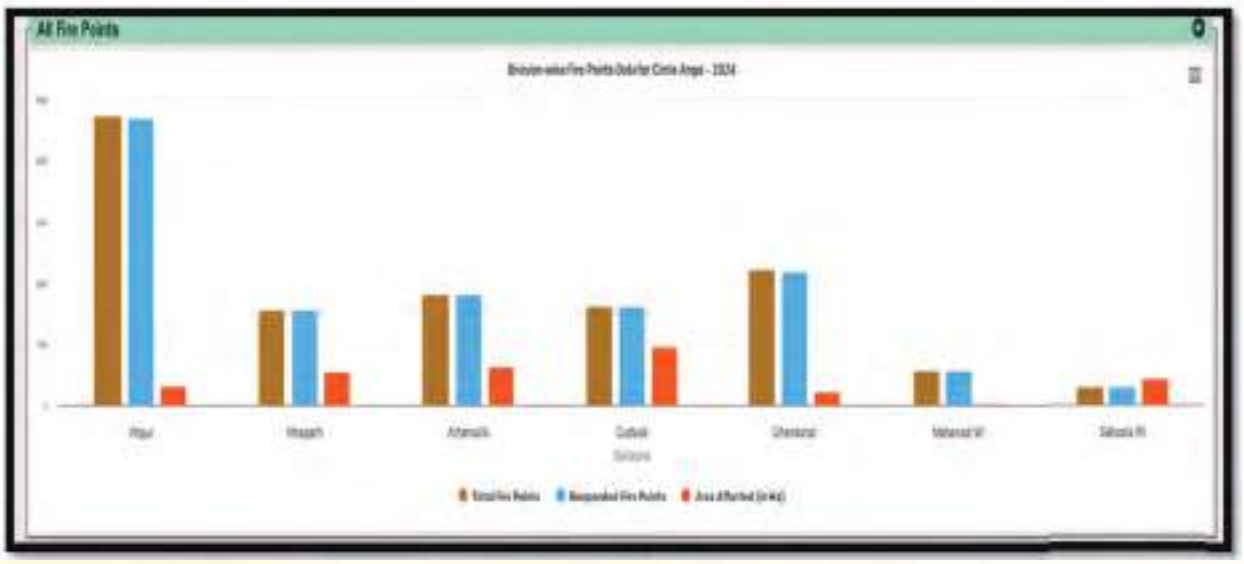
W. **Forest Cam:** Used to take Geo Tagged photographs.

X. **Gallery:** Used to store the Photographs & files.

Y. **Road Explorer:** Used to survey & upload all the Forest Roads.

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

Graphical Representation of Odisha Forest Monitoring System Web Portal



The Forest Cover of Odisha Across Five Assessment Years

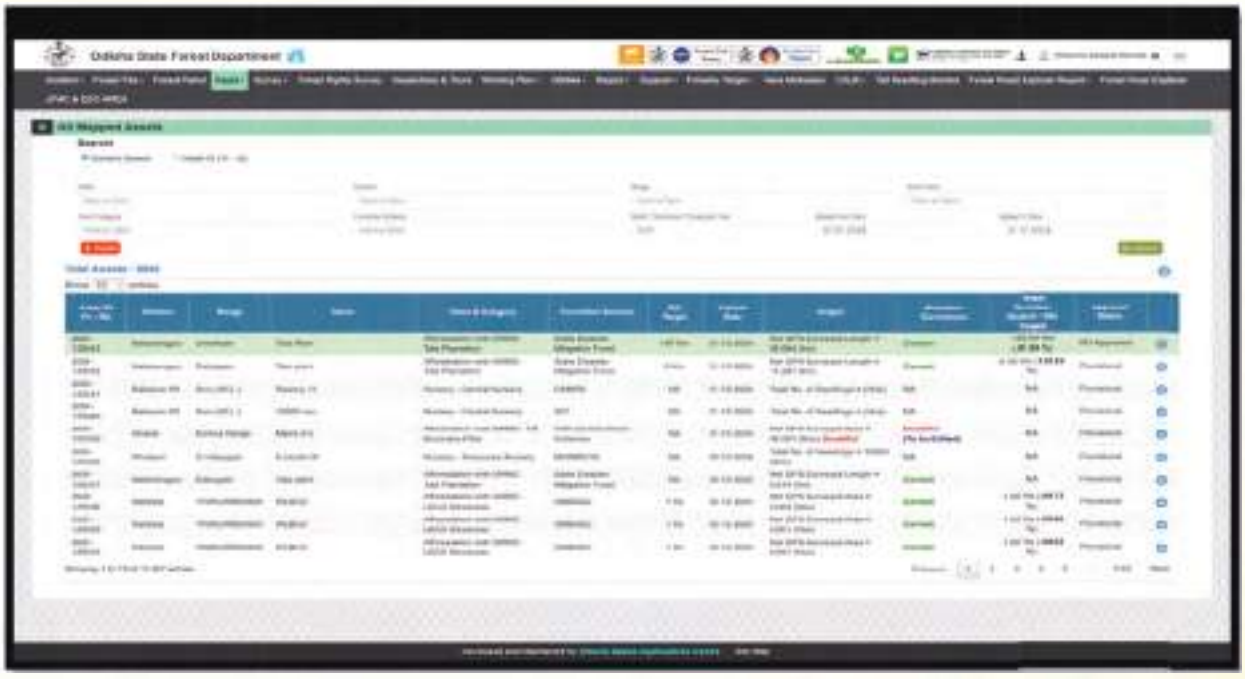
Year : 2013	Year : 2015	Year : 2017	Year : 2019	Year : 2021
Area: 50347 (Sq Km)	Area : 50468 (Sq Km)	Area : 51345 (Sq Km)	Area: 51819 (Sq Km)	Area : 52196 (Sq Km)

TT Permit Project -Current Status

Total Application Received	Total TT Permit Issued	Total Application Pending	Total Application Rejected
7401	169	4977	1855

Wildlife - Anukampa Project (Till Date Status)

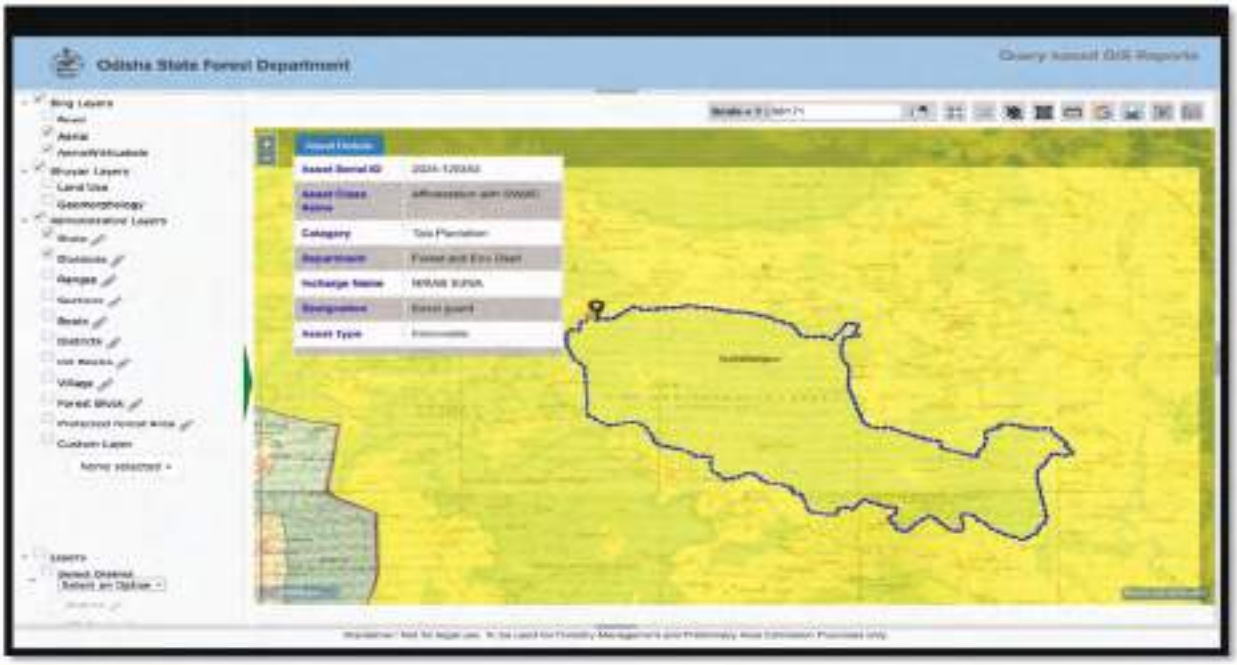
Crop Damage		Cattle Kill		House Damage		Human Injury		Human Death	
Total Applications Received	102544	Total Applications Received	539	Total Applications Received	1347	Total Applications Received	1544	Total Applications Received	430
Application Paid	100947	Application Paid	779	Application Paid	5948	Application Paid	1228	Fully Paid Applications	330



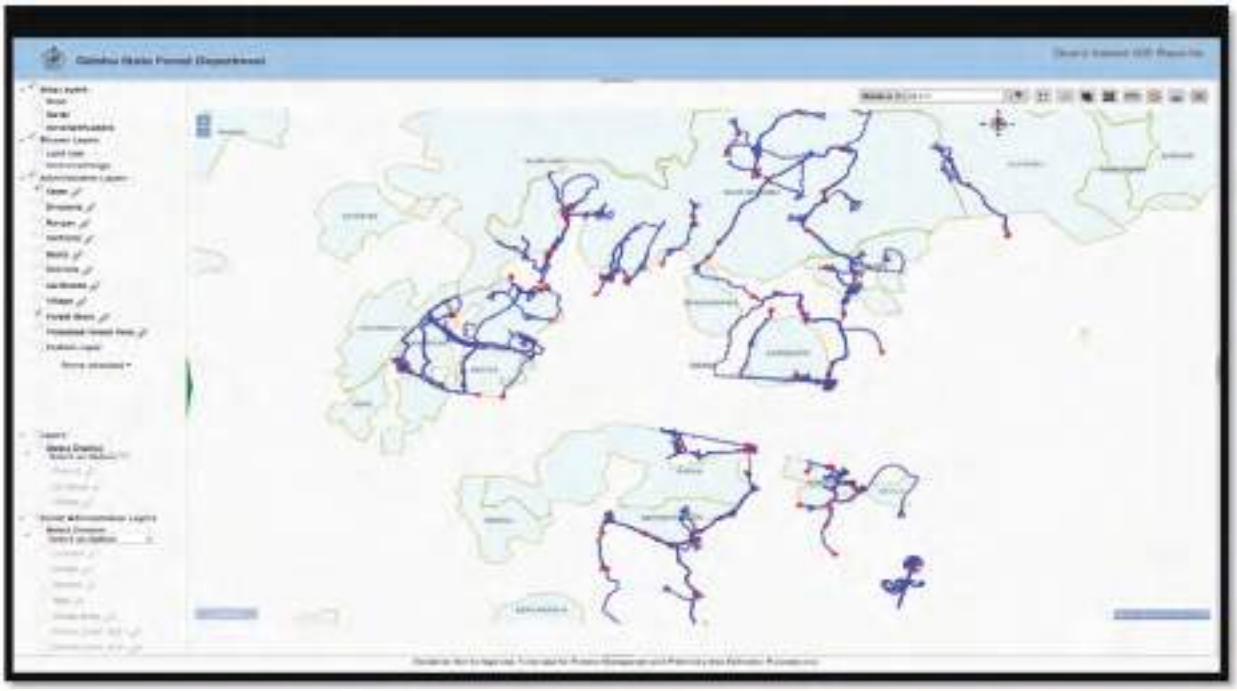
Map View of an captured ANR Plantation

Map View of a Rescue Centre:

Map View of an captured Taala Plantation Asset



Map Showing Forest Patrolling data for a time period in OFMS

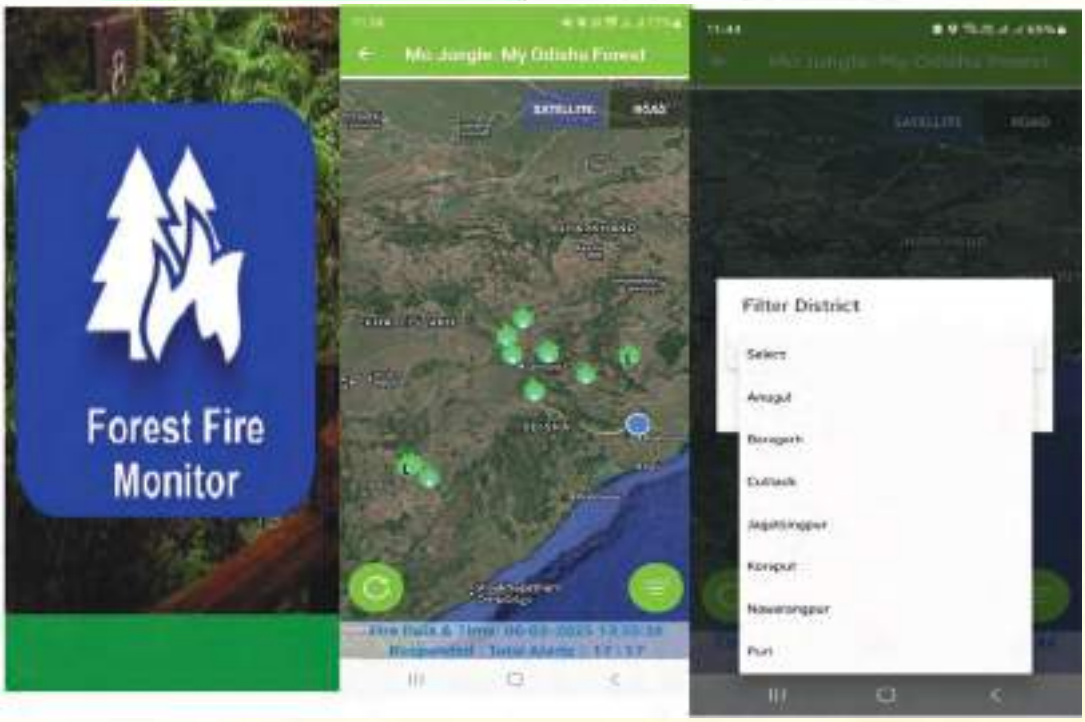


Foot Patrolling Data Showing on Google image in OFMS Web Portal

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):** Using KYFL @ Odisha App, anyone can get the geo-location of Point of Interest (POI), name & Approximate Distance from the nearest Notified Forest Block and details of Forest Administrative Jurisdiction. The application also provides the additional land revenue Information like Name of the District, Tahasil, CD Block, GP, Village, Khata No., Plot No., Owner's Name, Land Type & area in ha. with respect to Point of interest.

- **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.



6) **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. The Offline mode of TT Permit issue is being stopped. 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.

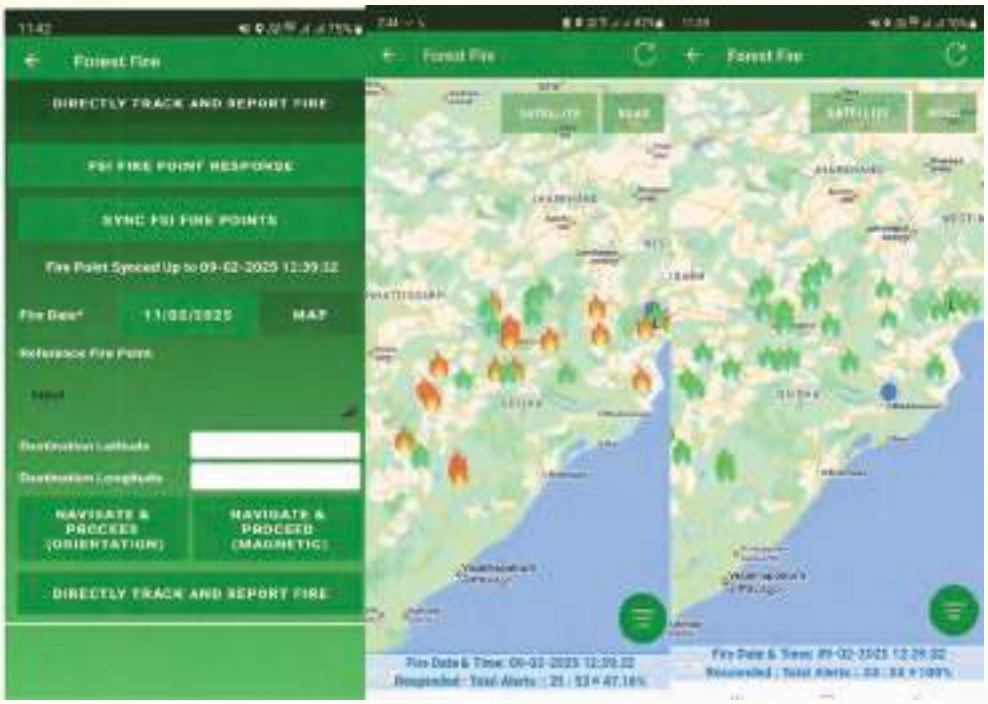
7) **Annual Maintenance Contract and Purchase of IT equipment:** This Centre has taken up the task of Annual maintenance of Computers and peripherals. The FITGC has also been assigned the task of procurement of IT items through GeM portal.

8) **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.

9) **Monitoring of Forest Fire:** The forest fire monitoring is done in a unique way by integrating our FITGC server with FSI server to fetch the fire data directly in the fire application from FSI server. In addition to this, the application having navigation facility helps the ground staff to navigate and quickly reach to the fire spot thereby substantially reducing time to respond fire incidences and area of damage. The user responds all the fire spot through android application and then sync the data to the server for further monitoring by Forest Headquarter. The Forest HQ has dedicated fire cell which monitors fire on 24x7 basis. During the year 2023, out of 36713 number of fire incidences, 36321 nos. fire points have been responded online by the front line 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.)

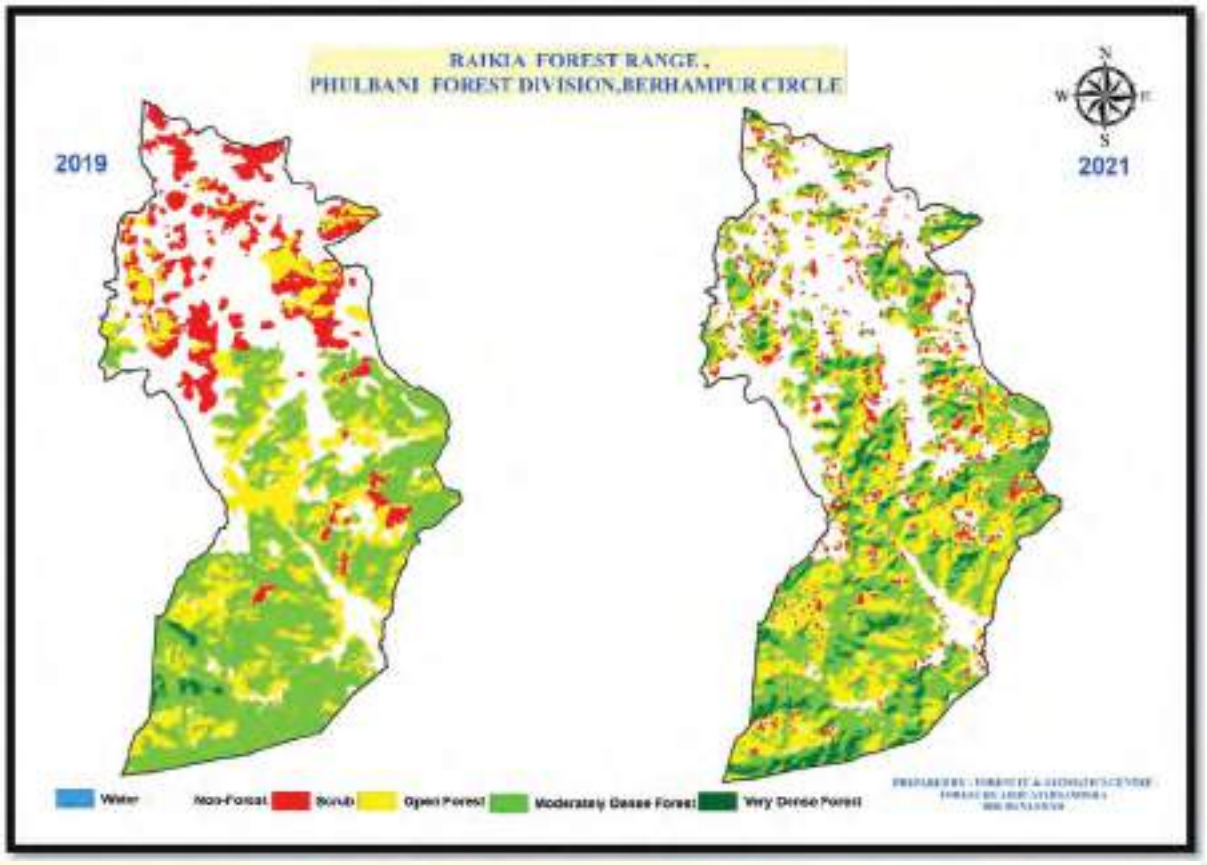
OFMS @ Mobile (Odisha Forest Management System)



10) **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 and six 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.

11) **DRFL:** The project of identification of degraded Revenue Forest Land for the purpose of raising Compensatory Afforestation against the project requiring Diversion of Forest Land for Non-Forest use is under process. This is a part of the Project "Geo-referencing of Forest Land in Odisha". Till date Identification of Degraded Revenue Forest Land has completed in 27 Forest Divisions. Under this exercise all Revenue & DLC Forest in a Division is being Geo-referenced based on high resolution satellite image, cadastral maps and Tahsildar & DFO certified Revenue & DLC Forest Land schedules as per RoR & DLC records. All these data of each Division has made available in the official website ***odishaforestgis.in*** for use by Forest & Revenue officials as below:

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



KENDU LEAVES ORGANIZATION, ODISHA

Introduction

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

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

17.1. Kendu Leaves Organization

Kendu leaves 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 Divisions	13 Sub Divisions	41 Ranges
	CCF Balangir Circle	8 Divisions	16 Sub Divisions	59 Ranges
	CCF Sambalpur Circle	6 Divisions	13 Sub Divisions	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 from Grade- I to IV as per the specification of colour, texture, size and leaf condition and 5 Kg bundles are produced. 12 such bundles are packed in gunny bags which makes one bag of 60 Kg and 100 such bags equivalent to 60 qtls are delivered to OFDC for sale as KL lots. Around 21,000 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.

17.4. Achievement of KL during last 5 years

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

Crop year	No. of Kerries Purchased In Crore	Physical achievement in lakh Qtl	Financial Achievement in crores	Sale value in crores	Mandays generated in lakhs	OFDC commission in crore	Trade Surplus in crore
2020	89.34	1.902	265.44	410.79	60.18	38.75	106.60
2021	125.46	2.650	365.84	596.85	80.00	61.43	169.51
2022	130.92	2.785	412.33	589.80	100.00	61.57	115.82
2023	124.95	2.652	405.12	493.72	100.00	60.00	80.00
2024	115.39	2.457	478.15 (Provisional) As on 31.01.2025	541.27 (Provisional) As on 31.01.2025	100.00	55.00 (Provisional)	45.00 (Provisional)

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

The physical and financial achievement of 2024 crop year up to 31.01.2025 is furnished herein under.

Physical

Crop year	PPKL amount In Crore	Target In lakh Qtl	Achievement In lakh Qtl	Sale In lakh Qtl upto 31.01.2025	Sale Value in crores upto 31.01.2025	Anticipated Sale value in crores	Anticipated Trade Surplus in crores
2024	210.48	3.01	2.456	2.12	541.27	600.00	45.00

Financial

Crop year	Revised Target in crores	Achievement in Crores up to 31.01.2025	Anticipated achievement in crores as on 31.03.2025	Mandays generated in lakhs up to 31.01.2024
2024	499.19	478.15	481.89	100.00

17.5. Fund Management

(i) Working Fund advance is arranged by OFDC by availing DRI loan and taking sale proceedsfrom KL Joint account.

(ii) Kendu Leaves Development Board (KLDB) under the Chairmanship of Hon'ble Chief Minister,Odisha is the apex policy making body

(iii) KLCC under the Chairmanship of Chief Secretary, Odisha approves annual budget and monitorsprogress of KL operations.

17.6. 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).

17.7. Initiatives taken

1. Employment Generation

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

2. DBT Payment

The annual budget for kendu leaf working is around 480 Crores. 95 % of the entire budgetamount along with all welfare measures to the tune of more than Rs 500.0 Crores are paidto the beneficiaries through DBT.

3. Mobile Banking facility

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

4. New Schemes

There is no budget provision for kendu leaf operational works from state budget. However, during Financial Year 2023-24, Rs 50.0 Crores have been provided under a new Scheme "Mukhyamantri Kendu leaf welfare Fund" for welfare of kendu leaf beneficiaries. Similarly, Rs 100.00 Crores has been provisioned during 2024-25 FY in Annual Budget and Rs 20.0 lakh have been provisioned for publication of IEC materials under Programme expenditure.

5. Women empowerment

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

6. Regular hike in Kerri price

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

7. Geo tagging of Bush Cutting command areas

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

8. IT Intervention

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

9. Integration with State DBT portal

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

ODISHA FOREST DEVELOPMENT CORPORATION

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

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

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

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

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

18.1. OBJECTIVES

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

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

18.2. ORGANISATION

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

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

18.2.1. TIMBER & FIREWOOD

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

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

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 meetthe requirement of local people, some timber as per choice of the purchaser are sold to them at fixed retail rate. From the year 2006-07, Government have taken decision to sell 30% ofcoupe timber to local people on retail basis confined to 35 cft. per family per year. With effectfrom 2008-09, Government have also earmarked 40% of irregular lots for sale on retail.It is seen that only for species like Teak and Sal there is more demand among retail purchasers.

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

Timber Production (in cum)

Financial Year	No.of Coupes Worked	Timber Production (in Cum)			
		Coupe	Salvaging & UD Case	Other Sources	Total
2019-20	97	14001	9621	6462	25001
2020-21	119	16069	3970	5994	26033
2021-22	100	12528	3436	4666	20630
2022-23	144	20346	3431	5919	29696
2023-24	130	16648	2310	7480	26438

Firewood Production (in Stacks)

Financial Year	No.of Coupes Worked	Firewood Production (in Stacks)			
		Coupe	Salvaging	Other Sources	Total
2019-20	97	6381	4551	11108	22041
2020-21	119	6402	1112	12232	19747
2021-22	100	7014	2228	12402	21644
2022-23	144	8724	1929	1410	24760
2023-24	130	8239	1061	23223	32523

18.2.2. SAW MILL OPERATION

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

Financial Year	OFDC's own sawing (Quantity in cum)				Private Sawing (in cum)		
	RT Fed to Sawmill	Sawn timber obtained	Quantity Sold	Sale Value (Rs. In lakh)	RT Fed to Sawmill	Sawn timber obtained	Sawing Charges Realized
2019-20	965	558	777	338.69	5227	4081	139.20
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

TURN OVER FROM TIMBER TRADE FOR LAST 5 YEARS IS AS UNDER (RS. IN LAKH)

Financial Year	Round Timber	Firewood	Sawn Timber	Sawn Firewood	Sawing Charges	Total
2019-20	7611.31	1024.86	338.69	16.79	139.20	9130.85
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

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.

18.2.4. KENDULEAF

Kendu leaf is an important 'Non-Timber Forest Products (NTFP) item of Forest Department. It is used as wrapper of Bidi. In Odisha these leaves are collected, stored, processed and bagged by Kendu Leaves organisation of Forest Department. There are two different ways of trading these leaves - 'Phal' leaves which are the dried leaves bagged in standard bags, each weighing about 40 Kg. Such type of collection is common in Kendu leaves producing states like Andhra Pradesh, Bihar, Chhatisgarh, Jharkhand, Madhya Pradesh, Maharastra, Rajasthan, and U.P. The other kind of trading involves processing of leaves at Phadi house into different grades of quality and leaves are bundled quality wise weighing 5 Kg each and bagged with each bag weighing about 60 Kg. These processed leaves are the monopoly of Odisha State only and best quality processed leaves are exported by the purchasers to countries like Sri Lanka, Bangladesh, Pakistan etc. This trade creates about one crore mandays of job mostly during peak summer season. Corporation entered into this trade from the year 1965-66. However, after nationalisation of produce from the year 1973, Corporation has been made the sole selling agent. After collection, processing and bagging, the leaves are delivered to Corporation by the Kendu Leaves Organisation and the Corporation through its marketing strategy sells the leaves through tender or Auction. Tender or Auction takes place at regular interval. The manual tender and auctions for sale of Kendu Leafs are now being replaced with e-tender and e-auction mode through e-tender/e-auction portal of OFDC Ltd. For kendu leaves working in the field, Corporation arranges working fund advance for Kendu Leaves Organisation which are subsequently recovered from the sale proceeds. Corporation gets commission at fixed rate. After realising taxes, working fund advance and commission, balance fund is paid to Kendu Leaf Development Fund.

Financial Year	Crop year	Crop year wise Quantity delivered (in Lakh Qntl)	Quantity sold including arrear stock (in Lakh Qntl)	Realised Sale Value (Rs. in Cr.)	Working Fund (Rs. in Cr.)	Selling commission (Rs. in Cr.)	Amount paid to KLDF (Rs. in Cr.)
2019-20	2019	2.033	2.625	399.09	273.70	34.34	111.02
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

18.2.5. BAMBOO

Like Kendu leaves, Bamboo is also a nationalised forest produce in the State. It is worked in the forest areas as per the prescriptions of Working Plans and Working Schemes. For managing the working of Bamboo there is an 'Empowered Committee' at State level under the Chairmanship of Additional Chief Secretary, FE & CC Department. Bamboo working is done by OFDC Ltd through Raw Material Procurers (RMP) as per guidelines approved by the Empowered Committee. Most of the Bamboos in the form of Industrial Bamboo [I.B] are sold to different industrial units whereas Commercial Bamboos [C.B] are harvested for supply to local people and Bamboo artisans at concessional rate. Till 2016, the paper Mills were major procurers of Industrial bamboo. In the meanwhile,Paper Mills have adopted a new technology for paper manufacturing replacing bamboo with soft wood as raw materials. Thereby, requirement of bamboo as a raw material is reduced to minimal which has resulted in drastic reduction on the demand of Industrial Bamboo.

Financial Year	No.of Coupes Worked	Production of		Sale Value (IB+CB) Rs. in Lakh	OFDC's Revenue Rs. in Lakh
		Industrial Bamboo (in SU)	Commercial Bamboo (in pcs.)		
2019-20	24	3502.26	351938	330.84	74.34
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

18.2.6. COMMERCIAL PLANTATION

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

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

18.2.7. CANNING CENTER

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

Honey Processing Plant at Canning Center Jashipur

18.2.8. ECOTOURISM AND THEME PARK

OFDC has been appointed as the Nodal Agency for promotion of Ecotourism in the State and to provide one stop solution for this purpose. The OFDC is operating the ecotourism portal www.ecotourodisha.com and doing advance booking for all the accommodation facilities available at 53 numbers of Eco-tourism Destinations. The OFDC is also doing advance booking for safari vehicles and boating facilities wherever available in these sites.

During the financial year 2022-23, there were 14,662 nos. of online booking for accommodation with total transaction value of Rs.14.18 Crore.

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

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

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

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

The OFDC Ltd is also engaged in raising avenue and block plantations, plantations around industrial, urban and coastal areas, landscaping etc. for various institutions like IOCL, Dhamra Port, NHAI, East Coast railways, Airport Authority of India, MCL, NALCO, OMC, SAIL etc. The landscaping project of Kalinga Stadium at Bhubaneswar, Birsa Munda Hockey Stadium at Rourkela, IOCL campus at Paradeep Port area, Ravenshaw College Stadium, Raj Bhawan at Bhubaneswar and Eco- Park at Jayadev 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 green developer of the State.

Achievement during last five financial years

Financial Year	Nos of seedling planted	Total Value of work done (Rs. in Crore)	Establishment Cost earned (Rs. in Crore)
2019-20	4,81,296	42.95	6.41
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

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

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

It is a fact that inspite of low capital base, the corporation which is a Zero Debt PSU of the State has made its best efforts to turn around its financial conditions. This Corporation has been not only earning profits consecutively for last 15 years and paying cash dividend to Government every year complying to the direction of the Government, it has also 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	Profit for the year (Before Tax)
2019-20	562.46	20.15
2020-21	611.75	25.58
2021-22	740.58	27.42
2022-23	754.04	30.02
2023-24	807.03	70.95

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 Millsduring 1st decade of this century had not only affected its revenue but also deprived the people of sawing facilities. Now Forest Rights Act 2002 is further going to affect its trade of timber, KL and Bamboo.

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

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

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

CHILIKA DEVELOPMENT AUTHORITY

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

19.1. Formulation of the leasing policy of Chilika Fishery Sairats

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

19.2. Excavation of Feeder Channel

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

19.3. Chilika Health Report Card

Chilika Development Authority has published the Chilika Health Report Card every two years since 2012, taking the inputs from the monitoring data.

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

19.4. Monitor the Physiochemical Parameters

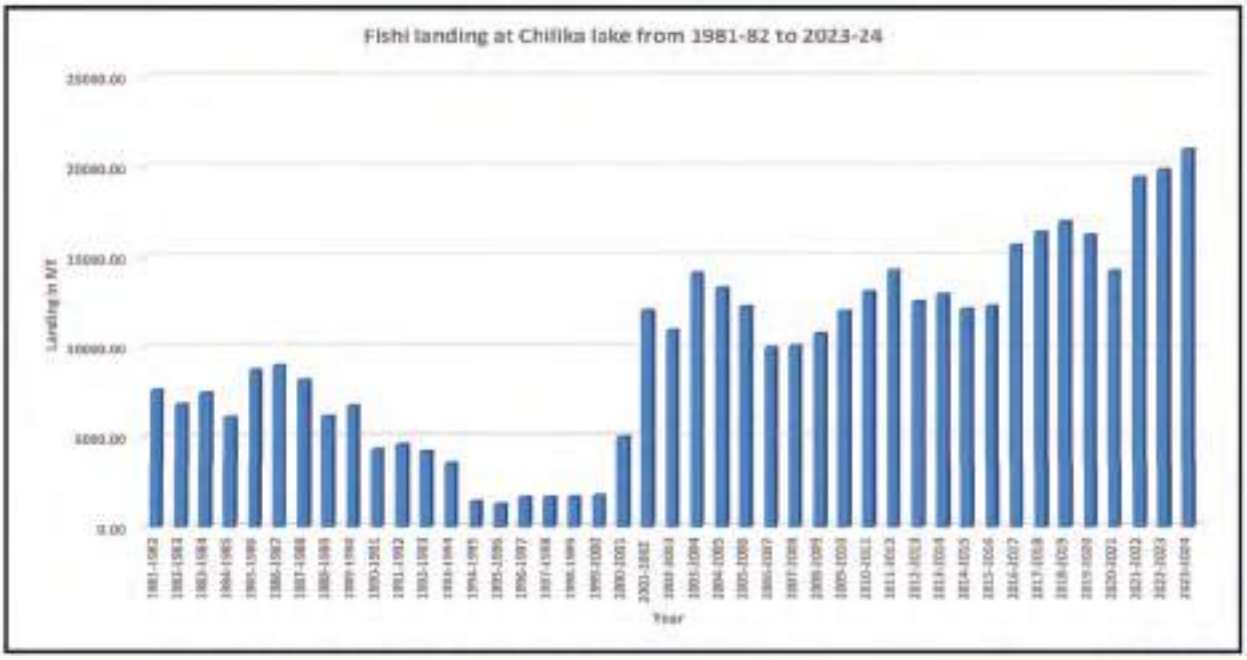
Chilika Development Authority monitors the Physiochemical Parameters from 33 pre-defined stations covering 4 sectors of Chilika Lake and monitoring the Chilika Inlets every month.

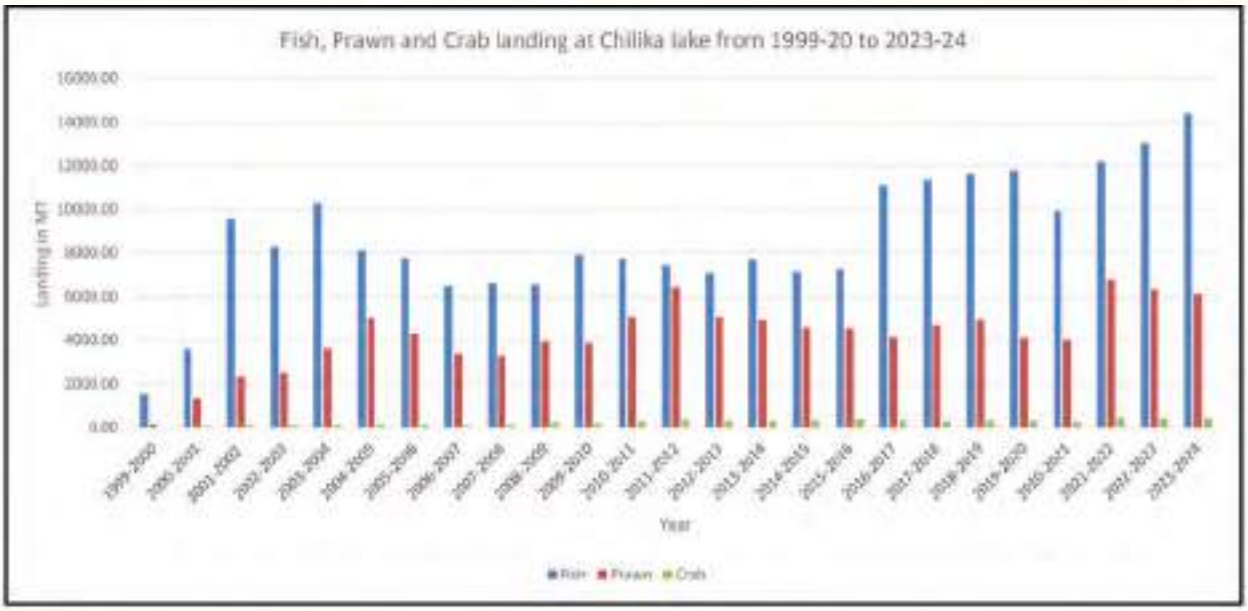
19.5. Wetland Campaigning Awareness

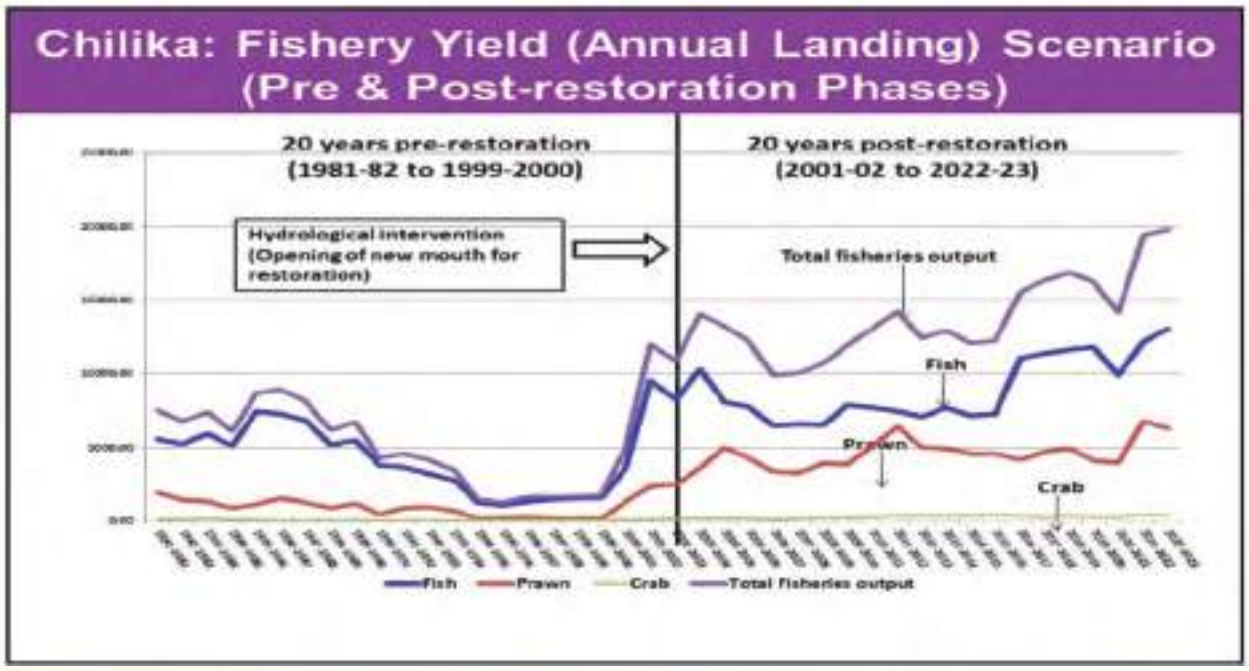
Chilika Development Authority is identified as one of the Knowledge partners by the Minister of Forest, Environment & Climate Change, Govt. of India under the Save Wetland campaigning and Amruta Dharodhar Programme. Every year Chilika Bird Festival is organized by the Tourism department in collaboration of the CDA and Wildlife Wing for greater awareness on the birds and their habitat in Chilika.

19.6. Fishery Resource Development

CDA has been collecting the landing data from 34 landing centers, which includes also the two Godowns. The total estimated Fish, Prawns, and Crabs from Chilika during the years 2023-24 were 14413.09, 6109.595 and 368.043 MT respectively and the total recorded fish landing was 20947.41 MT. The total calculated market values of fish catch was INR 381.84 Crores.


Fishi landing at Chilika lake from 1981-82 to 2023-24
Landing in MT
Year


Fish, Prawn and Crab landing at Chilika lake from 1999-20 to 2023-24
Landing in MT
Year
Fish
Prawn
Crab



19.7. Ferry Service from Satapada to Jahnikuda

There are two existing ferries in the Chilika Lake which ply between Satapada and Jahnikuda (4.1km). ML Bhabakundaleswar had been procured during 2007-08 and MV Chilikarani had been procured during 2017-18 by the Chilika Development Authority. These are the only source of transportation of passengers and vehicles in Chilika Lake from Satapada to Jahnikuda. Two new ferries have also been procured in 2024 will run in the same route soon.

19.8. Population Estimation of Fishing Cat

CDA initiated the Annual Population Estimation of Fishing Cat. The total study area is 230 sq. km. A map of this study area was superimposed with grids of 1.5 km x 1.5km. 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.

19.9. Annual population estimation survey of the Irrawaddy Dolphin

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

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

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

19.11. Ansupa lake

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

1. De-weeding of Ansupa Lake

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

2. De-siltation Work

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

3. Nature Trail Work

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

4. Fishery Activities

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


Eco-park, Ansupa


Monitoring Centre at Eco-park, Ansupa

Repairing of OTDC Hall at Ansupa


Watch Tower No-2 at Ansupa

REGIONAL PLANT RESOURCE CENTRE

Research and 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 fruits and 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 2 M.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 were morphologically 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.

Dendrobium Earsakul under cultivated condition

Dendrobium Sanon White under cultivation condition

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

Pomatocalpa decipiens and *Cymbidium bicolor*, two rare 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 micro propagation 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 propagatein 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.

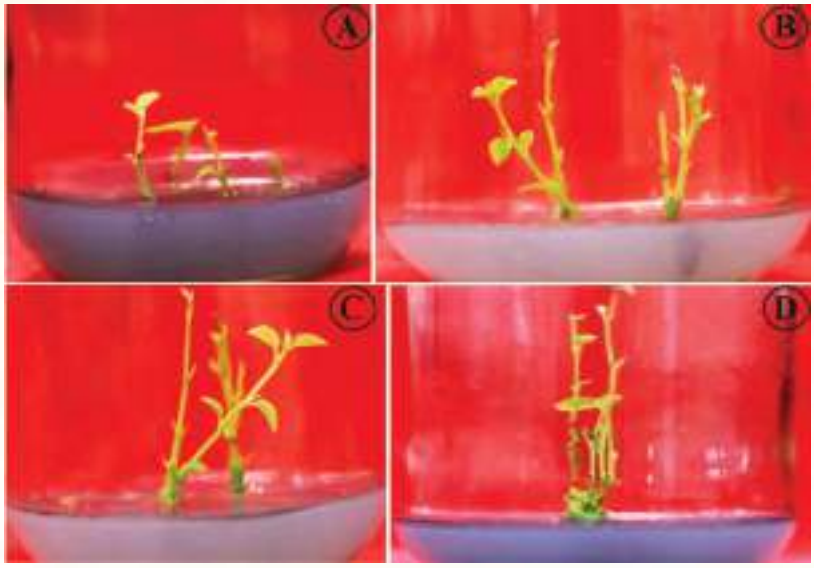


Fig.1A-D: Shoot induction and growth, and multiple shoot induction and growth in P. santalinus. (A-C) shoot induction and growth on MS+ BAP1.0mg/L +0.5 mg/L NAA +additives and +activated charcoal, (D) multiple shoot initiation and growth on MS + BAP 1.0mg/L + NAA 0.5 mg/L + additives + activated charcoal.

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 kendu exists in Odisha.

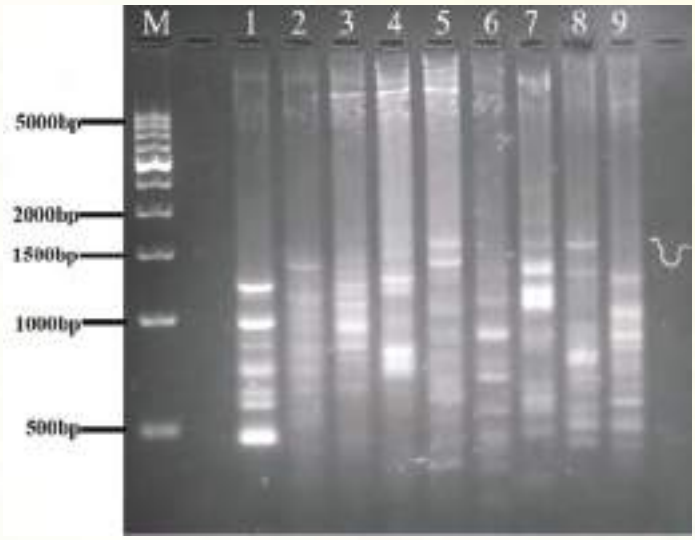


Fig.2. ISSR fingerprinting profile of Diospyros melanoxylon Roxb. (kendu) using primer1-9 i.e., $(AC)_8C$, TGG $(AC)_7$, $ACG(GT)_7$,$(CA)_8RG$, $(CA)_8G$, $(GA)_8YG$, $(AC)_8YT$, $(AC)_8T$ and $(AC)_8AA$ and 'M' is a molecular size marker (500bp).

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

The study 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.

Tissue culture in media with both citric acid and ascorbic acid

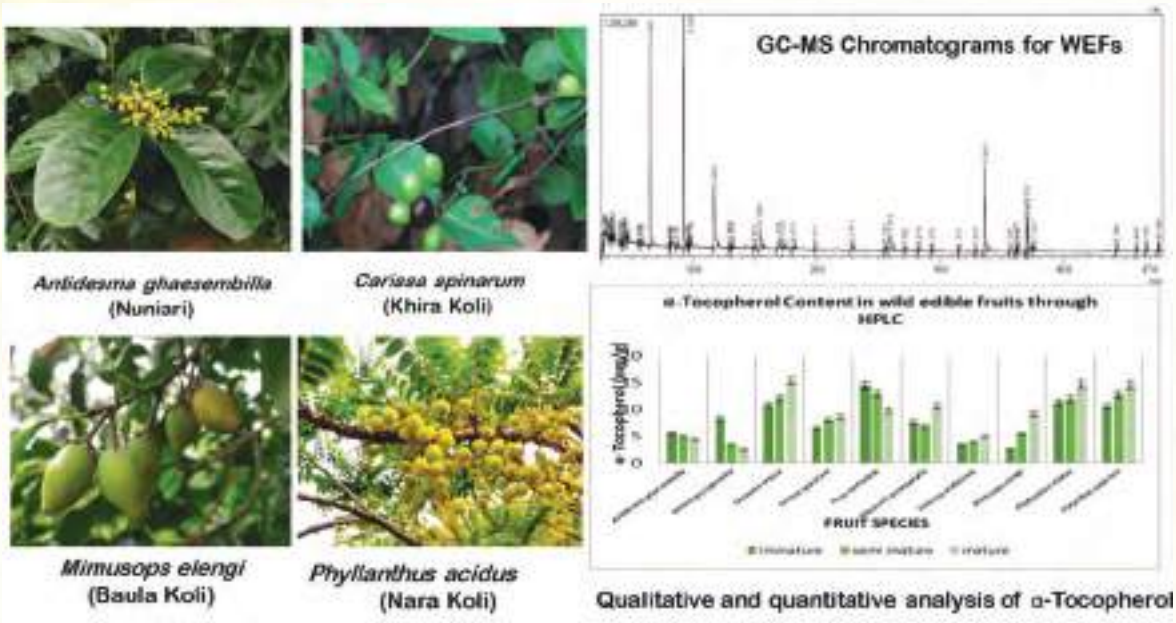
Tissue culture in media with citric acid only

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.

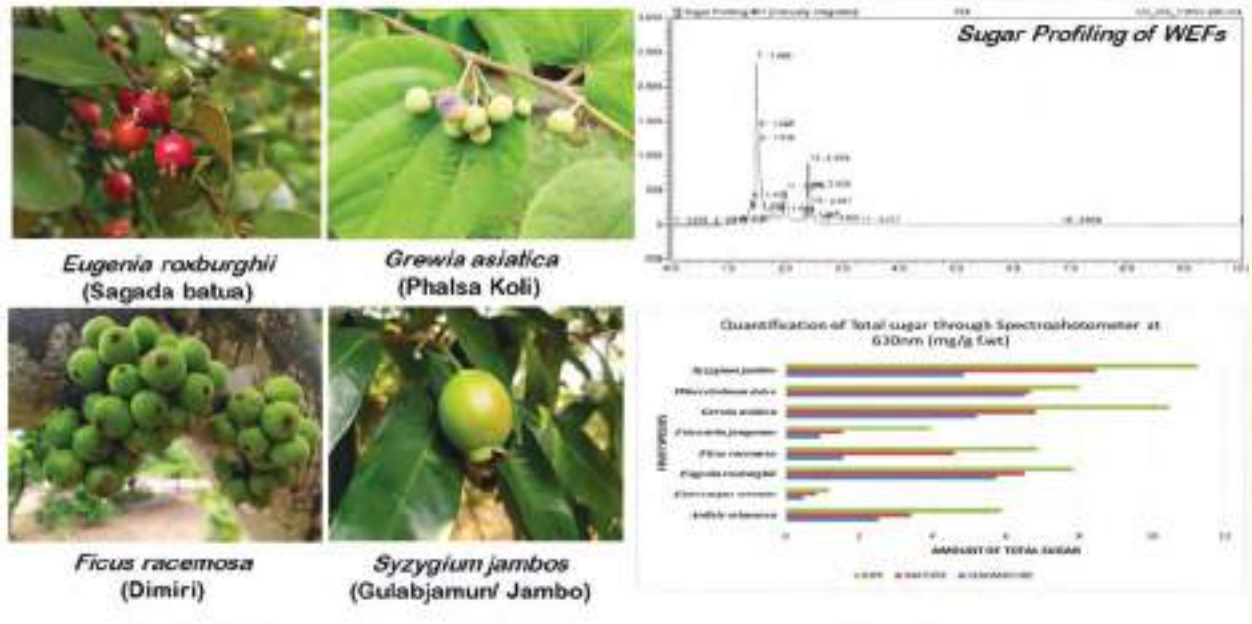


Qualitative and quantitative analysis of α-Tocopherol

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.

Veg. propagation at BKNP | *Hands on Training* | *Hardening activity* | *Re-Introduction at Bhitarkanika*

20 43'52.29" N
86 53'6.44" E

20 44'8. 18" N
86 52'30.79" E

RPRC Nursery

20°43'45.78N

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

The investigation supports the potential role of B. lanzan in the antidiabetic neuropathy condition of type 2 diabetic Miletus. The status of hyperglycemia, oxidative stress, and inflammation associated with T2DM is evidenced by the histological architectureof pancreatic islet cells. Investigation of hydroalcoholic fraction of B. lanzanhas 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.

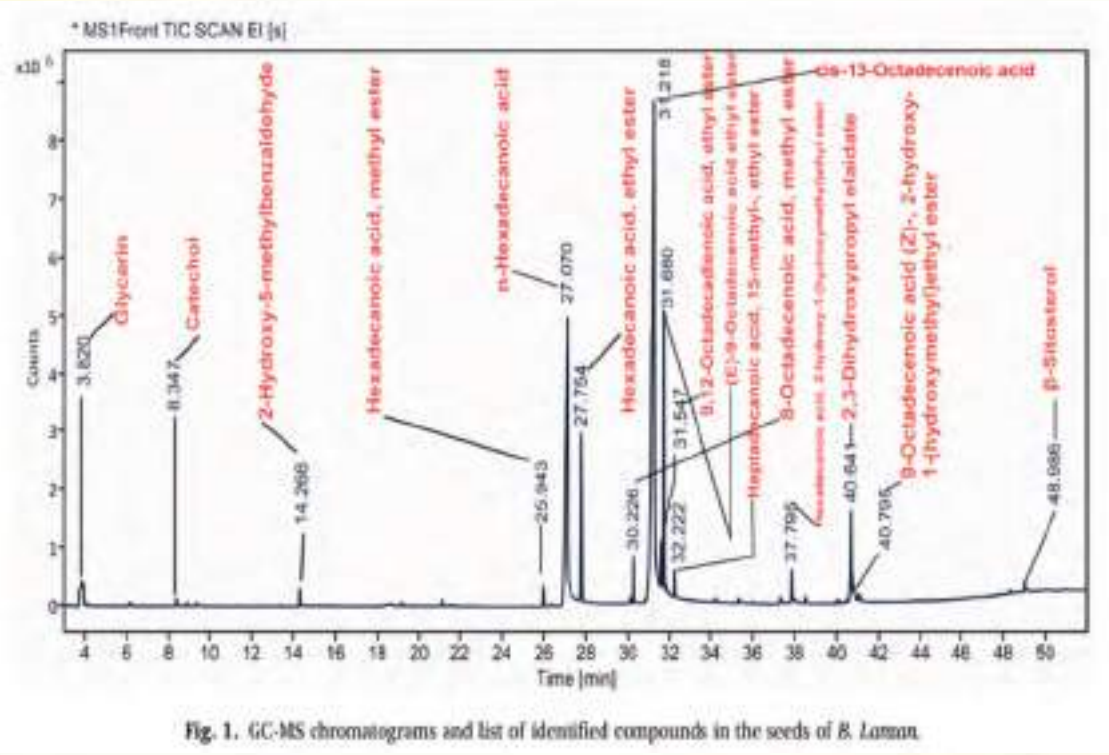


Fig. 1. GC-MS chromatograms and list of identified compounds in the seeds of *B. Lanzan*

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.

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. lucida*. **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.

FOREST & INNOVATIONS

21.1. Tapping traditional knowledge for Livelihood option

21.1.1 Bamboo Handicraft Training Unit in Boudh Forest Division

Bamboo, the poor man's timber, has been used as value added handicrafts by the artisan of village Sindurpur as their income generation activities. This village situated within Manamunda Range of Boudh Forest division is inhabited mainly by poor people who used to venture outsideas migratory labourers for their livelihood. This endeavour of the forest department to tap the traditional knowledge with a series of skill development capacity building trainings has provided an alternative source of income for rural communities, reducing dependence on traditional agriculture improving their economic conditions and cease the migration.

The preliminary training engaged 30 traditional artisans from Sindurpur VSS, equipping them with the skills to produce high-quality bamboo handicrafts followed by a series of skill upgradation training from expert resource persons associated with the NGO Sanjojana, NABARD, OFSDP-II, and Development Commissioner, Handicrafts, Sambalpur. As many as forty Bamboo Artisans of Sindurpur VSS have been distributed with Pehchan Cards in collaboration with Handicrafts Service Centre, Sambalpur, Government of India.

Boudh Forest Division ensures the availability of raw materials by introducing bamboo planting in the nearby plantations, also by supplying bamboo at affordable rates from the nearby bamboo coupes within the purview of the Vana Surakshya Samiti(VSS) which are surrendered by the OFDC Ltd., making handicraft production a viable livelihood option while also promoting sustainable forest management.

The Sindurpur VSS training unit is equipped with modern infrastructure to support artisans in producing high-quality handicrafts like tables, sofa sets, chairs, lamps, wall decor, and other decorative items. The artisans showcase and sell their products at various fairs ("Melas"), generating income.



A remarkable transformation has been witnessed among Self-Help Groups (SHGs) in Sindurpur village. Women from Maa Pitabali, Maa Saraswati and Maa Patneswari SHGs, formerly migrant labourers, have embraced bamboo handicrafts as a sustainable livelihood. Collectively, they produce 12,000 handicraft pieces annually, generating Rs. 10,80,000/- in sales. Each group earns a net annual income of Rs. 2,46,000/-, ensuring financial independence for its members.

Future expansion plans include setting up a Bamboo Handicrafts and Training Unit at Sindurpur which will serve the purpose of roping up the entire bamboo artisans of this district as well as other neighbouring districts to adopt bamboo handcrafting as their livelihood option.

By equipping local communities with valuable skills and creating a sustainable marketfor bamboo products, the Bamboo Handicraft Training Unit will serve as a model for rural development, entrepreneurship, and forest conservation.

21.2. Development Vs Conservation

21.2.1. Khurda Road-Bolangir New BG Rail Link Project

The Khurda Road-Bolangir New Broad Gauge (BG) Rail Link Project stands as a testament to infrastructural advancement while maintaining environmental responsibility. This ambitious project has been meticulously planned and executed to enhance rail connectivity from west to coast in Odisha. Covering extensive forested lands, it incorporates well-defined compensatory afforestation measures and innovative structural developments, including tunnels and viaducts, to minimize environmental disruption.

One of the key sections, from Chainage 180 Km to 238 Km, received approvals in two stages, with Stage-I granted on 09.02.2021 and Stage-II on 18.11.2022. This stretch impacted 13.22 hectares of revenue forest land, yet not a single tree was felled. To ensure ecological balance, compensatory afforestation was carried out over 26.44 hectares, with an additional 13.26 hectares allocated for reforestation.

The next crucial section, from Chainage 143.33 Km to 180 Km, faced greater environmental challenges as it passes through a stretch of dense moist deciduous forest. With Stage-I approval on 13.02.2023 and Stage-II on 13.01.2025, this segment required careful planning due to its impact on 302.329 hectares of forest land, including 209.503 hectares of revenue forest and 92.826 hectares of reserved forest. A total of 57,791 trees were felled, while 79,910 were marked prior to the current proposal for tunnels and viaducts. As a proactive measure, 606 hectares of compensatory afforestation land were designated to counterbalance the environmental impact.

A hallmark of this project is its extensive structural developments. The construction of four tunnels spanning a cumulative length of 6.650 km in Boudh District ensures reduced ecological disturbance while providing a seamless railway connection. Additionally, five viaducts covering a total length of 2.273 km have been built to navigate challenging terrains, allowing smooth passage for trains without significant topographical alterations and tree felling.

This project epitomizes a successful integration of infrastructure expansion and environmental stewardship. By implementing strategic planning, ecological mitigation measures, and advanced engineering solutions, the Khurda Road-Bolangir Rail Link has become a model for sustainable development. It not only strengthens transportation networks but also exemplifies responsible environmental management, ensuring a balance between progress and preservation.

21.2.2. Miyawaki with MGNREGS: A pioneering effort in Boudh Forest Division

The Forest Department of Boudh Forest Division has successfully implemented a pioneering Miyawaki plantation over 01 hectare in Talabahal village, marking a significant milestone in afforestation and environmental conservation in the district. Funded by the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS), this initiative stands as a model for community-driven ecological restoration.

The Miyawaki method, known for its high-density plantation technique, involves raising native species in a multi-layered manner, replicating natural forests with minimal human intervention. This approach accelerates forest growth, enhances biodiversity, restores soil fertility, and contributes to climate change mitigation by promoting carbon sequestration. Unlike traditional afforestation methods, Miyawaki forests thrive with rapid growth, creating a self-sustaining ecosystem within a short period.

The initiative follows the potential of the Miyawaki technique to address soil degradation, loss of biodiversity, and environmental challenges in Talabahal village has not only revitalized the ecosystem but also generated employment for local villagers, fostering a strong sense of community ownership and participation.

This project engaged the local community at every stage-from soil preparation, selection &planting of sapling and maintenance, empowering them with knowledge about sustainable forestry practices. The active involvement of women and youth further strengthened the socio-economic impact, providing skill development and financial benefits. This hands-on approach

to conservation has instilled a deep-rooted sense of environmental responsibility among the villagers.

The results of the Miyawaki plantation are already visible. The dense forest has become a paradise for birds, insects, and small mammals, significantly enhancing local biodiversity. Additionally, the trees help prevent soil erosion, improve air quality, and contribute to climate resilience. The success of this initiative has sparked interest among neighbouring regions, inspiring the adoption of similar afforestation projects.

This landmark project in Boudh Forest Division exemplifies how innovation, community involvement, and government support can drive sustainable environmental transformation. The Miyawaki plantation in Talabahal village not only restores degraded land but also strengthens the bond between people and nature, paving the way for a greener and more sustainable future.

21.2.3. Achieving FOREST FIRE FREE villages in Kalahandi North Division

Kalahandi (North) Forest Division has among the higher number of fire incidences in Odisha with close to 700 fires in the past two years each. After ground-level surveys to identify potential causes and drivers behind fire incidences by each range, it was seen that Bhawanipatna range had a majority of fires due to shifting cultivation (podu) by forest fringe communities. After extensive interactions with the local communities, mediated very ably by the local P-NGO teams, awareness programs were conducted in many of these villages. The P-NGO teams educated the communities regarding the negative impacts of shifting cultivation on forests, wildlife and the environment in general. Various avenues of alternative livelihoods were also discussed. In particular, three villages - Jurkabhata, Ranikata, Kolgaon, all revenue villages on the margins of Th Gundi PRF came forward to adopt mushroom cultivation as an alternative sustainable livelihood option and a village level resolution was made to make these villages FOREST FIRE FREE.

Sl. No.	Name of the Village	Total No. of Family	Total No. of Population
1	Jurkabhata	16	75
2	Ranikata	33	146
3	Koalgaon	24	155

The forest department officials, with the help of PNGO teams carried out multiple training sessions to build capacity in mushroom cultivation. Seed stocks were provided through convergence with other schemes and assistance was provided to set up substrate for mushroom growth. Members of Kutenpadar VSS (in Kalahandi North division) who had already set up similar system for mushroom cultivation, assisted them in every step of the process. With an expected output of 750 kg, they are hopeful of a revenue of close to 150000 in the 2025 season. Further, the community members were also engaged through MGNREGA in soil-moisture conservation activities and plantation work in nearby areas. Due to these steps, the villages have abstained from shifting cultivation and there were no fires in vicinity of these villages in 2024. Similar steps are being taken in other parts of the division to identify possible alternative livelihoods to shift people from traditional agriculture to more productive and sustainable ways of livelihood.

21.3. Success Story: Revolutionizing Elephant Monitoring with Thermal Drone Technology in Keonjhar Forest Division

21.3.1. Introduction

Keonjhar Forest Division in Odisha is home to a substantial elephant population, making human-elephant conflict (HEC) a persistent challenge in the region. The rapid expansion of mining activities, linear infrastructure development and habitat fragmentation have further exacerbated the situation, leading to frequent encounters between elephants and local communities. To address this growing concern, the division has integrated advanced technology, including enterprise-grade thermal drones, into its monitoring and conflict mitigation strategies. These drones provide real-time tracking capabilities, even in dense forests and during nighttime, enabling swift interventions and proactive management. By leveraging cutting-edge technology, Keonjhar Forest Division is setting a benchmark in innovative conservation approaches, promoting coexistence between humans and elephants while ensuring the safety of both.

The Challenge

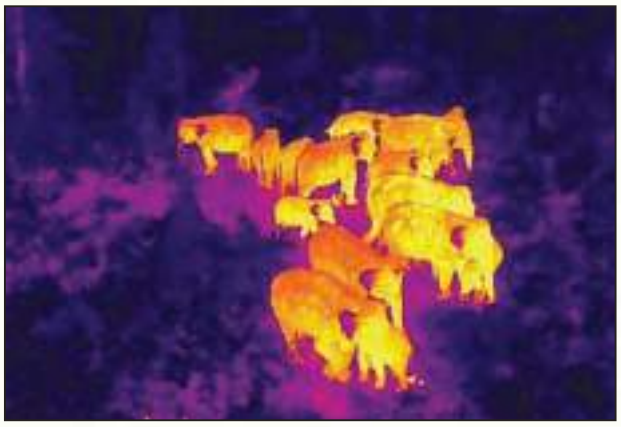
Traditional monitoring methods, such as ground-based tracking and camera traps, faced challenges in dense forests, nighttime operations, and large-scale surveillance. These approaches were time-consuming, susceptible to human error, and often led to delays in conflict mitigation. To address these limitations, the division has adopted intensive use of thermal drones, providing a real-time, efficient, and non-intrusive monitoring solution.

1. Detection and Monitoring of Injured/Sick Elephants

Drones equipped with thermal imaging and high-resolution cameras enable the swift identification and tracking of distressed elephants. This capability ensures timely interventions, minimizing the suffering of injured or sick individuals and reducing potential human-wildlife conflicts. These drones also provide a safer alternative to ground-based tracking, especially in difficult terrains or dense forests.

2. Census Tool for Population Estimation

Drones provide precise population data by surveying extensive areas with minimal disturbance to wildlife. The aerial perspective allows for accurate assessments of herd size, age structure, and gender ratios. This data plays a crucial role in understanding population dynamics and informing management strategies. Additionally, drones reduce the manpower and logistical challenges typically associated with ground-based surveys.



3. Hazard Mapping

Drone technology is used to identify risks such as electricity lines, open wells, railway crossings, and other potential threats within elephant corridors. The mapping of these hazards facilitates proactive mitigation measures, ensuring the safety of both elephants and humans. Regular drone surveillance also helps identify new hazards that may emerge over time.

Implementation and Impact

- **24/7 Elephant Tracking flexibility**: Division Field staff regularly use drones to monitor herds and solitary tuskers, ensuring real-time surveillance.
- **Rapid Conflict Mitigation**: Early detection of elephant movements near human settlements allows timely warnings. This information is disseminated via division control room, local radio (Radio Juhar 90.4), and WhatsApp groups to alert villagers.
- **Improved Rescue and Veterinary Care**: Thermal drones have assisted in locating injured or stranded elephants, enabling quick veterinary intervention.
- **Enhanced Protection Against Poaching and Electrocution**: Division use drones to patrol sensitive areas, providing real-time aerial insights to ground teams, enabling swift and proactive measures.

21.4. Success Story: Hope from Above: The Role of Drones in Rescuing Elephant Calf Asha

The Keonjhar Forest Division has set a new benchmark in wildlife conservation by leveraging drone technology for monitoring and rescue operations. This advanced approach played a pivotal role in the successful rescue of an injured elephant calf, later named "Asha," meaning "Hope." The operation highlighted how drones are transforming the management of wildlife emergencies by enabling rapid, precise, and non-invasive interventions.

Operation ASHA: A Milestone in Elephant Rescue Operation

On November 8, 2023, the Keonjhar Forest Division's patrolling team reported a limping elephant calf near Jharbelda. Immediate deployment of thermal drones enabled the team to locate the calf swiftly within the herd. Equipped with high- resolution and thermal imaging cameras, these drones provided real-time visuals of the herd's behavior and the calf's condition, aiding in meticulous planning and execution of the rescue mission.

The drones allowed the team to track the herd's movement across challenging terrains, covering 7-8 kilometers daily. Despite the herd's protective instincts, which posed significant challenges, the drones offered a safe and efficient way to monitor the situation without causing distress to the animals.

Precision and Safety in Action

After 15 days of careful surveillance and planning, the rescue team, guided by drone footage, tranquilized the calf's mother and separated the injured calf. The drones' thermal imaging capabilities ensured accurate targeting and minimized risks to both the team and the elephants. Sirens and firecrackers were used to deter the herd, ensuring the safety of the ground personnel during the operation.

The calf, suffering from a severe injury to its carpal and metacarpal joints, was transported to Nandankanan Zoo for advanced treatment. Thanks to the insights provided by drones, the operation was executed efficiently, minimizing stress on the calf and ensuring its survival.

Drones: A Revolution in Wildlife Conservation

The success of Operation ASHA underscores the transformative potential of drone technology in wildlife management. Drones not only reduce the time and manpower required for operations but also enhance the accuracy of decision-making. Their ability to provide a bird's-eye view of challenging terrains makes them indispensable in tracking and monitoring wildlife.

In Keonjhar, drones have become a vital tool for hazard mapping, population surveys, and monitoring land-use violations. However, their role in rescuing Asha demonstrates their unique capability to address complex wildlife emergencies, ensuring the safety of both animals and humans.

A Symbol of Hope

Today, Asha is a beacon of hope, fully recovered and thriving under care. Her rescue is a testament to the dedication of the Keonjhar Forest Division and the potential of advanced technologies in wildlife conservation. The integration of drones in such operations not only saves lives but also paves the way for a future where humans and wildlife coexist harmoniously.

21.5. Review of Experimental Sal Plantation in the Transition Zone of Sal and Teak Mathili Range, Malkangiri Forest Division.

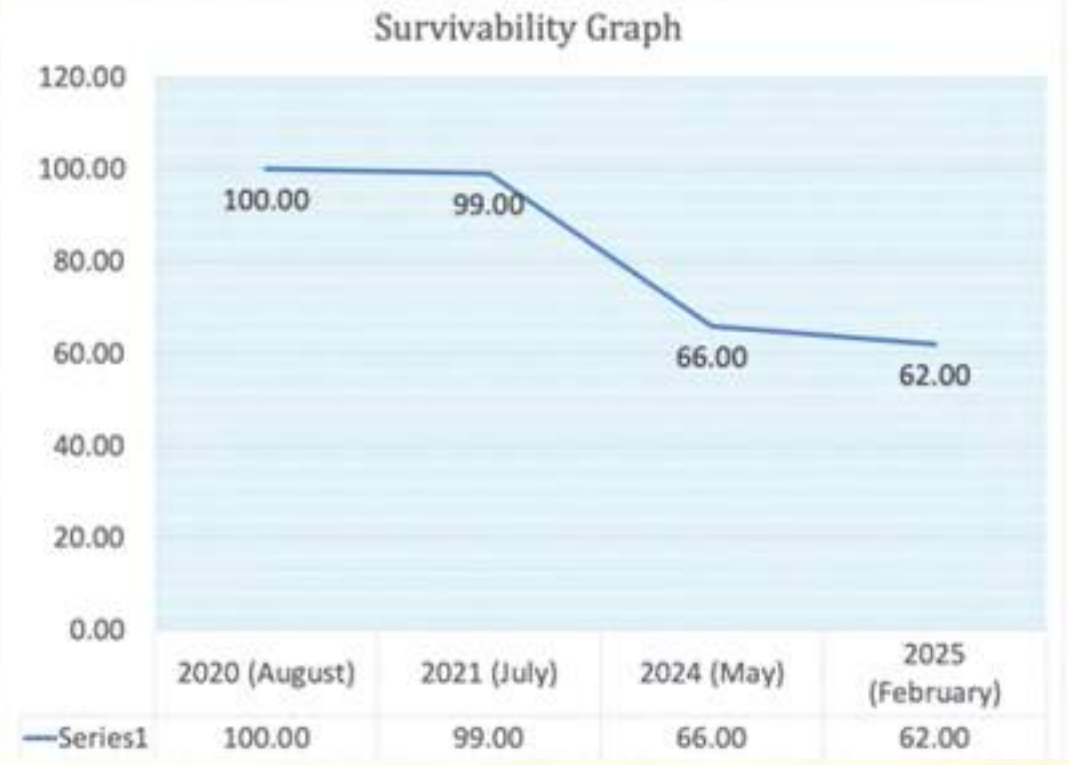
Shorea robusta or Sal tree is an important tree of the dry or moist deciduous forest of India. It is a large tall deciduous tree belonging to the family Dipterocarpaceae that can reach the height of 50 m. The tree species not only play a vital role in the dry and moist deciduous forest ecosystem but are also closely linked to the indigenous tribal communities of Odisha. The species has a multifaceted role in serving the needs of humans and providing livelihood through its plant parts, medicinal uses, providing habitat for wildlife, maintaining a relationship with associated insects to protect from pests, etc. The tribal communities conserved the species by worshiping, performing restoration activities, and utilizing it sustainably.

The present study documents the growth of Sal (Shorea robusta) in Mathili Range, Malkangiri. In State of Odisha Mathili forms the transition zone between Sal and Teak. Hence Mathili has been chosen for the experimental study of the Sal plantation. This review is based on an experimental plantation of 100 Sal saplings in 2020-21, assessing their survival rate, growth patterns, and influencing environmental factors.

Growth Observation and Analysis

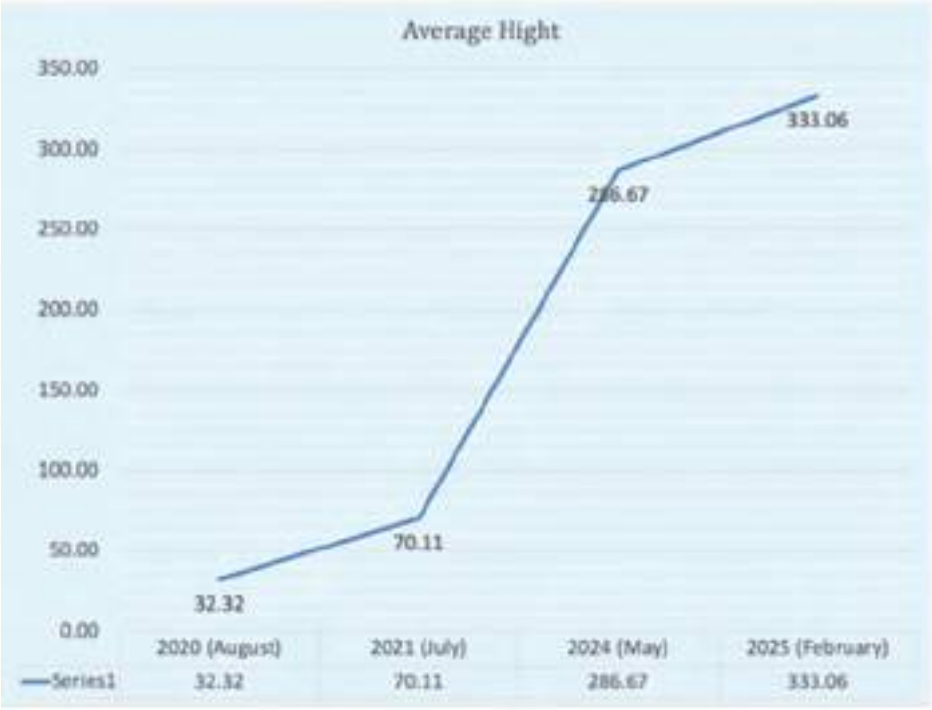
1. Survival Rate:

The survival rate of the sapling was found to be 62% in February, 2025.



The graph shows the temporal survival rate from 2021 to 2025.

2. Growth Rate:



Average height increment (in CM) is shown below:

3. Key Growth Influences:

Clay and loamy soils, along with plain geography, prevail in Mathili, which helped the Sal growth. However, biotic pressure, especially cattle grazing, was the primary cause of the mortality. Though water scarcity occurs during peak summer, reducing the growth rate, overall water scarcity does not form a primary concern as the region receives heavy rainfall during monsoon seasons. Diseases, fungal and pest attacks, are also common, requiring occasional protective measures.

Conclusion

The experimental Sal plantation in Malkangiri has shown promising growth, with saplings adapting well to the local conditions. This survival percentage achieved is in spite of no watch and ward, no fencing provisions, no silvicultural operations nor any growth supplements like fertilizers. Large scale plantation could ensure the conservation of the species, ecological benefits along with enhancing socio economic benefits to the people. Plantation of Sal associated species may create a healthy ecosystem for the Sal Forest.

OBSERVATION OF IMPORTANT DAYS

22.1. ECO-DAYS CELEBRATED AT NANDANKANAN ZOOLOGICAL PARK

22.1.1. World Veterinary Day 2024

The World Veterinary Day was celebrated at Nandankanan on 27th April, 2024. The programme was based on the theme, "Veterinarians are essential health workers". Veterinarians from Zoo Veterinary Hospital, Nandankanan & from Odisha Wildlife Headquarters gave presentations. After the presentations a short felicitation ceremony of some eminent veterinarians was conducted.

22.1.2. World Environment Day 2024

Nandankanan observed World Environment Day on 5th June, 2024. Workshops on "Seed ball preparation" & "Value addition of water weeds" were organised at State Botanical Garden in collaboration with District Legal Services Authority, Bhubaneswar & Sattvic Soul Foundation.

22.1.3. Van Mahotsav 2024

The 75th Van Mahotsav was celebrated on 6th July 2024 at the State Botanical Garden, Nandankanan in association with the Nature & Wildlife Conservation Society of Odisha (NWCSO).

22.1.4. World Crocodile Day 2024

The World Crocodile Day was celebrated on 17th June,2024 at Gharial Research and Conservation Unit, Tikarpada, where zoo volunteers presented an awareness street play for the villagers along with awareness quiz with school children.

22.1.5. International Tiger Day 2024

Nandankanan Zoological Park celebrated International Tiger Day on 29thJuly 2024in pursuit to spread awareness about the protection and habitat restoration and the importance of tigers to ecosystems, several programmes such as online awareness quiz, awareness programme at Nandankanan Govt. High School, Keepers Talk, Signature Campaign and a selfie point were organised.

22.1.6. World Lion Day

World Lion Day was celebrated at Nandankanan on 10th of August 2024 with visitors. Zoo Volunteers assisted the programme with awareness quiz competition and various games on lion.

22.1.7. World Elephant Day 2024

World Elephant Day was celebrated on 12th August, 2024 at Nandankanan Zoological Park. Sri Debidutta Biswal, PCCF & HoFF, Odisha graced the occasion with felicitation of elephant care takers, winners of quiz competition, followed by inauguration of a signature campaign and elephant themed selfie booth.

22.1.8. 70th Wildlife Week

The 70th Wildlife Week was celebrated from 02.10.2024 to 08.10.2024 at Nandankanan with a series of events like different awareness programmes, expert talks, online quiz, keeper's talk, Nukkad Natak, Zoo Outreach programme, Species in Focus in Zoo & State Botanical Garden. More than 1000 participants took part.

22.1.9. World Wetland Day 2025

The World Wetland Day 2025 was celebrated on 2nd February, 2025 with an Expert talk by Dr Nabin Kumar Dhal, Chief Scientist & Head of Environment and Sustainability Department, Institute of Minerals and Materials Technology, Bhubaneswar. An interactive quiz programme on "Wetlands" was conducted amongst the participants followed by Bird Walk, Wetland Trail, Nature journaling & Origami session.

22.1.10. World Pangolin Day 2025

World Pangolin Day 2025 was celebrated at Nandankanan on 15th February, 2025 with a special workshop on Pangolin conservation with an expert talk by Dr. Rajesh Kumar Mohapatra, focusing on the biology, rescue, and rehabilitation of Indian Pangolins. It was followed by interactive sessions, quizzes, and a field demonstration. Workers of Pangolin Conservation Breeding Centre were felicitated on the occasion.

FOREST HEAD QUARTERS, ODISHA

BHUBANESWAR

Glimpses of Aranya Bhawan


ARANYA BHAWAN


Jyoti Graphics // 0674-2544209