

2024



## THIRD PARTY EVALUATION OF PROJECTS

COMPENSATORY AFFORESTATION FUND MANAGEMENT AND PLANNING  
AUTHORITY (CAMPA), ODISHA

# FINAL REPORT



**Submitted to:**  
**The Principal Chief Conservator of Forests & HoFF**  
**Government of Odisha**  
Forest, Environment and Climate Change Department  
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**SUBMITTED: JANUARY 15, 2025**



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## **ACKNOWLEDGEMENT**

The Third-Party Evaluation assignment of the Project Undertaken under Compensatory Afforestation Fund Management and Planning Authority (CAMPA) in the State of Odisha for APO 2022-23 was awarded to AFC India Ltd.

At the very outset, we extend our gratitude to the Principal Chief Conservator of Forests and Head of Forest Force (PCCF & HoFF), Odisha for giving us the opportunity to undertake the assignment and his guidance from time to time in bringing out this report. We would also like to thank CEO, CAMPA for his continuous support and confidence for undertaking this assignment.

We would like to thank Chief Conservator of Forests (PP&A), Odisha for coordinating with circle and divisional level officials for the study.

We are extremely grateful to the DFOs of the respective Divisions for their support and cooperation at field level without which the task could not have been accomplished.

We extend our heartfelt thanks to the Range Officers and their frontline staff including Foresters and Forest Guards for their support and co-operation in sharing data/information and facilitating community interactions in the project areas. In addition, we express our heartfelt thanks to all other Staff members for their inputs and support during the study.

We also convey our special thanks to the entire team who were directly or indirectly associated during field assessment and data collection for their excellent support.

Last but not the least, we express our thanks to all the VSSs/EDCs Secretaries, Presidents, Governing Body Members, and men and women in the villages who took their time off from their work for discussions. The cooperation of the respondents for providing us with the requisite insights and information is gratefully acknowledged.

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## ABBREVIATIONS

<b>AFC</b>	AFC India Ltd. (Agricultural Finance Corporation Limited)
<b>ANR</b>	Aided Natural Regeneration
<b>APO</b>	Annual Plan of Operation
<b>AJY</b>	Ama Jangala Yojana
<b>AR</b>	Artificial Regeneration
<b>CA</b>	Compensatory Afforestation
<b>CATP</b>	Catchment Area Treatment Plan
<b>CAMPA</b>	Compensatory Afforestation Fund Management and Planning Authority
<b>CASP</b>	Central Assistance to State Plans
<b>CFR</b>	Community Forest Rights
<b>CPR</b>	Common Property Resource
<b>DBH</b>	Diameter at Breast Height
<b>DFO</b>	Divisional Forest Officer
<b>EC</b>	Executive Committee
<b>EDC</b>	Eco- development Committee
<b>EPA</b>	Entry Point Activities
<b>FGD</b>	Focus Group Discussions
<b>FRA</b>	Forest Rights Act. 2006
<b>FTC</b>	Forest and Tree Cover
<b>GB</b>	General Body
<b>Ha</b>	Hectare
<b>HH</b>	House hold
<b>IFR</b>	Individual Forest Rights
<b>IGA</b>	Income Generation Activity
<b>JFMC</b>	Joint Forest Management Committee
<b>KII</b>	Key Informant Interview
<b>LBCD</b>	Loose Boulder Check Dam
<b>LIS</b>	Livelihood Improvement Activities
<b>LPG</b>	Liquefied Petroleum Gas
<b>MOEF&amp;CC</b>	Ministry of Environment, Forests and Climate Change
<b>M&amp;E</b>	Monitoring and Evaluation
<b>MFP</b>	Marketing of Forest Produce
<b>MGNREGA</b>	Mahatma Gandhi National Rural Employment Guarantee Act
<b>NAEB</b>	National Afforestation and Eco-Development Board
<b>NAPCC</b>	National Action Plan on Climate Change
<b>NPV</b>	Net Present Value
<b>NTFP</b>	Non-Timber Forest Produce
<b>OFD</b>	Odisha Forest Department
<b>OLM</b>	Odisha Livelihood Mission

<b>PCA</b>	Penal Compensatory Afforestation
<b>PCCF</b>	Principal Chief Conservator of Forests
<b>PRA</b>	Participatory Rural Appraisal
<b>RCCF</b>	Regional Chief Conservator of Forests
<b>RO</b>	Range Officer
<b>SC</b>	Scheduled Caste
<b>SFDA</b>	State Forest Development Agency
<b>SHG</b>	Self-Help Group
<b>SMC</b>	Soil Moisture Conservation
<b>SSO</b>	Subsidiary Silvicultural Operations
<b>ST</b>	Scheduled Tribe
<b>TC</b>	Time Concentration
<b>VDF</b>	Village Development Fund
<b>VSS</b>	Vana Samrakshana Samiti
<b>WL</b>	Wildlife

## **Executive Summary**

The state CAMPAs formulate Annual Plans of Operation (APOs) every year to carry out its operations in the forestry sector as per the approved APO. The core activities of CAMPAs include working plan prescription and plantations, forest protection, wildlife management, Ama Jangala Yojana, and SMC activities while non-core activities comprise of research, development and capacity building, infrastructure development, Forest IT and working plan exercise. The activities planned in the APO out of the CAF are undertaken by different wings of the Forest, Environment and Climate Change Department, Government of Odisha (GOO). The current assignment is being carried out by AFC India Ltd., an agency selected through competitive bidding process to carry out Third-party monitoring of the CAMPAs works for the APO of FY 2022-23.

The CAMPAs State Authority of the Odisha Forest Department (OFD) has prepared APO for estimated cost of around Rs. 973.61 cr. to be implemented during the financial year 2022-23. As per the APO FY 2022-23, fund allocation for 'forest management' activities are around 77%, whereas for the 'wildlife management' allocation for the planned activities is 23%. As reported by State CAMPAs, the total expenditure is around Rs. 929.93 cr (around 96%). Under 'Forest Management' 100% of the allocated funds were utilized, whereas under the 'Wildlife Management' 80% of the allocated funds could be utilized.

The entire assignment was carried out in three distinct phases, viz., Inception phase, Field Survey phase, and Report Preparation phase. The report has been organized circle-wise with observations on each of the divisions based on the activity observed, that was randomly chosen from the list of activities included in the APO supported with tables, graphs, and photographs.

As per the mandate, the study team covered all 51 forest divisions falling in 8 Circles to observe the activities planned in the APO implemented during the FY 2022-23. In all 37 territorial forest divisions, and 14 wildlife divisions were covered. Other functional divisions that also received the funds under the APO, and were reviewed are – Silva BBSR, Silva Rayagada, FRC, Angul, G.Udayagiri, Dy Champua, Nadankanan, and FTS Ghatikia.

The following are a set of observations based on the inputs obtained from the selected field samples:

1. The saplings raised in the forest nurseries were of good quality. At the time of field visits plantation works were in progress - saplings planted were of good quality.
2. Departmental norms and protocols followed in raising plantations. Field observations - at some sites the Artificial Regeneration (AR) model have been implemented whereas the sites were planned for some other plantation model – mostly ANR. e.g. Berhampur, Baliguda, Parlakhemundi and Boudh Divisions.
3. At most sites, the spacing was appropriate. Field observation - at some sites non-conformity with the norms especially reduced spacing to comply with the numbers to be planted.
4. At few sites sapling have been planted under the shade of existing trees for achieving the model plant numbers. e.g. Raygada division.
5. The construction of infrastructure such as watch towers, staff quarters office buildings etc. has been done according to a standardised norm, and are of good quality. These structures were measured on sample basis for their dimensions and these were checked with the measurement books. The record was generally found to be accurate and as per the work done.



6. Roads, culverts, causeways etc. have been built as per the requirements of the sites and the dimensions have been recorded in the measurement books. This was verified by spot checking of the sampled sites.
7. The SMC works have been done in a site-appropriate manner. The quality of the SMC works are good.
8. In some divisions the allocated physical targets were not fully achieved. The gaps in achieving the targets could be identified with the respective divisions, and could be addressed in subsequent years.
9. Budgetary procedures have been followed and record maintenance is good.
10. E-green watch is mostly updated. Barring - Balasore WL, Baripada, Karanjia, Keonjhar.
11. The labour and staff engaged though the CAMPA funds were used for the designated purpose.
12. The AJY model has been successfully integrated in the field works by way of social mobilization. (e.g. Angul, Balliguda, Parlakhemundi, Bolangir).
13. Protection fencing using varies material like angle-iron, cross-wire, green fence, wooden poles etc., have been installed around the plantation sites. The protective fencing was found damaged at some places.
14. The protected area network, a sector that usually faces a resource crunch, has been supported in several key areas such as protection by the creation of physical barriers, support to anti – depredation squads, quick payment of compensatory sums of money for losses resulting from human-animal conflict etc.
15. The development of grassland in the farms of relocated villages and the consequent use of the site by wild ungulates is indeed an encouraging sign of effective use of financial allocations.
16. The use of CAMPA funds for rejuvenation of coastal shelterbelts is a good example of funds well used. e.g. Chilika Wildlife Division.
17. The Subsidiary Silvicultural Operations done in bamboo areas has generally benefitted the crop.
18. The upkeep of records such as plantation journals, nursery records, measurement books etc. has been generally found to be of good quality. The documents were usually available during the field inspections and found to be regularly updated.
19. The field staff was found to be conversant with the work and they were able to share their knowledge and provide useful inputs during the field survey.

## **1. Background to CAMPA**

In India, forest land can be diverted for non-forest purposes such as construction of dams, mining, and other developmental non-forestry activities only if the government permits. Since this diversion of forest land results in loss of biodiversity which in turn affects wildlife as well as geographical parameters such as climate and terrain, compensatory afforestation is also mandated in the law. In other words, to compensate for the losses incurred, the government made compensatory afforestation mandatory.

Whenever forest land is diverted for non-forest purposes, it is mandatory under the Forest (Conservation) Act, 1980 that an equivalent area of non-forest land must be taken up for compensatory afforestation. In addition to this, funds for raising the forest are also to be imposed on whomsoever is undertaking the diversion. The land chosen for afforestation, if viable, must be in proximity of reserved or protected forest for ease of management by forest department.

In 2002, the Hon'ble Supreme Court (SC) ordered that a Compensatory Afforestation Fund had to be created in which all the contributions towards compensatory afforestation and net present value of land had to be deposited.

In April 2004, Ministry of Environment and Forests constituted Compensatory Afforestation Fund Management and Planning Authority (CAMPA) to overlook and manage the Compensatory Afforestation Fund (CAF) as directed by the SC. The authority was termed as the 'custodian' of the fund. Further in 2009, the government ordered that State CAMPAs had to be set up to boost compensatory afforestation at state level and manage Green India Fund.

Compensatory Afforestation Fund Act, 2016 came into force from 30 September 2018. The Act established a National Compensatory Afforestation Fund under the Public Account of India and State Compensatory Afforestation Fund under the Public Account of each state. The payments made for compensatory afforestation, net present value and others related to the project will be deposited in the fund. The State Funds will receive 90% of the payments while National Fund will receive remaining 10%. These funds will be regulated by State and National CAMPA. The Compensatory Afforestation Fund Rules were notified in August 2018.

Compensatory Afforestation Fund Management and Planning Authority (CAMPA) are meant to promote afforestation and regeneration activities as a way of compensating for forest land diverted to non-forest uses.

National CAMPA Advisory Council has been established as per orders of The Hon'ble Supreme Court with the following mandate:

- Lay down broad guidelines for State CAMPA;
- Facilitate scientific, technological, and other assistance that may be required by State CAMPA;
- Make recommendations to State CAMPA based on a review of their plans and programmes;
- Provide a mechanism to State CAMPA to resolve issues of an inter-state or Centre-State character.

In April 2019, the Ministry of Environment notified that states which have a forest land of more than 75% of their geographical area need not provide non-forest land for compensatory afforestation. Instead, land can be taken up in states with lesser forest cover. Further, it was also notified that the minimum area of compensatory land should be five hectares if the land is not contiguous to a forest.

The Ministry also stressed that the fund had to be used for important needs such as Compensatory Afforestation, Catchment Area Treatment, Wildlife Management, Assisted Natural Regeneration, Forest Fire Prevention and Control Operations, Soil and Moisture Conservation Works in the forest, Improvement of Wildlife Habitat, Management of Biological Diversity and Biological Resources, Research in Forestry and Monitoring of CAMPAs works and others.

### **Odisha Context**

The Forest, Environment & Climate Change Department in the State operates through several departmental formations and autonomous bodies. The field formations under the Forest set up are organized under the Forest, Wildlife and Kendu Leaf Wings. The Odisha Forest Development Corporation (OFDC) Ltd. acts as the commercial wing of the Department and discharges the function of disposing various forest produce like Kendu Leaf, salvaged timber, bamboo etc.

The State has 8 Forest Circles & 37 Forest Divisions under the Principal Chief Conservator of Forests & Head of Forest Forces and 14 Wildlife Divisions with territorial jurisdiction and Nandankanan Zoological Park under the Principal Chief Conservator of Forests (Wildlife) and Chief Wildlife Warden. Besides, there are 3 Circles and 19 Kendu Leaf Divisions under the PCCF (KL) which look after the collection and processing of Kendu Leaf. Further there are 8 working plan Divisions, one Forest Resources Survey Division, one State Silviculturist at Bhubaneswar and one Silviculturist Division at Rayagada under the administrative control of PCCF and HoFF, Odisha.

The State has a recorded Forest area of 61204.17 sq. km. which is about 39.30% of its geographical area. This includes 26873.66 sq. km. of Reserve Forest, 9175.15 sq. km. of Proposed Reserve Forest, 1085.22 sq. km. of Protected Forest, 287.51 sq. km. of Village Forest, 4179.59 sq. km. of Demarcated Protected Forest, 4272.91 sq. km. of Un-Demarcated Protected Forest, 15117.30 sq. km. of Revenue Forests, 22.06 sq. km. of Un-Classified Forests and 190.77 sq. km. of Private Forests.

As per ISFR, 2021, the forest cover of Odisha is 52,156 sq. km (33.50%) comprising 7,213 sq. km as Very Dense Forest, 20,995 sq. km as Moderately Dense Forest and 23,948 sq. km under Open Forest and the tree cover is 5004 sq. km. The State has gained 537 sq. km of forest cover and 356 sq. km of tree cover in the State over the assessment made by FSI in 2019.

The Compensatory Afforestation Fund Management and Planning Authority (CAMPAs) Odisha was constituted vide Notification No. 13995/F&E dated 14.08.2009 with an objective for Conservation, Protection, Regeneration and Management of existing natural forests, Wildlife and their habitat and raising Site Specific compensatory Afforestation, Penal compensatory Afforestation etc.

The state CAMPAs formulates Annual Plans of Operation (APOs) every year to carry out its operations in the forestry sector as per the approved APO. The core activities of CAMPAs include working plan prescription and plantations, forest protection, wildlife management, Ama Jangala Yojana, and SMC activities while non-core activities comprise of research, development and capacity building, infrastructure development, Forest IT and working plan exercise. The activities planned in the APO out of the CAF are undertaken by different wings of the Forest, Environment and Climate Change Department, Government of Odisha (GOO).

## **2. M&E of CAF Activity**

The CAMPAs guidelines envisage engagement of independent concurrent monitoring and evaluation agency to oversee and evaluate activities on annual basis on state specific parameters as per the

requirements/ terms of reference. The current assignment is being carried out by AFC India Ltd., an agency selected through competitive bidding process to carry out Third-party monitoring of the CAMPA works for the APO of FY 2022-23.

To this endeavour key objectives of the present evaluation study, as indicated in the Request for Proposal/ MOU are as follows:

- Evaluation of CAMPA Annual Plan of Operations (APO) for the year 2022-23, and submission of reports;
- Evaluation includes AR, ANR, Bald Hill, Avenue Plantations in Compensatory Afforestation works along with AR, ANR, Bald Hill, Bamboo, Miyawaki, Fruit & Fodder, Conservation of RET Species, and other models of plantations under NPV component raised in APO year and previous plantations maintained in APO year;
- Site Specific WL Conservation Measures under Integrated WL management;
- Evaluation of Subsidiary Silvicultural Operations of Bamboo;
- Evaluation of Soil and Moisture Conservation Measures;
- Evaluation of Forest Protection and Forest Fire Protection activities;
- Ama Jangal Yojana (AJY) works;
- Wildlife Management activities;
- Infrastructure Development works;
- Research, Capacity Building and Forest IT;
- Raising and maintenance of 18-month-old seedlings;
- Digitization of Forest Blocks boundary; and
- Any other works taken up which are not specified above.

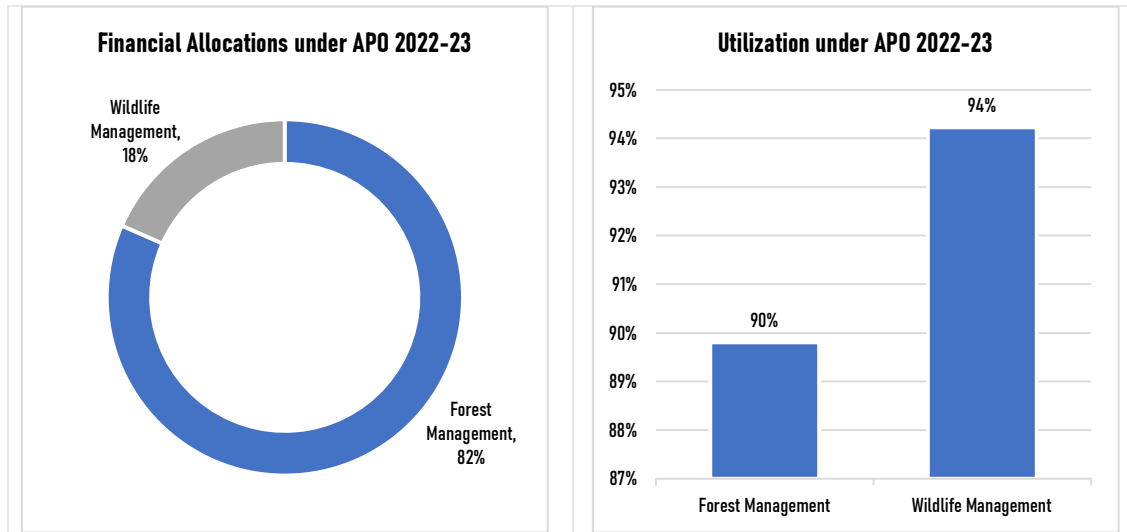
As per the information shared by the CAMPA State Authority, summary of the APO 2022-23 is presented below.

The CAMPA Annual Plan of Operation 2022-23 was implemented from April 2022 with financial outlay of Rs.1241.34 Crore which was approved by the State Level Steering Committee against which Rs. 1155.91 Crore was kept in State Budget. However, the National Authority approved the APO for Rs.1191.31 Crore. Total Treasury Challan amount for the FY 2022-23 was Rs.1026.17 Cr., of which expenditure of Rs.929.93 Cr. has been reported, overall utilizing 91% of the allocated funds. As per the APO FY 2022-23, fund allocation for ‘forest management’ activities are around 82%, whereas for the ‘wildlife management’ allocation for the planned activities is 18%.

The table 2.1 below provides Outlay, Allocations and Expenditure for the forest management as well as wildlife management under the APO FY 2022-23.

**Table 2.1: Financial allocations and Expenditure under the APO for FY 2022-23**

Amount in Rs. Lakh					
Particulars	Outlay	Allocated	Expenditure	% Utilized	Allocation
[1]	[2]	[3]	[4]	[5]=[4]x100/[3]	[6]
Forest Management	96,979.00	83,744.18	75,208.91	90%	82%
Wildlife Management	22,152.00	18,873.16	17,783.64	94%	18%
<b>Total APO 2022-23</b>	<b>1,19,131.00</b>	<b>1,02,617.34</b>	<b>92,992.56</b>	<b>91%</b>	



**Figure 2.1: Financial allocations and Expenditure under the APO for FY 2022-23**

As per the APO, activities were proposed in 13 key categories (A thru M) under ‘Forest Management’, whereas under ‘Wildlife Management’ the activities were proposed in 3 key categories (A thru C). Category-wise allocations of works for ‘Forest Management’ is presented in Table 2.2, whereas allocations for ‘Wildlife Management’ is presented in Table 2.3.

**Table 2.2: Category-wise allocation under Forest Management**

SI No	Particulars	Physical (Area in ha)	Financial (Rs. in Lakh)
<b>A</b>	<b>Compensatory Afforestation, Penal Compensatory Afforestation,</b>		
1	P.O for Block Plantation 2023-24	94.82	59.68
2	P.O for ANR Plantation 2023-24	1335.10	142.83
3	P.O for ANR Plantation 2023-24 (Without Gap)	109.79	3.44
4	P.O for Tall Tree Plantation 2023-24	28189.26	7.36
5	P.O for Baldhill & Others Plantation 2023-24	407.73	475.90
6	1st Year Creation of Block Plantation @1000	324.95	169.89
7	1st Year Creation of Block Plantation @1600	274.51	363.50
8	1st Year Creation of ANR Plantation @200	1470.68	490.90
9	1st Year Creation of ANR Plantation @200 (Without Gap)	827.76	107.93
10	1st Year Creation of ANR Plantation @400	1369.22	846.90
11	1st Year Creation of ANR Plantation @600	123.77	77.72
12	1st Year Creation of ANR Plantation @800	168.98	142.56
13	1st Year Creation of ANR Plantation @1000	0.00	0.00
14	1st Year of Tall Tree Plantation	11651.61	140.86
15	1st Year Other Ancillary	6.00	606.36
16	1st Year of Baldhill without fencing @1600	70.30	66.75
17	2nd Year Maintenance of All Plantation	4028.33	507.93
18	2nd Year Maintenance of Avenue Plantation	11.00	5.29
19	3rd Year Maintenance of All Plantation	3874.84	273.02
20	3rd Year Maintenance of Avenue Plantation	1.94	1.07
21	3rd Year Maintenance of Tree Plantation	4422.00	3.81
22	4th Year Maintenance of All Plantation	5073.98	135.04
23	5th Year Maintenance of All Plantation	1374.85	22.40
24	5th Year Maintenance of Avenue Plantation	2.56	0.67
25	6th Year Maintenance of All Plantation	3106.01	42.90
26	6th Year Maintenance of Tree Plantation	142.50	2.59
27	7th Year Maintenance of All Plantation	2817.09	39.28
28	8th Year Maintenance of All Plantation	893.63	10.74
29	8th Year Maintenance of Avenue Plantation	10.00	2.17

Sl No	Particulars	Physical (Area in ha)	Financial (Rs. in Lakh)
30	CA Others	1160.00	7.39
	<b>Total CA, PCA</b>	<b>73343.20</b>	<b>4756.90</b>
<b>B</b>	<b>Plantation, Maintenance, SMC &amp; SSO Bamboo</b>		
<b>i)</b>	<b>ANR Plantation</b>		
1	Vanya Silk @500 plant/ha @0.62876 Lakh/Ha	1807.00	608.95
2	Fodder and Fruits Species @500 plant/ha @0.62876 Lakh/Ha	2760.00	929.47
3	RET/Medicinal Species @200 plant/ha @0.31284 Lakh/Ha	2402.00	467.07
4	Other Indigenous Misc. Species @200 plant/ha @0.31284 Lakh/Ha	44898.00	8708.53
<b>ii)</b>	<b>AR Plantation</b>		
1	Economic (Timber/High value Timber Species except Teak) @1600 plant/ha @2.05526 Lakh/Ha	185.00	207.79
2	Other Indigenous Species @1600 plant/ha @2.05526 Lakh/Ha	1235.00	1386.28
3	Other Indigenous Species @1000 plant/ha @1.45077 Lakh/Ha	1050.00	896.19
4	Phasi @1600 plant/ha @2.05526 Lakh/Ha	85.00	95.46
5	River Rejuvenation Plantation@1600 plant/ha @2.05526 Lakh/Ha	80.00	95.36
6	Baldhill @1600 plant/ha @3.15386 Lakh/Ha	970.00	1872.10
7	Casuarina (in protected area only) @2500 plant/ha @1.77238 Lakh/Ha	150.00	197.21
8	Mangrove @2500 plant/ha @0.94027 Lakh/Ha	8.00	6.80
9	Mangrove (Hypocotyl) @4445 plant/ha @0.3592 Lakh/Ha	125.00	43.44
10	Miyawaki Plantation @8000 Plant/ha	0.00	0.00
11	Fodder and Fruits @1600 plant/ha (1st year only)	60.00	61.83
<b>iii)</b>	<b>2nd Year Maintenance</b>		
1	ANR 200 Plant (2nd year)	35515.00	2426.52
2	Block Plantation 1600 plant/ha (2nd year)	1490.00	452.90
3	Bald Hill 1600 Plant/Ha (2nd year)	1326.00	565.77
4	Bamboo Plantation 400 plant / ha (2nd year)	1370.00	329.78
5	Miyawaki @800 Plant Ha (2nd year)	13.00	105.55
6	Casuarina @ 2500 plant/Ha.	46.10	32.45
7	Fodder & Fruit 1600 Plant/Ha	105.00	33.71
8	RET Species (with Gap) @200 plant/Ha. (2nd year)	130.00	8.90
9	Conservation of RET Species (without Gap)(2nd year)	70.00	3.29
<b>iv)</b>	<b>3rd Year Maintenance</b>		
1	ANR 200 Plant (3rd year)	39865.00	2581.28
2	Block Plantation 1600 plant/ha (3rd year)	1492.50	383.53
3	Bald Hill 1600 Plant/Ha (3rd year)	875.00	209.81
4	Bamboo Plantation 400 plant / ha (3rd year)	770.00	127.62
5	Miyawaki @800 Plant Ha (3rd year)	4.00	16.02
6	Fodder & Fruit 1600 Plant/Ha (3rd year)	385.00	98.80
7	Fodder & Fruit Urban Mode) @1600 Plant/Ha (3rd year)	62.50	68.26
8	Conservation of RET Species (with Gap) @200 plant/Ha. (3rd year)	85.00	5.57
9	Conservation of RET Species (without Gap)(3rd year)	699.00	20.04
<b>v)</b>	<b>4th Year Maintenance</b>		
1	ANR 200 Plant (4th year)	19705.00	895.90
2	Block Plantation 1600 plant/ha (4th year)	1930.00	130.91
3	Avenue Plantation @250 Plant/RKM	76.00	19.46
<b>vi)</b>	<b>Monitoring charge</b>		800.29
	<b>Total Plantation</b>	<b>161829.10</b>	<b>24892.86</b>
<b>C</b>	Silvicultural Operation & Maintenance of Research Garden & Research	0.00	199.98
<b>D</b>	Regeneration of Degraded bamboo Forests (SSO Bamboo)	74099.72	1944.46
<b>E</b>	Soil & Moisture Conservation in Forest Area (SMC)	23696.18	8305.04
	<b>Total Silvicultural, Regeneration &amp; Soil &amp; Moisture Conservation</b>	<b>97795.90</b>	<b>10449.47</b>
<b>F</b>	<b>Forest Protection squad</b>		
1	Protection of Forest through consolidation by Geo Referencing of Notified Forest Block 13046.87 KM Sq. and 3965.17 KM Sq. of Revenue and Deemed Forest Area	13627.00	66.14
2	Protection of Forest through provisioning of mobility by Hired Vehicle (Hired vehicle Rs.31,000/- + Fuel Rs.12,000/ P.M) total Rs.5.16 lakhs	226.00	1088.63

SI No	Particulars	Physical (Area in ha)	Financial (Rs. in Lakh)
3	Casual Engagement of Local Youth to Assist regular staff of State Forest Department for works for Protection of Forest & Wildlife undertaken from State Fund (10 person each in 227 units for whole year)	227.00	3592.73
	<b>Total Forest Protection</b>	<b>14080.00</b>	<b>4747.49</b>
<b>G</b>	<b>Fire Prevention &amp; Control Operation</b>		
	<b>Fire Protection Rapid response teams involving community youth with Hired Vehicle for Fire Protection</b>		
1	Wages for Firefighting squads with vehicle in each Forest Range @ Rs.4.725 lakhs/squad	213.00	985.35
2	Fire vehicle @ Rs.0.014/ day and 150 day= Rs. 2.10 lakhs	213.00	433.56
3	Creation & Maintenance of Fire line @ Rs.0.00315 lakhs/KM	19410.60	611.97
4	Procurement of Fire Blower including Fuel and Others Accessories @0.65 Lakhs/each	289.00	190.47
5	Logistic to the Fire Protection squad @ Rs.0.85 lakhs/Sqd	209.00	188.30
6	Training on Forest Fire to the Frontline Forest Staff @0.10 lakhs/each	267.00	29.70
7	Awareness Campaign in the Ranges @0.50 lakhs/each	272.00	95.69
8	Fire Watch Tower @20.00 lakhs	10.00	184.78
	<b>Total Fire Protection</b>	<b>20883.60</b>	<b>2719.83</b>
<b>H</b>	<b>INFRA STRUCTURE DEVELOPMENT</b>		
1	Range office @ Rs.31.65 lakhs/ office	9.00	237.22
2	Range Officer Residence @ Rs.24.521 lakhs/Range	13.00	313.79
3	Forester Qrs @ Rs.20.389 lakhs/each	90.00	1724.21
4	Forest Guard Qrs @ Rs.16.29 lakhs/each	256.00	3997.95
5	Seizure Yard @ Rs.12.00 lakh/one	25.00	291.34
6	Construction & Maintenance of Forest Road @ Rs.0.69 lakhs/R.K.M.	948.63	656.28
7	Culvert @ Rs.1.53 lakhs/one	128.00	191.61
8	Cause way @ Rs.1.06 lakhs/one	376.00	409.11
9	Spill Over Work for APO 2021-22	13.00	70.09
	<b>TOTAL Infra.</b>	<b>1858.63</b>	<b>7891.59</b>
I	Training & Publicity (Vanamahotsav)		21.21
J	Forest IT & Geomatics		76.54
K	M&E		17.35
<b>L</b>	<b>INTEREST</b>		
1	P.O for 18 months seedling during to be planted during 2024-25 (3 months) January, 2023	13428960.00	1392.69
2	Maintenance of 18 months old seedling@ to be planted during 2022-23 (3 months) January, 2021	17700000.00	4077.65
3	Maintenance of 18 months old seedling@ to be planted during 2023-24 (12 months) January, 2022	18100000.00	5753.35
4	Maintenance of 18 months old seedling of AJY	5500000.00	1887.39
5	Data Internet Charges for Fire Protection	4559.00	34.33
6	Maintenance Of 18 month old seedling (Casuarina)	192500.00	8.45
7	State Authority Expenditure		2768.95
	<b>TOTAL INTEREST</b>		<b>16037.91</b>
<b>M</b>	<b>Ama Jangala Yojana</b>		
1	2nd Year ANR with Gap	20350.00	1513.15
2	2nd Year ANR without Gap	23457.00	1211.13
3	3rd Year ANR without Gap	26950.00	731.70
4	4th Year ANR without Gap	24950.00	256.87
	<b>Total Ama Jangala Yojana</b>		<b>3712.85</b>
	<b>Grand Total</b>		<b>75208.91</b>

Under the APO, highest allocations/ utilization (33%) was made Plantation including maintenance, followed by 14% that includes SMC, SSO Bamboo, Research etc. activities, followed by 10% towards infrastructure development.

**Table 2.3: Category-wise allocation under Wildlife Management**

	Particulars	Funds approved by National CAMPA (Rs. In lakh)	Funds received against approved outlay from CEO, CAMPA, Odisha (Rs. In lakh)	Funds utilised (Rs. In lakh)	% achieved
<b>A</b>	<b>Activities for Wildlife Management under CAMPA APO:2022-23 (80% Components of NPV)</b>	<b>14,456.00</b>	<b>14,456.00</b>	<b>11,902.64</b>	<b>82%</b>
1	Protection and Anti-Depredation Activities	1,575.00	1,575.00	853.46	54%
2	Forest Fire Prevention and Control Operations	1,144.00	1,144.00	1,047.73	92%
3	Improvement of Wildlife Habitat	3,137.00	3,137.00	2,697.58	86%
	3.1 Augmentation of food and water resources	112.00	112.00	30.44	27%
	3.2 Monitoring assessment and protection of wildlife habitat	1,700.00	1,700.00	1,609.97	95%
	3.3 Habitat Management	900.00	900.00	700.00	78%
	3.4 Corridor Management	63.00	63.00	21.97	35%
	3.5 Management of Special Habitats	362.00	362.00	335.21	93%
	3.6 Contingency & Overhead Expenditure	-	-	-	-
4	Establishment, operation and maintenance of animal rescue centre and veterinary treatment facilities for wild animals	1,400.00	1,400.00	294.33	21%
5	Management of biological diversity and biological resources	700.00	700.00	677.93	97%
6	Voluntary Relocation of Villages from Protected Areas and Tiger Reserve	6,500.00	6,500.00	6,331.60	97%
	<b>Activities for Wildlife Management under CAMPA APO:2022-23 (20% Components of NPV)</b>	<b>1,432.00</b>	<b>1,432.00</b>	<b>1,177.10</b>	<b>82%</b>
7	Strengthening of Communication facilities for Protection of Wildlife	350.00	350.00	228.13	65%
8	Construction & Maintenance of Infrastructure for Protection of Wildlife	982.00	982.00	896.30	91%
9	Research Activities	-	-	-	-
10	Publicity & Awareness Programmes	100.00	100.00	52.67	53%
	<b>Total NPV (80% + 20%)</b>	<b>15,888.00</b>	<b>15,888.00</b>	<b>13,079.74</b>	<b>82%</b>
<b>B</b>	<b>Implementation of Regional Wildlife Management Plan for the State</b>	<b>1,500.00</b>	<b>1,500.00</b>	<b>668.23</b>	<b>45%</b>
<b>C</b>	<b>Implementation of Site-Specific Wildlife Conservation Plan</b>	<b>4,764.00</b>	<b>4,764.00</b>	<b>4,040.68</b>	<b>85%</b>
	<b>Total B + C</b>	<b>6,264.00</b>	<b>6,264.00</b>	<b>4,708.91</b>	<b>75%</b>
	<b>Total A + B + C</b>	<b>22,152.00</b>	<b>22,152.00</b>	<b>17,788.64</b>	<b>80%</b>

Under the Wildlife Management the activities planned under category A the achievement is 82% whereas for the activities under category B and C the achievement is 45% and 85% respectively. Overall, 80% of the allocated funds have been utilized.



### 3. Key Processes and Limitation of the Study

After the award of the contract in late November 28, 2023, the draft Inception Report was presented on January 16, 2024 before the Evaluation Committee chaired by PCCF (HoFF). Some clarification and more details were desired. Accordingly, based on the feedback and suggestions second presentation was made before the Evaluation Committee chaired by PCCF (HoFF) on January 22, 2024. Thereafter, after seeking ‘go-ahead’ remarks, the Inception Report was revised and submitted.

After submission of the Inception Report, the first field survey was undertaken during one week of February, 2024 in forest divisions/ ranges of the Bhubaneshwar Circle. Based on initial field visits by the key experts, detailed guidelines and data collection forms were designed and validated in the field. Subsequently, after the first field visit, a small in-house training was conducted with all the field teams to ensure uniformity in data collection as well as quality. A follow-up training was conducted online on February 14, 2024 to adjust the forms based on the feedback. Thereafter, the field survey was rolled-out on full scale.

The survey work was planned in a manner that it gets completed by mid-April, but the entire survey schedule got impacted by series of other factors, viz., closing of financial year, parliamentary as well as state assembly elections in Odisha, heatwave spells followed by excessive rains due to which the rhythm of the survey kept on stretching.

There were follow-up letters from the CEO, CAMPA, and was communicated on September 19, 2024 informing about the completion of the survey work, and the data tabulation and analysis. Summary of the assignment stages is depicted in following table 3.1 below.

**Table 3.1: Assignment Chronology**

Assignment Stages	Key Dates	Remarks
Award and Signing of Contract	November 28, 2023	
Inception Report Presentation	January 16 and January 22, 2024	
Field Survey and Training	First week of February 2024	Initiated after go-ahead
Follow-up Training on Data Collection	February 14, 2024	Online mode
Field Survey Completion	September 19, 2024	The survey work got impacted due to several factors viz., financial year closing, State and Parliament Elections, Heat-wave followed by rains etc.
Draft Report Submission	October 15, 2024	
Draft Report Presentation	December 24, 2024	The minutes were issued on January 9, 2025, and final report submission is kept as January 15, 2025

Now, the final report is being submitted after incorporating the suggestions and feedbacks in compliance of the completion of the assignment.

The report has been organized circle-wise with observations on each of the divisions based on the activity observed, that was randomly chosen from the list of activities included in the APO supported with tables, graphs, and photographs.

## 4. Methodology

Under the CAF Rules and Guidelines, it is mandatory to undertake independent monitoring of the CAMPA activities including CAT Plan activities. Since, this exercise is undertaken in subsequent year of Annual Plan of Operation (APO) implementation, the method of the exercise is more like objective assessment of accomplishment of planned activities including quality and quantities of works.

The approach of undertaking the assessment of CAMPA works was to measure effectiveness of the treatments/ interventions undertaken, identification of implementation gaps and limitations, and provide objective suggestions etc. The entire assignment was carried out in three distinct phases, viz., Inception phase, Field Survey phase, and Report Preparation phase. The total duration of the assignment was to be around 6 months, or little more depending on the survey duration which had been estimated for 12 weeks, as well as available working days. Figure 1 describes in brief the three phases of the assignment.

### 1. Evaluation of Plantation Works

**(Form 1 and Form 1A were used; refer Annex 1)**

#### Sampling method and Sampling Percentage

- Range-wise list of plantation sites were collected from the divisions
- Two Ranges from each division where maximum areas covered under the afforestation activities were selected
- In each selected Forest Range serial numbers were given to all the sites
- 10% of the total sites provided as per the list were randomly selected utilizing Random Number Table
- 2% of the area was enumerated for each sampled site by laying plots of size 33m x 33m (approx. 0.1 ha.)
- The plots were laid randomly on the diagonal starting from one corner of the treatment/ plantation site
- Photographs along with GPS location (using mobile app) were taken to have a visual record.

#### DATA COLLECTION

- Suitability of location of plantation
- Year of plantation
- Area of the plantation
- Suitability of planted species per agro-climatic conditions
- Name & Number of species planted
- Spacing of plantation
- Type of planting: AR/Block/ANR/Avenue/Fruit & fodder/ Miyawaki/ RET/ Bamboo/ Bald Hill/ River bank/ Canal-side/Others
- Number of plants planted/ Spacing
- Average height of plants
- Average collar girth
- Silvicultural operation such as weeding, fencing, fertilizer application etc. and Protection measures etc.
- Maintenance of Plantation Journal/clump register & Nurseries

**Criteria for Evaluation (based on count in 0.1 ha sample plot)**

- Survival percentage
- Average plant height (in cm)
- Average DBH/ Collar Girth (in cm)
- Average number of seedlings planted
- Status of natural regeneration/coppicing status of stump, if any

**Note:** Score obtained based on the “Scoring of Plantation” based on the criteria like plantation journal & its updation, treatment map, SMC measures, survival percentage, Height & growth etc.

**2. Evaluation of SMC Works**

**(Form 3 was used; refer Annex 1)**

**Sampling method and Sampling %**

- Range-wise list of SMC sites were collected from the divisions
- Two Ranges from each division where maximum set of SMC activities undertaken were selected
- In each selected Forest Range serial numbers were given to all the sites
- 10% of the total sites provided as per the list were randomly selected utilizing Random Number Table
- Photograph along with GPS location (using mobile app) were taken.

**Data Collection**

- DPR prepared / Sanction letter
- Types of structure
- No. /volume
- Treatment Map available in Register of SMC
- Numbers per ha
- Extent of Siltation
- Efficacy of the Structures
- Extent of stabilization of gullies
- Comparative enhancement of ground water table
- Comparative assessment of the Vegetation cover in the area
- Status of regeneration
- Record maintenance like MB, GPS location

**Criteria for Evaluation (based on sample site)**

- Quality/suitability of SMC structures
- Staggered trench, Percolation Pit, Contour bund, graded bund, Gully Plugging, WHS, etc.
- Design and number of structures as per Norms/ Specification
- Effectiveness of structures (siltation check and stabilization of erosion/ gullies, improvement in soil moisture regime and regeneration) – observation based supported by photograph to be rated in two categories – a) Satisfactory, b) Not satisfactory
- Gaps, if any observed, will share with field as well as senior team for taking corrective measures

### **3. Evaluation of Infrastructure Works**

**(Form 4 was used; refer Annex 1)**

#### **Sampling method and Sampling %**

- Range-wise list of sites were collected from the divisions
- 10% of the total sites provided as per the list were randomly selected utilizing Random Number Table
- Photograph along with GPS location (using mobile app) were taken

#### **Data Collection**

- DPR/ Estimates for the structure
- Types of structure
- Work Order and Estimated Cost
- Completion status/ Commissioning of structure
- Specification/ norms followed for construction of structure
- Deviations/ cost over-run
- Utilization and maintenance of structure

#### **Criteria for Evaluation (based on sample site)**

- Completion of structure as per Work Order/ specification
- Any deviation from plan and estimate
- Usability and utility
- Construction quality (observation based supported by photograph to be rated in two categories – a) Satisfactory, b) Not satisfactory)

### **4. Evaluation of Wildlife Management Works**

#### **Sampling method and Sampling Percentage**

- Range-wise list of different wildlife management activities were collected from the divisions
- Two Ranges from each division where maximum activities taken up were selected, if any activities will be missing in two sampled ranges, alternate range(s) were selected to cover the activities
- In each selected Forest Range serial numbers were given to all the sites
- 10% of the total sites provided as per the list were randomly selected utilizing Random Number Table

#### **Data Collection**

- Protection and Anti-Depredation Activities
- Forest Fire Prevention and Control Operations
- Improvement of Wildlife Habitat
- Augmentation of food and water resources
- Monitoring assessment and protection of wildlife habitat
- Habitat Management

- Corridor Management
- Management of Special Habitats
- Contingency & Overhead Expenditure
- Establishment, operation and maintenance of animal rescue centre and veterinary treatment facilities for wild animals
- Management of biological diversity and biological resources
- Voluntary Relocation of Villages from Protected Areas and Tiger Reserve
- Strengthening of Communication facilities for Protection of Wildlife
- Construction & Maintenance of Infrastructure for Protection of Wildlife
- Research Activities
- Publicity & Awareness Programmes

**Criteria for Evaluation** (based on sample site)

- Completion of interventions
- Any deviation from plan and estimate in case of anti-poaching barrack/watch tower/animal rescue center/anti-poaching check gate
- Usability and utility
- Present conditions and utility
- Construction quality (observation based supported by photograph to be rated in two categories – a) Satisfactory, b) Not satisfactory)

## **5. Evaluation of Other Works**

### **Sampling method and Sampling %**

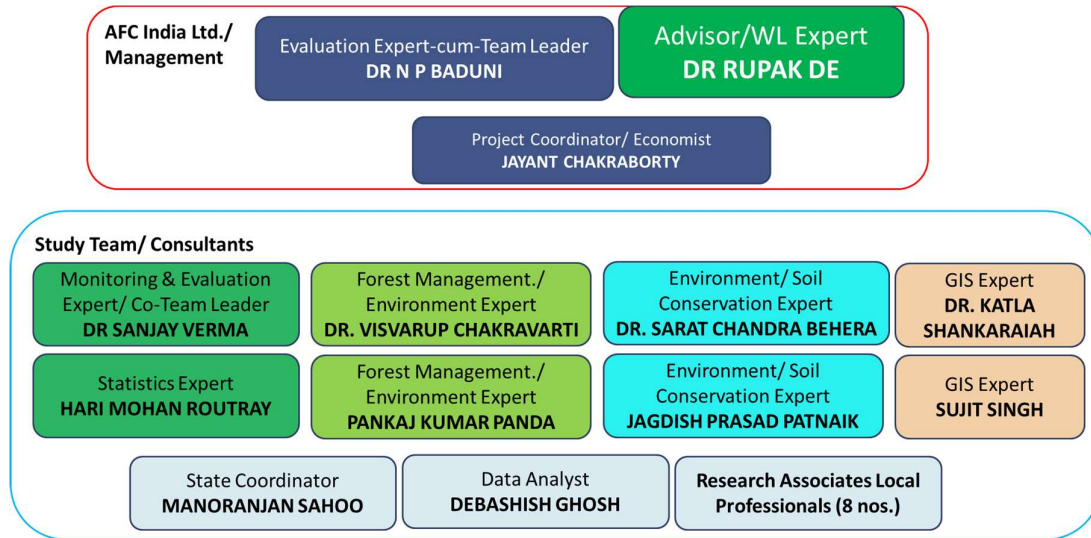
- Range-wise list of other activities carried out were collected from the divisions
- Two Ranges from each division where maximum activities taken up were selected, if any activities will be missing in two sampled ranges, alternate range(s) were selected to cover the activities
- 10% of the total activities provided as per the list were randomly selected utilizing Random Number Table

**Criteria for Evaluation** (based on sample site)

Activity wise suitable criteria will be applied.

## **4.1 Team Composition and Roles & Responsibilities**

As suggested in the TOR a multidisciplinary team of experts was deployed for carrying out the assignment, as proposed in the Inception Report as well. The choice of the experts has been made in a manner – having sufficient experience, knowledge, expertise and required qualifications, and has ability to deliver quality report within the stipulated timeframe. A team of experts was mobilized in the month of December 2023 to carry out the requisite study under the supervision of Team Leader/ Project Coordinator, and under guidance of Technical Advisor. The team was further supported by 8 Field Investigators who were engaged locally.



**Figure 4.1: Study Team**

## 4.2 Key Deliverables and Timeline

As per the TOR, there are four deliverables for the assignment, and are listed in table below:

**Table 4.1: Key Deliverables and Timelines**

Sl. No.	Outputs/ Deliverables	Timeline	Remarks
1	Inception Report	Original: January 10, 2024 Revised: January 16 and January 22, 2024	Within one month of signing of MOU; the MOU was signed on November 28, 2023 <b>*Presentation made on January 16, 2024, and follow-on presentation on January 22, 2024</b>
2	Draft Final Report	Original: June 5, 2024 Revised: October 15, 2024	Efforts will be made to submit the draft report as per schedule. Presentation will be made on the draft report, and subsequently finalized report will be submitted by due date. <b>*Presentation made on December 24, 2024.</b>
3	Final Report	Original: July 9, 2024 Revised: January 15, 2025	After incorporating the feedback/ comments from State CAMPA/ OFD <b>*Comments expected from State CAMPA received on January 9, 2025; Final report submission is based on the comments communicated by the Client.</b>

## 5. Study Coverage

As per the mandate, the study team covered all 51 forest divisions falling in 8 Circles to observe the activities planned in the APO implemented during the FY 2022-23. In all 37 territorial forest divisions, and 14 wildlife divisions were covered.

**Table 5.1: Study Coverage by Circles**

Circle	Territorial	Wildlife	Total
Angul	5	2	7
Baripada	3	4	7
Berhampur	7	0	7
Bhawanipatna	5	1	6
Bhubaneswar	3	5	8
Koraput	5	0	5
Rourkela	5	0	5
Sambalpur	4	2	6
<b>Total</b>	<b>37</b>	<b>14</b>	<b>51</b>

Other functional divisions that also received the funds under the APO, and were reviewed are – Silva BBSR, Silva Rayagada, FRC, Angul, G.Udayagiri, Dy Champua, Nadankanan, and FTS Ghatikia.

Following table indicates the number of sites visited in the territorial and wildlife forest divisions. The table illustrates total number of sites [3], Sites to be covered as per the sampling requirements [4], and total number of sites covered under the assignment [5]. In all 156% sites were visited as against the targeted sites whereas the study team covered around 16% sites as per the total listed sites.

**Table 5.2: Number of sites visited under the Study by Circles**

Circle	Division	Sites	Target for Coverage	Sites covered	% of site covered	% covered against target
[1]	[2]	[3]	[4]	[5]	[6]	[7]
<b>Angul</b>	Angul	167	17	27	16%	159%
	Athagarh	97	10	13	13%	130%
	Athamallik	56	6	12	21%	200%
	Cuttack	168	17	34	20%	200%
	Dhenkanal	134	14	26	19%	186%
	Mahanadi WL	9	1	4	44%	400%
	Satkosia WL	25	3	5	20%	167%
	<b>Total</b>	<b>656</b>	<b>68</b>	<b>121</b>	<b>18%</b>	<b>178%</b>
<b>Baripada</b>	Balasore WL	57	6	11	19%	183%
	Baripada	52	6	12	23%	200%
	Karanjia	74	8	14	19%	175%
	Keonjhar WL	111	12	21	19%	175%
	Rairangpur	75	8	17	23%	213%
	Similipal North WL	33	4	9	27%	225%
	Similipal South WL	41	5	12	29%	240%
	<b>Total</b>	<b>443</b>	<b>49</b>	<b>96</b>	<b>22%</b>	<b>196%</b>
<b>Berhampur</b>	Balliguda	351	36	74	21%	206%
	Berhampur	103	11	32	31%	291%
	Boudh	116	12	28	24%	233%
	Ghumusur North	150	15	38	25%	253%
	Ghumusur South	142	15	32	23%	213%
	Parlakhemundi	161	17	43	27%	253%
	Phulbani	149	15	23	15%	153%
	<b>Total</b>	<b>1172</b>	<b>121</b>	<b>270</b>	<b>23%</b>	<b>223%</b>

Circle	Division	Sites	Target for Coverage	Sites covered	% of site covered	% covered against target
[1]	[2]	[3]	[4]	[5]	[6]	[7]
<b>Bhawanipatna</b>	Bolangir	389	39	42	11%	108%
	Kalahandi North	247	25	47	19%	188%
	Kalahandi South	448	45	28	6%	62%
	Khariar	260	26	29	11%	112%
	Subarnapur	137	14	23	17%	164%
	Sunabeda WL	128	13	15	12%	115%
	<b>Total</b>	<b>1609</b>	<b>162</b>	<b>184</b>	<b>11%</b>	<b>114%</b>
<b>Bhubaneswar</b>	Bhadrak WL	24	3	5	21%	167%
	Chandaka WL	26	3	3	12%	100%
	Chilika WL	35	4	11	31%	275%
	City Forest, BBSR	17	2	7	41%	350%
	Khordha	33	4	5	15%	125%
	Nayagarh	175	18	24	14%	133%
	Puri Wildlife	41	5	17	41%	340%
	Rajnagar WL	43	5	13	30%	260%
	<b>Total</b>	<b>394</b>	<b>44</b>	<b>85</b>	<b>22%</b>	<b>193%</b>
<b>Koraput</b>	Jeypore	270	27	33	12%	122%
	Koraput	311	32	59	19%	184%
	Malkangiri	387	39	34	9%	87%
	Nabarangapur	198	20	39	20%	195%
	Rayagada	411	42	44	11%	105%
	<b>Total</b>	<b>1577</b>	<b>160</b>	<b>209</b>	<b>13%</b>	<b>131%</b>
<b>Rourkela</b>	Bonai	118	12	16	14%	133%
	Deogarh	128	13	15	12%	115%
	Keonjhar	224	23	30	13%	130%
	Rourkela	140	14	29	21%	207%
	Sundargarh	127	13	16	13%	123%
	<b>Total</b>	<b>737</b>	<b>75</b>	<b>106</b>	<b>14%</b>	<b>141%</b>
<b>Sambalpur</b>	Bamara WL	159	16	17	11%	106%
	Bargarh	106	11	11	10%	100%
	Hirakud WL	34	4	7	21%	175%
	Jharsuguda	80	8	13	16%	163%
	Rairakhol	113	12	16	14%	133%
	Sambalpur	97	10	20	21%	200%
	<b>Total</b>	<b>589</b>	<b>61</b>	<b>84</b>	<b>14%</b>	<b>138%</b>
<b>Total Circle</b>		<b>7177</b>	<b>740</b>	<b>1155</b>	<b>16%</b>	<b>156%</b>



## **6. Assessment Findings**

### **6.1 Overall Assessment**

The role of the third-party evaluator is to take a scientifically sampled view of the exercise done by the primary players, evaluate the same and present an unbiased view of the activities along with a set of observation and suggestions for future follow up actions and improvements.

The following are a set of observations based on the inputs obtained from the selected field samples:

1. The saplings raised in the forest nurseries are of good quality. At the time of the field visits the plantation works were in progress, and the saplings planted are of sufficiently good quality.
2. Departmental norms and protocols have been followed for raising the new plantations. The field teams have observed that at some sites the Artificial Regeneration models have been implemented whereas the sites were planned for some other plantation model – mostly ANR.
3. In most of the sites observed, the spacing of plantation were appropriately executed, however at some sites issues of spacing have been noticed – generally related to non-conformity with the norms especially reduced spacing to comply with the numbers to be planted.
4. At few sites sapling have been planted under the shade of existing planted trees.
5. The construction of infrastructure such as watch towers, staff quarters office buildings etc. has been done according to a standardised plan and are apparently of a sufficiently good quality. These structures were measured on sample basis for their dimensions and these were checked with the measurement books. The record was generally found to be accurate and as per the work done.
6. Roads, culverts, causeways etc. have been built as per the requirements of the sites and the dimensions have been recorded in the measurement books. This was verified by spot checking of the sampled sites. One of the causeways observed was found damaged.
7. The SMC works have been done in a site-specific manner and the sites are appropriate. The quality of the SMC works is also satisfactory.
8. In some divisions the allocated physical and financial targets were not fully achieved. The gaps in achieving the targets could be identified with the respective divisions, so that realistic planning could be done in subsequent years.
9. Budgetary procedures have generally been followed and record maintenance is good.
10. Barring of few cases, information of E-green watch is regularly been updated at the division level.
11. The labour and staff engaged though the CAMPA funds were used for the designated purpose.
12. The AJY model has been deployed successful to implement the field works by gathering strength from social mobilization. The support of the local community has benefited the forestry and wildlife conservation efforts.
13. Protection fencing using varies material like angle-iron, cross-wire, green fence, wooden poles etc, have been installed around the plantation sites observed. The protective fencing was found damaged at some places.

14. The protected area network, a sector that usually faces a resource crunch, has been supported in several key areas such as protection by the creation of physical barriers, support to anti – depredation squads, quick payment of compensatory sums of money for losses resulting from human-animal conflict etc. The development of grassland in the farms of relocated villages and the consequent use of the site by wild ungulates is indeed an encouraging sign of effective use of financial allocations.
15. The use of CAMPA funds for rejuvenation of coastal shelterbelts is a good example of funds well used.
16. The Subsidiary Silvicultural Operations done in bamboo areas are generally benefitted the crop.
17. The upkeep of records such as plantation journals, nursery records, measurement books etc. has been generally found to be of good quality. The documents were usually available during the field inspections and found to be regularly updated.
18. The field staff was found to be conversant with the work and they were able to share their knowledge and provide useful inputs during the field survey.

## 6.2 Findings on CAMPA Activities (Qualitative and Quantitative)

### 6.1.1 Overall Physical and Financial Progress analysis

The APO physical as well as the financial targets have been met completed. The table 6.2.1 indicates the circle-wise expenditures incurred by the forestry wing and the wildlife wing of the forest department.

**Table 6.1: Circle-wise expenditure under forestry and wildlife management**

Name of Circle	Forestry Activities (General) (Rs. In lakh)	Wildlife Management (Rs. In lakh)	Total Expenditure Incurred (Rs. In lakh)
<b>Circle</b>			
Angul	7,803.63	8,942.20	16,745.83
Baripada	4,928.64	1,992.96	6,921.59
Berhampur	12,235.81	780.78	13,016.58
Bhawanipatna	14,205.42	678.01	14,883.43
Bhubaneswar	5,790.05	1,727.28	7,517.34
Koraput	12,285.21	234.18	12,519.39
Rourkela	7,860.98	1,971.56	9,832.54
Sambalpur	7,181.75	1,131.15	8,312.90
<b>Total Circle</b>	<b>72,291.48</b>	<b>17,458.12</b>	<b>89,749.60</b>
<b>Other</b>			
Silva BBSR	131.94	-	131.94
Silva Rayagada	94.02	-	94.02
FRC,Angul	4.21	75.00	79.21
G.Udayagiri	4.37	-	4.37
Dy Champua	4.41	-	4.41
Nadankanan	-	230.45	230.45
FTS Ghatikia	-	15.00	15.00
DCF(HQ)	2,678.49	-	2,678.49
PCCF WL	-	5.07	5.07
<b>Total Others</b>	<b>2,917.43</b>	<b>325.52</b>	<b>3,242.95</b>
<b>Total</b>	<b>75,208.91</b>	<b>17,783.64</b>	<b>92,992.56</b>

**6.1.1 (a) Nursery Management**

Forest nurseries are well managed and maintained, and saplings are well kept. Sorting and grading of plants was observed at the time of visit by the study team at few nurseries. Nursery Journals and Specie-wise records are well maintained. System of maintaining Pit Registers along with the Nursery Journal is also introduced, and being updated at site level.

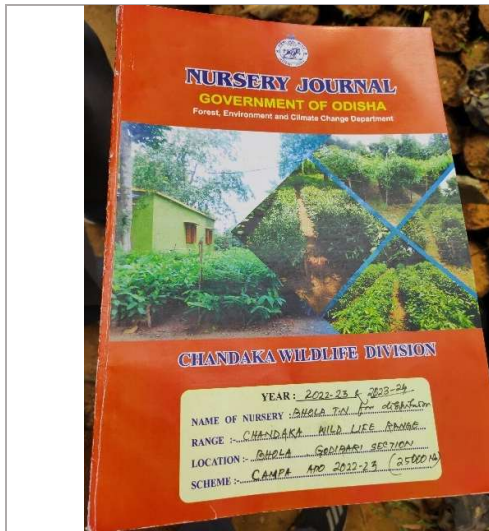


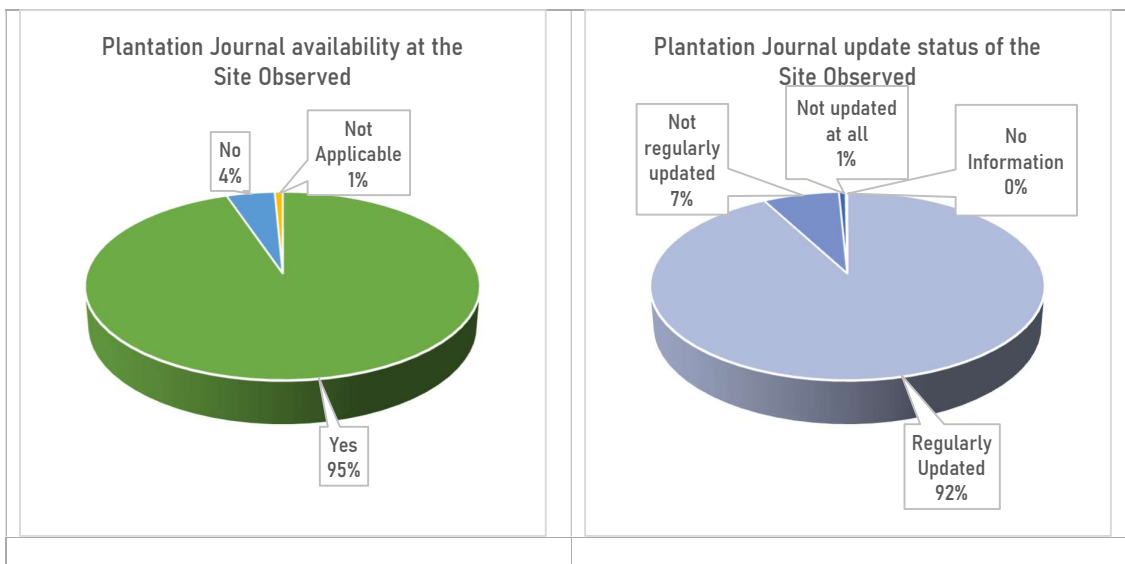
Figure 1: Chandaka Wildlife Division

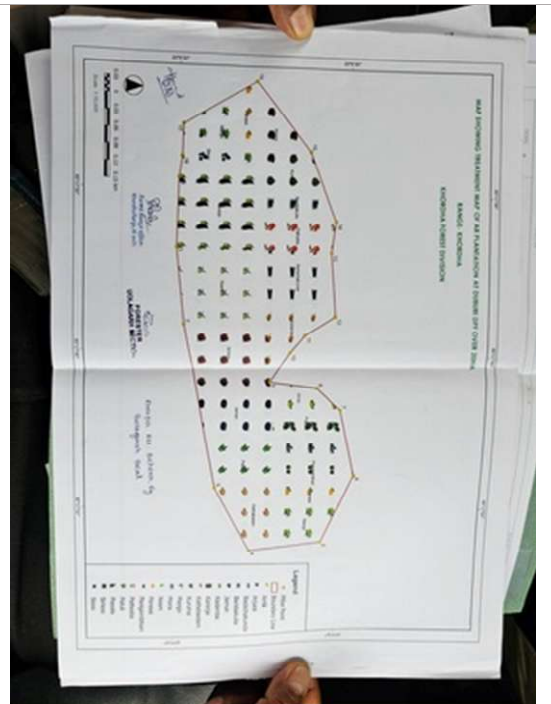
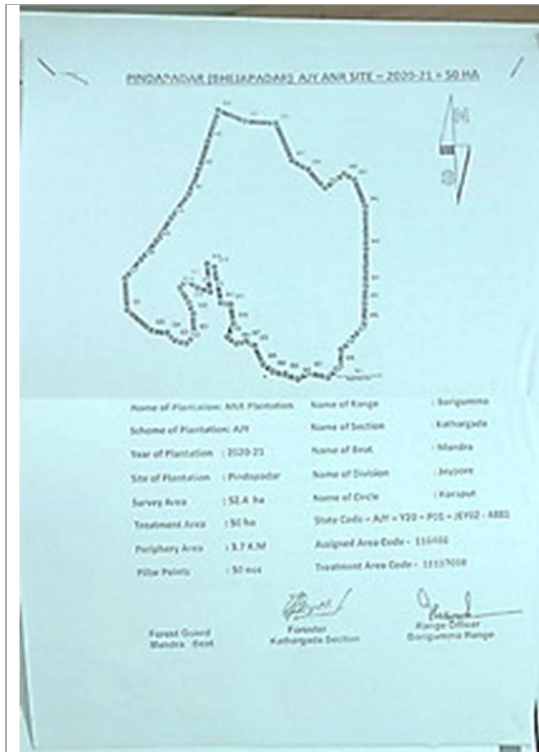
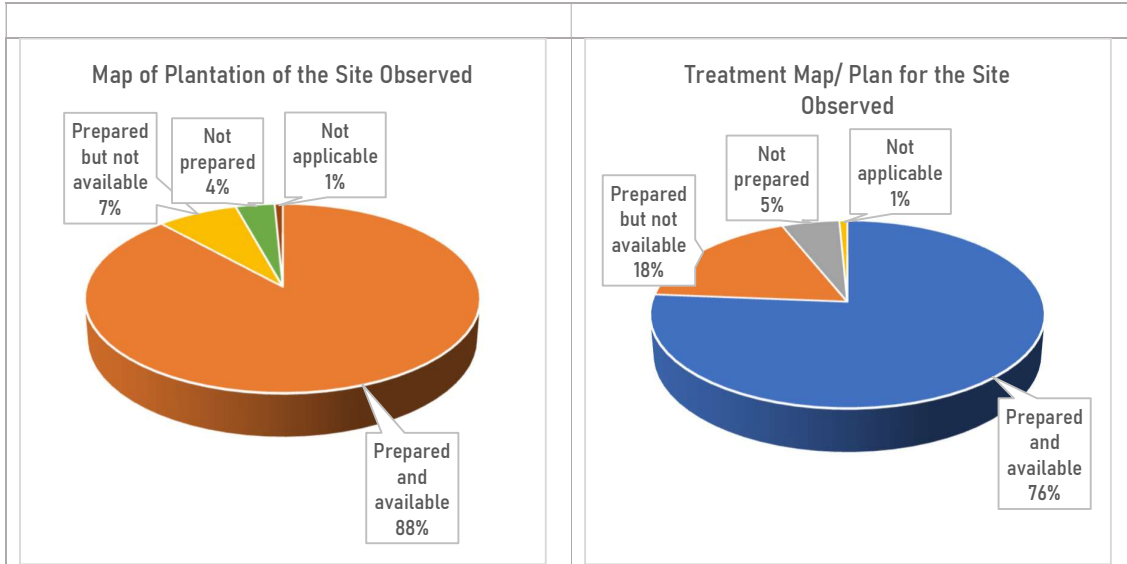
Sl. No.	Name of the species (ScientificName (Local))	No of seedlings to be raised (Nos.)	Date of seed treatment	Date of Dribbling	Date of sowing with percentage of sowing	Date of first weeding
1	Ambu	3000	22.12.22	24.12.22	12.1.23	
2	Pijub	2000	22.12.22	24.12.22	13.1.23	
3	Bela	1000	23.12.22	25.12.22	15.1.23	
4	Kanchan	3000	23.12.22	26.12.22	16.1.23	
5	Bamboo	3000	24.12.22	26.12.22	17.1.23	
6	Kalbo Bandun	4000	24.12.22	27.12.22	18.1.23	
7	Baulo Chakunda	1500	25.12.22	28.12.22	20.1.23	
8	Ankada	2000	25.12.22	28.12.22	21.1.23	
9	Pisal	3000	26.12.22	29.12.22	21.1.23	
Total		25000				

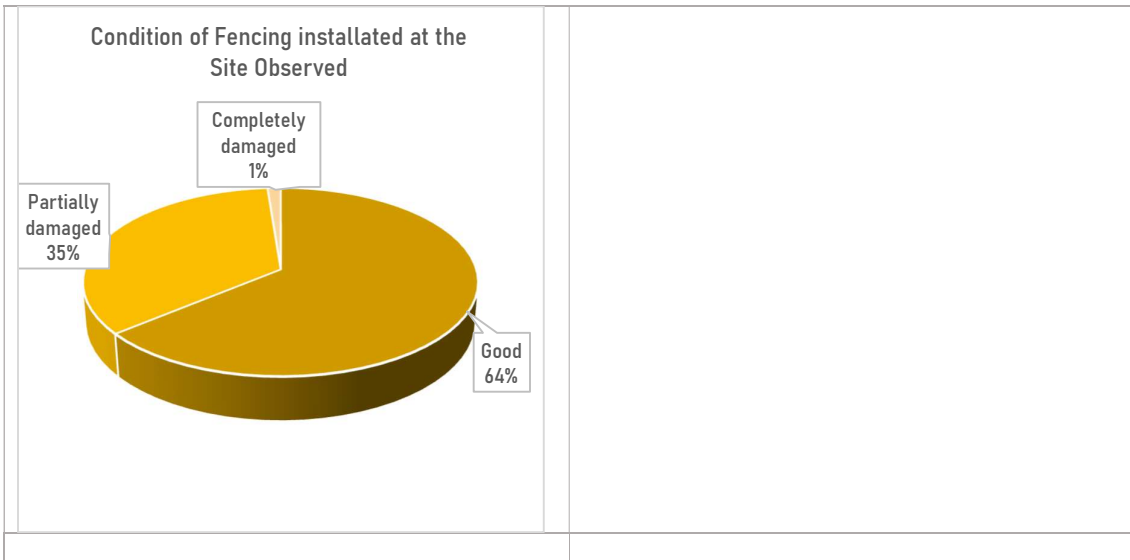
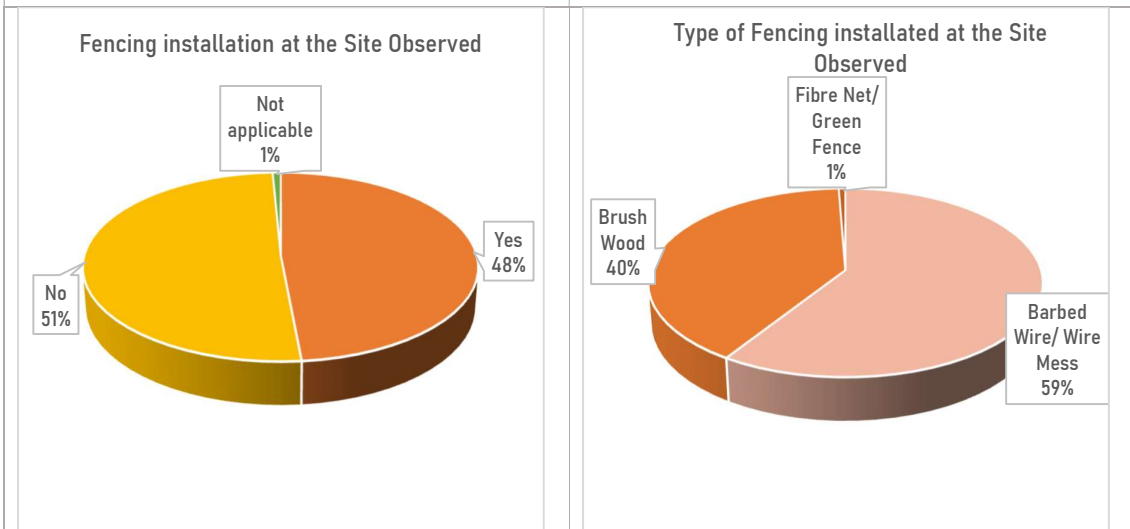
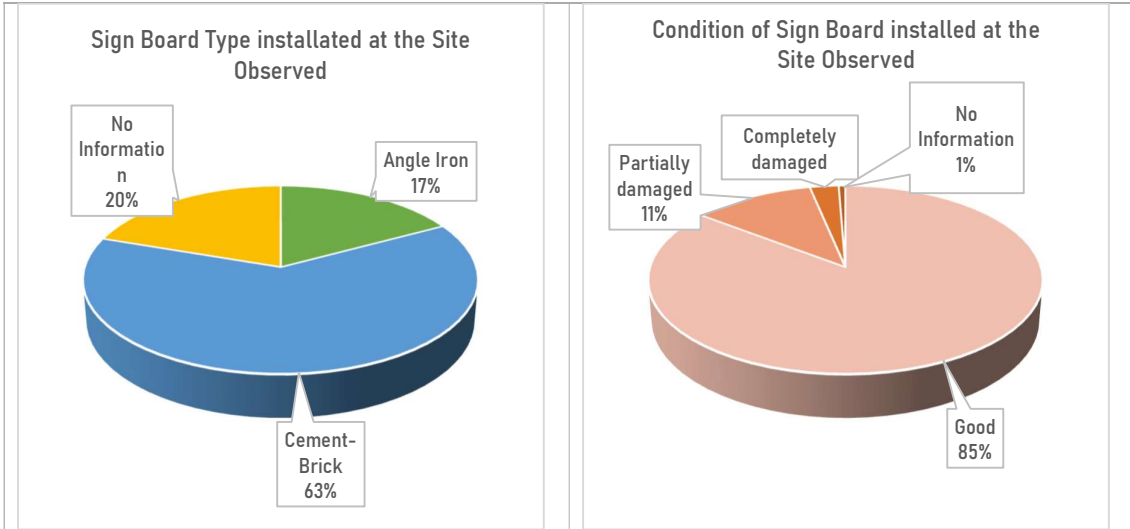
Figure 2 Nursery Register Update

**6.1.1 (b): Status of update of Plantation Journal, Site Map and Treatment Plan/ Map, installation of Sign Board and Fencing**

The figures below depict the overall status of the Plantation Journal availability at site level, and its update frequency, Map of Plantation and its Treatment Plan/ Map, Sign Board installation, and its present condition, Fencing at Site including type of fencing, and its condition. However, variation has been observed across the divisions. Subsequent Table 6.2.2 provides Circle-wise and Division-wise status of sample sites on these factors.







**Table 6.2: Circle-wise and Division-wise status of Plantation Journal, Map of Plantation, Treatment Plan/Map, Sign Board and Fencing at Sample Sites**

Circle	Division Name	Plantation Journal available at Site	Map of Plantation Site Prepared and available	Treatment Plan/ Map Prepared and available	Sign Board Installed at site	Fencing at Site
<b>Angul</b>	Angul	100%	100%	94%	94%	41%
	Athagarh	100%	100%	100%	100%	100%
	Athamallik	100%	67%	67%	89%	56%
	Cuttack	97%	97%	97%	88%	59%
	Dhenkanal	100%	100%	100%	100%	38%
	Mahanadi WL	0%	0%	0%	0%	0%
	Satkosia WL	0%	0%	0%	0%	0%
	<b>Total</b>		96%	93%	91%	90%
<b>Baripada</b>	Balasore WL	80%	80%	80%	80%	20%
	Baripada	100%	100%	100%	100%	86%
	Karanja	100%	100%	100%	100%	11%
	Keonjhar WL	100%	88%	71%	88%	35%
	Rairangpur	100%	91%	91%	100%	55%
	Similipal North	0%	0%	0%	0%	0%
	Similipal South	0%	0%	0%	0%	0%
	<b>Total</b>		94%	88%	82%	90%
<b>Berhampur</b>	Balliguda	88%	100%	69%	88%	58%
	Berhampur	100%	95%	67%	100%	62%
	Boudh	100%	100%	82%	94%	41%
	Ghumusur North	100%	100%	80%	80%	30%
	Ghumusur South	100%	94%	81%	100%	56%
	Parlakhemundi	95%	100%	86%	100%	86%
	Phulbani	100%	85%	69%	100%	100%
	<b>Total</b>		97%	97%	76%	95%
<b>Bhawanipatna</b>	Bolangir	100%	86%	76%	93%	24%
	Kalahandi North	100%	88%	88%	100%	75%
	Kalahandi South	100%	81%	63%	88%	50%
	Khariar	100%	88%	88%	100%	38%
	Subarnapur	88%	94%	94%	88%	75%
	Sunabeda WL	100%	100%	100%	100%	10%
	<b>Total</b>		98%	88%	83%	94%
<b>Bhubaneswar</b>	Bhadrak WL	100%	100%	100%	100%	67%
	Chandaka WL	100%	100%	60%	80%	20%
	Chilika WL	100%	100%	70%	100%	50%
	City Forest, BBSR	100%	100%	67%	100%	33%
	Khordha	100%	100%	17%	83%	17%
	Nayagarh	78%	56%	56%	100%	56%
	Puri Wildlife	91%	91%	82%	91%	9%
	Rajnagar WL	100%	100%	88%	75%	13%
	<b>Total</b>		95%	91%	67%	91%
<b>Koraput</b>	Jeypore	100%	100%	100%	80%	100%
	Koraput	78%	67%	64%	81%	50%
	Malkangiri	89%	72%	78%	94%	22%
	Nabarangapur	95%	86%	81%	86%	81%
	Rayagada	95%	83%	24%	95%	38%
	<b>Total</b>		91%	81%	63%	87%
<b>Rourkela</b>	Bonai	100%	90%	90%	80%	30%
	Deogarh	100%	83%	50%	100%	50%

Circle	Division Name	Plantation Journal available at Site	Map of Plantation Site Prepared and available	Treatment Plan/ Map Prepared and available	Sign Board Installed at site	Fencing at Site
	Keonjhar	83%	71%	71%	88%	54%
	Rourkela	100%	100%	100%	91%	9%
	Sundargarh	100%	100%	100%	100%	64%
	<b>Total</b>	95%	88%	85%	90%	38%
<b>Sambalpur</b>	Bamara WL	100%	90%	90%	100%	10%
	Bargarh	83%	67%	50%	83%	50%
	Hirakhud WL	0%	0%	0%	0%	0%
	Jharsuguda	100%	75%	63%	88%	38%
	Rairakhol	86%	57%	57%	86%	43%
	Sambalpur	100%	86%	71%	100%	29%
	<b>Total</b>	92%	74%	67%	90%	31%

### 6.1.1 (c): Status of Survival under different Plantation Models under Compensatory Afforestation (CA) / Penal CA Journal, Additional CA and NPV

The overall survival percentage is 88% across the age of plantation which is quite good, minimum being 83% and maximum being 91%. The table 6.2.3 depicts overall survival % of the plantation along with average height and collar size by creation year wise.

**Table 6.3: Survival % of plantation by Creation Year**

Creation Year	Total Plants	Live Plants	Age of Plantation in year 2024-25	Survival %	Average Height (cm)	Average Collar (cm)
<b>Creation</b>						
2022-23	53,94,578	48,52,269	2	90%	181	9
<b>Maintenance</b>						
2021-22 (2 <sup>nd</sup> Yr.)	23,26,586	20,19,120	3	87%	231	11
2020-21 (3 <sup>rd</sup> Yr.)	17,38,024	15,03,160	4	86%	260	13
2019-20 (4 <sup>th</sup> Yr.)	15,11,437	12,47,356	5	83%	318	14
2018-19 (5 <sup>th</sup> Yr.)	73,440	66,959	6	91%	344	20
2017-18 (6 <sup>th</sup> Yr.)	1,57,558	1,38,826	7	88%	418	22
2016-17 (7 <sup>th</sup> Yr.)	1,04,856	94,998	8	91%	510	28
2015-16 (8 <sup>th</sup> Yr.)	12,500	11,188	9	90%	611	56
<b>Overall</b>	<b>1,14,59,577</b>	<b>1,00,55,328</b>		<b>88%</b>	<b>226</b>	<b>11</b>

Subsequent tables provide the survival % of plantation by creation year along with the plantation model, average height, and collar size for each division.

**Table 6.4.1: Species-wise Survival % of plantation – Angul Circle**

#### a) Division: Angul

APO Head	Year	Plantation Model	Survival %	Average Height (Cm)	Average Colar (Cm)
<b>CA</b>	2018-19	6th Year ANR Plantation @200 plant/ha	88.8%	327	15
		Total	88.8%	327	15
	2020-21	3rd Year ANR Plantation @200 plant/ha	90.6%	157	8
		3rd Year AR Plantation @1600 plants/ha	84.4%	176	7
		Total	88.1%	164	8
	2021-22	2nd Year Mant. ANR Plantation @200 plants/ha	84.4%	121	11
		Total	84.4%	121	11

APO Head	Year	Plantation Model	Survival %	Average Height (Cm)	Average Colar (Cm)
NPV	2020-21	3rd Year ANR Bamboo Plantation @400 plants/ha	92.5%		
		3rd Year ANR Plantation @200 plant/ha	93.8%	245	12
		Total	93.7%	245	12
	2021-22	2nd Year Bamboo Plantation @400 plant/ha	92.5%	287	8
		Total	92.5%	287	8
	2022-23	ANR Fooder & Fruit Plantation @500 Plant/Ha	82.5%	171	7
		ANR Plantation @200 plant/ha	83.7%	199	7
		ANR Plantation @500 plants/ha	84.4%	147	5
		Total	83.6%	188	7

**b) Division: Athagarh**

APO Head	Year	Plantation Model	Survival %	Average Height (Cm)	Average Colar (Cm)
NPV	2019-20	4th Year ANR Plantation @200 plants/ha	94.6%	207	7
		Total	94.6%	207	7
	2020-21	3rd Year ANR Plantation @200 plant/ha	89.7%	240	10
		Total	89.7%	240	10
	2022-23	ANR Plantation @200 plant/ha	86.9%	185	8
		AR Bald Hill Plantation @ 1600 plant/ha	96.6%	184	7
		AR Plantation @1600 plants/ha	91.9%	222	9
		Total	92.8%	198	8

**c) Division: Athamallik**

APO Head	Year	Plantation Model	Survival %	Average Height (Cm)	Average Colar (Cm)
CA	2022-23	AR Plantation @ 1000 plant/ha	93.1%	133	8
		Total	93.1%	133	8
NPV	2020-21	3rd Year Bamboo Plantation @400 plant/ha	93.8%	270	12
		3rd Year Block (Dwarf) Plantation @ 1600 plant/ha	83.8%	267	11
		4th Year ANR Plantation @200 plants/ha	90.6%	203	10
		Total	89.2%	236	11
		2021-22	2nd Year Bamboo Plantation @400 plant/ha	93.8%	193
	2021-22	2nd Year Block (Dwarf) Plantation @ 1600 plant/ha	94.4%	200	10
		2nd Year Mant. ANR Plantation @200 plants/ha	91.9%	248	11
		Total	92.6%	233	10
	2022-23	ANR Plantation @200 plant/ha	94.4%	218	10
		ANR Vanya Silk Plantation @ 500 Plants/Ha	78.5%	120	9
		Total	93.1%	208	10

**d) Division: Cuttack**

APO Head	Year	Plantation Model	Survival %	Average Height (Cm)	Average Colar (Cm)
CA	2015-16	8th Year CA AR Plantation @1600 plant /ha	90.0%	213	19
		Total	90.0%	213	19
	2016-17	6th Year AR Plantation @1600 plant /ha (CA)	91.9%	1093	41
		Total	91.9%	1093	41
	2022-23	AR Baldhill Plantation without fencing @1600 plant/ha	90.6%	287	18
		Avenue Plantation@250 plant/RKM (400 meters) Tall Tree	96.9%	223	9
		Total	92.0%	273	16
NPV	2019-20	4th Year ANR Plantation @200 plants/ha	94.6%	371	18
		4th Year AR Bald Hill Plantation@ 1600 Plants	96.3%	265	12



APO Head	Year	Plantation Model	Survival %	Average Height (Cm)	Average Colar (Cm)
		4th Year AR Block plantation @1600 plants/ha	93.1%	299	19
		Total	94.7%	323	16
	2020-21	3rd Year ANR Plantation @200 plant/ha	92.2%	235	14
		3rd Year AR Bald Hill Plantation@ 1600 Plant/ha	89.8%	263	18
		3rd Year AR Fodder & Fruit Plantation @ 1600 Plant/ha	91.9%	265	15
		Total	91.1%	253	16
	2021-22	2nd Year AR Fodder & Fruit Plantation @ 1600 Plant/ha	91.0%	189	11
		2nd Year Mant. ANR Plantation @200 plants/ha	91.7%	238	15
		Total	91.4%	216	14
	2022-23	ANR Fodder & Fruit Plantation @500 Plant/Ha	97.5%	135	9
		ANR Indigenous Misc. Species @200 plant/ha	87.8%	173	11
		ANR Vanya Silk Plantation @ 500 Plants/Ha	77.1%	159	9
		AR Indigenous Species @1600 plant/ha	86.3%	207	12
		Total	88.0%	185	11

**e) Division: Dhenkanal**

APO Head	Year	Plantation Model	Survival %	Average Height (Cm)	Average Colar (Cm)
<b>ACA</b>	2022-23	ANR Bamboo Plantation @400 plants/ha (ACA)	92.5%	153	9
		Total	92.5%	153	9
<b>CA</b>	2018-19	6th Year ANR Plantation @200 plants/ha	92.5%	121	13
		6th Year Avenue Plantation	89.1%	330	28
		Total	90.4%	246	22
	2019-20	4th Year ANR Plantation @400 plants/ha	89.4%	344	11
		Total	89.4%	344	11
	2021-22	2nd Year Mant. ANR Plantation @400 plants/ha	81.3%	140	4
		Total	81.3%	140	4
	2022-23	ANR Plantation @800 plants/ha	87.5%	201	9
		Total	87.5%	201	9
<b>NPV</b>	2019-20	4th Year ANR Plantation @400 plants/ha	84.4%	293	19
		4th Year AR Plantation @1600 plants/ha	88.8%	361	12
		Total	86.7%	329	15
	2021-22	2nd Year AR Block Plantation @1600 plants/ha	92.5%	294	10
		2nd Year Mant. ANR Plantation @200 plants/ha	91.9%	275	13
		Total	92.2%	284	11
	2022-23	ANR Plantation @200 plant/ha	83.8%	140	8
		ANR Plantation @500 plants/ha	93.1%	159	8
		ANR Vanya Silk Plantation @ 500 Plants/Ha	85.6%	165	8
		AR Indigenous Species @1600 plant/ha	84.4%	134	8
		AR Plantation @1600 plants/ha	92.5%	133	14
		Total	88.6%	145	9

**Table 6.4.2: Species-wise Survival % of plantation – Baripara Circle**

**a) Division: Balasore WL**

APO Head	Year	Plantation Model	Survival %	Average Height (Cm)	Average Colar (Cm)
NPV	2020-21	3rd Year ANR Plantation @200/500 Plant/ha	91.0%	171	9
		3rd Year Bamboo Plantation @500 Plant/ha	98.8%	333	
		Total	91.4%	179	9
	2022-23	ANR Plantation @200/ 500 plants/ha	96.9%	186	9
		AR Plantation @1000/ 1600 plants/ha	99.4%	290	16
		Total	97.1%	193	9

**b) Division: Baripada**

APO Head	Year	Plantation Model	Survival %	Average Height (Cm)	Average Colar (Cm)
CA	2022-23	ANR Plantation @200/ 500 plants/ha	98.1%	173	10
		Total	98.1%	173	10
NPV	2021-22	2nd Year ANR Plantation @200/ 500 plants/ha	95.0%	213	10
		2nd Year AR Plantation @1000/ 1600 plants/ha	96.3%	225	11
		Total	95.7%	220	11
	2022-23	ANR Plantation @200/ 500 plants/ha	93.9%	214	9
		AR Plantation @1000/ 1600 plants/ha	94.4%	247	13
		Total	94.0%	223	10

**c) Division: Karanjia**

APO Head	Year	Plantation Model	Survival %	Average Height (Cm)	Average Colar (Cm)
NPV	2019-20	4th Year ANR Plantation @200/500 Plant/ha	81.9%	268	13
		4th Year AR Plantation @1000/1600 Plant/ha	88.9%	432	21
		Total	85.3%	358	17
	2020-21	3rd Year ANR Plantation @200/500 Plant/ha	91.9%	402	27
		Total	91.9%	402	27
	2021-22	2nd Year ANR Plantation @200/500 Plant/ha	88.1%	114	6
		Total	88.1%	114	6
	2022-23	ANR Plantation @200/500 Plant/ha	93.6%	175	9
		AR Plantation @1000/1600 Plant/ha	90.0%	177	8
		Total	92.5%	176	8

**d) Division: Keonjhar WL**

APO Head	Year	Plantation Model	Survival %	Average Height (Cm)	Average Colar (Cm)
AJY	2021-22	2nd Year AJY ANR ANR Plantation @200	92.0%	184	10
		Total	92.0%	184	10
CA	2016-17	7th year ANR Gap Plantation @200 plant /ha	66.9%	467	23
		Total	66.9%	467	23
	2017-18	6th Year AR Block Plantation under CA	78.1%	377	20
		6th Year Bald Hill Plantation under CA	90.0%	528	29
		Total	86.9%	477	26
	2018-19	5th Year ANR Plantation @200/500 Plant/ha	93.4%	722	36
		Total	93.4%	722	36
	2020-21	3rd Year ANR Plantation @200/500 Plant/ha	91.4%	135	12
		Total	91.4%	135	12
	2021-22	2nd Year ANR Plantation @200/500 Plant/ha	86.6%	189	9
		Total	86.6%	189	9
NPV	2019-20	4th Year ANR Plantation @200/500 Plant/ha	89.7%	315	16

APO Head	Year	Plantation Model	Survival %	Average Height (Cm)	Average Colar (Cm)
		Total	89.7%	315	16
	2020-21	3rd Year ANR Plantation @200/500 Plant/ha	82.7%	271	12
		Total	82.7%	271	12
	2021-22	2nd Year ANR Plantation @1600 Plant/ha	87.3%	238	11
		2nd Year ANR Plantation @200/500 Plant/ha	95.6%	226	11
		2nd Year AR Plantation @200/500 Plant/ha	56.3%	53	4
		Total	86.5%	222	11
	2022-23	ANR Plantation @200/500 Plant/ha	90.4%	184	8
		AR Plantation @1000/1600 Plant/ha	93.1%	188	8
		AR Plantation @1600 Plant/ha	93.3%	177	8
		Total	92.6%	184	8

**e) Division: Rairangpur**

APO Head	Year	Plantation Model	Survival %	Average Height (Cm)	Average Colar (Cm)
<b>CA</b>	2021-22	2nd Year AR Plantation @1000/1600 Plant/ha	91.3%	143	7
		Total	91.3%	143	7
	2022-23	AR Plantation @1000/1600 Plant/ha	86.6%	190	8
		Total	86.6%	190	8
	Total	2nd Year AR Plantation @1000/1600 Plant/ha	91.3%	143	7
		AR Plantation @1000/1600 Plant/ha	86.6%	190	8
		Total	89.6%	161	8
<b>NPV</b>	2019-20	4th Year ANR Plantation @200/500 Plant/ha	95.0%	382	12
		Total	95.0%	382	12
	2020-21	3rd Year ANR Plantation @200/500 Plant/ha	90.0%	410	19
		Total	90.0%	410	19
	2021-22	2nd Year ANR Plantation @200/500 Plant/ha	84.9%	260	12
		2nd Year AR Plantation @1000/1600 Plant/ha	92.8%	206	8
		Total	88.5%	233	10
	2022-23	ANR Plantation @200/500 Plant/ha	91.9%	177	6
		Total	91.9%	177	6
	Total	2nd Year ANR Plantation @200/500 Plant/ha	84.9%	260	12
		2nd Year AR Plantation @1000/1600 Plant/ha	92.8%	206	8
		3rd Year ANR Plantation @200/500 Plant/ha	90.0%	410	19
		4th Year ANR Plantation @200/500 Plant/ha	95.0%	382	12
		ANR Plantation @200/500 Plant/ha	91.9%	177	6
	Total	90.4%	261	11	

**Table 6.4.3: Species-wise Survival % of plantation – Berhampur Circle**

**a) Division: Balliguda**

APO Head	Year	Plantation Model	Survival %	Average Height (Cm)	Average Colar (Cm)
AJY	2020-21	3rd Year, AJY, ANR with Gap @ 200 plants/ha	75.0%	323	17
		Total	75.0%	323	17
NPV	2019-20	4th Year, ANR + @200/1600plants/ha	88.8%	405	14
		4th Year, ANR + Plantation @200 plants/ha	68.1%	394	17
		Total	75.9%	398	15
	2020-21	3rd Year, ANR + 200/500 plants/ha	70.6%	328	13
		3rd Year, ANR + Plantation @200plants/ha	79.7%	455	19
		3rd Year, AR Bamboo plantation@ 400 plants/ha	81.3%	414	13
		Total	74.2%	375	15
	2021-22	2nd Year, ANR with gap 200/1600plants/ha)	80.9%	322	13
		2nd Year, ANR with gap 200/500 plants/ha)	78.7%	321	15
		2nd Year, ANR with gap 200/500plants/ha)	89.1%	341	20
2nd Year, AR @400 (OBDP) Bamboo Plantation		84.1%	359	14	
2nd Year, AR@1600, Bald Hill Plantation		84.1%	416	18	
2nd Year, Bald Hill (AR @ 1000/1600 plants/ha)		89.4%	426	19	
Total		83.6%	356	16	
2022-23		ANR Plantation @ 200 plants/ha	90.3%	287	18
	ANR Plantation @ 200/500 plants/ha	91.3%	325	12	
	ANR Plantation @200 plants/ha	80.3%	333	14	
	ANR with Gap @ 200/500plants/ha	90.1%	272	14	
	ANR with Gap Plantation @ 200/500plants/ha	84.1%	209	12	
	AR Bamboo plant @ 400 plants/ha	68.8%	356	13	
	AR Plantation @ 1000/1600 plants/ha	85.7%	223	13	
	AR Plantation @ 1000/1600plants/ha	74.7%	447	21	
	AR Plantation @1000/1600 plants/ha	89.1%	206	14	
	AR Plantation @1000/1600 plants/ha (BHP)	89.7%	343	15	
Total	90.0%	164	10		
Total	Total	86.2%	281	14	

**b) Division: Berhampur**

APO Head	Year	Plantation Model	Survival %	Average Height (Cm)	Average Colar (Cm)
CA	2017-18	6th Year Maintenance, Bald Hill Plantation (@1600 plant/ha)	92.7%	550	21
		Total	92.7%	550	21
	2020-21	3rd Year AR Plantation (3rd Year) @ 200 plants/ha	95.2%	391	18
		Total	95.2%	391	18
NPV	2019-20	4th Year ANR Plantation @ 200 plants/ha	83.8%	441	19
		4th Year AR Plantation @ 1600 plants/ha	80.7%	385	17
		Total	81.7%	397	18
	2020-21	3rd Year ANR Plantation @ 200 plants/ha	83.1%	424	21
		Total	83.1%	424	21
2021-22	2nd Year AR Plantation @ 1600 plants/ha	89.4%	295	18	
	2nd Year AR Plantation 1600 plants/ha	86.0%	182	12	
	2nd Year AR- Plantation @ 1600 plants/ha	94.0%	195	14	
	2nd Year AR Bamboo 400 plants/ha	84.2%	437	11	
	Total	90.6%	259	16	
2022-23	ANR Plantation @ 200 plants/ha	95.7%	372	15	
	AR Plantation @ 1600 plants/ha	92.6%	191	13	
	AR Plantation @ 2500 plants/ha	95.1%	150	11	
	Bald Hill Plantation @ 1600 plants/ha	92.2%	178	13	
	Casuarina Plantation	91.9%	154	11	
Total	Total	93.0%	218	13	

**c) Division: Boudh**

APO Head	Year	Plantation Model	Survival %	Average Height (Cm)	Average Colar (Cm)
CA	2022-23	ANR Plantation @800 Plants/HA	90.4%	150	11
		Total	90.4%	150	11
NPV	2019-20	4th Year Maintenance, ANR @ 200 Plants/ Ha	69.0%	470	17
		4th Year Maintenance, AR @ 1600 Plants /ha	76.0%	493	22
		Total	72.5%	482	19
	2020-21	3rd Year Maintenance AR @ 1600 Plants/ha	72.2%	368	15
		3rd Year, ANR Plantation@200 Plants/ Ha	91.3%	297	15
		Total	81.7%	333	15
	2021-22	2nd Year Maintenance, (AR phasi @ 1600Plantsh/a	96.6%	291	14
		2nd Year Maintenance, ANR @ 200 Plants/ Ha	90.9%	162	12
		2nd Year Maintenance, ANR @ 200 Plants/ha	70.0%	306	14
		Total	86.0%	205	13
	2022-23	ANR Plantation @ 200 plants/ha	84.2%	153	9
		ANR plantation @ 500 plants/ha	80.0%	117	13
		ANR plantation @200/500 plants/ha	92.9%	151	9
		AR Block plantation @1600 plants/ha	96.3%	186	12
		AR plantation @1000 plant /ha	94.1%	161	12
		Bald Hill Plantation @1600 plant/ha	93.1%	149	11
		Block plantation @1600 plants/ha	92.6%	183	12
		Total	89.4%	152	11

**d) Division: Ghumsur North**

APO Head	Year	Plantation Model	Survival %	Average Height (Cm)	Average Colar (Cm)
CA	2020-21	3rd year Maintenance (CA) Block+ANR @ 1600Plantsh/a	88.1%	473	16
		Total	88.1%	473	16
NPV	2019-20	4th year Maintenance ANR+ @ 200 Plants/ha	85.9%	326	24
		Total	85.9%	326	24
		2020-21	3rd year Maintenance ANR+ 200 Plants/ha	81.9%	344
3rd year Maintenance ANR+ Gap @200 Plants/ha	93.1%		205	15	
3rd year Maintenance AR Bamboo @ 400 plant/ha	85.5%		435	12	
	2021-22	Total	87.0%	291	16
		2nd year Maintenance -AR Bamboo @ 400Plants/ha	73.5%	308	11
		2nd year Maintenance @ 1600 plants/ha	91.9%	194	13
	2022-23	Total	89.3%	210	13
		ANR Plantation @ 200 plants/ha	92.8%	230	15
		AR Plantation @ 1000 Plants/ha	90.9%	279	18
		Total	92.1%	248	16

**e) Division: Ghumsur South**

APO Head	Year	Plantation Model	Survival %	Average Height (Cm)	Average Colar (Cm)
NPV	2019-20	4th Year ANR Plantation (4th Year) @ 200 plants/ha	80.5%	158	12
		4th Year Plantation @ 1600 plant/ha	84.5%	383	16
		Total	82.7%	286	14
	2020-21	3rd Year ANR Plantation (3rd year) @ 200 plants/ha	92.4%	319	18
		3rd Year AR Plantation @ 1600 plant/ha	95.9%	316	12
		Protection of RET species without any planting	100.0%	529	79
	2021-22	Total	95.8%	410	43
		2nd Year AR Plantation @ 1600 plant/ha	90.5%	196	14
		Total	90.5%	196	14

APO Head	Year	Plantation Model	Survival %	Average Height (Cm)	Average Colar (Cm)
	2022-23	ANR Creation with Gap @ 200 Plant/ha	97.9%	183	11
		ANR Creation with Gap @ 500 plant/ha	97.2%	274	12
		ANR Plantation @ 200 plants/ha	95.1%	164	12
		ANR Plantation @1600 plants/ha	96.0%	220	12
		ANR with GAP @ 200 plants/ha	95.2%	210	11
		AR Plantation @ 1000/1600 plants/ha	97.3%	161	11
		Bald Hill Plantation@ 1600 plant/ha	97.4%	288	12
		Block Plantation @ 1600 plants/ha	95.9%	445	19
		Total	96.4%	240	12

**f) Division: Parlakhemundi**

APO Head	Year	Plantation Model	Survival %	Average Height (Cm)	Average Colar (Cm)
AJY	2021-22	2nd Year AJY, ANR@ 200 Plant/ ha	74.4%	134	11
		2nd Year AJY, ANR@ 200/500 Plant/ ha	91.6%	145	11
		Total	83.4%	140	11
NPV	2019-20	4th Year, ANR Plantation @ 200 plant/ha	90.0%	314	17
		4th Year, Bamboo Plant @ 400 plant/ha	90.0%		
		Total	90.0%	314	17
	2020-21	3rd Year Maintenance, ANR Plantation@ 200	94.4%	337	16
		3rd Year Maintenance, ANR Plantation@200	70.3%	385	15
		3rd Year Maintenance, AR-Bamboo Plant@400	79.0%	441	12
		3rd Year Maintenance, Bald Hill Plantation@1600	83.4%	356	13
		Rare Endemic Threatened (RET)	95.2%	111	18
	Total	77.5%	358	15	
	2021-22	2nd Year Maintenance, ANR@ 200 Plant/ ha	88.4%	237	15
2nd Year Maintenance, AR-Bamboo Plant@400		89.4%	563	16	
2nd Year Maintenance, Bald Hill Plantation@1600		75.6%	214	12	
2nd Year Maintenance, Bamboo Plantation@400		65.0%	620	16	
2nd Year, ANR with Gap Plantation@1600		94.9%	297	14	
2nd Year, Bald Hill Plantation@1600		71.2%	217	24	
Total		83.0%	261	16	
2022-23	ANR Plantation @ 200 Plants/Ha	83.1%	204	11	
	ANR Plantation 200/ 500 Plants/Ha	84.4%	182	12	
	AR @ 1600 Plants/Ha, ANR 200 Plants/Ha	88.7%	200	11	
	AR 1600 Plants/Ha, ANR 200 Plants/Ha	88.4%	278	13	
	Bald Hill Plantation@1600 plant/ha	92.2%	197	14	
	Total	87.9%	211	12	

**g) Division: Phulbani**

APO Head	Year	Plantation Model	Survival %	Average Height (Cm)	Average Colar (Cm)
NPV	2020-21	3rd Year ANR with Gap@ 200 plant/ha	86.0%	163	16
		3rd Year AR Plantation@ 1600 plants/ha	90.9%	177	13
		ANR Rare Endemic Threatened (RET)	87.7%	182	16
		ANR- Rare Endemic Threatened (RET)	90.9%	177	13
		Total	87.6%	172	15
	2021-22	2nd Year Bald Hill Plantation (@1600 plant/ha)	89.1%	219	15
		Total	89.1%	219	15
2022-23	ANR Plantation @200 plant/ha	94.9%	179	13	
	ANR with Gap@ 200 plant/ha	92.5%	154	12	
	AR Plantation @ 1600 plants/ha	98.3%	232	11	
	AR Plantation@ 1600 plants/ha	97.0%	320	15	
	Bald Hill Plantation (@1600 plant/ha)	96.6%	324	16	
	Block Plantation (AR @ 1600 plants/ha)	98.1%	287	13	
	Total	95.9%	242	13	

**Table 6.4.4: Species-wise Survival % of plantation – Bhawanipatna Circle**

**a) Division: Bolangir**

APO Head	Year	Plantation Model	Survival %	Average Height (Cm)	Average Colar (Cm)
CA	2018-19	5th Year ANR Plantation @200 plants/ha	81.3%	353	23
		Total	81.3%	353	23
NPV	2019-20	4th Year ANR Plantation @200 plants/ha	91.9%	328	16
		4th Year AR Plantation @1600 plants/ha	94.4%	268	13
		Total	93.0%	293	14
	2020-21	3rd Year ANR Plantation @ 200 Plants/Ha	87.4%	229	12
		3rd Year ANR Plantation @ 400 Plants/Ha	90.0%	175	8
		Total	87.7%	222	11
	2021-22	2nd Year ANR Plantation @ 200 plants/ha	87.4%	176	8
		2nd Year ANR Plantation @ 200 Plants/Ha	90.0%	158	7
		2nd Year AR Plantation @1600 plants/ha	93.8%	353	15
		2nd Year Misc. Plantation @ 200 Plants/Ha	92.5%	238	12
		Total	89.4%	207	9
	2022-23	ANR Misc. Plantation @ 200 Plants/Ha	93.1%	176	9
		ANR Plantation @200 plants/ha	83.6%	149	8
		AR Plantation @1600 plants/ha	90.9%	125	6
		AR High Value Species @ 1600 Plants/Ha	91.3%	227	13
		Bald Hill Plantation @ 1600 Plants/Ha	92.5%	184	13
		Fodder and Fruit Plantation @ 500 Plants/Ha	80.0%	201	10
		Other Misc. Plantation @ 200 Plants/Ha	79.2%	196	11
		RET/Medicinal Plantation @ 200 Plants/Ha	93.8%	130	10
		Vanya Silk @ 500 Plants/Ha	87.5%	205	10
Total	86.4%	171	9		

**b) Division: Kalahandi North**

APO Head	Year	Plantation Model	Survival %	Average Height (Cm)	Average Colar (Cm)
NPV	2021-22	2nd Year ANR Plantation @ 200 Plants/Ha	84.3%	189	9
		Total	84.3%	189	9
	2022-23	ANR Plantation @200 plants/ha	86.3%	143	11
		ANR 200/ 500 plants/ha	88.8%	193	11
		AR Bald Hill Plantation @ 1600 Plants/Ha	89.1%	115	7
		AR Baldhill Plantation @1600 plant/ha	89.4%	224	9
		Total	86.9%	152	10

**c) Division: Kalahandi South**

APO Head	Year	Plantation Model	Survival %	Average Height (Cm)	Average Colar (Cm)
CA	2022-23	ANR Other Misc. Species @ 200 Plants/Ha	91.9%	213	10
		Total	91.9%	213	10
NPV	2019-20	4th Year ANR with Gap Plantation @ 200 Plants/Ha	76.3%	206	10
		4th Year Bald Hill Plantation @ 1600 plants/ha	87.3%	331	17
		Total	79.9%	250	13
	2020-21	3rd Year ANR with Gap Plantation @ 200 Plants/Ha	89.4%	249	12
		Total	89.4%	249	12
	2021-22	AR Bald Hill Plantation @ 1600 Plants/Ha	88.8%	210	8
		Total	88.8%	210	8
	2022-23	ANR Other Misc. Species @ 200 Plants/Ha	87.1%	165	9
		AR Bald Hill Plantation @ 1600 Plants/Ha	87.3%	175	10
		AR Other Misc. Species 1600 Plants/Ha (AR)	92.3%	192	9
		Bald Hill Pltn. @ 1600 plants/ha	90.6%	188	8
		Total	88.3%	173	9

**d) Division: Khariar**

APO Head	Year	Plantation Model	Survival %	Average Height (Cm)	Average Colar (Cm)
NPV	2020-21	3rd Year ANR Plantation @ 200 Plants/Ha	91.6%	192	13
		Total	91.6%	192	13
	2021-22	2nd Year ANR Plantation @200 plants/ha	88.1%	171	7
		2nd Year AR Plantation @1600 plants/ha	92.8%	161	8
		2nd Year Bamboo Plantation @400 plants/ha	89.4%	217	11
		Total	91.9%	164	8
	2022-23	ANR Fodder and Fruits Species @500 plant/ha	88.8%	130	8
		ANR Plantation @ 200 Plants/Ha	87.2%	192	8
		ANR Plantation @200 plants/ha	85.8%	134	7
		ANR Vanya Silk @500 plant/ha	95.0%	177	10
		AR Plantation @1600 plants/ha	88.8%	126	7
		Total	87.9%	142	7

**e) Division: Subarnapur**

APO Head	Year	Plantation Model	Survival %	Average Height (Cm)	Average Colar (Cm)	
CA	2020-21	3rd Year AR Plantation @ 1600 Plants/Ha	95.6%	167	6	
		Total	95.6%	167	6	
NPV	2019-20	4th Year ANR Plantation @200 plants/ha	78.8%	179	9	
		Total	78.8%	179	9	
	2020-21	3rd year ANR Plantation @200 plant/ha	75.6%	261	14	
		3rd year ANR Plantation @400 plant/ha	94.4%	167	7	
		3rd year AR Baldhill Plantation @1600 plant/ha	95.6%	320	14	
		3rd year AR Plantation @1600 plant/ha	75.6%	170	7	
		3rd Year AR Plantation @1600 plants/ha	90.0%	170	7	
		3rd Year Conservation of RET Species (without Gap)	97.5%	1683	103	
		Total	87.1%	251	12	
		2021-22	2nd year AR Plantation @1600 plant/ha	81.9%	242	12
			2nd Year AR Plantation @1600 plants/ha	84.4%	153	9
			Total	83.1%	183	10
2022-23	ANR Plantation @200 plants/ha	85.7%	152	7		
	AR Plantation @1000 plants/ha	88.8%	134	6		
	AR Plantation @1600 plants/ha	85.1%	134	6		
	AR Block, Indigenous Species @1600 plant/ha	84.4%	160	5		
Total	85.8%	140	6			

**f) Division: Sunabeda WL**

APO Head	Year	Plantation Model	Survival %	Average Height (Cm)	Average Colar (Cm)
NPV	2020-21	3rd Year ANR Plantation @200 Plant/ha	93.8%	154	8
		Total	93.8%	154	8
	2021-22	2nd Year Bamboo Plantation @400 plant / ha	93.4%	183	9
		Total	93.4%	183	9
	2022-23	ANR Fodder and Fruits Species @500 plant/ha	94.4%	144	6
		ANR Other Indigenous Misc. Species @1600 plant/ha	94.4%	148	6
		ANR Other Indigenous Misc. Species @200 plant/ha	92.5%	162	9
		ANR Other Indigenous Misc. Species @500 plant/ha	93.8%	151	7
		ANR Plantation @200 Plant/ha	92.2%	154	8
		Total	93.1%	152	7



**Table 6.4.5: Species-wise Survival % of plantation – Bhubaneswar Circle**

**a) Division: Bhadrak WL**

APO Head	Year	Plantation Model	Survival %	Average Height (Cm)	Average Colar (Cm)
NPV	2020-21	3rd Year AR Plantation @1000/1600 plant/ha	88.8%	228	17
		Total	88.8%	228	17
	2021-22	2nd Year AR Plantation @1000/1600 plant/ha	90.0%	168	16
		Total	90.0%	168	16
	2022-23	Mangrove Plantation @4445 plants/ ha	71.0%	92	6
		Total	71.0%	92	6

**b) Division: Chandaka WL**

APO Head	Year	Plantation Model	Survival %	Average Height (Cm)	Average Colar (Cm)
CA	2021-22	2nd Year AR Block Plantation @1600 plant/ ha	88.1%	195	14
		Total	88.1%	195	14
NPV	2022-23	3rd Fodder & Fruit Plantation@1600 Plant/Ha	95.8%	217	15
		AR Other Indigenous Species @1600 plant/ha	93.7%	195	12
		Total	94.3%	201	13

**c) Division: Chilika WL**

APO Head	Year	Plantation Model	Survival %	Average Height (Cm)	Average Colar (Cm)
NPV	2019-20	4th Year ANR Plantation @200 plant/ha	72.2%	411	20
		Total	72.2%	411	20
	2020-21	3rd Year ANR Plantation @200 plant/ha	69.4%	359	18
		3rd Year AR Plantation @1600 plant/ha	70.3%	399	20
		Total	69.7%	376	19
		2021-22	2nd Year ANR Plantation @ 200 plants/ha	73.4%	291
		2nd Year AR Bald Hill Plantation @1600 plant/ha	83.8%	365	11
		Total	78.6%	328	11
		2022-23	ANR Plantation @200 plant/ha	81.8%	259
		AR Plantation @1600 plant/ha	94.9%	322	10
		AR Plantation @1600/ 2500 plant/ha	95.4%	298	11
		Total	84.1%	269	12

**d) Division: City Forest, BBSR**

APO Head	Year	Plantation Model	Survival %	Average Height (Cm)	Average Colar (Cm)
NPV	2021-22	2nd Year ANR Plantation @200 plant/ha	84.4%	186	15
		Total	84.4%	186	15
	2022-23	ANR Plantation @ 200 plants/ha	80.0%	160	14
		AR Plantation @1000 plant/ha	87.5%	159	15
		Total	84.2%	159	14

**e) Division: Khordha**

APO Head	Year	Plantation Model	Survival %	Average Height (Cm)	Average Colar (Cm)
NPV	2022-23	ANR @ 200 plants /ha	86.6%	248	12
		AR @ 1000plants/ha	92.8%	209	14
		AR Plantation@ 1600 plants/ha	95.6%	196	11
		Total	88.8%	231	12

**f) Division: Nayagarh**

APO Head	Year	Plantation Model	Survival %	Average Height (Cm)	Average Colar (Cm)
NPV	2020-21	3rd Year ANR Plantation @400 plant/ha	90.6%	280	17
		3rd Year AR Plantation @1600 plant/ha	70.6%	154	9
		Total	74.0%	175	10
	2021-22	2nd Year Bald Hill Plantation @1600 plant/ha	86.3%	400	7
		Total	86.3%	400	7
	2022-23	ANR Plantation @200 plant/ha	86.4%	156	6
		ANR Plantation @500 plant/ha	89.4%	151	6
		AR Plantation @1600 plant/ha	58.1%	180	7
		Total	83.8%	158	6

**g) Division: Puri WL**

APO Head	Year	Plantation Model	Survival %	Average Height (Cm)	Average Colar (Cm)
NPV	2021-22	2nd Year AR Plantation @1600 plant/ha	92.5%	145	7
		Total	92.5%	145	7
	2022-23	ANR Plantation @200 plant/ha	87.0%	143	7
		ANR Plantation @500 plant/ha	91.9%	109	7
		AR Plantation @1000 plant/ha	92.1%	160	8
		AR Plantation @1600 plant/ha	90.1%	131	7
		AR Plantation @2500 plant/ha	88.9%	310	13
		Total	90.4%	139	7

**h) Division: Rajnagar WL**

APO Head	Year	Plantation Model	Survival %	Average Height (Cm)	Average Colar (Cm)
CA	2021-22	2nd Year ANR Plantation @ 1000 plants/ha	89.4%	377	25
		Total	89.4%	377	25
NPV	2021-22	2nd Year ANR Casuarina @200 plants/ ha	84.8%	407	25
		2nd Year ANR Plantation @ 200 plants/ha	89.6%	440	24
		Total	87.2%	423	24
	2022-23	ANR Plantation @ 200 plants/ha	88.1%	132	19
		Casuarina Plantation @2500 plants/ ha	95.2%	800	29
		Casuarina/ Mangrove Plantation @200 plants/ ha	71.9%	185	14
		Mangrove Plantation @ 4445 plants/ ha	95.1%	126	20
		Total	88.7%	181	19

**Table 6.4.6: Species-wise Survival % of plantation – Koraput Circle**

**a) Division: Jeypore**

APO Head	Year	Plantation Model	Survival %	Average Height (Cm)	Average Colar (Cm)
CA	2020-21	Avenue (Tall Tree) Plantation @250 plant/RKM	95.6%	162	6
		Total	95.6%	162	6
NPV	2019-20	4th Year Maintenance of AR Plantation @1600 plant/ha	96.6%	166	8
		4th Year Maintenance of AR Plantation @1600 Plants/Ha	75.0%	354	14
	Total	80.2%	308	13	
	2020-21	3rd Year Maintenance of ANR Plantation @200 plants/ha	77.5%	432	14
		Total	77.5%	432	14
	2021-22	2nd Year Maintenance of ANR Plantation @200 Plants/Ha	85.3%	236	11
		2nd Year Maintenance of ANR Plantation @400 Plants/Ha	86.8%	199	8
		2nd Year Maintenance of AR Bald Hill @1600 Plants/Ha	80.3%	163	7
		2nd Year Maintenance of Miyawaki Plantation @ 8000 plant/ha	98.6%	454	19
		ANR Plantation @200 plants/ha	90.6%	201	10
Total		88.1%	253	11	
2022-23		ANR Plantation @200 plants/ha	86.5%	220	9
		ANR Plantation @200 Plants/Ha	85.9%	262	21
	AR Plantation @1600 Plant /ha	86.8%	312	12	
Total	86.3%	251	13		

**b) Division: Koraput**

APO Head	Year	Plantation Model	Survival %	Average Height (Cm)	Average Colar (Cm)	
CA	2019-20	4th Year Maintenance of ANR Plantation @200 plants/ha	90.6%	210	7	
		Total	90.6%	210	7	
	2022-23	Avenue (Tall Tree) Plantation @250 plant/RKM	93.1%	267	12	
Total		93.1%	267	12		
NPV	2020-21	3rd Year Maintenance of ANR Plantation @200 plants/ha	88.8%	229	10	
		3rd Year Maintenance of Bald Hill Plantation@ 1600 Plant/Ha	75.8%	394	13	
		Total	85.9%	268	11	
	2021-22	2nd Year Maintenance of ANR @ 200 Plantation/ Ha	97.1%	380	12	
		2nd Year Maintenance of ANR Plantation@ 200 Plant/Ha	80.0%	306	11	
		2nd Year Maintenance of ANR Plantation @200 plants/ha	74.0%	238	8	
		2nd Year Maintenance of Bald Hill Plantation @1600 Plant/Ha	89.3%	232	6	
		2nd Year Maintenance of Miyawaki Plantation @ 8000 plant/ha	98.6%	454	16	
		2nd Year Maintenance of RET/Medicinal Plantations @200 Plants	91.3%	193	8	
		ANR @ 200 Plantation/ Ha	88.1%	399	11	
		Total	85.9%	292	10	
		2022-23	ANR Plantation @ 200 Plant/ ha	96.9%	255	5
			ANR Plantation @200 plants/ha	66.3%	182	6

APO Head	Year	Plantation Model	Survival %	Average Height (Cm)	Average Colar (Cm)
		ANR Vanya Silk Plantation @500 Plant/ ha	92.5%	139	5
		AR Bald Hill Plantation @ 1600 plants/ha	87.5%	263	10
		AR Plantation @1000 Plant /ha	88.5%	156	6
		AR Plantation @1000 plants/ha	98.1%	175	8
		Bamboo Plantation @400 Plant/ ha	93.8%	159	7
		Fodder & Fruit Plantation @500 Plant/ ha	76.3%	147	5
		RET/Medicinal Plantations @200 Plant/ ha	93.1%	186	10
		Total	85.9%	214	8

**c) Division: Malkangiri**

APO Head	Year	Plantation Model	Survival %	Average Height (Cm)	Average Colar (Cm)
<b>CA</b>	2017-18	5th Year Maintenance of ANR Plantation @200 plants/ha	93.1%	289	16
		Total	93.1%	289	16
	2018-19	5th Year Maintenance of ANR Plantation @200 plants/ha	93.8%	667	33
		Total	93.8%	667	33
<b>NPV</b>	2017-18	5th Year Maintenance of ANR Plantation @200 plants/ha	93.1%		
		Total	93.1%		
	2018-19	5th Year Maintenance of ANR Plantation @200 plants/ha	93.8%	613	31
		Total	93.8%	613	31
	2019-20	4th Year Maintenance of ANR Plantation @200 plants/ha	87.5%	317	19
		4th Year Maintenance of AR Plantation @1600 plants/ha	93.8%	244	10
		Total	90.6%	284	15
	2021-22	2nd Year Maintenance of ANR Plantation @200 plants/ha	92.2%	170	14
		2nd Year Maintenance of ANR Plantation @200 plants/ha	93.3%	207	9
		2nd Year Maintenance of AR Block Plantation @1600 plants/ha	91.3%	210	10
2nd Year Maintenance of AR Plantation @1600 plants/ha		92.8%	248	11	
2nd Year Maintenance of Miyawaki Plantation @ 8000 plant/ha		98.6%	454	16	
Total		93.6%	254	12	
2022-23	ANR Plantation @200 plants/ha	90.3%	188	6	
	ANR Plantation @500 plants/ha	90.6%	260	10	
	AR Plantation @1000 Plant /ha	92.8%	244	11	
	RET ANR Plantation @200 Plant/ha	95.6%	162	5	
		Total	92.2%	185	6

**d) Division: Nabarangapur**

APO Head	Year	Plantation Model	Survival %	Average Height (Cm)	Average Colar (Cm)
<b>NPV</b>	2019-20	4th Year Maintenance of ANR Plantation @200 plants/ha	91.3%	223	11
		4th Year Maintenance of AR Plantation @1600 plant/ha	96.3%	317	19
		Total	92.3%	243	13
	2020-21	3rd Year Maintenance of ANR Plantation @200 plants/ha	87.0%	186	6

APO Head	Year	Plantation Model	Survival %	Average Height (Cm)	Average Colar (Cm)
		3rd Year Maintenance of AR Plantation @1600 Plants/Ha	81.6%	306	11
		Total	86.0%	209	7
	2021-22	2nd Year Maintenance of ANR Plantation @200 plants/ha	86.8%	236	11
		2nd Year Maintenance of ANR Plantation @200 Plants/Ha	97.5%	465	15
		2nd Year Maintenance of AR Plantation @1600 Plants/Ha	65.0%	432	14
		2nd Year Maintenance of Miyawaki Plantation @ 8000 plant/ha	98.6%	451	16
		Total	87.1%	381	14
	2022-23	ANR Plantation @200 plants/ha	82.1%	160	5
		AR Plantation @1000 Plant /ha	88.8%	213	7
		Total	82.8%	166	6

**e) Division: Rayagada**

APO Head	Year	Plantation Model	Survival %	Average Height (Cm)	Average Colar (Cm)
<b>AJY</b>	2020-21	2nd Year Maintenance of ANR Plantation @200 plants/ha (AJY)	85.0%	268	11
		Total	85.0%	268	11
	2021-22	2nd Year Maintenance of ANR Plantation @200 plants/ha (AJY)	77.6%	266	11
		2nd Year Maintenance of ANR Plantation @200 plants/ha (with Gap)	81.5%	293	11
		Total	79.0%	276	11
<b>CA</b>	2019-20	4th Year Maintenance of ANR Plantation @ 800 plant/ha (CA)	70.6%	415	14
		4th Year Maintenance of Bald Hill Plantation @1600 plant/ha (CA)	74.3%	470	15
		Total	72.1%	438	15
	2021-22	2nd Year Maintenance of ANR Plantation @400 plant/ha (CA)	90.2%	161	11
		2nd Year Maintenance of Bald Hill Plantation @1600 plant/ha (CA)	87.7%	374	17
		Total	88.6%	295	15
	2022-23	Tall Tree Plantation @1000 plant/ha	91.3%	125	9
		Total	91.3%	125	9
<b>NPV</b>	2019-20	4th Year Maintenance of ANR Plantation @500 plants/ha	73.4%	405	15
		Total	73.4%	405	15
	2020-21	2nd Year Maintenance of ANR Plantation @200 plants/ha	78.8%	212	12
		3rd Year Maintenance of RET Species (with Gap) @200 plant/Ha.	83.8%	133	10
		3rd Year Maintenance of ANR Plantation @200 plants/ha	80.9%	329	14
		3rd Year Maintenance of Bald Hill Plantation @1600 Plant/Ha	84.0%	295	13
		3rd Year Maintenance of AR Bloch Plantation @1600 plants/ha	90.6%	330	11
		Total	82.8%	278	13
	2021-22	2nd Year Maintenance of ANR Plantation @200 plants/ha	80.4%	294	12
		2nd Year Maintenance of AR Bald Hill Plantation @1600 plant/ha	84.7%	225	14

<b>APO Head</b>	<b>Year</b>	<b>Plantation Model</b>	<b>Survival %</b>	<b>Average Height (Cm)</b>	<b>Average Colar (Cm)</b>
		2nd Year Maintenance of Bald Hill Plantation @1600 Plant/Ha	78.4%	237	12
		2nd Year Maintenance of RET Species (with Gap) @200 plant/Ha.	81.3%	238	11
		2nd Year Maintenance of AR Black Plantation @1600 plants/ha	89.1%	328	13
		Total	81.1%	262	12
	2022-23	ANR Gap Plantation @200 plants/ha	88.1%	148	10
		ANR Mic. Plantation @200 plants/ha	92.8%	267	11
		ANR Plantation @200 plants/ha	88.9%	226	10
		ANR Plantation @500 plants/ha	85.0%	228	10
		ANR Vanyasilk Plantation @500 plants/ha	93.1%	226	11
		AR Bald Hill Plantation @ 1600 plants/ha	96.4%	268	13
		AR Fodder and Fruit Plantation @ 1600 plants/ha	79.1%	136	11
		AR Plantation @ 1000 plants/ha	89.2%	132	10
		Total	90.0%	210	11
<b>PCA</b>	2019-20	4th Year Maintenance of AR Block Plantation @1600 plant/ha (PCA)	71.5%	268	12
		Total	71.5%	268	12
	2020-21	3rd Year Maintenance of AR Plantation @1600 plant/ha (PCA)	74.5%	431	15
		Total	74.5%	431	15

**Table 6.4.7: Species-wise Survival % of plantation – Rourkela Circle**

**a) Division: Bonai**

APO Head	Year	Plantation Model	Survival %	Average Height (Cm)	Average Colar (Cm)
CA	2019-20	4th Year ANR Plantation @200/500 plants/ha	84.4%	272	13
		Total	84.4%	272	13
NPV	2019-20	4th Year ANR Plantation @200/500 plants/ha	84.4%	272	13
		4th Year ANR Plantation @200/ 500 plants/ha	92.5%	259	12
		Total	87.8%	267	13
	2021-22	2nd Year ANR Plantation @200/ 500 plants/ha	88.8%	152	6
		2nd Year AR Plantation @1600 Plant /ha	75.0%	133	6
		2nd Year ANR Plantation @ 200 plants/ha	87.5%	239	11
		Total	80.8%	175	8
2022-23	ANR Plantation @200/ 500 plants/ha	83.2%	95	5	
	ANR Plantation @500 plants/ha	92.5%	72	5	
	AR Plantation @1600 Plant /ha	80.0%	122	7	
	Total	82.2%	102	5	

**b) Division: Deogarh**

APO Head	Year	Plantation Model	Survival %	Average Height (Cm)	Average Colar (Cm)
NPV	2019-20	4th Year ANR Plantation @200 plant/ha	90.3%	282	7
		Total	90.3%	282	7
	2020-21	3rd Year ANR Plantation @200 plant/ha	68.3%	411	11
		Total	68.3%	411	11
	2022-23	ANR @ 200 seedlings	95.6%	228	9
		ANR @ 500 vanya silk Plantation	95.6%	226	7
		ANR Plantation @200 plant/ha	81.9%	194	6
		AR @ 1600 plants/ha	98.4%	209	6

**c) Division: Keonjhar**

APO Head	Year	Plantation Model	Survival %	Average Height (Cm)	Average Colar (Cm)
CA	2015-16	8th Year Avenue plantation	87.5%	824	76
		Total	87.5%	824	76
	2016-17	7th Year ANR Plantation @200 plant/ha	91.3%	337	27
		7th Year ANR Plantation @400 plant/ha	91.9%	451	26
		Total	91.5%	386	26
	2017-18	6th Year ANR Plantation @200/ 500 plants/ha	91.9%	553	42
		Total	91.9%	553	42
	2018-19	5th Year ANR Plantation @ 400 plant/ha	94.4%	208	9
		5th Year ANR Plantation @ 400 plant/ha CA	92.6%	266	14
		Total	93.4%	240	12
	2022-23	ANR Plantation @200 plants/ha	90.0%	108	5
		ANR Plantation @200/ 500 plants/ha	88.2%	93	5
		ANR Plantation @400 plants/ha	92.5%	103	5
		Total	90.3%	102	5
NPV	2019-20	4th Year ANR Plantation @200/500 plants/ha	96.7%	357	7
		4th Year ANR Plantation @400 plants/ha	95.0%	294	18
		Total	95.8%	324	13
	2020-21	3rd Year ANR Plantation @200/500 plants/ha	95.1%	201	7
		3rd Year Bald hill Plantation @1600 plants/ha	98.8%	197	9
		Total	97.0%	199	8
	2021-22	2nd Year ANR Plantation @200/ 500 plants/ha	94.8%	174	7
2nd Year Avenue Plantation		95.8%	229	11	
		Total	95.2%	197	9

APO Head	Year	Plantation Model	Survival %	Average Height (Cm)	Average Colar (Cm)
	2022-23	ANR Plantation @200 plants/ha	92.5%	124	6
		ANR Plantation @200/ 500 plants/ha	96.1%	149	6
		Bald Hill Plantation @1000 plants/ha	97.5%	120	6
		Vanyasilk (ANR) Plantation @500 plants/ha	98.8%	105	6
		Total	95.5%	130	6

**d) Division: Rourkela**

APO Head	Year	Plantation Model	Survival %	Average Height (Cm)	Average Colar (Cm)
<b>AJY</b>	2021-22	2nd Year ANR Plantation @200/ 500 plants/ha	87.5%	174	8
		Total	87.5%	174	8
<b>CA</b>	2017-18	6th Year ANR Plantation @200/ 500 plants/ha	80.0%	268	12
		Total	80.0%	268	12
	2020-21	3rd Year ANR Plantation @200/500 plants/ha	85.0%	229	12
		Total	85.0%	229	12
	2021-22	2nd Year ANR Plantation @200/ 500 plants/ha	83.1%	181	8
		Total	83.1%	181	8
<b>NPV</b>		Avenue Plantation	87.5%	360	18
		Total	87.5%	360	18
	2019-20	4th Year ANR Plantation @200 plants/ha	92.5%	262	12
		4th Year AR Plantation @1600 plants/ha	84.4%	249	11
		Total	87.9%	254	12
	2020-21	3rd Year ANR Plantation @200/500 plants/ha	84.4%	210	10
		3rd Year AR Plantation @1600 plants/ha	81.3%	161	7
		Total	83.6%	198	9
	2021-22	2nd Year ANR Plantation @200/ 500 plants/ha	85.4%	193	8
		2nd Year AR Plantation @1600 plants/ha	85.6%	163	7
		Total	85.5%	178	7
	2022-23	ANR Plantation @200/ 500 plants/ha	85.4%	147	7
		AR Plantation @1000/ 1600 plants/ha	80.0%	136	5
		Total	84.6%	146	7

**e) Division: Sundargarh**

APO Head	Year	Plantation Model	Survival %	Average Height (Cm)	Average Colar (Cm)
<b>CA</b>	2017-18	6th Year ANR Plantation @200/ 500 plants/ha	78.8%	205	9
		Total	78.8%	205	9
	2019-20	4th Year AR Plantation @1600 plants/ha	73.8%	146	7
		Total	73.8%	146	7
	2022-23	AR Plantation @1000/ 1600 plants/ha	86.9%	91	3
		Total	86.9%	91	3
<b>NPV</b>	2019-20	4th Year AR Plantation @1600 plants/ha	76.3%	306	14
		Total	76.3%	306	14
	2021-22	2nd Year ANR Plantation @200/ 500 plants/ha	79.4%	93	3
		Total	79.4%	93	3
	2022-23	ANR Plantation @ 500 plants/ha	85.3%	87	4
		ANR Plantation @200/ 500 plants/ha	82.7%	81	4
		ANR Plantation @500 plants/ha	81.9%	135	6
		Total	82.7%	91	4



**Table 6.4.8: Species-wise Survival % of plantation – Sambalpur Circle**

**a) Division: Bamara WL**

APO Head	Year	Plantation Model	Survival %	Average Height (Cm)	Average Colar (Cm)
CA	2022-23	ANR Plantation @200/ 500 plant/ha	90.6%	169	7
		Total	90.6%	169	7
NPV	2019-20	4th year ANR plantation @200 plants per ha	91.3%	253	10
		Total	91.3%	253	10
	2020-21	3rd year ANR plantation @200 plants/ ha	85.6%	208	9
		Total	85.6%	208	9
	2021-22	2nd Year ANR Plantation @200/ ha	90.0%	200	9
		2nd Year Mant. of ANR Plantation @200 plant/ha	89.9%	193	8
		Total	89.9%	195	8
	2022-23	ANR Gap RET/ Medicinal plants @200 plants	93.8%	167	7
		ANR Other Indigenous Misc species @200 plants	93.8%	181	8
		AR Indigenous species plantation @1600 plants	93.3%	182	8
		Fodder & Fruits plantation@500 plants	91.9%	170	7
		Total	93.2%	176	7

**b) Division: Bargarh**

APO Head	Year	Plantation Model	Survival %	Average Height (Cm)	Average Colar (Cm)
NPV	2021-22	2nd Year Mant. of ANR Plantation @200 plant/ha	88.8%	101	5
		2nd Year Mant. of Bamboo Plantation	93.8%		
		Mant. of ANR Plantation @200 plant/ha	93.1%	162	7
		Total	90.2%	119	6
	2022-23	ANR Plantation @200 plant/ha	96.3%	92	5
		ANR Plantation @200/ 500 plant/ha	95.0%	79	5
		Mant. of ANR Plantation @200 plant/ha	93.1%	133	7
		Total	95.7%	89	5

**c) Division: Jharsuguda**

APO Head	Year	Plantation Model	Survival %	Average Height (Cm)	Average Colar (Cm)
CA	2022-23	ANR Plantation @200/ 500 plant/ha	74.4%	91	5
		AR Plantation @1000/1600 Plant/ha	75.6%	93	5
		Total	75.0%	92	5
NPV	2020-21	3rd Year ANR Plantation @200/ 500 plant/ha	76.9%	276	11
		Total	76.9%	276	11
	2021-22	2nd Year Mant. of ANR Plantation @200 plant/ha	85.0%	323	16
		Total	85.0%	323	16
	2022-23	ANR Plantation @200/ 500 plant/ha	80.2%	185	8
		AR Plantation @1000/1600 Plant/ha	91.4%	138	6
		Total	87.9%	157	7

**d) Division: Rairakhol**

APO Head	Year	Plantation Model	Survival %	Average Height (Cm)	Average Colar (Cm)
NPV	2021-22	2nd Year Mant. of ANR Plantation @200 plant/ha	85.8%	135	6
		Total	85.8%	135	6
	2022-23	ANR Plantation @200/ 500 plant/ha	92.0%	132	6
		Total	92.0%	132	6

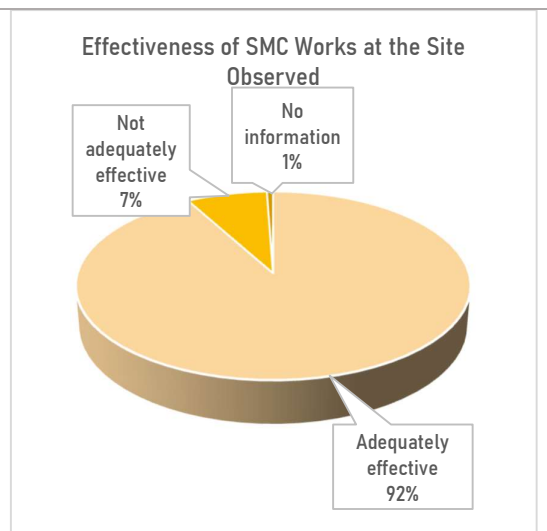
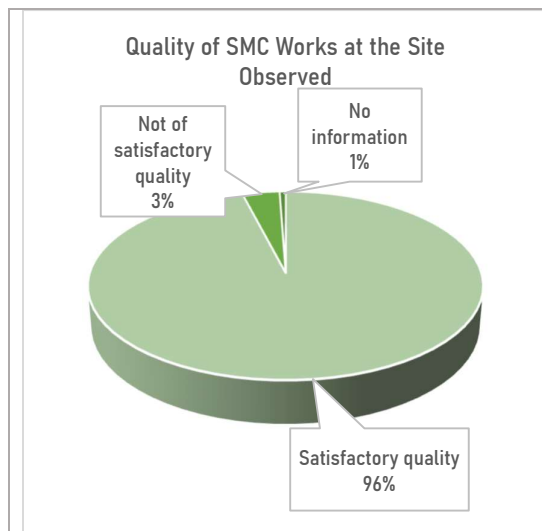
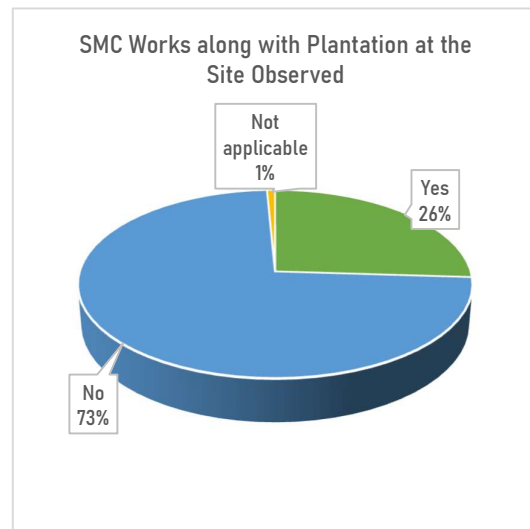
**e) Division: Sambalpur**

APO Head	Year	Plantation Model	Survival %	Average Height (Cm)	Average Colar (Cm)
CA	2022-23	ANR Plantation @200/ 500 plant/ha	76.3%	85	5
		Total	76.3%	85	5
NPV	2019-20	4th Year ANR Plantation @200 plant/ha	71.3%	226	9
		Total	71.3%	226	9
	2020-21	3rd Year ANR Plantation @200 plant/ha	79.7%	144	7
		3rd Year ANR Plantation @200/ 500 plant/ha	71.3%	135	6
2022-23	Total	76.6%	140	7	
	ANR Plantation @200 plant/ha	87.8%	121	6	
	ANR Plantation @200/ 500 plant/ha	85.9%	95	5	
		Total	86.8%	107	5

**6.1.1 (d): Status of Soil Moisture Conservation (SMC) and its impact**

Overall SMC works have been effective, and as a result in improved soil moisture regime is found supporting in germination of forest floor seeds including medicinal plant regeneration e.g. *Andrographis paniculata*, *Hemidesmus indicus*, Brahmi.

Water table recharge in the forest fringe village – wells and ponds; e.g. a) Berhampur, Digaphandi Range 50 ha. Percolation pit developed that remains full of water round the year, b) Ghumsur South, Aska Range, Bhanjnagar – dry borewells recharged and villagers have restarted vegetable cultivation contributing to their incomes.



### **6.1.1 (e): Status of Wildlife Management**

#### **A) Activities for Wildlife Management under CAMPA APO: 2022-23 (80% Components of NPV)**

##### **A.1) Protection and Anti-Depredation Activities**

The activities are:

- a) Anti-depredation equipment's/Tracking devices: Trap Camera -101 nos, Search light- 664 nos, LED Torch light-908 nos, Metal Detector-9 nos, Kit Bag- 238 nos, Warning system-5 nos, Canon Gun- 5 nos, equipment-66 nos, & training to villages for Gaja Sathi-299 nos.
- b) Mobility: for 71 nos Boats for patrolling/anti-depredation/anti-smuggling activities
- c) 80 nos Rescue & release operation of wild animals,
- d) Solar Fencing-53 Kms,
- e) Trench Fencing-25.96 Kms and Pre casted RCC Structure- 50 Nos.,
- f) Wages of attendant and DEO engaged in Wildlife Crime Cell 15 nos.,
- g) Maintenance of Boundary-929.98 RKM and Pillar-729 Nos,

For this the total expenditure incurred is Rs. 853.46 lakh.

##### **A.2) Forest Fire Prevention and Control Operations**

The following activities were undertaken:

- a) Under Forest Fire Prevention 48 nos. Firefighting Squads engaged with vehicle & it fuel @ 1500/- per day, 101 nos.;
- b) Firefighting equipment's purchases including Blowers along with fuel, 48 nos.;
- c) Logistics support for the firefighting squads,
- d) 6,771 Kms Fire line creation & maintenance done,
- e) Wages of attendant and DEO engaged in Wildlife Crime Cell,
- f) Construction of Watch Tower 20 nos.

For this the expenditure incurred is Rs. 1047.73 lakh.

##### **A.3) Improvement of Wildlife Habitat**

The activities included are:

- a) Plantation of 500 nos of plant of Fruit Bearing and Fodder species around water bodies and maintenance thereof.;
- b) Second year maintenance of 350 nos. plantation of Fruit & Fodder species around water bodies,
- c) Third year maintenance of 250 nos plantation of Fruit & Fodder species around the water bodies, 63 nos
- d) Creation and maintenance of salt licks.
- e) Monitoring assessment and protection of wildlife habitat,
- f) 367 nos of cattle vaccination/ awareness and animal health camp,
- g) Invasive weed eradication 871 Ha,
- h) Creation and maintenance of meadows covering 543.46 ha. area,
- i) Habitat restoration post natural disaster in *ex-situ* and *in-situ* conservation in 425 ha areas.

- j) 0th and 1st year operation of plantation under Rejuvenation of wildlife Corridor (for 1000 nos. plant per ha. using 18 months old seedling,
- k) Wages of 12 nos. Squads for Black Buck Conservation,
- l) Wages of 4 nos. of Squads for Conservation and wet land management of migratory bird congregation areas outside PA's,
- m) Establishment, operation and maintenance of animal rescue centre and veterinary treatment facilities for wild animals,
- n) Management of biological diversity and biological resources
- o) Wages of 32 nos. of Squads for Monitoring, surveillance, and protection of meta population of important wildlife species including RET species outside protected areas through local communities.,
- p) Relocation of 2 numbers villages.

Overall expenditure incurred under **80% Components of NPV** Rs. 11902.63 lakh against allocation of Rs. 14456.00 lakh. Thus, the achievement is 82% against allotment.

#### **B) Activities for Wildlife Management under CAMPA APO: 2022-23 (20% Components of NPV)**

Strengthening of Communication facilities for Protection of Wildlife

- a) 75 nos VHF base station installed and expenditure incurred for maintenance thereof including satellite tracking,
- b) Equipment for monitoring of wild animals and the protection activities are Trap Camera-335 nos., Binocular-3 nos., Drone-1 no., Solar light-4 nos., Metal Detector-3nos., GPS Tracking system-21 nos., Gun-1 no., Mega Phone-20 nos., Compass- 24 nos., and other equipments- 37 nos. supplied. 28 nos. of computer purchases and its accessories, wages of DEO/Driver/Support Staff/Consultant etc.
- c) Construction & Maintenance of Infrastructure for Protection of Wildlife: 1,281 Rkm Forest Road/ Inspection path have been maintained.
- d) 18 nos Anti-poaching Barrack, 1 no Floating Jetty, 2 nos Spill Over Work created.
- e) Under Publicity & Awareness, Training programme for Gaja Sathi- 865 nos. of villages, Training programme for veterinarian on Wildlife Health and disease control, Diploma course fee for ACF and WII.

Overall expenditure incurred under **20% Components of NPV** Rs. 1177.10 lakh against allocation of Rs. 1432.00 lakh. Achievement is 82% against allotment.

#### **C) Regional Wildlife Management Plan**

While sending proposals for diversion of forest land for mining purpose, State Government stipulate for realization of cost towards implementation of Regional Wildlife Management Plans across the state as per the norm fixed by the State Government. A Financial Outlay of Rs 15 crore has been provisioned in APO 2022-23 for implementing the region-specific components of Regional Wildlife Management Plans as per requirement.

The state has wildlife wealth of various animal life and iconic species of wild animals such as Elephant, Tiger, Leopard, Dolphin, Hyena, Wolf, Fishing Cat, Leopard Cat, Jungle Cat, Gaur, Sambar, Blackbuck, Spotted Deer, Wild pig, Giant squirrel, Pea Fowl, Hill Myna, Salt water Crocodile, Marsh Crocodile, Gharial, King Cobra, various Sea turtles, Monitor lizard etc. Although the state has extensive Protected

Area network for wildlife conservation and protection, it still faces several challenges. These include habitat degradation, fragmentation, and shrinkage due to various reasons, increased man-animal conflicts, proliferation of invasive species, poaching, and impacts of climate change. There is an explicit need for ensuring better protection of wildlife outside the protected areas and initiating recovery programs to save threatened species and their habitats. The major three identified key threats are Habitat fragmentation and deterioration, Human-wildlife conflict, and loss of wildlife.

The Regional Wildlife Management Fund approved 1500.00 lakh and out of that fund utilised Rs. 668.23 lakh which is 45% of the fund allocation. Activities taken are:

- a) Barrack-3 nos, Watch Tower-2 nos, Turtle nesting beach-2 nos, Maintenance of one Watch Tower with 2 nos. barrack, Wages of Rapid Action Team-15 nos, Wildlife Training Centre, Wages of Rapid response units-14 nos, Establishing Training Centre, rescue and orphan animal care-3 nos, Purchase of equipment, Laboratory consumables like reagents kits, plastic wares etc.
- b) The expenditure incurred in Dhenkanal Division Rs. 51.21 lakh, Athagarh Division Rs. 43.01 lakh, Cuttack Division Rs. 4.25 lakh, Athmallik Division Rs. 14.64 lakh, Balasore WL Division Rs. 27.64 lakh, Rairangpur Division Rs. 8.61 lakh, Karanjia Division Rs. 4.58 lakh, Baripada Division Rs. 8.61 lakh, Keonjhar (WL) Division Rs. 4.03 lakh, Berhampur Division Rs. 38.61 lakh, Ghumsur (S) Division Rs. 23.65 lakh, Parlakhemundi Division Rs. 23.01 lakh, Subarnapur Division Rs. 8.61 lakh, Bolangir Division Rs. 4.58 lakh, Mangrove WL (Rajnagar) Division Rs. 30.00 lakh, Chandaka WL Division Rs. 10.45 lakh, Malkangiri Division Rs. 24.00 lakh and others divisions Rs. 338.76 lakh. Overall sampling the activities and verified. The works are executed properly and were found to be generally satisfactory.

#### **D) Site specific Wildlife Conservation Plan**

In case of establishing any industry/ developmental/mining project requiring diversion of forest land involved and in need of environmental clearance under Environmental Protection Act, 1986, certain conditions are imposed by Government of Odisha/ Government of India towards conservation of flora and fauna likely to be affected within the project area as well as in the impact area of up to 10 km radius around the project. This involves preparation of Wildlife Conservation Plan for each site where these projects are being established.

The proposal was to implement 30 new Site-Specific Plans in addition to 99 running Site-Specific Plans of previous years covering 31 Divisions in this plan. Thus, necessary provisions for 129 projects at a cost of Rs. 47.642 crores were made under APO 2022-23.

The data reveals that as per Site specific Wildlife Conservation Plan 30 new projects and 99 old projects are implemented covering 31 divisions and expenditure incurred Rs. 40.407 crores where the achievement is 85% against the target.

Various activities are taken like Infrastructure Development, Creation of Water Body, Bio-diversity Park & Renovation, Urban Plantation, Bald Hill Plantation, AR Plantation, ANR Plantation, Anti-depredation Squad, Immunisation of livestock, Photo voltaic power fencing along Railway track, Expenditure incurred for maintenance of vehicles, Cost of Fuel, Wear & Tear for vehicle, Research activity, Awareness Campaign, Bio-diversity Monitoring, Solar Street Light installation, Monitoring, Supervision & Evaluation etc.

**Table 6.5 Site specific Wildlife Conservation Plan and Achievement**

SL. No.	Name of the Division	Total No. of Projects	No. of Projects		Amount (as per APO) (Amount Rs.in Lakh)	Funds Utilised	Percentage of Achievement
			Old	New			
1	Angul	7	5	2	234.76	163.96	70%
2	Dhenkanal	10	2	8	779.85	559.95	72%

SL. No.	Name of the Division	Total No. of Projects	No. of Projects		Amount (as per APO) (Amount Rs.in Lakh)	Funds Utilised	Percentage of Achievement
			Old	New			
3	Satkosia (WL)	1	1	0	7.19	7.18	100%
4	Athgarh	3	3	0	182.01	126.06	69%
5	Cuttack	17	16	1	469.75	469.75	100%
6	Athamallik	3	2	1	86.72	86.72	100%
7	Keonjhar (WL)	2	2		122.85	109.85	89%
8	Khariar	1	1		5.74	3.83	67%
9	Mangrove (WL)	1	1		114.80	64.24	56%
10	Bhadrak (WL)	1	1		5.50	5.50	100%
11	Nayagarh	1	1		28.97	27.40	95%
12	Khordha	1	1		27.27	27.27	100%
13	Rayagada	4	3	1	139.00	133.68	96%
14	Bonai	20	17	3	448.15	441.68	99%
15	Deogarh	4	2	2	270.79	215.71	80%
16	Keonjhar (T)	21	18	3	501.10	484.20	97%
17	Rourkela	6	6		148.19	148.19	100%
18	Sundargarh	2	2		26.05	19.30	74%
19	Sambalpur	5	5		83.32	75.37	90%
20	Jharsuguda	5	5		132.72	86.95	66%
21	Rairakhol	1	1		50.97	50.97	100%
22	Bamra (WL)	3	3		14.50	14.50	100%
23	Rairangpur	1		1	120.93	89.48	74%
24	Karanjia	2		2	323.98	230.60	71%
25	Baripada	1		1	50.43	48.08	95%
26	Boudh	1		1	188.63	171.16	91%
27	Phulbani	1		1	10.28	10.28	100%
28	Subarnapur	1		1	81.65	72.48	89%
29	Bolangir	1		1	28.79	27.71	96%
30	Puri	1	1		12.44	10.71	86%
31	Chandaka WL	1		1	66.84	57.90	87%
<b>Total:-</b>		<b>129</b>	<b>99</b>	<b>30</b>	<b>4764.17</b>	<b>4040.68</b>	<b>85%</b>

Overall physical and financial achievements are indicated in the table 6.6 below:

**Table 6.6: Overall Physical and Financial Progress under Wildlife Management**

Sl.No	Item of Work/ Activities	Physical Target as per APO	Financial Target as per APO (Rs. In Lakh)	Physical Achievement (In No/Ha/Kms)	Funds approved & Released (Rs. In Lakh)	Funds utilised (Rs. In Lakh)	Remarks
1	2	3	4	5	6	7	8
<b>A. 80% Components of NPV</b>							
1	<b>Protection and Anti-Depredation Activities</b>						
(i)	Anti-depredation equipment/ Tracking devices	50	200.00	2295	200.00	157.16	Trap Camera -101 nos, Search light- 664 nos, LED Torch light-908 nos, Metal Detector-9nos, Kit Bag- 238 nos, Warning system-5 nos, Canon Gun- 5 nos, equipment-66 nos, &









Sl.No	Item of Work/ Activities	Physical Target as per APO	Financial Target as per APO (Rs. In Lakh)	Physical Achievement (In No/Ha/Kms)	Funds approved & Released (Rs. In Lakh)	Funds utilised (Rs. In Lakh)	Remarks
1	2	3	4	5	6	7	8
							training to villages for Gaja Sathi-299 nos.
(ii)	Mobility for Boats for patrolling/anti-depredation/ anti-smuggling activities.	LS	125.00	71	125.00	121.04	71 nos. boats and it's POL
(iii)	Rescue & release operation of wild animals.	LS	50.00	80	50.00	29.13	80 nos.
(iv)	Fencing & Erection of barriers, Solar/ trench fencing /maintenance.	118	1000.00	50	1000.00	352.81	Solar Fencing-53 Kms, Trench Fencing-25.96 Kms and Precasted RCC Structure- 50 Nos.
(v)	Protection of wildlife, its habitat and prevention of wildlife crime.	LS	100.00	15	100.00	97.60	Wages of attendant and DEO engaged in Wildlife Crime Cell 15 nos.
(vi)	Maintenance of Boundary of protected areas.	500 Units	100.00	729	100.00	95.72	Maint. Of Boundary-929.98 Rkm and Pillar-729 Nos.
<b>2</b>	<b>Forest Fire Prevention and Control Operations</b>						
(i)	Firefighting Squads with vehicle & it fuel @ 1500/- per day	58 nos.	395.85	48	396.00	322.71	48 nos.
(ii)	Firefighting equipment including Blowers along with fuel	100 Units	65.00	101	65.00	64.99	101 nos.
(iii)	Logistics support for the firefighting squads	48 nos.	40.80	48	41.00	40.80	48 nos.
(iv)	Fire line creation & maintenance	6887 units	216.94	6771	217.00	213.27	6771 Kms.
(v)	Data management and analysis	LS	25.00		25.00	7.26	Wages of attendant and DEO engaged in Wildlife Crime Cell
(vi)	Construction Of Watch Tower	20	400.00	20	400.00	398.70	20 nos.
<b>3</b>	<b>Improvement of Wildlife Habitat</b>						
<b>i</b>	<b>Augmentation of food and water resources:</b>						
i(a)	Creation of water body (40m x 30m x 3m)	100 Nos	616.00		112.00	0.00	
i(b)	Maintenance of Water body created during previous years.	50 nos	50.00			0.00	
i(c)	Plantation of Fruit Bearing/ Fodder species around water bodies	2500	12.65	500		0.25	500 nos.
i(d)	2nd year maintenance of Fruit & Fodder species around the water bodies	9000	17.10	350		0.39	350 nos.
i(e)	3rd year maintenance of Fruit & Fodder species around the water bodies	4050	4.70	250		0.29	250.nos

Sl.No	Item of Work/ Activities	Physical Target as per APO	Financial Target as per APO (Rs. In Lakh)	Physical Achievement (In No/Ha/Kms)	Funds approved & Released (Rs. In Lakh)	Funds utilised (Rs. In Lakh)	Remarks
1	2	3	4	5	6	7	8
i(f)	Bamboo seed ball plantation to enrich elephant habitation.	100000	15.00			0.00	
i(g)	Creation and maintenance of salt licks.	75	37.50	63		29.50	63 nos.
i(h)	Water Harvesting structure	35	350.00			0.00	
<b>ii</b>	<b>Monitoring assessment and protection of wildlife habitat:</b>						
ii(a)	Protection, assessment and monitoring of RET species and their habitat within and outside Protected Areas through community participation.	84	1744.68	84	1500.00	1420.93	Wages of 84 nos. squads
ii(b)	Cattle vaccination/awareness and animal health camp	400	100.00	367	100.00	99.98	367 nos. camps
ii(c)	Invasive weed eradication	1000	100.00	871	100.00	89.06	871 Ha.
<b>iii</b>	<b>Habitat Management:</b>						
iii(a)	Creation and maintenance of meadows	200	250.00	543	250.00	239.47	543.46 Ha.
iii(b)	Habitat restoration post natural disaster in ex-situ and instu conservation areas.	LS	500.00	425	500.00	419.08	425 Ha.
iii(c)	Community mobilization and data management etc.	LS	150.00		150.00	41.45	Wages of DEO/Driver/Support Staff/Consultant
<b>iv</b>	<b>Corridor Management:</b>						
iv(a)	0 <sup>th</sup> and 1 <sup>st</sup> year operation of plantation under Rejuvenation of wildlife Corridor (as per revised plantation cost norm given annexure-6 for 1000 nos. plant per Ha. using 18 months old seedling.	65	57.53	25	57.00	21.97	25 Ha.
iv(b)	2 <sup>nd</sup> year maintenance of plantation under Rejuvenation of wildlife Corridor	20	5.92		6.00	0.00	
<b>(v)</b>	<b>Management of Special Habitats:</b>						
v(a)	Black Buck Conservation	12	261.12	12	261.00	249.51	Wages of 12 nos. of Squads
v(b)	Conservation and wet land management of migratory bird congregation areas outside PAs	45	101.25	4	101.00	85.70	Wages of 4 nos. of Squads
<b>(vi)</b>	<b>Contingency &amp; Overhead Expenditure</b>	LS	75.00		0.00	0.00	



Sl.No	Item of Work/ Activities	Physical Target as per APO	Financial Target as per APO (Rs. In Lakh)	Physical Achievement (In No/Ha/Kms)	Funds approved & Released (Rs. In Lakh)	Funds utilised (Rs. In Lakh)	Remarks
1	2	3	4	5	6	7	8
<b>4</b>	<b>Establishment, operation and maintenance of animal rescue centre and veterinary treatment facilities for wild animals:</b>						
(i)	Maintenance of Nandankanan & Other Zoo.	LS	300.00	8	300.00	281.08	8 nos.
(ii)	Veterinary care facilities.	LS	100.00	1	100.00	1.25	1 no.
(iii)	Establishment of Rescue Centre and Veterinary treatment facilities and maintenance.	LS	1000.00	1	1000.00	12.00	1 no.
<b>5</b>	<b>Management of biological diversity and biological resources</b>						
(i)	Biodiversity assessment of Protected Areas.	5	5.00	1	700.00	5.00	1 no.
(ii)	Monitoring, surveillance and protection of meta population of important wildlife species including RET species outside protected areas through local communities.	86	1786.22	32		672.93	Wages of 32 nos. of Squads
<b>6</b>	<b>Voluntary Relocation of Villages from Protected Areas and Tiger Reserve.</b>						
(i)	Relocation of villages	LS	5000.00	2	6500.00	6331.60	2 Nos.
<b>B</b>	<b>20% Components of NPV</b>						
<b>7</b>	<b>Strengthening of Communication facilities for Protection of Wildlife</b>						
(i)	Installation of VHF base station and maintenance thereof including satellite tracking.	33	49.50	75	50.00	48.80	75 nos.
(ii)	Equipments for monitoring of wild animals and the protection activities.	25	150.00	449	150.00	142.63	Trap Camera-335 nos., Binocular-3 nos., Drone-1 no., Solar light-4 nos., Metal Detector-3nos., GPS Tracking system-21 nos., Gun-1 no., Mega Phone-20 nos., Compass- 24 nos., and other equipments-37 nos.
(iii)	Communication and information Technology, data analysis and data managing etc.	LS	150.00	28	150.00	36.70	28 nos. of computer and its accessories & wages of DEO/Driver/Support Staff/Consultant
<b>8</b>	<b>Construction &amp; Maintenance of</b>						

Sl.No	Item of Work/ Activities	Physical Target as per APO	Financial Target as per APO (Rs. In Lakh)	Physical Achievement (In No/Ha/Kms)	Funds approved & Released (Rs. In Lakh)	Funds utilised (Rs. In Lakh)	Remarks
1	2	3	4	5	6	7	8
	<b>Infrastructure for Protection of Wildlife</b>						
(i)	Maintenance of Forest Road/Inspection path	800	552.00	1281	552.00	548.55	1281 Rkm.
(ii)	Anti-poaching Barrack	20	400.00	18	400.00	327.22	18 nos.
(iii)	Seizure Yard	1	7.00		0.00	0.00	
(iv)	Floating Jetty	2	30.00	1	18.94	9.47	1 nos.
(v)	<b>Spill Over Work (Baripada Division)</b>	-	-	2	11.06	11.06	2 nos.
<b>9</b>	<b>Research Activities:</b>						
(i)	Promoting conservation, sustainable use and documentation of biological diversity including preservation of habitats etc.	LS	200.00		0.00	0.00	
<b>10</b>	<b>Publicity &amp; Awareness Programmes:</b>						
(i)	Publicity, Awareness, Training & Capacity building etc.	1000	200.00	865	100.00	52.67	Training programme for Gaja Sathi- 865 nos. of villages, Training programme for veterinarian on Wildlife Health and disease control, Diploma course fee for ACF and WII.
<b>B</b>	<b>Implementation of Regional Wildlife Management Plan for the State</b>	LS	1500.00	42	1500.00	668.23	Barrack-3nos, Watch Tower-2nos, Turtle nesting beach-2nos, Maint. Of one Watch Tower & 2 nos. barrack, Wages of Rapid Action Team-15 nos, Wildlife Training Centre, Wages of Rapid response units-14 nos, Establishing Training Centre, rescue and orphan animal care-3 nos, Purchase of equipments, Laboratory consumables like reagents kits, plastic wares etc.
<b>C</b>	<b>Implementation of Site Specific Wildlife Conservation Plan</b>	LS	4764.19		4764.00	4040.68	129 nos, project.
	<b>Grand Total</b>		<b>23360.95</b>		<b>22152.00</b>	<b>17788.64</b>	

 <p>Latitude: 20.55213          Longitude: 84.784732          Elevation: 70.75±0.0 m          Accuracy: 6.2 m          Time: 08-02-2024 08:51          Note: satkosajia WL</p>	 <p>Latitude: 20.55213          Longitude: 84.784732          Elevation: 70.75±0.0 m          Accuracy: 6.2 m          Time: 08-02-2024 08:51          Note: satkosajia WL</p>
<p><b>Automatic Whather Station, Tikarpada Range</b></p>	<p><b>Crocodile cage, Tikarpada Range</b></p>
 <p>Latitude: 20.594231          Longitude: 84.844798          Elevation: 135.4±0.50 m          Accuracy: 3.9 m          Azimuth: 10° (N)          Pitch: 7.6° (0.7)          Time: 38-02-2024 09:29          Note: CAMPA 2023 Satkosajia WL</p>	 <p>Latitude: 21.509472          Longitude: 84.792297          Elevation: 364.69±13 m          Accuracy: 15 m          Time: 07-31-2024 12:31          Note: Zamra wildlife division jamankira chelamunda basin WL</p>
<p><b>Fruit Bearing Plantation around Water body, Tikarpada Range</b></p>	<p><b>Guard Well, Jamankira, Chelamunda (2022-23)</b></p>
	
<p><b>Salt Lick, Dampad Range</b></p>	<p><b>Meadow Development, Debrigarh</b></p>
 <p>Latitude: 20.57323          Longitude: 85.79219          Elevation: -8.3±1.6 m          Accuracy: 3.9 m          Azimuth: 29° (NE)          Pitch: -12.9° (2.1)          Time: 06-24-2024 18:32          Note: CAMPA 2023 Fire line</p>	 <p>Latitude: 19.840541          Longitude: 85.906094          Elevation: 67.5±2.2 m          Accuracy: 4.7 m          Azimuth: 227° (SW)          Pitch: -3.6° (-0.8)          Time: 08-16-2024 16:33          Note: CAMPA 2023 Puri WL</p>
<p><b>Fire Line, Banigoccha Range</b></p>	<p><b>Water Body, Puri WI</b></p>



Latitude: 20.446188  
 Longitude: 84.90209  
 Elevation: 89.1483 m  
 Accuracy: 13.4 m  
 Azimuth: 117° (SE)  
 Pitch: -75.8° (-65.7°)  
 Time: 06-30-2024 12:54  
 Note: CAMPA 2023 Mahanadi

Powered by NoteCam

**Fire Blower for Fire control**



Latitude: 20.41900  
 Longitude: 84.715011  
 Elevation: 144.20 m  
 Accuracy: 8.96 m  
 Azimuth: 114° (SE)  
 Pitch: -10.9° (-1.7°)  
 Time: 06-29-2024 14:09  
 Note: CAMPA 2023

Powered by NoteCam

**Trap Camera for WL Monitoring, Mahanadi WL**



Latitude: 21.298315  
 Longitude: 86.263025  
 Elevation: 529.62 m  
 Accuracy: 3.9 m  
 Azimuth: 220° (WSW)  
 Pitch: 4.1°  
 Time: 08-10-2024 10:17  
 Note: CAMPA 2023 Similipal South

Powered by NoteCam

**Invasive Weed Eradication, Similipal south**



Latitude: 20.591065  
 Longitude: 85.750967  
 Elevation: 142.74+18 m  
 Accuracy: 10.5 m  
 Time: 22-06-2024 09:39  
 Note: Common public use

Powered by NoteCam

**Establishment and Maintenance of Zoo, Dhenkanal Div**



Latitude: 20.728452  
 Longitude: 84.984677  
 Altitude: 139.0222 m  
 Accuracy: 33.4 m  
 Time: 04-08-2024 10:14  
 Note: Solar system, Kartabhata Section

Powered by NoteCam

**Solar System, Kartabhata section**



Latitude: 20.743913  
 Longitude: 85.000894  
 Elevation: 193.59+12 m  
 Accuracy: 10.8 m  
 Time: 04-08-2024 10:40  
 Note: Solar system, Kartabhata Section

Powered by NoteCam

**Solar fencing, Kartabhata section Madhupur to Gopalpur**



**Biodiversity Park Champajhar, Tomaka Range**



**Meadow Development, Hirakud WI**



**Forest Road Repair, Similipal South Div.**



**Watch Tower for wild animal monitor, Konark Range**



**Small Indian Mangoes Rescue center, Kapilash**



**Protection Squad Barack, Kapilash**



**SMC work, Sonepur Division**

**Water Body, Kunarmunda Rangamati RF, Rourkela**

**Salt Lick, Dubori Range**

**Cattel Vaccination, Tikarpada Range**

**Awareness, Mahanadi WL**

**Trench for Elephant, Dhenkanal**

**6.1.1 (f): Status of Silvicultural Operations on Bamboo**

The silvicultural operations on bamboo plantation have been effectively undertaken across the forest divisions. Under the activities removal of all dead and dry clump, high stumps and hanging branches and clean up to arm's reach was done. Removal of climber's damaging the clumps including general tidying up of the clumps and soil mounding in the clumps for better regeneration of the clumps was also done, whereas stone mounding in downhill side of bamboo clumps keeping distance upto 50 cm. and above. Removal of all malformed, twisted, insect attacked, and top broken bamboos has also been accomplished. Table 6.5 depicts area treated against the target.

**Table 6.7: Area Treated under SSO by Circle**

Circle	Total Area (ha)	Treated Area (ha)	Total No. of Clumps	Amount Sanctioned (Rs. in Lakh)	Amount Expenditure (Rs. in Lakh)
Angul	800	730	22,800	20.16	20.16
Baripada	-	-	-	-	-
Berhampur	28,676	13,400	3,82,683	324.86	324.86
Bhawanipatna	5,066	1,890	50,265	48.58	48.58
Bhubaneswar	1,246	1,010	40,392	25.45	25.45
Koraput	5,256	1,675	22,550	51.82	51.82
Rourkela	5,280	2,050	92,820	51.88	51.88
Sambalpur	6,303	-	48,225	158.81	158.81
<b>Total Circle</b>	<b>52,626</b>	<b>20,755</b>	<b>6,59,735</b>	<b>681.56</b>	<b>681.56</b>

**6.1.1 (g): Status of Ama Jangala Yojna (AJY)**

The physical targets were successfully completed in the Ama Jangala Yojana (AJY). IGA support extended to the VSS beneficiaries that supported wage employment generation; e.g. Jeypore, Kalahandi North, Angul, Navrangpur.



**6.1.1 (h): Status of Publicity and Training**

Trainings were conducted on topics like forest fire control and prevention, protection of wildlife, elephants/ Gaja Sathi etc. Awareness campaigns and rallies were also conducted on these topics.

Cattle Vaccination camps were organized, and SHGs members / women were given trainings on various topics around the forest fire prevention and wildlife conflicts.

**6.1.2 Findings on activities under Compensatory Afforestation**

The AR, ANR, Bald Hill, Avenue Plantations in Compensatory Afforestation were found to be of good quality and were undertaken as per requirements of the site, and therefore the growth and survival of the saplings is generally good. Most of the older patches have started to look like forested areas albeit artificially regenerated.

**6.1.3 Findings on activities under Catchment Area Treatment Plan (CAT)**

The treatments have been done largely inside the plantation areas and at selected sites in the forests. The works include LBCD, concrete check-dams, wire mesh structures, contour trenches etc. The activities are well planned and appropriately located.

#### 6.1.4 Findings on the activities under Integrated Wildlife Management

The funds have been used to address a multitude of issues related to the sector and generally the efforts are effective. Mitigation measures have been undertaken to address the issues related to HWLC, and the management and protection of the habitats have been prioritised. At places where grasslands have been developed the benefit accruing to the wild animals is visible. The watch towers are well located and are beneficial for undertaking monitoring and watch on the wild animals and on interlopers.

#### 6.1.5 Findings on the activities under NPV Fund (A) and NPV Fund (B)

The funds allocated under this category have been utilized for the maintenance of plantations, and at some places to develop mangrove plantations. The AR or/ and ANR plantations raised are doing well. The funds have generally been used for the allocated purpose.

#### 6.1.6 Update on e-Green Watch Portal

Barring a few exceptions, the updation of information on the e-Green Watch portal was found to be complete.

#### 6.1.7 Other Observations

The works under infrastructure development include diverse structures such as staff quarters, field offices, compound wall, seizure yards, watch towers are largely of good quality and are being used for the purpose for which they have been built.

#### 6.1.8 Field Survey Images

The images gathered during the field survey are huge in number and some selected images are presented in the document to provide snapshot views of the works done in the field. In all 2027 images were captured by the field teams during the field survey. Table 6.6 depicts the number of images captured by Circle. Some of the selected photographs have been utilized on the cover page as well as to substantiate the field work in various sections of the report.

**Table 6.8: Images captured by the Survey Field Teams by Circle**

Circle	Division Name	Number of Photographs
Angul	Angul	53
	Athagarh	6
	Athamallik	39
	Cuttack	103
	Dhenkanal	58
	Mahanadi WL	0
	Satkosia WL	0
	<b>Total</b>	<b>259</b>
Baripada	Balasore WL	12
	Baripada	16
	Karanjia	28
	Keonjhar WL	46
	Rairangpur	34
	Similipal North WL	0
	Similipal South WL	0
<b>Total</b>	<b>136</b>	
Berhampur	Balliguda	30
	Berhampur	26
	Boudh	17
	Ghumusur North	12
	Ghumusur South	18
	Parlakhemundi	22



Circle	Division Name	Number of Photographs
	Phulbani	21
	<b>Total</b>	<b>146</b>
Bhawanipatna	Bolangir	94
	Kalahandi North	65
	Kalahandi South	55
	Khariar	37
	Subarnapur	48
	Sunabeda WL	34
	<b>Total</b>	<b>333</b>
Bhubaneswar	Bhadrak WL	9
	Chandaka WL	5
	Chilika WL	9
	City Forest, BBSR	14
	Khordha	6
	Nayagarh	31
	Puri WL	55
	Rajnagar WL	41
	<b>Total</b>	<b>170</b>
Koraput	Jeypore	53
	Koraput	231
	Malkangiri	69
	Nabarangapur	155
	Rayagada	42
	<b>Total</b>	<b>550</b>
Rourkela	Bonai	50
	Deogarh	6
	Keonjhar	72
	Rourkela	110
	Sundargarh	53
	<b>Total</b>	<b>291</b>
Sambalpur	Bamara WL	10
	Bargarh	31
	Hirakhud WL	0
	Jharsuguda	34
	Rairakhol	34
	Sambalpur	33
	<b>Total</b>	<b>142</b>
<b>Total</b>		<b>2027</b>

In the subsequent sections division wise observations are documented for each of the Circle under 8 key sub-sections, viz., 1) Overall Physical and Financial Progress analysis, 2) Findings on activities under Compensatory Afforestation, 3) Findings on activities under Catchment Area Treatment Plan (CAT), 4) Findings on the activities under Integrated Wildlife Management, 5) Findings on the activities under NPV Fund (A) and NPV Fund (B), 6) Update on e-Green Watch Portal, 7) Other Observations, and 8) Field Survey Images. For each of the divisions this structure has been followed, and divisions are arranged under each of the Circles.

## 6.2 (C1) CIRCLE ANGUL

There are 7 forest divisions in Angul Circle, of which 5 are territorial divisions (Angul, Athagarh, Athamallik, Cuttack and Dhenkanal), and 2 are wildlife divisions, viz., Mahanadi WL, and Satkosia WL.

Subsequent 5 tables provide information for the Circle, followed by division-wise observations organized under 8 sub-sections. In Angul Circle total expenditure incurred is around Rs. 167.45 Cr. of which Rs. 78 Cr. has been spent by the forest wing, and around Rs. 89.42 Cr. has been spent by the wildlife wing of the forest department.

**Table C1.6.1.1: Financial Achievements in Angul Circle as per the APO (Rs. In lakh)**

Name of Division	Forestry Activities (General)	Wildlife Management	Total Expenditure Incurred
Angul	1,486.38	280.65	1,767.02
Athagarh	1,316.65	218.57	1,535.22
Athamallik	590.58	129.45	720.03
Cuttack	1,650.87	450.46	2,101.33
Dhenkanal	2,369.94	880.02	3,249.96
Mahanadi WL	171.75	277.54	449.29
Satkosia WL	217.47	6,705.51	6,922.97
<b>Total</b>	<b>7,803.63</b>	<b>8,942.20</b>	<b>16,745.83</b>

**Table C1.6.1.2: Study Coverage in Angul Circle – Plantation CA/PCA/NPV (Creation & Maintenance) including Without Gap, SMC & SSO (Bamboo)**

Division	Area Covered (ha)	Evaluated Area in ha.	% of area evaluated	No. of Total Sites	Sample to be Covered	No. of Sites covered	% of Verification
Angul	9,570.03	544.17	6%	136	14	20	15%
Athagarh	3,055.00	210.00	7%	66	7	9	14%
Athamallik	2,101.53	364.90	17%	45	5	10	22%
Cuttack	5,462.24	1,444.98	26%	122	12	28	23%
Dhenkanal	7,002.58	1,416.35	20%	70	7	19	27%
Mahanadi WL	400.00	100.00	25%	4	0.4	1	25%
Satkosia WL	255.00	50.00	20%	5	1	1	20%
<b>Total</b>	<b>27,846.38</b>	<b>4,130.40</b>	<b>15%</b>	<b>448</b>	<b>45</b>	<b>88</b>	<b>20%</b>

**Table C1.6.1.3: Study Coverage in Angul Circle – Infrastructure Development and Nursery Management**

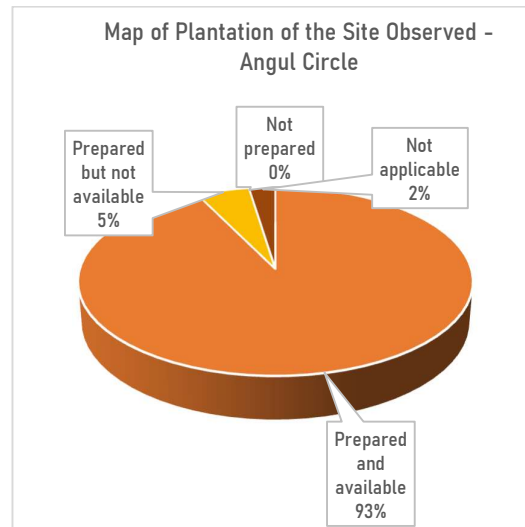
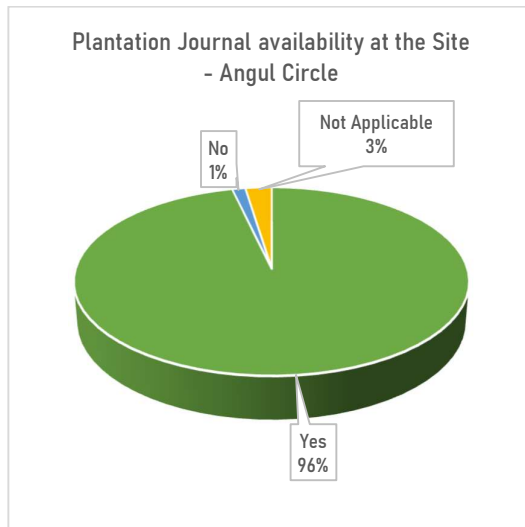
Division	No. of Total Sites	Sample to be Covered	No. of Sites covered	% of Verification
Angul	31	3	7	23%
Athagarh	35	4	4	11%
Athamallik	16	2	2	13%
Cuttack	46	5	5	11%
Dhenkanal	70	7	7	10%
Mahanadi WL	5	1	3	60%
Satkosia WL	22	2	4	18%
<b>Total</b>	<b>225</b>	<b>23</b>	<b>32</b>	<b>14%</b>

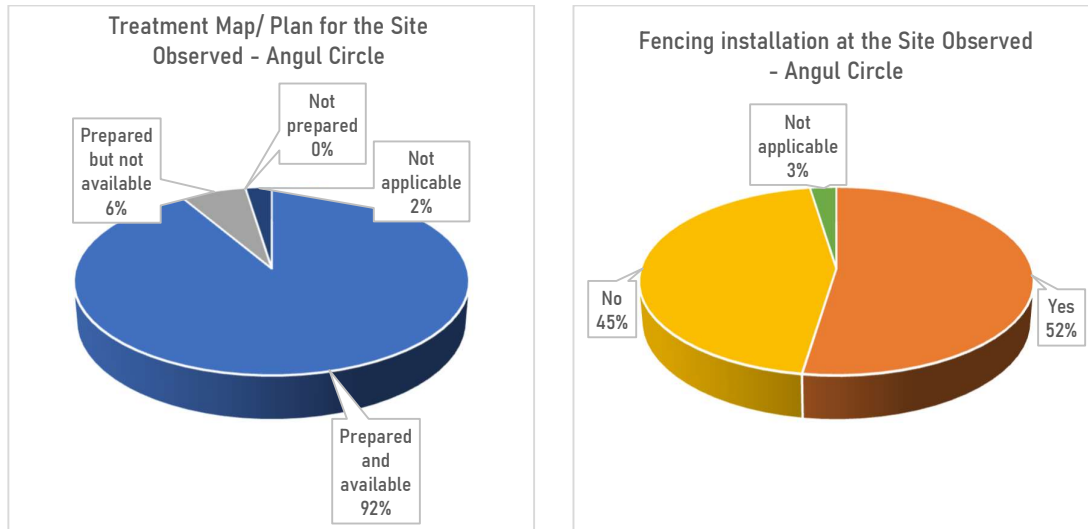
**Table C1.6.1.4: Financial Statement Angul Circle – Plantation CA/PCA/NPV (Creation & Maintenance) including Without Gap, SMC & SSO (Bamboo)**

Division	Amount sanctioned (Rs. In Lakh)	Amount released (Rs. In Lakh)	Expenditure Incurred (Rs. in Lakh)	% of Achievement
Angul	132.75	93.62	92.82	70%
Athagarh	122.27	122.27	122.27	100%
Athamallik	119.09	119.09	119.09	100%
Cuttack	492.95	492.95	492.95	100%
Dhenkanal	255.91	255.52	221.75	87%
Mahanadi WL	17.68	17.68	17.68	100%
Satkosia WL	20.74	20.74	20.74	100%
<b>Total</b>	<b>1161.39</b>	<b>1121.87</b>	<b>1087.30</b>	<b>94%</b>

**Table C1.6.1.5: Financial Statement Angul Circle – Infrastructure Development and Nursery Management**

Division	Amount sanctioned (Rs. In Lakh)	Amount released (Rs. In Lakh)	Expenditure Incurred (Rs. in Lakh)	% of Achievement
Angul	70.16	70.16	69.71	99%
Athagarh	42.57	42.57	42.57	100%
Athamallik	21.06	21.06	21.06	100%
Cuttack	73.21	73.21	73.21	100%
Dhenkanal	125.59	125.59	125.59	100%
Mahanadi WL	38.88	38.88	38.88	100%
Satkosia WL	50.48	50.48	47.14	93%
<b>Total</b>	<b>421.94</b>	<b>421.94</b>	<b>418.15</b>	<b>99%</b>





In subsequent subsections division-wise observations are presented. The data has been collected from field level and specific to the activities being observed. Thus, this may not add-up to the circle totals.

### C1.1 Angul Division

#### 6.2.1 (C1.1) Over all Physical and Financial Progress Analysis

The allocation was Rs. 1486.38 lakh under forestry sector and all was utilized. For forest protection and fire protection/control operation Rs. 164.49 lakh expenditure was incurred. For Wildlife management there was an allocation of Rs. 322.80 lakh but expenditure was Rs. 280.65 lakh, thus only 87% of the fund was utilized.

The physical targets of new plantation, maintenance other activities were completed 100% including Ama Jangala Yojana (AJY).

However, in case of SMC only 357 ha. completed against target of 1000 ha. and regeneration of degraded bamboo forests (SSO Bamboo) 641.997 ha area completed against target of 870 ha. Thus, the achievement is 37.5% and 74% respectively.

Soil and moisture conservation (SMC) activities like RCC check dam, loose boulders check dam (LBCD), staggered trenches, wire mesh LBCD were undertaken in the plantation area as well as in assigned forest area. 2 sites out of 7 sites were visited and it was observed that soil and moisture conservation measures undertaken were effective and were able to control runoff and thus preventing loss of soil by surface soil erosion, reduce soil compaction, improve soil fertility, conserve, or drain water and harvest (excess) water.

#### 6.2.2 (C1.1) Finding on activities under Compensatory Afforestation

Under Compensatory Afforestation (CA) or Penal Compensatory Afforestation (PCA), 9 ha. new plantation was taken up. Also, 2<sup>nd</sup> year maintenance of 700 ha., 3<sup>rd</sup> Year Tall Tree plantation, 4<sup>th</sup> year maintenance of 937 ha., 5<sup>th</sup> year maintenance of 33 ha., 6<sup>th</sup> year maintenance of 149 ha., 7<sup>th</sup> year maintenance of 55 ha. and 8<sup>th</sup> year maintenance of 622 ha. plantation area was done. On average, the health of the plantations is good. Casualty replacement has also been done.

**6.2.3 (C1.1) Finding on activities under Catchment Area Treatment (CAT) Plan**

No activity has been observed under the category in this division.

**6.2.4 (C1.1) Finding on the activities under Integrated Wildlife Management**

Under wild life management the major assets created mainly SMC, water body, wildlife protection squad, tracker engagement, Supply of anti-depredation equipment on use basis to primary response team of VSS under Gaja Sathi Scheme, publicity, and awareness programme - training to primary response team of VSS (Gaja Sathi), transportation and fixing charges of elephant depredation, cost of vehicle/POL /maintenance, solar fencing maintenance, engagement of fire watchers, habit improvement etc.

**6.2.5 (C1.1) Finding on the activities under NPV fund (A) and NPV fund (B)**

NPV new creation and maintenance works done. Under ANR Plantation 1714 ha. area developed through plantation of medicinal species and other indigenous miscellaneous species plantation. The 2<sup>nd</sup> year maintenance covered 620 ha., 3<sup>rd</sup> year maintenance covered 630 ha. and 500 ha. area was covered in 4<sup>th</sup> year maintenance. The health of the plants is, on average, good. Casualty replacement has been done.

The villagers are very much aware that their day-by-day requirements are met from the forest produces. So, the protection efforts of the villagers are very good in most of the verified site.

In nursery management, at 16 nurseries about 14 lakh seedlings were raised. For raising and maintenance of seedling expenditure of Rs. 345.38 lakh was incurred including AJY. Currently most of the 18-month seedling have been planted.

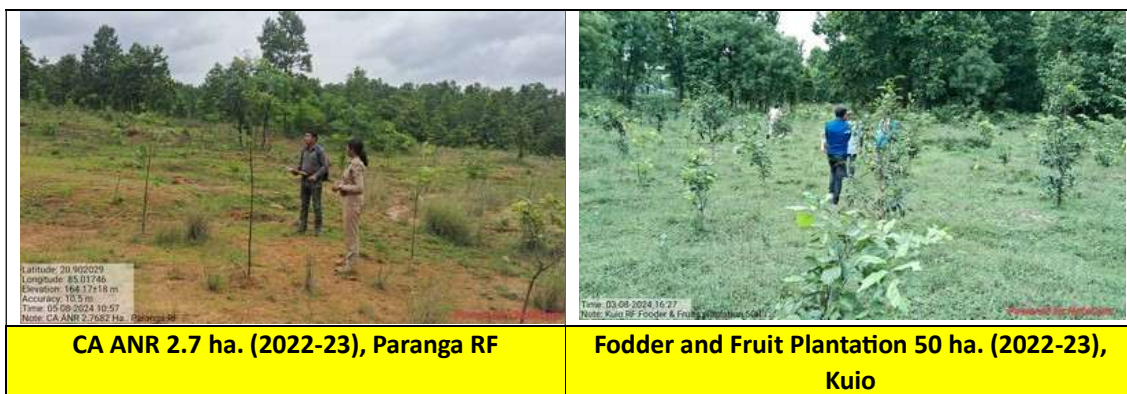
**6.2.6 (C1.1) Update on e-green portal**

Details of all activities under CAMPA APO 22-23 have been uploaded in the portal.

**6.2.7 (C1.1) Other Observations**

Infrastructure development: The constructed forester quarter, forest guard quarter, culverts, causeways, and maintenance of forest road are good and utilized properly.

**6.2.8 (C1.1) Images Field Survey Images**





**C1.2 Athargarh Division**

**6.2.1 (C1.2) Over all Physical and Financial Progress Analysis**

No.	Sector	Allocation (Rs. In lakh)	Expenditure (Rs. In lakh)	Percentage
1	Forestry	1316.65	1316.65	100
2	Wildlife	279.91	218.57	78
	<b>Total</b>	<b>1596.56</b>	<b>1535.22</b>	<b>89</b>

For forest protection and fire protection/control operation Rs. 136.89 lakh expenditure was incurred. All physical targets of new plantation, maintenance, SMC and other activities have been fully achieved. Some soil and moisture conservation activities like RCC check dam, loose boulders check dam (LBCD), staggered trenches, wire mesh LBCD were undertaken in the plantation area as well as assigned the forest area.

Three site out of 24 sites were physically verified and it was observed that soil and moisture conservation measures undertaken were found effective and functional to control runoff and thus preventing loss of soil by surface soil erosion, reduce soil compaction, improve soil fertility, conserve, or drain water and harvest (excess) water.

**6.2.2 (C1.2) Finding on activities under Compensatory Afforestation**

No activity has been observed under this category in the division.

**6.2.3 (C1.2) Finding on activities under Catchment Area Treatment (CAT) Plan**

No activity has been observed under the category in this division.

**6.2.4 (C1.2) Finding on the activities under Integrated Wildlife Management**

For wild life management the major assets created include SMC, water body management, plantation maintenance. Several other activities like wildlife protection squad, maintenance of boundary of protected area, monitoring of assessment and protection wildlife habitat, improvement of wildlife habitat tracker engagement, publicity & awareness programme, training to primary response team of VSS (Gaja Sathi), cost of vehicle/POL /maintenance, solar fencing and its maintenance, engagement of fire watchers, habit improvement etc. were done.

**6.2.5 (C1.2) Finding on the activities under NPV fund (A) and NPV fund (B)**

New creation and maintenance works have been undertaken from these funds. Under AR Plantation 50 ha. area developed through Bald hill plantation & Other Indigenous Misc. Species plantation. 420 ha. area has been developed through ANR plantation models Other Indigenous Misc. Species plantation.

2<sup>nd</sup> year maintenance covered 45 ha. area, 3<sup>rd</sup> year maintenance covered 1040 ha. area and 500 ha. area covered in 4<sup>th</sup> year maintenance.

The nursery management funds were used at 6 nurseries to raise about 5.52 lakh seedling. On this Rs. 176.90 lakh was spent.

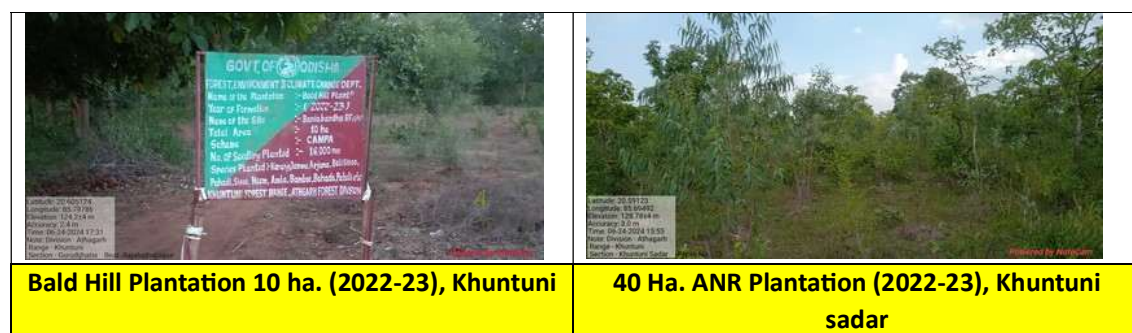
**6.2.6 (C1.2) Update on e-green portal**

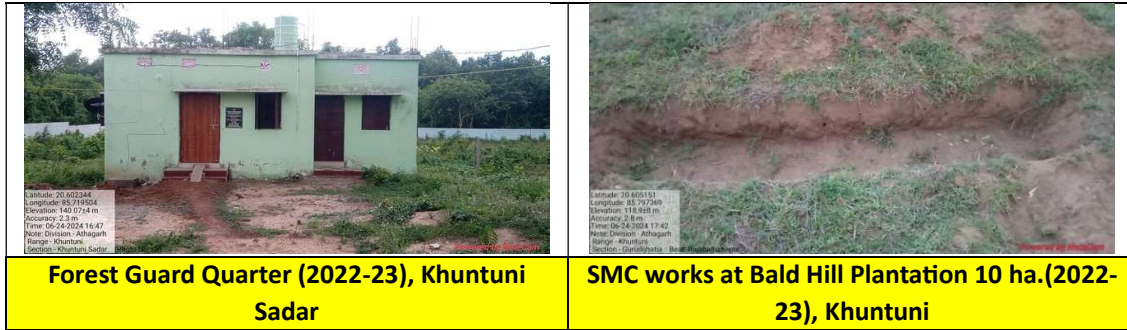
Portal is updated.

**6.2.7 (C1.2) Other Observations**

Funds have been used for construction of forester quarter, forest guard quarter, causeway and for the maintenance of forest road. The assets developed are being used properly.

**6.2.8 (C1.2) Field Survey Images**





### C1.3 Athamalik Division

#### 6.2.1 (C1.3) Over all Physical and Financial Progress Analysis

In CAMPA APO 2022-23, the Division was allocated Rs. 590.58 lakh under forestry sector. The expenditure was 100%. For forest protection and fire protection/control operation Rs. 148.11 lakh was spent. For Wildlife management from the allocated Rs. 148.2725 lakh the expenditure was Rs. 129.4511 - 87% of the target. The raising of new plantation, maintenance other activities was fully completed against target. However, in case of SMC, only 550 ha completed against target of 1000 ha. The achievement is only 55%. The department has executed some soil & moisture conservation activities like RCC check dam, loose boulders check dam (LBCD), staggered trenches, wire mesh LBCD in the plantation area as well as in other forest areas. One site out of 2 sites was visited and it was observed that soil and moisture conservation measures undertaken were effective and functional to control runoff and thus preventing loss of soil by surface soil erosion, reduce soil compaction, improve soil fertility, conserve, or drain water and harvest (excess) water.

#### 6.2.2 (C1.3) Finding on activities under Compensatory Afforestation

In Compensatory Afforestation (CA) or Penal Compensatory Afforestation (PCA) 48 ha. new plantation was taken up. 2<sup>nd</sup> year maintenance of 254 ha. and 7<sup>th</sup> year maintenance of 710 ha. plantation area was also done. The plantations are on an average good. The casualties have also been replaced.

#### 6.2.3 (C1.3) Finding on activities under catchment Area Treatment (CAT) Plan

No activity has been observed under the category in this division.

#### 6.2.4 (C1.3) Finding on the activities under Integrated Wildlife Management

Under wild life management the major assets created include anti-poaching barrack, water body. The other activities include engagement of wildlife protection squads, maintenance of boundary of protected area, monitoring of assessment and protection wildlife habitat, improvement of wildlife habitat tracker engagement, supply of anti-depredation equipment on use basis to primary response team of VSS under Gaja Sathi Scheme, publicity and awareness programme, training to primary response team of VSS (Gaja Sathi), transportation and fixing charges of elephant depredation, cost of vehicle/POL / maintenance, solar fencing its maintenance, engagement of fire watchers, habit improvement etc.

#### 6.2.5 (C1.3) Finding on the activities under NPV fund (A) and NPV fund (B)

NPV new creation and maintenance works done. Under ANR plantation 310 ha. area developed through plantation like Vanya silk & Other Indigenous Misc. Species plantation. Additionally, 2<sup>nd</sup> year



maintenance covered 50 ha., 3<sup>rd</sup> year maintenance covered 180 ha. and 50 ha. was covered in 4<sup>th</sup> year maintenance. The health of the plants is on an average good. The casualties have been replaced.

Regarding protection measures villagers are very much aware that their day-by-day requirements are met from the forest produces. So, the protection efforts of the villagers are very good in most of the verified site.

Under nursery management 10 numbers of nurseries raised about 6.5 lakh seedling. For raising and maintenance of seedling Rs. 32.10 lakh expenditure has been incurred. At present most of the 18-month seedling have been planted.

**6.2.6 (C1.3) Update on e-green portal**

All activities under CAMPA during 22-23 have been uploaded in the portal.

**6.2.7 (C1.3) Other observation**

Infrastructure development that included the construction of forester quarter, forest guard quarter, culvert, causeway, and maintenance of forest road has been done variously in the Division. The constructions are of good quality and are being utilized properly.

**6.2.5 (C1.3) Field Survey Images**



## **C1.4 Cuttack Division**

### **6.1.1 (C1.4) Over all Physical and Financial Progress Analysis**

In CAMPA APO 2022-23 there was an allocation of Rs. 1664.21 lakh under forestry sector. Of this the expenditure incurred was Rs. 1650.87 lakh or 99%. In case of forest protection and fire protection/control operation Rs. 167.53 lakh expenditure was incurred. From Wildlife management funds the allocation was Rs. 476.28 lakh from which the expenditure was Rs. 450.46 – an achievement of 94.5%. The physical targets of new plantation, maintenance and SMC activities etc. were fully achieved. The department has executed some soil and moisture conservation activities like Graded Bund, Guided Bund Small, Diaphragm within the plantation area as well as in designated places in other forest areas. Two such sites were visited and it was observed that soil and moisture conservation measures undertaken were effective and functional in the control runoff and thus preventing loss of soil by surface soil erosion, reduce soil compaction, improve soil fertility, conserve, or drain water and harvest (excess) water.

### **6.2.2 (C1.4) Finding on activities under Compensatory Afforestation**

In Compensatory Afforestation (CA) or Penal Compensatory Afforestation (PCA) there was P.O. for 2023-24 of 9 ha., creation of new plantation 202 ha., 2<sup>nd</sup> year maintenance of 5 ha., 3<sup>rd</sup> year maintenance of 131 ha., 4<sup>th</sup> year maintenance of 131 ha., 5<sup>th</sup> year maintenance of 3ha., 6<sup>th</sup> year maintenance of 61ha. and 7<sup>th</sup> year maintenance of 5ha. All targets were fulfilled. Overall, the plantations are good. Casualty replacement has also been done.

### **6.2.3 (C1.4) Finding on activities under catchment Area Treatment (CAT) Plan**

No activity has been observed under the category in this division.

### **6.2.4 (C1.4) Finding on the activities under Integrated Wildlife Management**

Under wild life management the major assets created include SMC, water body, plantation maintenance and other like wildlife protection squad, maintenance of boundary of protected area, monitoring of assessment and protection wildlife habitat, improvement of wildlife habitat tracker engagement, Supply of Anti-depredation equipment on use basis to primary response team of VSS under Gaja Sathi Scheme, publicity and awareness programme, training to primary response team of VSS (Gaja Sathi), transportation and fixing charges of elephant depredation, cost of vehicle/POL /maintenance, solar fencing and its maintenance, engagement of fire watchers, habit improvement etc.

### **6.2.5 (C1.4) Finding on the activities under NPV fund (A) and NPV fund (B)**

NPV new creation and maintenance works done. Under AR plantation 175 ha. area developed through River Rejuvenation Plantation and Other Indigenous Misc. Species plantation, 1550 ha. developed through ANR plantation like Vanya silk, Fodder and Fruits and Other Indigenous Misc. Species plantation. Also, 2<sup>nd</sup> year maintenance covered 1440 ha., 3<sup>rd</sup> year maintenance covered 505 ha. area and 646 ha. was covered in 4<sup>th</sup> year maintenance.

In the management of nurseries about 12.86 lakh were raised in 17 of nurseries. Rs. 345.77 lakh expenditure was incurred on this work. Most of the 18-month seedlings have been planted in the field. The infrastructure such as forest guard quarter, seizure yard, causeway, culverts, and maintenance of forest road that has been developed or created with the funds are all in good use.

### 6.2.6 (C1.4) Update on e-green portal

All requisite details of CAMPA during 22-23 have been uploaded in the portal.

### 6.2.7 (C1.4) Other Observations

There are no observations for this section.

### 6.2.8 (C1.4) Field Survey Images

 <p>A photograph of a large green sign with Odia text for Mahabinayak Nursery. The sign is set against a backdrop of trees and a cloudy sky.</p>	 <p>A photograph of a plantation area on Bald Hill, showing rows of young trees in a field with hills in the background.</p>
<p><b>Mahabinayak Nursery</b></p>	<p><b>Bald Hill 72.035 ha. Plantation (2020-21) Dalijoda</b></p>
 <p>A photograph showing people working in an ANR (Agroforestry Nucleus) plantation, with one person holding up a tree sapling.</p>	 <p>A photograph of an AR (Agroforestry) plantation with people working among the trees.</p>
<p><b>ANR 100 ha. (2021-22), Campajhara</b></p>	<p><b>AR 8.7 ha. (2022-23), Dalijora</b></p>
 <p>A photograph of a Biodiversity Park featuring a wooden bridge over a stream, surrounded by lush greenery.</p>	 <p>A photograph of a person using a backpack blower for fire control in a field.</p>
<p><b>Biodiversity Park (2022-23), Tomka</b></p>	<p><b>Blower for Fire Control</b></p>

## C1.5 Dhenkanal Division

### 6.2.1 (C1.5) Over all Physical and Financial Progress Analysis

There was an allocation of Rs. 2369.94 lakh under forestry sector and the entire amount was spent on works. For forest protection and fire protection/control operation Rs. 223.91 lakh expenditure has been incurred. In Wildlife management of the allocated Rs. 1191.568 lakh the expenditure is Rs. 880.024 lakh or 74% of the allocation. All physical targets of new plantation, maintenance, SSO Bamboo and SMC activities have been fully achieved. The department has executed some soil and moisture conservation activities like RCC check dam, LBCD, Staggered Trench inside plantation areas as well as

at selected spots in the forest area. Two out of 9 sites were visited and it was observed that soil and moisture conservation measures undertaken were found effective and functional to control runoff and thus preventing loss of soil by surface soil erosion, reduce soil compaction, improve soil fertility, conserve, or drain water and harvest (excess) water.

#### **6.2.2 (C1.5) Finding on activities under Compensatory Afforestation**

During the referred period with the provisions under Compensatory Afforestation (CA) or Penal Compensatory Afforestation (PCA) there was P.O for 2023-24 of 49 ha., creation of new plantation 1177 ha., 3<sup>rd</sup> year maintenance of 7 ha., 4<sup>th</sup> year maintenance of 674 ha., 5<sup>th</sup> year maintenance of 371 ha., 6<sup>th</sup> year maintenance of 530 ha., 7<sup>th</sup> year maintenance of 32 ha and 8<sup>th</sup> year maintenance of 171 ha. plantation. The health of the plants is on an average good. The casualty's replacement has also been done.

#### **6.2.3 (C1.5) Finding on activities under catchment Area Treatment (CAT) Plan**

No activity has been observed under the category in this division.

#### **6.2.4 (C1.5) Finding on the activities under Integrated Wildlife Management**

Under wildlife management the major assets created include watch tower, SMC, water body, plantation maintenance and other activities mainly like wildlife protection squad, maintenance of boundary of protected area, monitoring of assessment and protection wildlife habitat, improvement of wildlife habitat etc.

Also, tracker engagement, supply of anti-depredation equipment on-use basis to primary response team of VSS under Gaja Sathi Scheme, publicity and awareness programme, training of primary response team of VSS (Gaja Sathi), transportation and fixing charges of elephant depredation, cost of vehicle/POL /maintenance, solar fencing its maintenance, engagement of fire watchers, habit improvement etc. was also done.

#### **6.2.5 (C1.5) Finding on the activities under NPV fund (A) and NPV fund (B)**

From the allocation from NPV, new creation and maintenance works done. AR Plantation of 140 ha. area have been developed through Fodder and Fruits Plantation and Other Indigenous Misc. Species.

Around, 514 ha. area developed through ANR plantation like Vanya silk, Fodder and Fruits and Other Indigenous Misc. species plantation. Also, 2<sup>nd</sup> year maintenance covered 524 ha., 3<sup>rd</sup> year maintenance covered 1031 ha. and 600 ha. was covered in 4<sup>th</sup> year maintenance. Around, Rs 321 lakh was spent for Nursery management at 12 nurseries where about 12 lakh seedlings were raised. At present most of the 18-month seedling have been planted out in the field.

The infrastructure developed includes - forest guard quarter, Cause Way, Culvert, and maintenance of forest road. The constructions are good and utilized properly.






#### **6.2.6 (C1.5) Update on e-green portal**

The portal is updated.

#### **6.2.1 (C1.5) Other Observations**

There are no observations for this section.

### 6.2.8 (C1.5) Field Survey Images

 <p>Latitude: 21.105261                  Longitude: 85.533597                  Altitude: 97.6414 m                  Accuracy: 8.0 m                  Time: 21/06/2024 13:58                  Note: Vanya Silk 42 Ha</p>	 <p>Latitude: 20.83363                  Longitude: 85.54384                  Elevation: 104.81±10 m                  Accuracy: 37.1 m                  Time: 20/07/2024 16:54                  Note: ANR 40ha - Dhankajali</p>
<p style="text-align: center;"><b>42 ha Vanya silk plantation (2022-23), Chilida                  KF</b></p>	<p style="text-align: center;"><b>ANR 40 ha. Plantation (2022-23), Kankadahada                  RF</b></p>
	 <p>Latitude: 20.855021                  Longitude: 85.797758                  Altitude: 90.0214 m                  Accuracy: 9.0 m                  Time: 22/08/2024 11:33                  Note: Protection squad Barrack</p>
<p style="text-align: center;"><b>Culvert on forest road (2022-23), Anapur RF</b></p>	<p style="text-align: center;"><b>Protection Squad Barrack (2022-23), Biradia</b></p>
 <p>Latitude: 20.531497                  Longitude: 85.602192                  Elevation: 135.10539 m                  Accuracy: 7.1 m                  Time: 20/07/2024 10:00                  Note: Fasigaon beat quarter</p>	 <p>Latitude: 20.834222                  Longitude: 85.493781                  Elevation: 113.05144 m                  Accuracy: 5.6 m                  Time: 31/07/2024 16:55                  Note: Watch tower</p>
<p style="text-align: center;"><b>Beat Quarter (2022-23), Fasigaon</b></p>	<p style="text-align: center;"><b>Watch Tower(2022-23)</b></p>

## C1.6 Mahanadi Wildlife Division

### 6.2.1 (C1.6) Overall Physical and Financial Progress Analysis

In the CAMPA APO 2022-23 the target under forestry sector was Rs. 171.75 lakh and under Wildlife management it was Rs. 277.54 lakh. Both amounts have been fully utilized. The SMC target of 350 ha. has also been fully achieved. The department has executed some soil and moisture conservation activities like RCC check dam, LBCD, WLBCD, sub-surface dyke in the plantation areas as well as at assigned forest areas. Two sites out of 4 sites were visited and it is observed that soil and moisture conservation measures undertaken were found effective and functional to control runoff and thus preventing loss of soil by surface soil erosion, reduce soil compaction, improve soil fertility, conserve, or drain water and harvest (excess) water.

### 6.2.2 (C1.6) Finding on activities under Compensatory Afforestation

No activity was observed under this category in this division.

### 6.2.3 (C1.6) Finding on activities under catchment Area Treatment (CAT) Plan

No activity has been observed under the category in this division.

### 6.2.4 (C1.6) Finding on the activities under Integrated Wildlife Management

Under wildlife management the major assets created include anti-poaching barrack, maintenance of forest road, streamlining of communication facilities etc. Other activities like wildlife protection squad, maintenance of boundary of protected area, monitoring of assessment and protection wildlife habitat, improvement of wildlife habitat tracker engagement, forest fire prevention and control operation. Supply of anti-depredation equipment on use basis to primary response team, publicity and awareness programme, training to primary response team, transportation and fixing charges of anti- depredation squad, cost of vehicle/POL/maintenance, solar fencing and its maintenance, engagement of fire watchers, habit improvement etc. was also done.

The infrastructure developed such as the constructed forest guard quarter, causeway, and culvert are of good and are being utilized properly.

### 6.2.5 (C1.6) Finding on the activities under NPV fund (A) and NPV fund (B)

No activity has been observed under the category in this division.

### 6.2.6 (C1.6) Update on e-green portal

All details of work and expenditure have been updated.

### 6.2.7 (C1.6) Other Observations

There are no observations for this section.

### 6.2.8 (C1.6) Field Survey Images





### C1.7 Satakosia Wildlife Division

#### 6.2.1 (C1.7) Over all Physical and Financial Progress Analysis

No.	Sector	Allocation (Rs. In lakh)	Expenditure (Rs. In lakh)	Percentage
1	Forestry	299.6975	217.4679	72.5
2	Wildlife	6750.39	6705.51	99
	<b>Total</b>	<b>7050.08</b>	<b>6922.98</b>	<b>98.2</b>

The physical target of SMC was 400 ha. of which the achievement is 255 ha. or 64% of the target. The division has executed some soil and moisture conservation activities like RCC check dam, LBCD, WLBCD were prepared in the plantation areas as well as at specific points in the forest area.

One site out of 5 sites was visited and it was observed that soil and moisture conservation measures undertaken were found effective and functional to control runoff and thus preventing loss of soil by surface soil erosion, reduce soil compaction, improve soil fertility, conserve, or drain water and harvest (excess) water.

#### 6.2.2 (C1.7) Finding on activities under Compensatory Afforestation

No activity was observed under this category in this division.

#### 6.2.3 (C1.7) Finding on activities under catchment Area Treatment (CAT) Plan

No activity has been observed under the category in this division.

#### 6.2.4 (C1.7) Finding on the activities under Integrated Wildlife Management

For wildlife management the major assets created include the fixing of Automatic Weather Station, watch tower, anti-poaching barrack, maintenance of forest road, voluntary relocation of village from protected areas, plantation of fruit bearing and fodder species around water bodies, creation, and maintenance of salt licks, stretching of communication facilities etc.

Other activities mainly engagement of wildlife protection squad, maintenance of boundary of protected area, monitoring of assessment and protection wildlife habitat, improvement of wildlife

habitat tracker engagement, forest fire prevention and control operation, supply of anti-depredation equipment on use basis to primary response team, publicity and awareness programme, training to primary response team, transportation and fixing charges of anti- depredation squad, cost of vehicle/POL /maintenance, solar fencing and its maintenance, engagement of fire watchers, habit improvement etc. have also been done.

**6.2.5 (C1.7) Finding on the activities under NPV fund (A) and NPV fund (B)**

With an expenditure of Rs. 6.17 lakh about 1 lakh seedlings had been raised at four nurseries and currently most of the plants have been planted out in the field.

**6.2.6 (C1.7) Update on e-green portal**

The portal is updated.

**6.2.7 (C1.7) Other Observations**

The infrastructure developed includes Range Officer residence, forester quarter, forest guard quarter, causeway, and culvert. The constructions are being utilized properly.

**6.2.8 (C1.7) Field Survey Images**





## 6.2 (C2) CIRCLE BARIPADA

There are 7 forest divisions in Baripada Circle – 3 territorial and 4 wildlife divisions, viz., Balasore WL, Baripada, Karanjia, Keonjhar WL, Rairangpur, Similipal North WL, and Similipal South WL.

Subsequent 5 tables provide information for the Circle, followed by division-wise observations organized under 8 sub-sections. In Baripada Circle total expenditure incurred is around Rs. 67.22 Cr. of which Rs. 49.28 Cr. has been spent by the forest wing, and around Rs. 19.93 Cr. has been spent by the wildlife wing of the forest department.

**Table C2.6.1.1: Financial Achievements in Baripada Circle as per the APO (Rs. In lakh)**

Name of Division	Forestry Activities (General)	Wildlife Management	Total Expenditure Incurred
Balasore WL	435.83	212.70	648.53
Baripada	1,108.12	104.27	1,212.39
Karanjia	680.65	302.98	983.63
Keonjhar WL	856.15	330.18	1,186.33
Rairangpur	972.98	134.47	1,107.45
Similipal North	551.74	436.88	988.62
Similipal South	323.17	471.49	794.65
<b>Total</b>	<b>4,928.64</b>	<b>1,992.96</b>	<b>6,921.59</b>

**Table C2.6.1.2: Study Coverage in Baripada Circle – Plantation CA/PCA/NPV (Creation & Maintenance) including Without Gap, SMC & SSO (Bamboo)**

Division	Area Covered (ha)	Evaluated Area in ha.	% of area evaluated	No. of Total Sites	Sample to be Covered	No. of Sites covered	% of Verification
Baripada	1575.00	320.00	20%	31	3	7	23%
Karanjia	2235.00	330.00	15%	57	6	8	14%
Rairangpur	2676.87	457.00	17%	73	7	13	18%
Balasore WL	1400.00	185.00	13%	29	3	6	21%
Keonjhar WL	7496.03	1714.92	23%	57	6	14	25%
Similpal South WL							
Similpal North WL							
<b>Total</b>	<b>15382.90</b>	<b>3006.92</b>	<b>20%</b>	<b>247</b>	<b>25</b>	<b>48</b>	<b>19%</b>

**Table C2.6.1.3: Study Coverage in Baripada Circle – Infrastructure Development and Nursery Management**

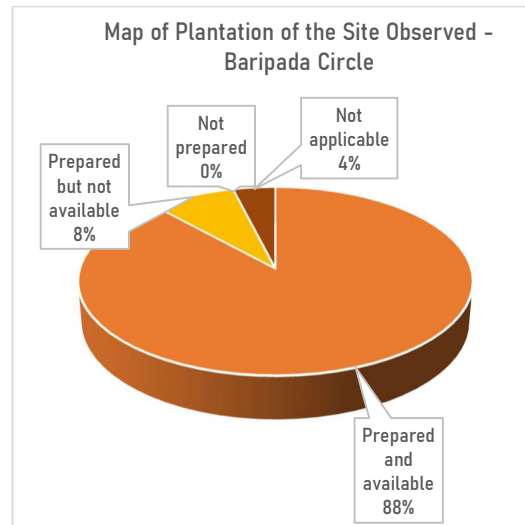
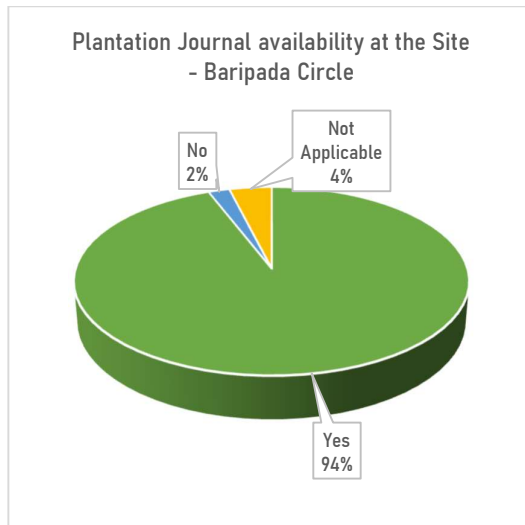
Division	No. of Total Sites	Sample to be Covered	No. of Sites covered	% of Verification
Baripada	29	3	3	10%
Karanjia	11	1	4	36%
Rairangpur	8	1	3	38%
Balasore WL	33	3	5	15%
Keonjhar WL	25	3	5	20%
Similpal South WL	41	4	10	24%
Similpal North WL	34	3	8	24%
<b>Total</b>	<b>181</b>	<b>18</b>	<b>38</b>	<b>21%</b>

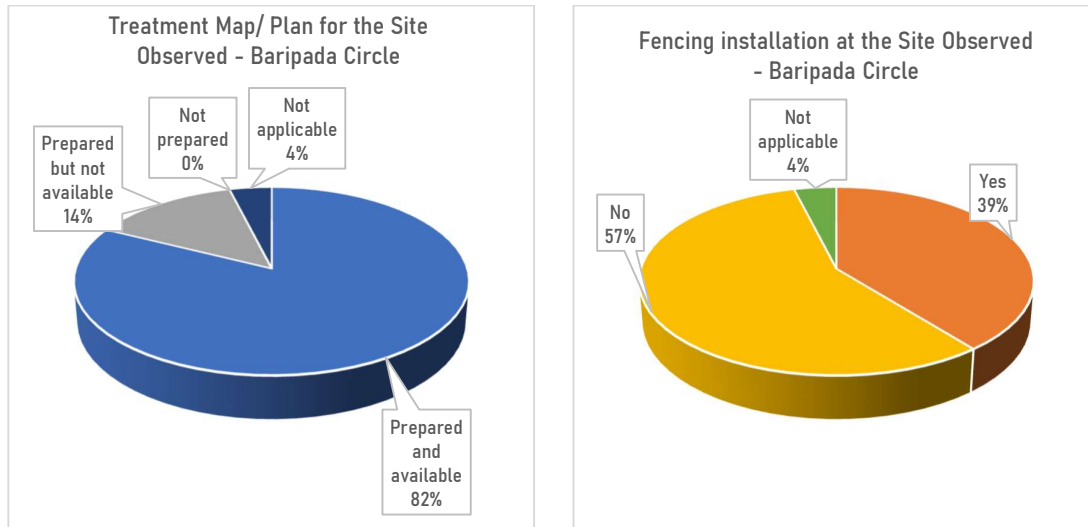
**Table C2.6.1.4: Financial Statement Baripada Circle – Plantation CA/PCA/NPV (Creation & Maintenance) including Without Gap, SMC & SSO (Bamboo)**

Division	Amount sanctioned (Rs. In lakh)	Amount released (Rs. In lakh)	Expenditure Incurred (Rs. in lakh)	% of Achievement
Baripada	139.88	138.70	138.70	99%
Karanjia	38.05	38.05	38.05	100%
Rairangpur	86.94	86.94	86.94	100%
Balasore WL	109.05	29.46	29.46	27%
Keonjhar WL	196.86	196.86	196.86	100%
Similpal South WL				-
Similpal North WL				-
<b>Total</b>	<b>570.78</b>	<b>490.01</b>	<b>490.01</b>	<b>86%</b>

**Table C2.6.1.5: Financial Statement Baripada Circle – Infrastructure Development and Nursery Management**

Division	Amount sanctioned (Rs. In lakh)	Amount released (Rs. In lakh)	Expenditure Incurred (Rs. in lakh)	% of Achievement
Baripada	37.63	35.89	35.89	95%
Karanjia	58.31	58.31	58.31	100%
Rairangpur	16.55	16.55	16.55	100%
Balasore WL	27.69	27.69	27.69	100%
Keonjhar WL	42.94	42.94	42.94	100%
Similpal South WL	117.59	117.59	117.59	100%
Similpal North WL	144.97	144.97	144.97	100%
<b>Total</b>	<b>445.67</b>	<b>443.93</b>	<b>443.93</b>	<b>100%</b>





In subsequent subsections division-wise observations are presented. The data has been collected from field level and specific to the activities being observed. Thus, this may not add-up to the circle totals.

## C2.1 Balasore Wildlife Division

### 6.2.1 (C2.1) Overall Physical and Financial Progress Analysis

<u>NPV</u>	<u>No of Sites</u>	<u>Physical (Area in ha.)</u>	<u>Financial (Rs. in Lakh)</u>
<b>Current Year (2022-23)</b>			
ANR @ 200/ha	1	60	9.62
AR(Casuarina) @ 2500/ha	4	40	44.78
<b>2<sup>nd</sup> Year Maintenance of (2021-22) Plantation</b>			
ANR @ 200/ha	1	50	3.51
AR @ 1600/ha	3	20	6.63
AR Bamboo @ 400/ha	1	10	2.49
<b>Total</b>			<b>12.63</b>
<b>3rd Year Maintenance of (2020-21) Plantation</b>			
ANR @ 200/ha	2	70	4.50
AR @ 1600/ha	2	30	7.88
AR Bamboo @ 400/ha	2	20	3.37
<b>Total</b>			<b>15.75</b>

### 6.2.2 (C2.1) Finding on activities under Compensatory Afforestation

No activity was observed under the category in this division.

### 6.2.3 (C2.1) Finding on activities under Catchment Area Treatment (CAT) Plan

No activity was observed under the category in this division.

### 6.2.4 (C2.1) Finding on the Activities Integrated Wildlife Management Plan

This Division has a protected area i.e. Kuldiha Sanctuary. It is affected by migratory elephants. Lot of activities like maintenance of forest road/path, maintenance of fire lines, engagement of firefighting

squads, construction of watch tower, cattle vaccination, animal health camp, invasive weed eradication, construction of watch tower for monitoring the movement of the wild animals and poachers have been undertaken. Total amount of Rs. 212.70 lakh has been spent during financial year 2022-23.

**6.2.5 (C2.1) Finding on the Activities under NPV Fund (A) and NPV Fund (B)**

**NPV(A):** Total ANR plantation of 60.0 ha. has been taken up at 01 site and an amount of Rs. 62 lakh has been spent for the same. Beside this 40 ha of *Casuarina* plantation has been taken up in AR mode (Block Plantation) at 4 sites at a cost of Rs. 44.78 lakh.

**NPV(B):** Total amount of Rs. 28.38 lakh has been spent towards 2<sup>nd</sup> year, 3<sup>rd</sup> year maintenance of plantation (AR, ANR & Bamboo).

**6.2.6 (C2.1) Update on e-green Portal**

The concerned IT staff is aware of the portal. It was found to be incomplete. The entry of data is ongoing and the same would be completed was the assurance given by the D.E.O. of Division office.

**6.2.7 (C2.1) Other Observations**

Besides all above mentioned activities, a lot of works have been taken up under SMC and Infrastructure Development activities. LBCD structures have been done along the foot hill side of Kuldiha Sanctuary, where dense green cover has come up due to retention of soil moisture for a long time and which also play a natural role for the herbivores. Beside this, 02 nos Forester quarters, 05 nos Forest Guard quarters, maintenance of road over 30 km. inside protected area, 05 culverts and 12 causeways on the forest road have been constructed for better management. Beside this, nice Bamboo plantations have been taken up in this Division. These Bamboo plantations have been taken up in the areas of movement of migratory elephants. Awareness programmes are being conducted regularly in the villages regarding fire protection. Wild life protection, documentation and record keeping at Range level are best to my satisfaction.

**6.2.8 (C2.1) Field Survey Images**





## C2.2 Baripada Division

### 6.2.1 (C2.2) Over all Physical and Financial Progress Analysis

#### CA PCA:

	No of Sites	Physical (Area in ha.)	Financial (Rs. in lakh)
1 <sup>st</sup> Year Creation of ANR plantation	1	35	34.72
<b>NPV 1<sup>st</sup> Year Creation</b>			
AR @ 500/hectare	2	200	67.59
ANR @ 500/hectare	10	200	67.59
ANR @ 200/hectare	3	230	44.74
<b>Total</b>	<b>15</b>	<b>630</b>	<b>179.92</b>
ANR @ 1000/hectare	3	250	21.58
<b>2<sup>nd</sup> Year Maintenance</b>			
ANR @ 200/hectare	1	260	17.80
AR @ 1600/hectare	1	25	8.29
Bald Hill @ 1600/hectare	1	10	4.31
<b>Total</b>			<b>30.40</b>
<b>3<sup>rd</sup> Year Maintenance</b>			
AR @ 1600/hectare	2	40	10.51
<b>4<sup>th</sup> Year Maintenance</b>			
ANR @ 200/hectare	2	500	23.51
AR @ 1600/hectare	1	50	3.36
<b>Total</b>			<b>26.87</b>

### 6.2.2 (C2.2) Finding on activities under Compensatory Afforestation

Creation of only ANR plantation over an area of 35 ha. No maintenance of any type of plantation was done under the head CA, PCA. Average height plants are excellent and on an average 200 cm and survival is more than 95%.

### 6.2.3 (C2.2) Finding on activities under catchment Area Treatment (CAT) Plan

No activity was observed under the category in this division.

### 6.2.4 (C2.2) Finding on the activities under Integrated Wildlife Management

Throughout the year the entire division area is heavily affected by the migratory elephants from the bordering states. For these elephants, water bodies have been created. Awareness steps are been

taken up for the villagers which are more affected by the migratory elephants. Regular training camps are organised at Division and Range level for the field staff as well as PA staff.

**6.2.5 (C.2.2) Finding on the activities under NPV fund (A) and NPV fund (B)**

**NPV Fund (A):** In all, ANR of 630 ha. of plantations have been raised at 15 sites and amount of Rs. 179.92 lakh has been spent for the same. Similarly, 25 ha. of AR plantation (1000/hectare) have been taken up with an expenditure of Rs. 21.53 lakh.

**NPV Fund (B):** Total 885 ha. of plantation (both ANR AR & Bald hill) have been taken up in the said Head of Service. Total amount of Rs. 67.78 lakh have been spent.

**6.2.6 (C.2.2) Update on e-green portal**

The IT staff are aware of this. But this portal is not being used for updating of information from Range level to Division. This issue needs to be redressed on priority.

**6.2.7 (C.2.2) Other Observations**

1. Steps have been taken up for the infrastructure development activities. Total 03 Forester Quarter (@ Rs. 61.17 lakh), 06 Forest Guard Quarter (@ Rs. 97.74 lakh), 02 Seizure Yards (@ Rs. 24.00 lakh) have been constructed.
2. Steps have been taken up for fire protection of the entire forest area of this division.
3. Steps have been taken up for creating awareness among the villagers and field staff for protection of Forest and Wildlife.
4. Record Keeping in the Range Office is appreciable. All the concerned register and related documents have been maintained update.

**6.2.8 (C.2.2) Field Survey Images**





**Nursery Ghiajodi**

**Water body (2022-23), Nuha malai side**

## C2.3 Karanja Division

### 6.2.1 (C2.3) Overall Physical & Financial Progress Analysis

NPV Plantation 1 <sup>st</sup> Year Plantation (2022-23)	No of Sites	Physical (Area in ha.)	Financial Target (Rs. in Lakh)
ANR RET/Medicinal Spc @ 200/ha	7	200	38.91
ANR Other Indigenous Misc. Spc@200/ha	8	265	51.55
<b>Total</b>	<b>15</b>	<b>465</b>	<b>90.46</b>
<b>2<sup>nd</sup> Year Maintenance (2021-22)</b>			
ANR @ 200/ha	8	400	27.39
<b>3<sup>rd</sup> Year Maintenance (2020-21)</b>			
ANR @ 200/ha	14	750	49.17
<b>4<sup>th</sup> Year Maintenance (2019-20)</b>			
ANR @ 200/ha	8	500	23.51
AR(Block) @ 1600/ha	12	100	6.70
<b>Total</b>	<b>20</b>	<b>600</b>	<b>30.21</b>

### 6.2.2 (C2.3) Finding on the activities under Compensatory Afforestation

No activity was observed under the category in this division.

### 6.2.3 (C2.3) Finding On activities under Catchment area treatment (CAT) Plan

No activity was observed under the category in this division.

### 6.2.4 (C2.3) Finding on the activities under Integrated Wildlife Management

This Division is situated adjoining to Similipal North Division of Similipal Tiger Reserve and affected by the migratory elephants from adjoining district Keonjhar and adjoining state of Jharkhand. A lot of wildlife management activities are being taken up in this Division, like maintenance of forest road/path, maintenance of fire lines, engagement forest fire control squads, construction of watch tower to keep watch on wild animals, forest fire as well as illegal transport of forest product. Cattle vaccination, animal health camps, awareness programme regarding forest fire and wildlife protection are being organised regularly at field level inviting the local villagers. Total amount of Rs. 302.98 lakh has been spent during the financial year 2022-23, towards different wildlife management activities.

### 6.2.5 (C2.3) Finding on the activities under NPV(A) and NPV(B)

**NPV(A):** ANR plantation of 465 ha. at 15 sites has been taken up. For these activities, total amount of Rs. 90.46 lakh has been spent.

**NPV(B):** Total amount of Rs. 106.76 lakh has been spent towards 2<sup>nd</sup> year, 3<sup>rd</sup> year, and 4<sup>th</sup> maintenance activities of previous plantations (both AR & ANR).

### 6.2.6 (C2.3) Update on e-green Watch Portal

The concerned IT staff (DEO) of Division office is aware of this portal. But no CAMPA data have been uploaded in this portal, starting from Range level to Division level. This situation need immediate redressal.

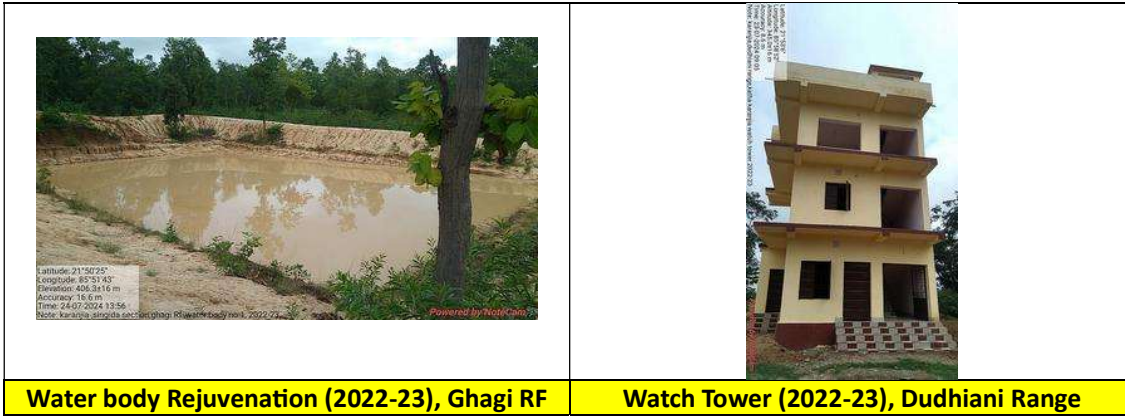
### 6.2.7 (C2.3) Other Observations

Besides all above mentioned activities, a lot of works have been taken up under SMC and Infrastructure Development activities. LBCD structures have been constructed at vulnerable areas taking topographic conditions. Due to construction of SMC, LBCD structures the quantum of soil moisture has increased, consequently the regeneration of local species of plants has been increased to a great extent. Beside this 03 Forest quarters, 05 Forest Guard quarters, 01 seizure yard, 01 watch tower have been constructed. Documentation and Record keeping at Range level is satisfactory.

### 6.2.8 (C2.3) Field Survey Images

 <p>Latitude: 21°44'37"                  Longitude: 85°59'25"                  Elevation: 402.51117 m                  Accuracy: 5.4 m                  Time: 24-07-2024 08:50                  Note: Karanjia, Jambani RF</p>	 <p>Latitude: 21°44'17"                  Longitude: 86°42'4"                  Elevation: 116.8615 m                  Accuracy: 365.1 m                  Time: 23-07-2024 17:53                  Note: Karanjia, Jambani RF</p>
<p style="text-align: center;"><b>ANR (Medicinal) 25 Ha. (2022-23), Sarabhadi, Karanjia Range</b></p>	<p style="text-align: center;"><b>AR 5 Ha. (2019-20) Plantation, Hathisalbeda RF</b></p>
 <p>Latitude: 21°50'37"                  Longitude: 85°23'37"                  Elevation: 523.9481 m                  Accuracy: 10.7 m                  Time: 24-07-2024 13:49                  Note: Karanjia, Jambani RF</p>	 <p>Latitude: 21°50'17"                  Longitude: 85°21'7"                  Elevation: 515.2912 m                  Accuracy: 16.2 m                  Time: 24-07-2024 13:06                  Note: Karanjia, Jambani RF</p>
<p style="text-align: center;"><b>Bird Bath(2022-23), Ghagi RF</b></p>	<p style="text-align: center;"><b>LBCD (SMC Work 2022-23), Jambani RF</b></p>
 <p>Latitude: 21°54'31"                  Longitude: 86°2'24"                  Elevation: 387.29412 m                  Accuracy: 9.6 m                  Time: 23-07-2024 17:43                  Note: Karanjia, Sarabhadi section, Hathisalbeda forest, Jambani RF</p>	 <p>Latitude: 21°45'57"                  Longitude: 85°58'37"                  Elevation: 356.315 m                  Accuracy: 6.4 m                  Time: 23-07-2024 11:28                  Note: Karanjia, forest guard quarter, initial range office campus, Karanjia 2022-23</p>
<p style="text-align: center;"><b>Forester Quarter (2022-23), Kadadhi Section</b></p>	<p style="text-align: center;"><b>Forest Guard Quarter (2022-23), Karnjia</b></p>





## C2.4 Keonjhar Wildlife Division

### 6.2.1 (C2.4) Over all Physical and Financial Progress Analysis

CA, PCA	No of Sites	Physical Target (area in ha.)	Financial Target (Rs.in lakh)
<b>1<sup>st</sup> Year Plantation (2022-23)</b>			
AR (Block Plantation)@ 1000/ha	1	2.0	1.08
<b>2<sup>nd</sup> Year Maintenance (2021-22)</b>			
2 <sup>nd</sup> Year Maintenance (2021-22)	4	35.46	10.06
<b>3<sup>rd</sup> Year Maintenance (2020-21)</b>			
3 <sup>rd</sup> Year Maintenance (2020-21)	1	1.98	0.10
<b>5th Year Maintenance (2018-19)</b>			
5th Year Maintenance (2018-19)	2	80.89	1.67
<b>6th Year Maintenance (2017-18)</b>			
6th Year Maintenance (2017-18)	2	91.00	2.37
<b>7th Year Maintenance (2016-17)</b>			
7th Year Maintenance (2016-17)	1	523.70	5.12
<b>Total</b>	<b>11</b>	<b>735.03</b>	<b>20.4</b>
<b>NPV Plantation</b>			
<b>1<sup>st</sup> Year Plantation (2022-23)</b>			
ANR @ 200/ha	9	1200.00	233.95
AR @ 1600/ha	11	61.00	71.96
<b>Total NPV(A)</b>	<b>20</b>	<b>1261.00</b>	<b>305.91</b>
<b>2<sup>nd</sup> Year Maintenance (2021-22)</b>			
ANR @ 200/ha	7	2000.00	139.32
3 <sup>rd</sup> Year Maintenance ANR@200/ha (2020-21)	13	1500.00	93.65
4 <sup>th</sup> Year Maintenance ANR@200/ha (2019-20)	6	500.00	21.90
<b>Total NPV(B)</b>	<b>26</b>	<b>4000.00</b>	<b>254.87</b>
<b>Ama Jangala Yojana</b>			
2 <sup>nd</sup> Year ANR with Gap	15	700.00	56.406
2 <sup>nd</sup> Year ANR without Gap	14	800.00	41.844
<b>Total</b>	<b>29</b>	<b>1500.00</b>	<b>98.250</b>

### 6.2.2 (C2.4) Finding on activities under Compensatory Afforestation

Creation of AR (Block) Plantation (@1000/ha) over an area of 2.0 ha and 2<sup>nd</sup> year, 3rd year, 5th year, 6<sup>th</sup> year, 7<sup>th</sup> year maintenance of plantations has been taken up under the head CA, PCA. Average height of plants is excellent i.e. on average of 135cm to 467cm depending on the age. The survival percentage varies from 70% to 90%.

### 6.2.3 (C2.4) Finding on activities under Catchment Area Treatment (CAT) Plan

No activity was observed under the category in this division.

### 6.2.4 (C2.4) Finding on the activities under Integrated Wildlife Management

This is a division with activities of mining. Here wildlife management and protection of forest is important as the Hadgarh Sanctuary comes under this Division which relates to Similipal Tiger Reserve. There is frequent movement of animals, especially elephants in this area. A lot of activities are being carried out from the point of wildlife management. These include maintenance of boundary of protected area, fire line creation and maintenance, cattle vaccination/ awareness and animal health camp, invasive weed eradication in protected area, creation and maintenance of meadows, maintenance of roads/paths, construction of watch tower etc. Total amount of Rs. 330.18 lakh has been spent towards wildlife management activities.

### 6.2.5 (C2.4) Finding on the activities under NPV fund (A) and NPV fund (B)

**NPV (A):** ANR plantation of 1200 ha. has been taken up at 09 sites and an expense of Rs.233.95 lakh. Similarly, AR plantations of 61 ha. at 11 sites have also been taken up incurring a cost of Rs.71.96 lakh.

**NPV (B):** Amount of Rs.253.87 lakh has been spent towards maintenance of 3000 ha. of ANR plantation of different financial year i.e. 2019-20, 2020-21, 2021-22.

### 6.2.6 (C2.4) Update on e-green portal

Although the staff is aware of the need to fully update the Details of all activities under CAMPA APO 22-23, but only some information has been uploaded in the portal.

### 6.2.7 (C2.4) Other Observations

Besides above mentioned activities under infrastructure a lot of development activities are being carried out. Construction of Watch tower (01), Culverts (10), Causeway (19), LBCD(238), have been done with CAMPA funds. Documentation and record keeping at Range level are satisfactory.

### 6.2.8 (C2.4) Field Survey Images



<b>AR 15 ha. (2022-23) Plantation, Sapanaposi PRF</b>	<b>Staggered Trench 1.1 ha Daitari plantation (2020-21)</b>
 <small>Latitude: 21°13'7" Longitude: 85°54'24" Elevation: 166.6316 m Accuracy: 112.5 m Time: 26/07/2024 11:58 Note: Keonjhar,deogaon range,mamurikhia watch tower,2022-23</small>	 <small>Latitude: 21°32'43" Longitude: 85°38'31" Elevation: 154.1126 m Accuracy: 18.2 m Time: 26/07/2024 13:23 Note: Keonjhar,patna range,accuracy:2022-23</small>
<b>Watch tower(2022-23), Mamurikhia</b>	<b>Causeway (2022-23), Patna</b>
 <small>Latitude: 21°32'15" Longitude: 85°59'10" Elevation: 201.5416 m Accuracy: 8.6 m Time: 26/07/2024 13:31 Note: Keonjhar,patna range,accuracy:2022-23</small>	 <small>Latitude: 21°15'26" Longitude: 86°13'37" Elevation: 144.8112 m Accuracy: 8.6 m Time: 01/08/2024 13:08 Note: Keonjhar, Jaldighi, Sujunapala to dalki forest road 10 km starting point</small>
<b>Culvert (2022-23), Patna</b>	<b>Starting Point Forest Road 10 km Sujunapala to Dalki</b>

## C2.5 Rairangpur Division

### 6.2.1 (C2.5) Over all Physical and Financial Progress Analysis

CA / PCA	No of Sites	Physical (Area in ha.)	Physical Target (Rs.in lakh)
1 <sup>st</sup> Year Creation of AR(Block)Plantation@1600/ha	1	4.78	25.45
2 <sup>nd</sup> Year Maintenance of Plantation	1	2.00	0.62
P.O for Block plantation 2023-24	-	5.392	5.82
P.O for Bald Hill and other plantation 2023-24	-	2.696	2.97
<b>Total CA/PCA</b>		<b>14.868</b>	<b>34.86</b>
<b>NPV</b>			
<b>Current Year (2022-23)</b>			
ANR Vanya Silk @ 500/ha	11	200.00	67.59
ANR (Fodder & Fruit) @ 500/ha	03	113.00	38.19
ANR RET/Medicinal Spc @ 200/ha	05	155.00	30.15
ANR Misc. Spc @ 200/ha	17	1000.00	195.15
<b>Total ANR</b>	<b>36</b>	<b>1468.00</b>	<b>331.08</b>
AR Economic (Except Teak) @ 1600/ha	1	15.00	16.83
AR Other Indigenous Spc @ 1600/ha	4	43.00	48.25
AR Phasi @ 1600/ha	1	5.00	5.60
<b>Total AR</b>	<b>6</b>	<b>63.00</b>	<b>70.68</b>
<b>Total expected current year plantation</b>			<b>401.76</b>
<b>2<sup>nd</sup> Year Maintenance of (2021-22) Plantation</b>			
ANR @ 200/ha	17	900.00	61.52
AR @ 1600/ha	8	80.00	25.10

CA / PCA	No of Sites	Physical (Area in ha.)	Physical Target (Rs.in lakh)
Miyawaki @ 800/ha	1	1.00	6.08
Conservation of RET Spc (Without Gap)	1	50.00	2.21
<b>Total expected</b>	<b>27</b>	<b>1031.00</b>	<b>94.91</b>
<b>3rd Year Maintenance of (2020-21) Plantation</b>			
ANR @ 200 plants/ha	1	50.0	3.28
4th Year Maintenance of (2019-20) Plantation	1	50.0	2.05
<b>Total</b>		<b>1131.00</b>	<b>100.24</b>

### 6.2.2 (C2.5) Finding on activities under Compensatory Afforestation

Creation of AR plantation (@1600plants/ha.) over an area of 4.78 ha and 2<sup>nd</sup> year maintenance of plantation have been taken up under the head CA/PCA. Average height of plants is excellent i.e. on an average of 150 cm to 200 cm and survival percentage ranges between 85% - 95%.

### 6.2.3 (C2.5) Finding on activities under catchment Area Treatment (CAT) Plan

No activity under the category was observed in this division.

### 6.2.4 (C2.5) Finding on the activities under Integrated Wildlife Management

This Division's area is affected by the migratory wild elephants from the adjoining district as well from Jharkhand. This division adjoins Similipal Tiger Reserve and therefore lot of activities are being taken up for wildlife management. Activities like, maintenance of forest roads/path, maintenance of fire line, steps for cattle vaccination, animal health camp, construction of watch tower for monitoring like movement of wild animals, invasive weed eradication, creation, and maintenance of meadows etc are being taken up regularly. For this purpose, total amount of Rs. 134.47 lakh was allocated under CAMPA wildlife management has spent during financial year 2022-23. Regular training camps are being organised at Division level and Range level.

### 6.2.5 (C2.5) Finding on the activities under NPV fund (A) and NPV fund (B)

**NPV Fund (A):** Total ANR plantation of 1468.00 ha has been taken up at 36 sites and an amount of Rs 331.08 lakh have been spent on the same. Besides this total 63.00 ha. AR plantations have also been taken up in 06 sites and for which Rs. 70.68 lakh has been spent.

**NPV Fund(B):** Total amount of Rs 100.24 lakh has been spent towards 2<sup>nd</sup> year, 3<sup>rd</sup> year and 4<sup>th</sup> year maintenance of plantation (AR and ANR) during the financial year 2022-23.

### 6.2.6 (C2.5) Update on e-green portal

The IT staff is aware and the data has partially been uploaded. This staff has assured that this would be completed shortly.

### 6.2.7 (C2.5) Other Observations

Infrastructure development - 01 FR quarter, 01 watch tower, 238 number of LBCD have been constructed. Steps have been taken up for preventing forest fire on the entire forest area of the division. Initiative has been taken for creating awareness among the villagers at field level.

### 6.2.8 (C2.5) Field Survey Images



## C2.6 Similipal North (WL) Division

### 6.2.1 (C2.6) Over all Physical and Financial Progress Analysis

Similipal North Division is one of the two divisions of Similipal Tiger Reserve. As the entire area of this division is a protected area, only development and protective activities are carried out. The activities are detailed as follows:

SI No	Particulars	Expenditure (Rs. in lakh)
1	Monitoring change	20.68
2	Forest Protection	3.77
3	Infrastructure Development	528.30
4	Internet Charges for Fire Protection	0.87
	Wildlife Management	436.88

Under infrastructure development the following construction were done:

Particulars	Number/Length	Amount ( in lakh)
Range Officers Residence	01	24.521
Forester Quarter	05	101.945
Forest Guard Quarter	12	195.480
Seizure Yard	07	84.000
Construction & Maintenance of Forest Road	100 km	69.004
Culvert	03	4.590
Cause way	46	48.760
Creation & Maintenance of Fire line (under WLM)	968 km	30.492
Construction of Watch Tower (under WLM)	01	20.000
Maintenance of Forest Road (under WLM)	130 km	89.700
Creation & Maintenance of Meadow (under WLM)	150.15 ha	37.500
Construction of Anti-poaching Barrack (under WLM)	01	20.00
<b>Total:</b>		<b>725.992</b>

### **6.2.2 (C2.6) Finding on activities under Compensatory Afforestation**

No CA, PCA or any other plantation activities were taken up. As the entire division area is protected area only development and protective activities have been taken up. Protection, assessment and monitoring of RET species and their habitat was done outside the protected area.

### **6.2.3 (C2.6) Finding on activities under catchment Area Treatment (CAT) Plan**

No activity was observed under the category in this division.

### **6.2.4 (C2.6) Finding on the activities under Integrated Wildlife Management**

The following activities have been taken up under Integrated Wildlife Management - protection and anti-depredation activities, maintenance of boundary of Protected Area, rescue and release of wild animals and the protection activities, publicity and awareness programme including training and capacity building, cattle vaccination/ awareness and animal health camp, invasive weed eradication, habitat restoration post natural disaster in *ex-situ* and *in-situ* conservation areas, creation and maintenance of fire lines, construction of watch tower, maintenance of forest road, creation and maintenance of meadows, construction of anti-poaching barrack, installation of VHF base station and maintenance thereof including satellite tracking.

### **6.2.5 (C2.6) Finding on the activities under NPV fund (A) and NPV fund (B)**

No activity was observed under the categories in this division.

### **6.2.6 (C2.6) Update on e-green portal**

The IT staff is aware of the same, but no data related to activities of APO 2022-23 has been uploaded.

### **6.2.7 (C2.6) Other Observations**

All constructions under Infrastructure development are as per the approved plan. Documentation and record keeping at Range level are all up-to-date.

### 6.2.8 (C2.6) Field Survey Images



## C2.7 Similipal South Wildlife Division

### 6.2.1 (C2.7) Over all Physical and Financial Progress Analysis

Similipal South Division is one of the two divisions of Similipal Tiger Reserve. As the entire area of this division is a Protected Area, only development and protective activities are being carried out. Which are as follows:

#### CA, PCA

Under this head all the protection measures have been taken up specially for boundary protection and mobile patrolling. Under infrastructure Development following construction has been done

Type	Total No.	Amount (Rs. in lakh)
Range Office	01	31.65
Range Officers Residence	01	24.52

Forester Quarter	05	101.95
Forest Guard Quarter	07	114.03
Seizure Yard	02	24.00
<b>Total:</b>		<b>296.15</b>

Under CAMPA Wildlife Management 02 anti-poaching barracks have been constructed at cost of Rs. 20 lakh. Beside this, steps have been taken for the habitat management and wildlife protection of entire protected area of the division.

**6.2.2 (C2.7) Finding on activities under Compensatory Afforestation**

As the entire division area is a Protected Area, only development and protection activities have been taken up. Afforestation activities have not been undertaken.

**6.2.3 (C2.7) Finding on activities under catchment Area Treatment (CAT) Plan**

No activity was observed under the category in this division.

**6.2.4 (C2.7) Finding on the activities under Integrated Wildlife Management**

The following activities have been taken up under Integrated Wildlife Management during financial year 2022-23.

- (i) Protection and Anti depredation activities.
- (ii) Rescue and release of wild animals.
- (iii) Equipment for monitoring of wild animals.
- (iv) Protection of wildlife and its habitat.
- (v) Maintenance of forest roads.
- (vi) Invasive weed eradication in 17 locations in this division for creation of ideal pasture land for herbivores.
- (vii) Creation and maintenance of meadow.
- (viii) Maintenance of mobile veterinary unit service.
- (ix) Maintenance of boundary of protected area.
- (x) Creation and maintenance of file lines in the entire area of the Division.
- (xi) Procurement of firefighting equipment.

**6.2.5 (C2.7) Finding on the activities under NPV fund (A) and NPV fund (B)**

No activity was observed under the category in this division.

**6.2.6 (C2.7) Update on e-green portal**

The IT staff is aware of the same, but no data related to the work under review has been updated.

**6.2.7 (C2.7) Other Observations**

All constructions under Infrastructure Development are as per the approved plan. Documentation and record keeping at Range level are up to date.



6.2.8 (C2.7) Field Survey Images



## 6.2 (C3) Berhampur Circle

There are 7 forest divisions in the Berhampur circle – all are territorial divisions, viz., Balliguda, Berhampur, Boudh, Ghumusur North, Ghumusur South, Parlakhemundi, and Phulbani.

Subsequent 5 tables provide information for the Circle, followed by division-wise observations organized under 8 sub-sections. In Berhampur Circle total expenditure incurred is around Rs. 130.17 Cr. of which Rs. 122.36 Cr. has been spent by the forest wing, and around Rs. 7.8 Cr. has been spent by the wildlife wing of the forest department.

**Table C3.6.1.1: Financial Achievements in Berhampur Circle as per the APO (Rs. In lakh)**

Name of Division	Forestry Activities (General)	Wildlife Management	Total Expenditure Incurred
Balliguda	2,328.76	94.38	2,423.14
Berhampur	1,378.00	200.62	1,578.62
Boudh	1,813.76	206.74	2,020.50
Ghumusur North	1,366.94	106.57	1,473.51
Ghumusur South	1,632.50	86.96	1,719.46
Parlakhemundi	1,366.98	75.23	1,442.21
Phulbani	2,348.87	10.28	2,359.15
<b>Total</b>	<b>12,235.81</b>	<b>780.78</b>	<b>13,016.58</b>

**Table C3.6.1.2: Study Coverage in Berhampur Circle – Plantation CA/PCA/NPV (Creation & Maintenance) including Without Gap, SMC & SSO (Bamboo)**

Division	Area Covered (ha)	Evaluated Area in ha.	% of area evaluated	No. of Total Sites	Sample to be Covered	No. of Sites covered	% of Verification
Baliguda	17160.00	5710.00	33%	230	23	39	17%
Berhampur	4724.31	538.79	11%	77	8	29	38%
Boudh	9541.00	2213.00	23%	104	10	22	21%
Ghumusur (North)	7385.44	1000.90	14%	91	9	14	15%
Ghumusur (South)	9386.27	3905.00	42%	113	11	26	23%
Parlakhemundi	7732.00	820.00	11%	140	14	27	19%
Phulbani	21502.00	3760.00	17%	63	6	21	33%
<b>Total</b>	<b>77431.01</b>	<b>17947.69</b>	<b>23%</b>	<b>818</b>	<b>82</b>	<b>178</b>	<b>22%</b>

**Table C3.6.1.3: Study Coverage in Berhampur Circle – Infrastructure Development and Nursery Management**

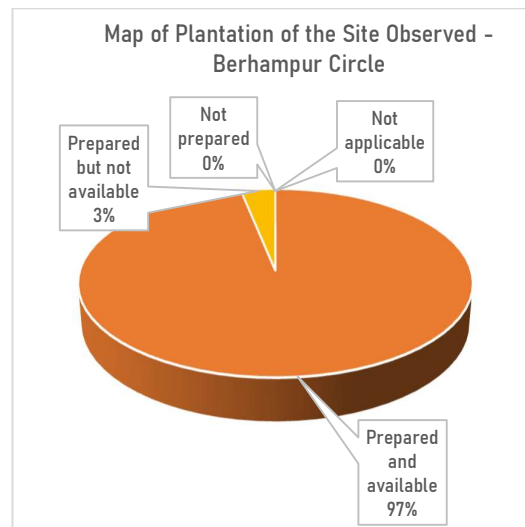
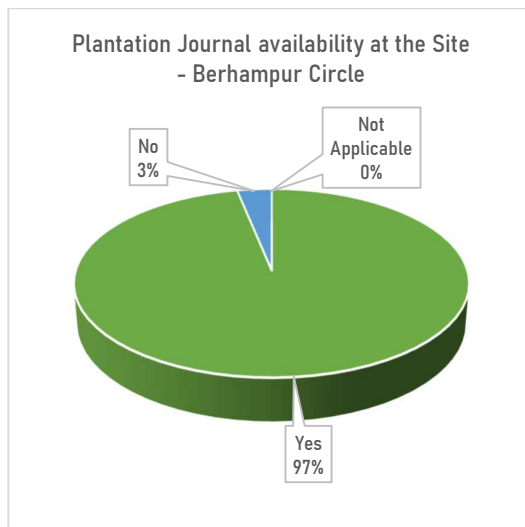
Division	No. of Total Sites	Sample to be Covered	No. of Sites covered	% of Verification
Baliguda	51	5	14	27%
Berhampur	26	3	3	12%
Boudh	10	1	4	40%
Ghumusur (North)	20	2	7	35%
Ghumusur (South)	29	3	6	21%
Parlakhemundi	17	2	13	76%
Phulbani	35	4	4	11%
<b>Total</b>	<b>188</b>	<b>19</b>	<b>51</b>	<b>27%</b>

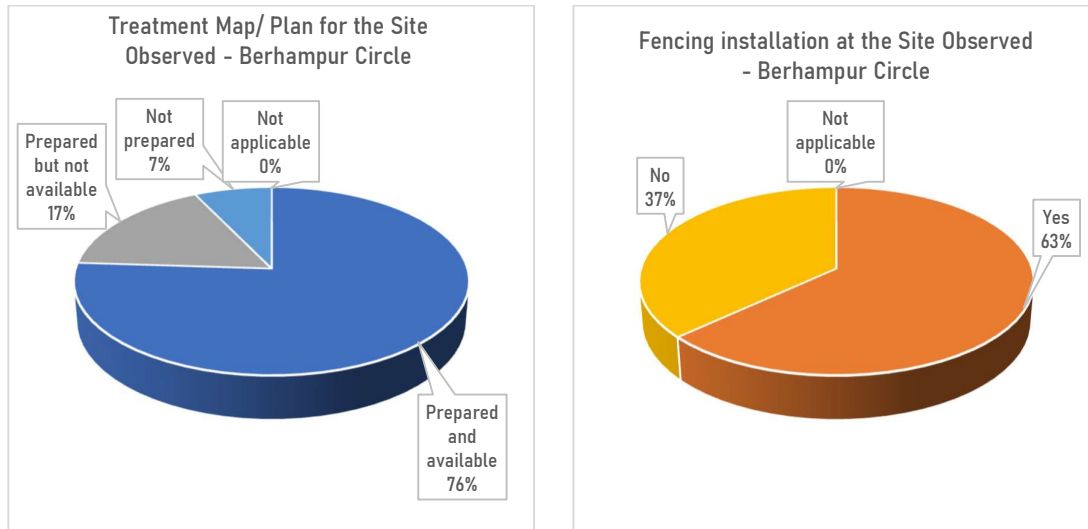
**Table C3.6.1.4: Financial Statement Berhampur Circle – Plantation CA/PCA/NPV (Creation & Maintenance) including Without Gap, SMC & SSO (Bamboo)**

Division	Amount sanctioned (Rs. In lakh)	Amount released (Rs. In lakh)	Expenditure Incurred (Rs. in lakh)	% of Achievement
Baliguda	488.24	488.24	488.24	100%
Berhampur	268.89	268.89	269.01	100%
Boudh	301.06	301.06	292.06	97%
Ghumusur (North)	137.13	137.13	137.13	100%
Ghumusur (South)	256.74	256.74	256.74	100%
Parlakhemundi	325.62	325.62	325.62	100%
Phulbani	304.00	303.77	303.77	100%
<b>Total</b>	<b>2081.67</b>	<b>2081.44</b>	<b>2072.57</b>	<b>100%</b>

**Table C3.6.1.5: Financial Statement Berhampur Circle – Infrastructure Development and Nursery Management**

Division	Amount sanctioned (Rs. In lakh)	Amount released (Rs. In lakh)	Expenditure Incurred (Rs. in lakh)	% of Achievement
Baliguda	113.41	113.41	113.41	100%
Berhampur	77.88	77.88	77.88	100%
Boudh	53.08	53.08	53.08	100%
Ghumusur (North)	42.56	42.56	42.56	100%
Ghumusur (South)	44.70	44.70	44.70	100%
Parlakhemundi	126.14	126.14	126.14	100%
Phulbani	56.59	56.59	56.59	100%
<b>Total</b>	<b>514.37</b>	<b>514.37</b>	<b>514.37</b>	<b>100%</b>





In subsequent subsections division-wise observations are presented. The data has been collected from field level and specific to the activities being observed. Thus, this may not add-up to the circle totals.

## 6.2 (C3.1) Balliguda Division

### 6.2.1 (C3.1) Over all Physical and financial Progress analysis

#### Physical Progress:

Category	1 <sup>st</sup> Year (2022-23)	2 <sup>nd</sup> Year (2021-22)	3 <sup>rd</sup> Year (2020-21)	4 <sup>th</sup> Year (2019-20)	Total
AR (BHP, Bamboo, Block)	95	190	80	20	385 ha. (49 Sites)
ANR with GAP	1875	1800	1580	820	6075 ha. (162 Sites)
SMC	21 Sites (800 ha.)				
SSO Bamboo	12 Coupes (6000 ha.)				
Infrastructure	16 Sites (5 FG Shed, 6 Road, 5 Causeway)				
AJY, ANR	With GAP (20 Sites - 1000 ha.)				3100 ha. (62 Sites)
	Without GAP (42 Sites - 2100 ha.)				
Nursery	(2023, January) Seedlings - 5,12,600 numbers				

Awareness Training - 05 Nos., Fire line - 125 km., Vehicle - 05, Squad - 70 Nos. etc. Fire protection work was done.

#### Financial Progress:

<b>Allotment</b> (Rs. In lakh)	23.15 Cr.	100%
<b>Expenditure</b> (Rs. In lakh)	22.54 Cr.	97.40%
<b>Surrender</b> (Rs. In lakh)	61.00	2.60%

**6.2.2 (C3.1) Finding on activities under Compensatory Afforestation**

No activity has been observed under the category in this division.

**6.2.3 (C3.1) Finding On activities under Catchment area Treatment (CAT) Plan**

No activity has been observed under the category in this division.

**6.2.4 (C3.1) Finding on the activities under Integrated Wildlife Plan**

Under wildlife plan - 5 squads, 3 vehicles and one watch tower constructed in Kotgada Wildlife Sanctuary.

**6.2.5 (C3.1) Finding on the activities under NPV fund (A) and NPV fund (B)**

**NPV (A):** Creation over 95 ha. AR & 1875 ha. ANR.

**NPV (B):** Maintenance of 290 ha. AR & 4200 ha. ANR.

**6.2.6 (C3.1) Update on e-green portal**

E- Green portal is updated with the physical and financial achievements and maps.

**6.2.7 (C3.1) Other Observations**

- (a) Watch tower at interior place done nicely.
- (b) Nurseries at Balliguda and Brahmanigaon are excellent.
- (c) Bald Hill Plantation of Daringbadi, Belghar, Kotgada and K.Nuagaon are good. Pure patch Planting of Jack Fruit and Amla is very nice for tribal economy.
- (d) Record Keeping over all goods. Daringbadi Range is the best in this activity.
- (e) DFO was well involved in all field works and special care taken for control of forest fires.

**6.2.8 (C3.1) Field Survey Images**

<p><b>Bald Hill Nursery</b></p>	<p><b>ANR 50 Ha.(2022-23)Plantation, Ulipadar, Brahmanigaon</b></p>
<p><b>Watch Tower (2022-23), Sikijoda, Kotgada</b></p>	<p><b>Forest Guard Quarter (2022-23), Jhinjiriguda</b></p>

## 6.2 (C3.2) Berhampur Division

### 6.2.1 (C3.2) Over all Physical and Financial Progress Analysis

#### Physical

	Activity	1 <sup>st</sup> Year	2 <sup>nd</sup> Year	3 <sup>rd</sup> Year	4 <sup>th</sup> Year	6 <sup>th</sup> Year	Total
<b>1</b>	<b>Creation</b>						
a.	NPV AR	65 ha.					
b.	ANR with GAP- @200 seedlings/ha	765 ha.					
<b>2</b>	<b>Maintenance</b>						
a.	AR			3.792 ha.			
b.	ANR			0.1357 ha.			
c.	Bald Hill Plantation					65	
d.	NPV		160				
e.	NPV ANR						2130
<b>3</b>	<b>SMC</b>	400 ha.					
<b>4</b>	<b>SSO Bamboo</b>	1135 ha.					

#### Financial:

<b>Allotment</b> (Rs in lakh)	14,56.14	
<b>Expenditure</b> (Rs in lakh)	13,77.99	(94.63%)
<b>Surrender</b> (Rs in lakh)	78.14	(5.37%)

### 6.2.2 (C3.2) Finding on activities under Compensatory Afforestation

No new creation; only AR 3.792 ha., ANR 1357 ha., 3<sup>rd</sup> year maintenance and 65 ha. Bald Hill 6<sup>th</sup> year maintenance has been done. The growth of AR is excellent and survival is 78%.

### 6.2.3 (C3.2) Finding on activities under Catchment Area Treatment (CAT) Plan

No activity has been observed under the category in this division.

### 6.2.4 (C3.2) Finding on the Activities Integrated Wild Life Management Plan

Olive Ridley Turtle protection work was done with boat and motor trawler (@ cost of over Rs. 12 lakh) and one watch tower constructed at Ramaguda under Bramhapur Range at a cost of Rs. 20 lakh.

Blackbuck conservation done with community support in Khallikote Range and the population has increased over 68 numbers in 2022-23.

### 6.2.5 (C3.2) Finding on the Activities under NPV Fund (A) and NPV Fund (B)

**NPV (A):** AR 65 hectare and ANR with GAP 765 hectare (+200) done nicely in Digapahandi, Samantiapalli and Khallikote Ranges.

**NPV (B):** Maintenance of plantation is very good in Bramhapur and Samantiapalli Ranges.

Activity	AR (ha.)	ANR (ha.)
2 <sup>nd</sup> Year maintenance	90	630
3 <sup>rd</sup> Year maintenance	40	1000
4 <sup>th</sup> Year maintenance	30	500
<b>Total</b>	<b>160</b>	<b>2130</b>

### 6.2.6 (C3.2) Update on e-green Portal

The E-green watch is updated with details of physical & financial achievements at Division level. No Range officers have done uploading of data.

### 6.2.7 (C3.2) General Observation

The construction of 08 buildings under infrastructure development through tenders; the buildings are of good quality. The impact of SMC works is visible through siltation and natural germination of plants in the ANR areas. The improvement in the moisture has promoted the germination and growth of medicinal species such as *Andrographis paniculata*, *Hemidesmus indicus* etc.

SSO Bamboo of Daba (*Bambusa arundinacea*) in Samantiapalli Range is very good. Overall record keeping of Samantiapalli and Khallikot Range is very good. Increased inspection by superior officers should be helpful.

### 6.2.8 (C3.2) Field Survey Images



## 6.2 (C3.3) Boudh Division

### 6.2.1 (C3.3) Overall Physical and Financial Progress Analysis

#### Physical

Activity	1 <sup>st</sup> Year (2022-23)	2 <sup>nd</sup> Year (2021-22)	3 <sup>rd</sup> Year (2020-21)	4 <sup>th</sup> Year (2019-20)	Total (ha.)
C.A. (ANR+800 plants)	230	-	-	-	230
AR (Indiginous+1000)	100	0	23	100	223
AR - (Phasi+1600)	50	18	0	0	68
AR	10	0	0	0	10

Activity	1 <sup>st</sup> Year (2022-23)	2 <sup>nd</sup> Year (2021-22)	3 <sup>rd</sup> Year (2020-21)	4 <sup>th</sup> Year (2019-20)	Total (ha.)
Bald Hill (+1600)					
ANR @500 Vanyasilk	100	0	0	0	100
ANR + 500 Fruit Fodder	200	0	0	0	200
ANR + 200 RET medicinal plants	60	0	0	0	60
ANR + 200 Other Miscellaneous plants	1650	800	1000	500	3950
Nursery (Jan/2023)	4,50,000 seedlings				
SMC	800 in 08 sites				
SSO Bamboo	04 coupes 1550 hectare				
Infrastructure	03 Seizure yard, 02 Forest Quarters, 01 RO Residences (Total- 06 buildings)				
Fireline	700 row km, 05 Vehicle, 05 squads				
Forest + Boundary	2950 pillar, 48 RF				

### Financial

<b>Allotment</b> (Rs in lakh)	2111.97	100 %
<b>Expenditure</b> (Rs in lakh)	2020.50	95.67 %
<b>Surrender</b> (Rs in lakh)	91.47	4.33 %

#### 6.2.2 (C3.3) Finding on activities under Compensatory Afforestation

CA- ANR with Gap (@ 800 seedlings/ha.) - 230 ha. (PO in 2022-23 for 2023-24)

#### 6.2.3 (C3.3) Finding on activities under Catchment Area Treatment (CAT) Plan

No activity has been observed under the category in this division.

#### 6.2.4 (C3.3) Finding on the Activities Integrated Wildlife Management Plan

Under wildlife only vehicle and squad maintained. No information in detail from Division.

#### 6.2.5 (C3.3) Finding on the Activities under NPV Fund (A) and NPV Fund (B)

**NPV (A)** - AR-160 ha., ANR-2010 ha.

**NPV (B)** - Maintenance - 2441 ha. ANR and 123 ha. AR.

#### 6.2.6 (C3.3) Update on e-green Portal

E Green watch portal is updated.

#### 6.2.7 (C3.3) Other Observations

- (a) In place of fencing the narrow trenches dug out around plantation were found to be more effective.
- (b) The M&E, contingency amount have been utilised for livelihood activities of VSS (like Vermi compost pit, mushroom cultivation etc.)
- (c) In Phasi species plantation the special care taken has resulted in the plants growing well due to alluvial soil of Mahanadi River.
- (d) SMC, LBCD structures well maintained and compact with siltation noticed.
- (e) Protection to the forests and wildlife with fire control is quite good.



### 6.2.8 (C3.3) Field Survey Images



### 6.2 (C3.4) Ghumusur North (Bhanjanagar) Division

#### 6.2.1 (C3.4) Over all Physical and Financial Progress Analysis

##### Physical

1<sup>st</sup> Year AR Creation - Nil

1<sup>st</sup> Year ANR Creation - 1065 hectare in 19 Sites

Activity	2 <sup>nd</sup> Year	3 <sup>rd</sup> Year	4 <sup>th</sup> Year	Total (ha.)
AR	90	30	-	120
ANR	500	700	500	1700
<b>Total: 170 Sites</b>				

##### Financial

<b>Allotment</b> (Rs. In lakh)	13,96.94	
<b>Expenditure</b> (Rs. In lakh)	13,66.93	97.85%
<b>Surrender</b> (Rs. In lakh)	30.01	2.15%

#### 6.2.2 (C3.4) Finding on activities under Compensatory Afforestation

Under CA/PCA/ 1.5 Sz/ CATP (2020-21) AR- 3<sup>rd</sup> Year maintenance has been done over 0.44 ha.

**6.2.3 (C3.4) Finding On activities under Catchment area treatment (CAT) Plan**

No activity has been observed under the category in this division.

**6.2.4 (C3.4) Finding on the activities under Integrated Wildlife Plan**

- (a) Protection vehicle Gajasathi, Elephant corridor and conflict management & squads maintained.
- (b) 05 Veterinary camps have been organised.

**6.2.5 (C3.4) Finding on the activities under NPV fund (A) and NPV fund (B)**

**NPV (A):** As mentioned above ANR- 1065 ha. raised (created) during 2022-2023.

**NPV (B):** Maintenance over AR- 120, ANR- 1700 ha. Aside above the following Physical achievement are also on record:

- (a) SMC- 14 Sites- 700 ha.
- (b) SSO Bamboo- 17- 3800 ha.
- (c) Fire line- 65- 25200 m.
- (d) Training to staff- 06 Nos.
- (e) Protection Vehicle- 05 Nos.
- (f) Infrastructure- 06 Buildings, 40 km. road maintenance, 23 Causeway, 05 Culvert
- (g) Nursery- Jan 2023- 4.20 lakh saplings raised.

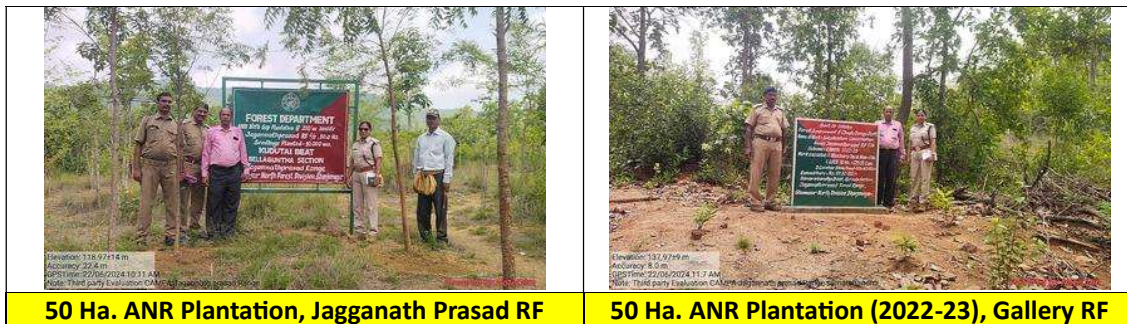
**6.2.6 (C3.4) Update on e-green portal**

E- green watch portal updated with physical, financial data and Maps.

**6.2.7 (C3.4) Other Observations**

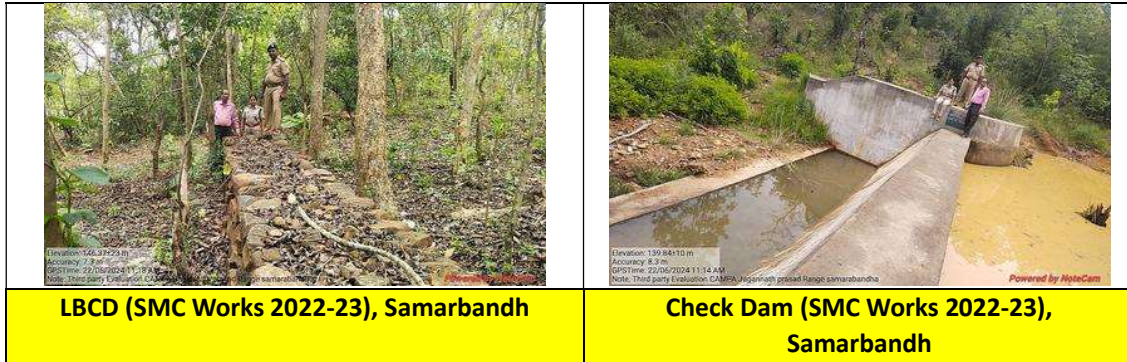
- (a) It is seen that in ANR GAP filling plantations raised in GAPS in block model of 2.5 x 2.5 m. spacing.
- (b) Success rate in calcareous soil: In Gallery & Jagannath Prasad Ranges the plantations have over 85 to 90% success in 2<sup>nd</sup> & 3<sup>rd</sup> year.
- (c) Elephant movement is frequent and the vehicles & squads are well utilised for their monitoring and the management of human animal conflict.
- (d) SSO Bamboo in Tarasingi Range is good.
- (e) SMC works in Jagannath Prasad Range is effective. Natural Sal, Sinsa, Rohini, Piasal & Kasi were noticed to have germinated in staggered trenches.
- (f) Wildlife using water holes in WHS & wire mesh structures.
- (g) The permanent Nursery of Mujagada Range at Lalsing is very good.

**6.2.8 (C3.4) Field Survey Images**



**50 Ha. ANR Plantation, Jagannath Prasad RF**

**50 Ha. ANR Plantation (2022-23), Gallery RF**



## 6.2 (C3.5) Ghumusur South (Bhanjanagar) Division

### 6.2.1 (C3.5) Overall Physical & Financial Progress Analysis

#### Physical

Activity	Creation 2022-23	Maintenance 1 <sup>st</sup> Year	Maintenance 2 <sup>nd</sup> Year	Maintenance 3 <sup>rd</sup> Year	Total (ha.)
AR	30	49	20	100	199
ANR	1660	500	905	570	3635
Total AR- 17 Sites & ANR- 79 Sites					

#### Other Achievements

SMC	SSO Bamboo	Infrastructure	Nursery (18 month seedlings)
13 Sites- 850 ha.	12 Coupes- 4700 ha.	18 Sites- 7 Building, 8 Compound walls, 3 Causeway	15 lakh

#### Financial

Forest Sector (Rs. In lakh)	14,96.28
Wildlife Sector (Rs. In lakh)	40,64.38
<b>Total (Rs. In lakh)</b>	<b>1536.92</b>

### 6.2.2 (C3.5) Finding on activities under compensatory Afforestation

No activity has been observed under the category in this division.

### 6.2.3 (C3.5) Finding on activities under Catchment Area Treatment (CAT) Plan

No activity has been observed under the category in this division.

### 6.2.4 (C3.5) Finding on the Activities Integrated Wildlife Management Plan

The following activities have been undertaken:

- Veterinary Camp - 08
- Gajasathi - 10 VSS
- One Poaching Barrack - @ Rs.17 lakh.

### 6.2.5 (C3.5) Finding on the Activities under NPV Fund (A) and NPV Fund (B)

**NPV(A):** New creation

AR (ha.)	ANR (ha.)	Total (ha.)
30	1660	1690

**NPV- (B):** Maintenance

AR (ha.)	ANR (ha.)	Total (ha.)
169	1975	2144

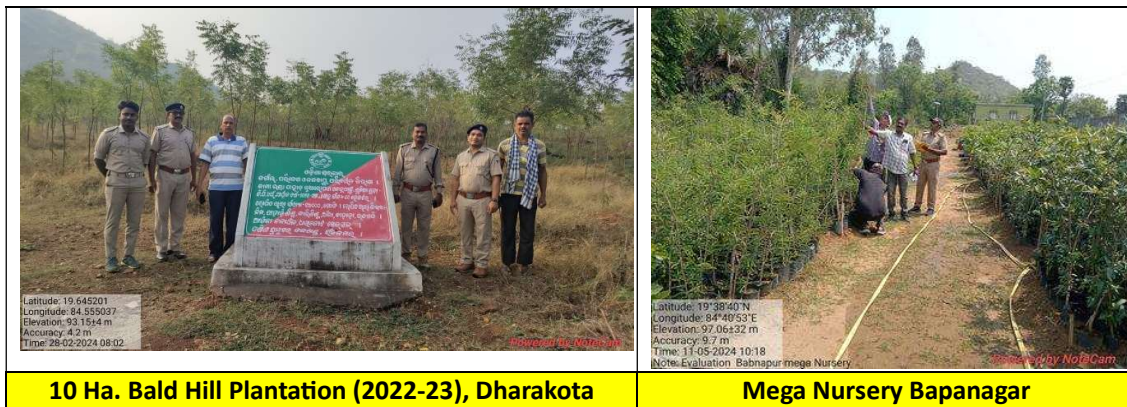
### 6.2.6 (C3.5) Update on e-green Portal

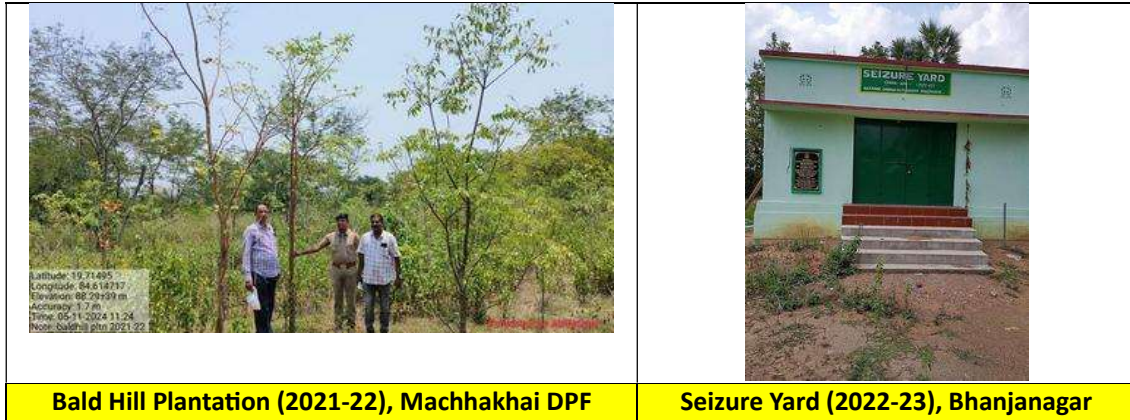
All Physical & Financial details with site wise maps uploaded in the portal.

### 6.2.7 (C3.5) Other Observations

1. Very good AR (Bald Hill) plantation have been raised.
2. Under ANR (RET) activities species conserved (Phanaphana- (*Oroxylum indicum*) Cycas, Kataka (*Strychnos potatorum*) Asoca (*Saraca asoca*) & many medicinal species.
3. Blackbuck community conservation at Bhetnoi (Aska Range) is excellent.
4. SMC works promote Sal regeneration and water hole to Elephant, Sambar etc. are good in Buguda Range.
5. Nursery of Badapada, Aska is nice. Visit of higher officer to sites could help in improvement in field works. and
6. Record keeping can be improved.

### 6.2.8 (C3.5) Field Survey Images





## 6.2 (C3.6) Parlakhemundi Division

### 6.2.1 (C3.6) Overall Physical and Financial Progress Analysis

#### Physical

##### a. Forest sector

Activities	1 <sup>st</sup> Year (2022-23)	2 <sup>nd</sup> Year (2021-22)	3 <sup>rd</sup> Year (2020-21)	4 <sup>th</sup> Year (2019-20)	Total (ha.)
AR (Bamboo, Bald Hill)	30	295	180	70	575
ANR with GAP+200	750	975	1200	800	3725
ANR (RET) without GAP	-	-	48	-	48
AJY ANR+ GAP	-	500	-	-	500 (10 VSS)
AJY ANR without GAP	-	500	1000	1000	2500 (50 VSS)
Infrastructure	13 Building, 06 road maintenance (23 km), 01 causeway				
SMC in RF areas	630 ha. at 12 sites				
18 months seedlings	Jan 2023 stock - 05 lakh seedlings				

##### b. Wildlife wing

- (a) Lakhari Sanctuary Boundary Maintenance – 30 km.
- (b) Deer Park at Taptapani upkeep - 4,5,6/2022
- (c) Wages of protection squads - 02 months
- (d) Engagement of vehicle + POL

#### Financial

Category	Allotment (Rs.in lakh)	Expenditure (Rs.in lakh)	Surrender (Rs.in lakh)
Forest Wing	1129.51	1129.51	Nil
Wildlife	23.01	23.01	Nil
<b>Total</b>	<b>1152.52</b>	<b>1152.52</b>	<b>Nil</b>

**6.2.2 (C3.6) Finding on activities under Compensatory Afforestation**

No activity has been observed under the category in this division.

**6.2.3 (C3.6) Finding on activities under Catchment Area Treatment (CAT) Plan**

No activity has been observed under the category in this division.

**6.2.4 (C3.6) Finding on the activities under integrated Wildlife Management**

Wildlife Management work was done in Lakhari Sanctuary & Taptapani Zoo (Deer park) with activities such as maintenance of vehicles, POL of vehicle and squad payments.

**6.2.5 (C3.6) Finding on activities under NPV Fund (A) and NPV Fund (B)**

**NPV (A)** Creation of AR- 30 ha.; ANR- 750 ha.

**NPV (B)** Maintenance AR- 545 ha.; ANR- 6023 ha.

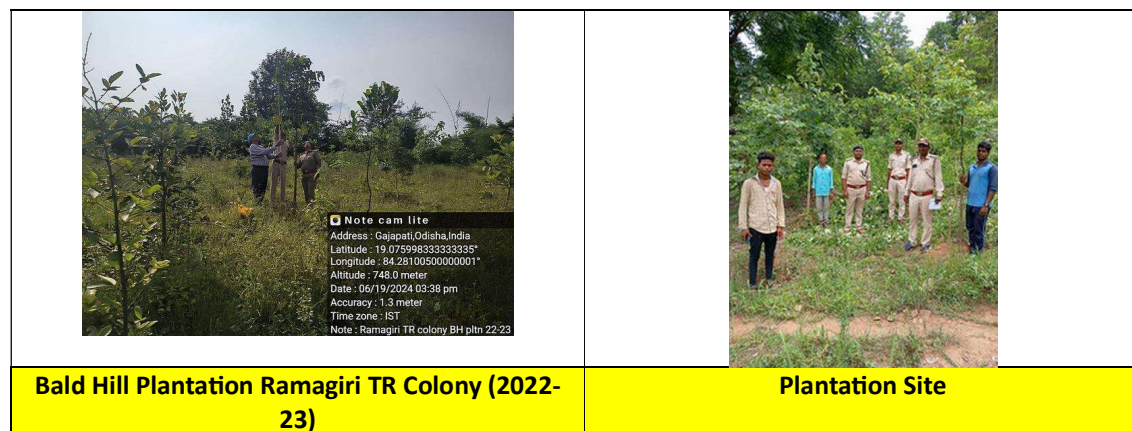
**6.2.6 (C3.6) Update in e-green portal**

The portal is updated with all physical, financial progress and maps.

**6.2.7 (C3.6) Other Observations**

1. AR - Bald Hill plantations of Ramagiri and R.Udayagiri Range are good.
2. ANR - Good work done in Mohana Range in Chandragiri.
3. The WH Sand building works taken up at Taptapani Deer Park is good.
4. Watch Tower - In Mahendra Range, the watch tower near RET plot, with protection to Red Sander in Chandragiri, Mohana Range are very good with clump formations.
5. Red sander and Piasal is good.
6. SSO of Bamboo done in Chandragiri and Mohana Ranges are good.

**6.2.8 (C3.6) Field Survey Images**





## 6.2 (C3.7) Phulbani Division

### 6.2.1 (C3.7) Over all physical and financial progress analysis

#### Physical

Activity	1 <sup>st</sup> Year (2022-23)	2 <sup>nd</sup> Year (2021-22)	3 <sup>rd</sup> Year (2020-21)	4 <sup>th</sup> Year (2019-20)	Total (ha.)
AR (ha.) (BHP, Bamboo, Block)	45	65	30	70	210
ANR (ha.) with GAP+200	1500	1500	2500	800	6300
RET (ANR)	-	-	65	-	
AJY (ANR)	-	1600	-	-	
SMC	08 Sites- 600 ha.				
SSO Bamboo	06 Coupes- 76926 clumps (Salia Bamboo)				
Infrastructure	Watchtower- 02, Culvert- 05, Road repair- 25 km, Causeway- 02				
Fire Protection	Vehicle-05, Squad- 20 numbers, Fire watch tower- 15				

#### Financial

Category	Allotment (Rs in Lakh)	Expenditure (Rs in Lakh)	Surrender (Rs in Lakh)
Forest Wing	1810.82	1751.57	59.25
Wildlife	419.41	419.41	Nil
<b>Total</b>	<b>2230.23</b>	<b>2170.98</b>	<b>59.25</b>
Expenditure- 97.34%			

### 6.2.2 (C3.7) Finding on activities under CA

No activity has been observed under the category in this division.

### 6.2.3 (C3.7) Finding on activities under Catchment Area Treatment (CAT) Plan

No activity has been observed under the category in this division.

**6.2.4 (C3.7) Finding on the activities under integrated Wildlife Management**

05 vehicles and 05 protection squad engaged.

**6.2.5 (C3.7) Finding on activities under NPV Fund (A) and NPV Fund (B)**

**NPV (A)** - Creation of AR- 45 ha. & ANR- 1500 ha.

**NPV (B)** - Maintenance of 165 ha. AR 4800 ANR+1600 ANR (AJY). Total- 6400 ha. ANR.

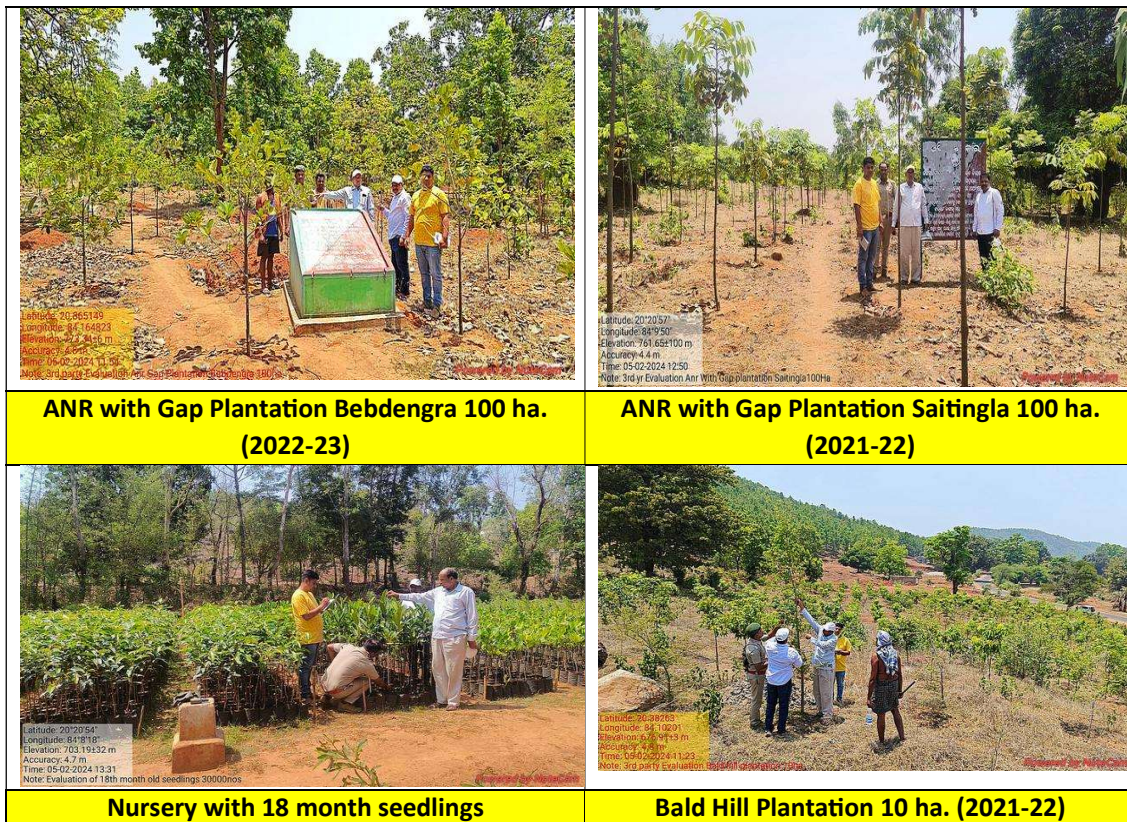
**6.2.6 (C3.7) Update in e-green portal**

E-green watch portal posted at Division office.

**6.2.7 (C3.7) Other Observations**

- (a) Coppice of Sal is vigorous, luxurious, and better grown with acidic soil over the Division.
- (b) The conservation of RET species with supplementing plantation of Sandal (*Santalum album*) is excellent in Phiringia Range.
- (c) All ANR are well maintained.
- (d) Involving VSS community for Forest and Wildlife Conservation under ANR (AJY) is very good.
- (e) SMC works and top to bottom nala plugging by LBCD is nice at many places, particularly at Raikia Range.
- (f) The Bald Hill plantation are overall good, particularly in Phiringia & Tikabali Range are more appreciated.
- (g) In future ANR without GAP for Phulbani and Balliguda Division with RET & medicinal sample plots inside ANR area will be more fruitful. SMC should be done inside these areas.

**6.2.8 (C3.7) Field Survey Images**





## 6.2 (C4) Bhawanipatna Circle

The are 6 forest divisions in Bhawanipatna Circle of which 5 are territorial divisions, and one is wildlife division, viz., Bolangir, Kalahandi North, Kalahandi South, Khariar, Subarnapur, and Sunabeda WL.

Subsequent 5 tables provide information for the Circle, followed by division-wise observations organized under 8 sub-sections. In Bhawanipatna Circle total expenditure incurred is around Rs. 148.83 Cr. of which Rs. 142 Cr. has been spent by the forest wing, and around Rs. 6.78 Cr. has been spent by the wildlife wing of the forest department.

**Table C4.6.1.1: Financial Achievements in Bhawanipatna Circle as per the APO (Rs. In lakh)**

Name of Division	Forestry Activities (General)	Wildlife Management	Total Expenditure Incurred
Bolangir	3,489.02	144.98	3,634.00
Kalahandi North	2,611.94	81.09	2,693.03
Kalahandi South	3,647.57	39.73	3,687.29
Khariar	1,978.90	47.76	2,026.66
Subarnapur	1,749.29	153.93	1,903.22
Sunabeda WL	728.70	210.52	939.22
<b>Total</b>	<b>14,205.42</b>	<b>678.01</b>	<b>14,883.43</b>

**Table C4.6.1.2: Study Coverage in Bhawanipatna Circle – Plantation CA/PCA/NPV (Creation & Maintenance) including Without Gap, SMC & SSO (Bamboo)**

Division	Area Covered (ha)	Evaluated Area in ha.	% of area evaluated	No. of Total Sites	Sample to be Covered	No. of Sites covered	% of Verification
Kalahandi( N)	22,407.36	1,515.00	7%	220	22	28	13%
Kalahandi (S)	22,531.04	1,674.63	7%	263	26	26	10%
Subarnapur	6,575.00	1,085.00	17%	121	12	19	16%
Bolangir	18,540.54	3,361.54	18%	289	29	38	13%
Khariar	7,132.95	1,305.00	18%	182	18	26	14%
Sunabeda WL	3,300.00	337.00	10%	95	10	10	11%
<b>Total</b>	<b>80,486.89</b>	<b>9,278.17</b>	<b>12%</b>	<b>1170</b>	<b>117</b>	<b>147</b>	<b>13%</b>

**Table C4.6.1.3: Study Coverage in Bhawanipatna Circle – Infrastructure Development and Nursery Management**

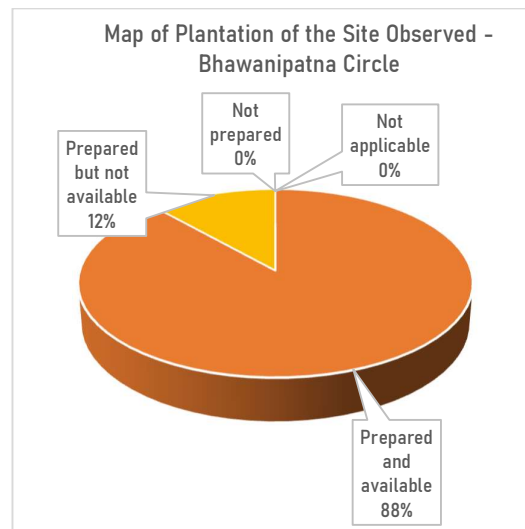
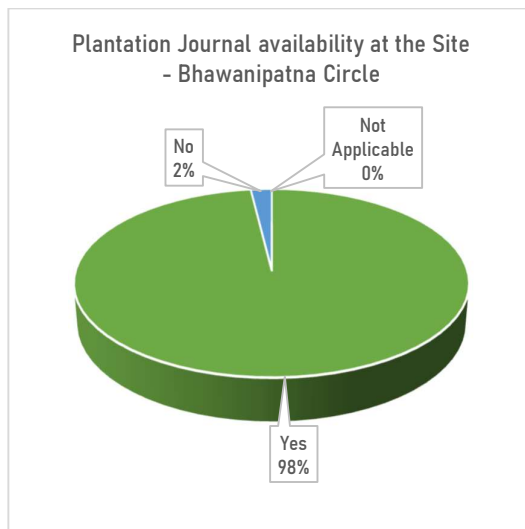
Division	No. of Total Sites	Sample to be Covered	No. of Sites covered	% of Verification
Kalahandi (N)	46	5	5	11%
Kalahandi (S)	48	5	7	15%
Subarnapur	16	2	3	19%
Bolangir	48	5	4	8%
Khariar	78	8	8	10%
Sunabeda WL	58	6	7	12%
<b>Total</b>	<b>294</b>	<b>29</b>	<b>34</b>	<b>12%</b>

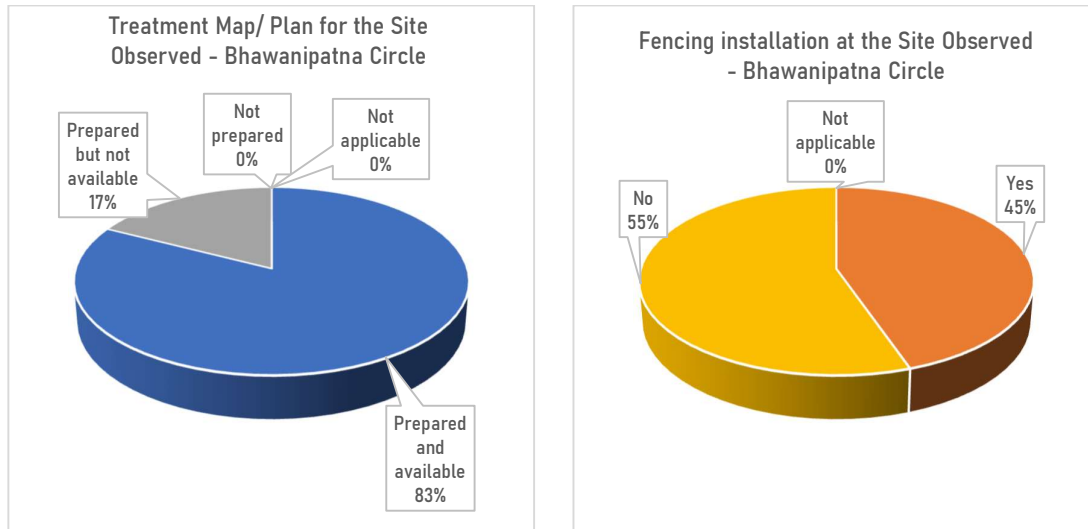
**Table C4.6.1.4: Financial Statement Bhawanipatna Circle – Plantation CA/PCA/NPV (Creation & Maintenance) including Without Gap, SMC & SSO (Bamboo)**

Division	Amount sanctioned (Rs. In lakh)	Amount released (Rs. In lakh)	Expenditure Incurred (Rs. in lakh)	% Achievement
Kalahandi( N)	332.04	332.04	332.04	100%
Kalahandi (S)	340.15	340.15	340.15	100%
Subarnapur	167.90	167.90	167.90	100%
Bolangir	326.18	326.18	326.18	100%
Khariar	275.33	270.43	270.73	98%
Sunabeda WL	111.64	111.64	111.64	100%
<b>Total</b>	<b>1553.24</b>	<b>1548.34</b>	<b>1548.64</b>	<b>100%</b>

**Table C4.6.1.5: Financial Statement Bhawanipatna Circle – Infrastructure Development and Nursery Management**

Division	Amount sanctioned (Rs. In lakh)	Amount released (Rs. In lakh)	Expenditure Incurred (Rs. in lakh)	% Achievement
Kalahandi (N)	46.11	46.11	46.11	100%
Kalahandi (S)	145.94	145.94	145.94	100%
Subarnapur	56.92	56.92	54.25	95%
Bolangir	57.19	57.19	57.19	100%
Khariar	30.00	30.00	30.00	100%
Sunabeda WL	12.41	12.41	12.41	100%
<b>Total</b>	<b>348.56</b>	<b>348.56</b>	<b>345.89</b>	<b>99%</b>





In subsequent subsections division-wise observations are presented. The data has been collected from field level and specific to the activities being observed. Thus, this may not add-up to the circle totals.

## 6.2 (C4.1) Bolangir Division

### 6.2.1 (C4.1) Overall Physical and Financial Progress Analysis

Sector	Allocation (Rs. In lakh)	Expenditure (Rs. In lakh)	Expenditure %
Forest	3636.44	3489.02	96
Wildlife	166.47	144.98	87
<b>Total</b>	<b>3802.91</b>	<b>3634.00</b>	<b>91.5</b>

The unspent amounts have been refunded to the State CAMPA.

The physical achievement of new plantation, maintenance and SMC activities fully completed including SSO Bamboo, Ama Jangala Yojana (AJY). The department has executed some soil and moisture conservation activities like RCC check dam, WLBCD, LBCD and contour trenches in the plantation area as well as in assigned the forest area. Five sites out of 8 sites were visited and it was observed that SMC measures undertaken were effective and functional to control runoff and thus preventing loss of soil by surface soil erosion, reduce soil compaction, improve soil fertility, conserve, or drain water and harvest water.

### 6.2.2 (C4.1) Finding on activities under Compensatory Afforestation

Under Compensatory Afforestation (CA) or Penal Compensatory Afforestation (PCA), 3<sup>rd</sup> year maintenance of 888 ha. of plantations was done. On average, the condition of the plantations is good.

### 6.2.3 (C4.1) Finding on activities under Catchment Area Treatment (CAT) Plan

No activity has been observed under the category in this division.

### 6.2.4 (C4.1) Finding on the Activities Integrated Wildlife Management Plan

Under wild life management the major works are the creation of water bodies and other activities like wildlife protection squad, tracker engagement, supply of anti-depredation equipment to primary

response team of VSS under Gaja Sathi Scheme, publicity and awareness programme, training to primary response team of VSS (Gaja Sathi), transportation and fixing charges of elephant depredation, cost of vehicle/POL and maintenance, solar fencing its maintenance, engagement of fire watchers, habit improvement etc.

**6.2.5 (C4.1) Finding on the Activities under NPV Fund (A) and NPV Fund (B)**

Regarding NPV new creation and maintenance works done. Under AR Plantation of 250 ha. area developed through Bald Hill plantation and other indigenous miscellaneous species plantation.

Around, 2500 ha area developed through ANR plantation like medicinal species & other indigenous miscellaneous species plantation. Alongside, 2<sup>nd</sup> year maintenance covered 3060 ha area, 3<sup>rd</sup> year maintenance covered 2324 ha area and 600 ha area was covered in 4<sup>th</sup> year maintenance. The health of the plants on an average is good. Casualty replacement has also been done.

The local villagers are very much aware that many of their day-to-day requirements are met from the forest produce. So, they contribute towards the protection efforts and hence the protection is very good in most of the verified site.

In 20 nurseries the division raised about 31.88 lakh seedlings. For raising and maintenance of these seedling expenditure of Rs 646.90 lakh was incurred. Most of the 18-month seedlings have been planted.

**6.2.6 (C4.1) Update on e-green Portal**

It was observed that all activities under CAMPA during 2022-23 have been uploaded in the portal.

**6.2.7 (C4.1) Other Observations**

Under infrastructure development the construction of range office, forester quarter, forest guard quarter, causeway and maintenance of forest road has been done. The constructions are of good quality and are being utilized properly.

**6.2.8 (C4.1) Field Survey Images**





## 6.2 (C4.2) Kalahandi North Division

### 6.2.1 (C4.2) Over all Physical and Financial Progress Analysis

Sector	Allocation (Rs. In lakh)	Expenditure (Rs. In lakh)	Expenditure %
Forest	2683.53	2611.94	97
Wildlife	81.09	81.09	100
<b>Total</b>	<b>2764.62</b>	<b>2693.03</b>	<b>97.41</b>

For forest protection and fire protection/ control operation Rs. 213.46 lakh expenditure has been incurred. The physical targets of new plantation, maintenance and SMC activities were successfully completed against the target including those in the Ama Jangala Yojana (AJY). The department has executed some soil and moisture conservation activities like RCC check dam, loose boulders check dam (LBCD), staggered trenches, wire mesh LBCD were prepared in the plantation area as well as assigned the forest area.

Around, 10 sites out of 26 sites were visited and it was observed that soil and moisture conservation measures undertaken were found effective and functional.

However, in case of regeneration of degraded bamboo forests (SSO Bamboo) 5014 ha area completed against the target of 5300 ha. That is, an achievement of 95%.

**6.2.2 (C4.2) Finding on activities under Compensatory Afforestation**

Under Compensatory Afforestation (CA) or Penal Compensatory Afforestation (PCA) there was no new plantation taken only 2<sup>nd</sup> year maintenance of 337.36 ha plantation was done. On an average, the health of the plant is good. The replacement of casualty has also been done.

**6.2.3 (C4.2) Finding on activities under catchment Area Treatment (CAT) Plan**

No activity has been observed under the category in this division.

**6.2.4 (C4.2) Finding on the activities under Integrated Wildlife Management**

Under this component no major assets have been created. Mainly wildlife protection squad, tracker engagement, supply of anti-depredation equipment on use basis to primary response team of VSS under Gaja Sathi Scheme, publicity, and awareness programme-training to primary response team of VSS (Gaja Sathi), Transportation and fixing charges of elephant depredation, cost of vehicle/POL /maintenance, solar fencing and its maintenance, engagement of fire watchers, habit improvement etc. has been done.

**6.2.5 (C4.2) Finding on the activities under NPV fund (A) and NPV fund (B)**

In NPV new creation and maintenance works done. Under AR plantation 80 ha. has been developed through Bald hill plantation & Other Indigenous Misc. Species, 1900 ha area developed through ANR plantation like medicinal species & Other Indigenous Misc. Species plantation. Also, 2<sup>nd</sup> year maintenance covered 2710 ha., 3<sup>rd</sup> year maintenance covered 2821 ha. and 845 ha. was covered in 4<sup>th</sup> year maintenance.

The protection efforts of the villagers are very good in most of the verified site. The villagers are very much aware that their day-by-day requirements are met from the forest produces.

Nursery management: In 40 nurseries about 15.90 lakh seedlings have been raised at a cost of Rs. 450.74 lakh. Most of the 18-month seedling have been sent to the field for being planted.

**6.2.6 (C4.2) Update on e-green portal**

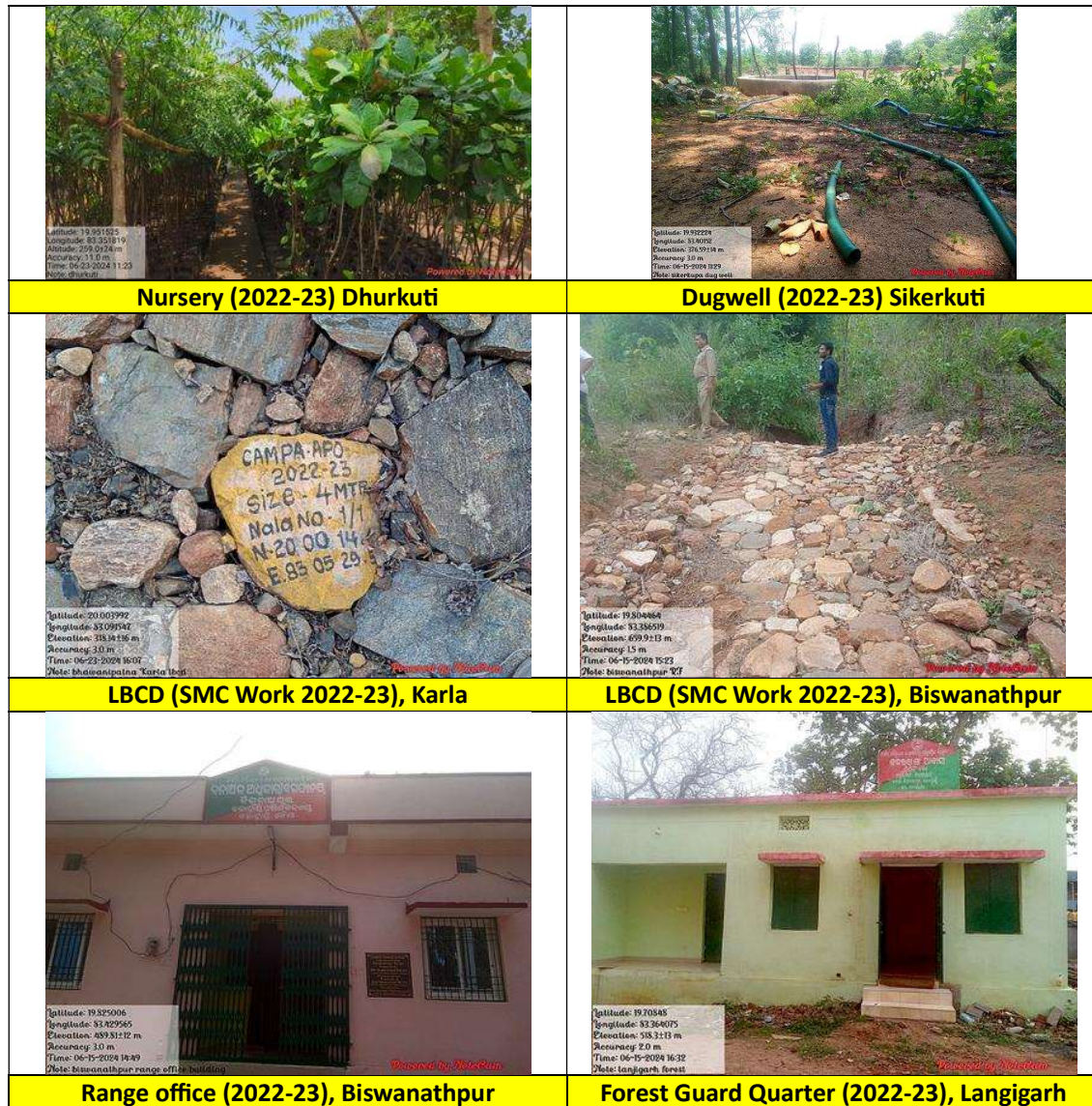
Details of all activities under CAMPA APO 22-23 have been uploaded in the portal.

**6.2.7 (C4.2) Other Observations**

Infrastructure development: The constructed forester quarter, forest guard quarter, culverts, causeways, and maintenance of forest road are good and utilized properly.

**6.2.8 (C4.2) Field Survey Images**





## 6.2 (C4.3) Kalahandi South Division

### 6.2.1 (C4.3) Over all Physical and Financial Progress Analysis

Sector	Allocation (Rs. In lakh)	Expenditure (Rs. In lakh)	Expenditure %
Forest	3647.57	3647.57	100
Wildlife	44.78	39.73	88.72
<b>Total</b>	<b>3692.35</b>	<b>3687.30</b>	<b>99.80</b>

For forest protection and fire protection/control operation expenditure of Rs. 253.39 lakh was incurred. The physical targets of new plantation, maintenance and SMC activities were successfully completed against the target including those in the Ama Jangala Yojana (AJY). For Catchment Area Treatment (CAT) Plan the department has executed some soil and moisture conservation activities like

loose boulders check dam (LBCD), staggered trenches were prepared in the plantation area as well as assigned the forest area. Eight out of 53 sites were visited and it was seen that soil and moisture conservation measures undertaken were effective and functional.

However, in case of regeneration of degraded bamboo forests (SSO Bamboo) 500 ha area treatment had been completed against target of 730.25 ha. Thus 68% of the target was achieved.

#### **6.2.2 (C4.3) Finding on activities under Compensatory Afforestation**

Under Compensatory Afforestation (CA) or Penal Compensatory Afforestation (PCA) there was P.O of 699 ha., creation of new plantation 1733 ha., 2<sup>nd</sup> year maintenance of 367 ha., 3<sup>rd</sup> year maintenance of 946 ha., 4<sup>th</sup> year maintenance of 51ha. and CA others 1160 ha. plantation.

#### **6.2.3 (C4.3) Finding on activities under Catchment Area Treatment (CAT) Plan**

No activity has been observed under the category in this division.

#### **6.2.4 (C4.3) Finding on the activities under Integrated Wildlife Management**

Under wild life management no major assets have been created. Funds have also been used for wildlife protection squad, tracker engagement, supply of anti-depredation equipment on use basis to primary response team of VSS under Gaja Sathi Scheme, publicity and awareness programme, training to primary response team of VSS (Gaja Sathi), transportation and fixing charges of elephant depredation, cost of vehicle/POL /maintenance, solar fencing its maintenance, engagement of fire watchers, habit improvement etc.

#### **6.2.5 (C4.3) Finding on the activities under NPV fund (A) and NPV fund (B)**

Under NPV new creation and maintenance works have been done. Under AR Plantation 120 ha. has been developed through Bald hill plantation and Other Indigenous Misc. Species. 2025 ha. area developed through ANR plantation like medicinal species & Other Indigenous Misc. Species plantation.

2<sup>nd</sup> year maintenance covered 1870 ha., 3<sup>rd</sup> year maintenance covered 3025 ha. area and 805 ha. area covered in 4<sup>th</sup> year maintenance. The condition of the plantations on average is good. Casualty replacement has also been done.

About 16 lakh seedlings have been raised in 26 nurseries. For raising and maintenance of seedling Rs 343.57 lakh was spent including AJY. At present most of the 18-month seedling have been planted out in the field.

#### **6.2.6 (C4.3) Update on e-green portal**

Details of all activities under CAMPA APO 22-23 have been uploaded in the portal.

#### **6.2.7 (C4.3) Other Observations**

Infrastructure development: The constructed forester quarter, forest guard quarter, culverts, causeways, and maintenance of forest road are good and utilized properly.



### 6.2.8 (C4.3) Field Survey Images



### 6.2 (C4.4) Khariar Division

#### 6.2.1 (C4.4) Over all Physical and Financial Progress Analysis

No.	Sector	Allocation (Rs. In lakh)	Expenditure (Rs. In lakh)	Percentage
1	Forestry	1978.90	1978.90	100

2	Wildlife	47.76	45.85	96
	<b>Total</b>	<b>2026.66</b>	<b>2024.75</b>	<b>99</b>

On forest protection and fire protection/ control operation Rs. 49.67 lakh expenditure has been incurred. All physical targets of new plantation, maintenance, SSO Bamboo and SMC activities have been fully achieved including Ama Jangala Yojana (AJY). The department has executed some soil and moisture conservation activities like RCC check dam, loose boulders check dam (LBCD), staggered trenches, wire mesh LBCD were prepared in the plantation area as well as at assigned sites in the forest area.

Nine sites out of 10 sites were visited and it was observed that soil and moisture conservation measures undertaken were found effective and functional to control runoff and thus preventing loss of soil by surface soil erosion, reduce soil compaction, improve soil fertility, conserve or drain water and harvest (excess) water.

**6.2.2 (C4.4) Finding on activities under Compensatory Afforestation**

Under Compensatory Afforestation (CA) or Penal Compensatory Afforestation (PCA) only of 2 ha plantation area was taken up. The plantation is in good shape.

**6.2.3 (C4.4) Finding on activities under catchment Area Treatment (CAT) Plan**

No activity has been observed under the category in this division.

**6.2.4 (C4.4) Finding on the activities under Integrated Wildlife Management**

Under wild life management no major assets have been created. The expenditure has mainly been on wildlife protection squad, tracker engagement, supply of anti-depredation equipment on use basis to primary response team of VSS under Gaja Sathi Scheme, publicity and awareness programme, training to primary response team of VSS (Gaja Sathi), transportation and fixing charges of preventing elephant depredation, cost of vehicle/POL /maintenance, solar fencing and its maintenance, engagement of fire watchers, habit improvement etc.

**6.2.5 (C4.4) Finding on the activities under NPV fund (A) and NPV fund (B)**

From NPV funds the new creation and maintenance works have been taken up. Under AR Plantation 100 ha area developed through Bald hill plantation & Other Indigenous Misc. Species, 1750 ha. area developed through ANR plantation like medicinal species & Other Indigenous Miscellaneous Species plantation.

Also, 2<sup>nd</sup> year maintenance covered 1425 ha., 3<sup>rd</sup> year maintenance covered 1576 ha and 680 ha. area was covered in 4<sup>th</sup> year maintenance. The health of the plants is on average quite good. The casualty replacement work is also done.

For nursery management in 60 nurseries about 18.14 lakh seedlings have been raised at a cost of Rs. 464.82 lakh including AJY.

**6.2.6 (C4.4) Update on e-green portal**

The portal is updated.

**6.2.7 (C4.4) Other Observations**

The infrastructure developed includes staff quarters, causeways, and culverts etc. These are being utilized properly.

**6.2.8 (C4.4) Field Survey Images**



**ANR with gap 50 ha. (2022-23), Kirekala**



**SMC Work (2022-23), Bajno PRF**



**Forester Quarter (2022-23), Boden**



**Map available in the field**



**SMC Work (2022-23), Kanabhaira PRF**



**SMC Work (2022-23), Kanabhaira PRF**

## 6.2 (C4.5) Subarnapur Division

### 6.2.1 (C4.5) Over all Physical and Financial Progress Analysis

No.	Sector	Allocation (Rs. In lakh)	Expenditure (Rs. In lakh)	Percentage
1	Forestry	1912.10	1749.30	91.50
2	Wildlife	174.52	153.93	88
	<b>Total</b>	<b>2086.62</b>	<b>1903.23</b>	<b>89.75</b>

On forest protection and fire protection/control operations, expenditure of Rs. 167.34 lakh was incurred.

All the targets of new plantation, maintenance and SMC activities have been fully achieved including SSO Bamboo and Ama Jangala Yojana (AJY). Some soil and moisture conservation activities like RCC check dam, LBCD, WLBCD were prepared in the plantation areas as well as at specific points in the forest area in the Division. Two out of 4 sites were visited and it was observed that soil and moisture conservation measures undertaken were found effective and functional to control runoff and thus preventing loss of soil by surface soil erosion, reduce soil compaction, improve soil fertility, conserve, or drain water and harvest (excess) water.

### 6.2.2 (C4.5) Finding on activities under Compensatory Afforestation

From the Compensatory Afforestation (CA) or Penal Compensatory Afforestation (PCA) funds the 3<sup>rd</sup> year maintenance of 360 ha. of plantation area was done.

### 6.2.3 (C4.5) Finding on activities under catchment Area Treatment (CAT) Plan

No activity has been observed under the category in this division.

### 6.2.4 (C4.5) Finding on the activities under Integrated Wildlife Management

For wild life management major works are SMC, construction of watch tower, staff Barrack etc. Other activities like wildlife protection squad, maintenance of boundary of protected area, monitoring of assessment and protection wildlife habitat, improvement of wildlife habitat tracker engagement, forest fire prevention and control operation, supply of anti-depredation equipment on use basis to primary response team, publicity and awareness programme, training to primary response team, transportation and fixing charges of anti- depredation squad, cost of vehicle/POL /maintenance, solar fencing and its maintenance, engagement of fire watchers, habit improvement etc. have also been done.

### 6.2.5 (C4.5) Finding on the activities under NPV fund (A) and NPV fund (B)

From funds available from NPV head, new creation and maintenance works have been done. Under AR Plantation 255 ha. area developed through Bald Hill plantation and Other Indigenous Misc. Species, 2040 ha. area developed through ANR plantation like medicinal species and Other Indigenous Miscellaneous Species plantation.

Aside this, 2<sup>nd</sup> year maintenance over 1135 ha., 3<sup>rd</sup> year maintenance of 1345 ha. and 4<sup>th</sup> year maintenance of 600 ha. was done.

At a cost of Rs. 265.00 lakh about 20 lakh seedlings were raised in 20 nurseries and most of the saplings had been planted out in the field at the time of field evaluation visit.

### 6.2.6 (C4.5) Update on e-green portal

The portal is updated.

### 6.2.7 (C4.5) Other Observations

The infrastructure developed includes range officer residence, forester quarter, forest guard quarter, causeway, and culvert. The constructions are being utilized properly.

### 6.2.8 (C4.5) Field Survey Images



## 6.2 (C4.6) Sunabeda Wildlife Division

### 6.2.1 (C4.6) Overall Physical and Financial Progress Analysis

No.	Sector	Allocation (Rs. In lakh)	Expenditure (Rs. In lakh)	Percentage
1	Forestry	728.70	728.70	100
2	Wildlife	210.52	210.52	100
	<b>Total</b>	<b>939.22</b>	<b>939.22</b>	<b>100</b>

For forest protection and fire protection /control operation Rs. 16.47 lakh was spent. The physical targets of new plantation, maintenance, SSO Bamboo and SMC have been fully achieved including the Ama Jangala Yojana (AJY). The division has executed some soil and moisture conservation activities like RCC check dam, LBDCD, WLBCD that were prepared in the plantation areas as well as at specific points in the forest area. Two sites out of 17 sites were visited and it was observed that soil and moisture conservation measures undertaken were found effective and functional to control runoff and thus preventing loss of soil by surface soil erosion, reduce soil compaction, improve soil fertility, conserve, or drain water and harvest (excess) water.

### 6.2.2 (C4.6) Finding on activities under Compensatory Afforestation

No activity was observed under the category in this division.

### 6.2.3 (C4.6) Finding on activities under catchment Area Treatment (CAT) Plan

No activity has been observed under the category in this division.

### 6.2.4 (C4.6) Finding on the activities under Integrated Wildlife Management

Under wild life management the major activities are the construction of watch tower, forest protection and fire protection, engagement of wildlife protection squads, engagement of trackers, supply of anti-depredation equipment on use basis to primary response team of VSS under Gaja Sathi Scheme, publicity and awareness programme-training to primary response team of VSS (Gaja Sathi), transportation and fixing charges of elephant depredation, cost of vehicle/POL /maintenance, solar fencing its maintenance, engagement of fire watchers, habit improvement etc.

### 6.2.5 (C4.6) Finding on the activities under NPV fund (A) and NPV fund (B)

From NPV funds the new creation and maintenance works were done. Under Other Indigenous and miscellaneous Species, 1000 ha area developed through ANR plantation like medicinal species and Other Indigenous and miscellaneous species plantation.

Also, 2<sup>nd</sup> year maintenance covered 970 ha. area, 3<sup>rd</sup> year maintenance covered 830 ha.

In 60 nurseries about 6 lakh seedlings have been raised at a cost of Rs. 147.40 lakh and this includes AJY. Presently most of the 18-month seedling have all been planted.

### 6.2.6 (C4.6) Update on e-green portal

The portal is fully updated.

### 6.2.7 (C4.6) Other Observations

The infrastructure developed includes forester quarter, forest guard quarter, causeway, and culvert. The constructions are being utilized properly.

6.2.8 (C4.6) Field Survey Images





**Watch Tower (2022-23), Gorra**



**Culvert (2022-23), Badjhola**



## 6.2 (C5) Bhubaneswar Circle

There are 8 forest divisions in the Bhubaneswar Circle, of which 3 are territorial divisions, and 5 are wildlife divisions, viz., Bhadrak WL, Chandaka WL, Chilika WL, City Forest, BBSR, Khordha, Nayagarh, Puri WL, and Rajnagar WL.

Subsequent 5 tables provide information for the Circle, followed by division-wise observations organized under 8 sub-sections. In Bhubaneswar Circle total expenditure incurred is around Rs. 75.17 Cr. of which Rs. 57.9 Cr. has been spent by the forest wing, and around Rs. 17.28 Cr. has been spent by the wildlife wing of the forest department.

**Table C5.6.1.1: Financial Achievements in Bhubaneswar Circle as per the APO (Rs. In lakh)**

Name of Division	Forestry Activities (General)	Wildlife Management	Total Expenditure Incurred
Bhadrak WL	136.12	82.90	219.03
Chandaka WL	827.65	425.99	1,253.64
Chilika WL	192.43	81.44	273.87
City Forest, BBSR	371.85	64.28	436.13
Khordha	1,168.08	138.08	1,306.15
Nayagarh	2,085.40	96.36	2,181.76
Puri Wildlife	632.12	577.57	1,209.69
Rajnagar WL	376.39	260.67	637.06
<b>Total</b>	<b>5,790.05</b>	<b>1,727.28</b>	<b>7,517.34</b>

**Table C5.6.1.2: Study Coverage in Bhubaneswar Circle – Plantation CA/PCA/NPV (Creation & Maintenance) including Without Gap, SMC & SSO (Bamboo)**

Division	Area Covered (ha)	Evaluated Area (ha.)	% of area evaluated	No. of Total Sites	Sample to be Covered	No. of Sites covered	% of Verification
Khurda	5,579.58	725.00	13%	48	5	8	17%
Puri WL	865.10	514.00	59%	25	3	11	44%
Rajnagar WL	1,065.12	322.00	30%	29	3	9	31%
Nayagarh	11,048.65	1,829.68	17%	105	11	15	14%
Chilika WL	855.00	488.82	57%	30	3	10	33%
Chandaka WL	842.30	204.97	24%	18	2	4	22%
City Forests	90.00	90.00	100%	3	0	3	100%
Bhadrakh WL	68.00	15.00	22%	16	2	3	19%
<b>Total</b>	<b>20,413.75</b>	<b>4,189.47</b>	<b>21%</b>	<b>274</b>	<b>27</b>	<b>63</b>	<b>23%</b>

**Table C5.6.1.3: Study Coverage in Bhubaneswar Circle – Infrastructure Development and Nursery Management**

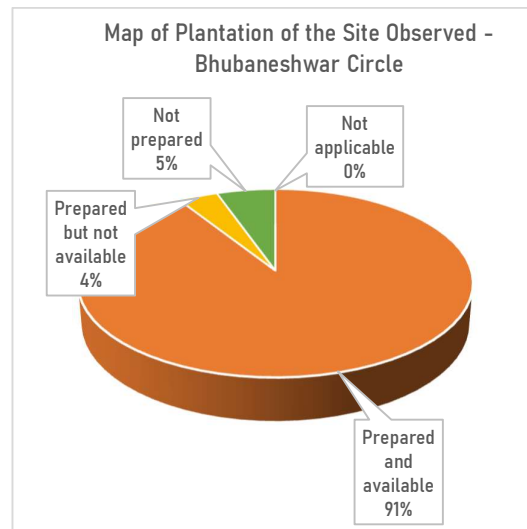
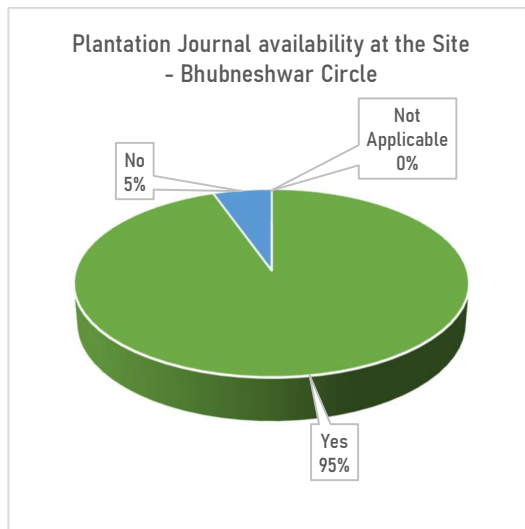
Division	No. of Total Sites	Sample to be Covered	No. of Sites covered	% of Verification
Khurda	20	2	2	10%
Puri WL	16	2	6	38%
Rajnagar WL	14	1	4	28%
Nayagarh	70	7	9	13%
Chilika WL	5	1	1	20%
Chandaka WL	20	2	4	20%
City Forests	14	1	4	29%
Bhadrakh WL	8	1	2	25%
<b>Total</b>	<b>167</b>	<b>17</b>	<b>32</b>	<b>19%</b>

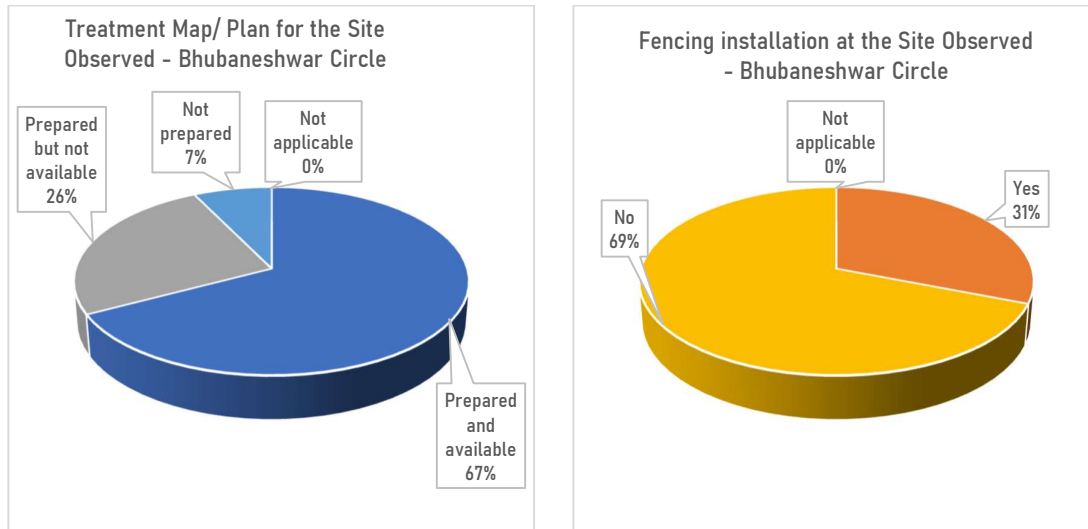
**Table C5.6.1.4: Financial Statement Bhubaneswar Circle – Plantation CA/PCA/NPV (Creation & Maintenance) including Without Gap, SMC & SSO (Bamboo)**

Division	Amount sanctioned (Rs. In lakh)	Amount released (Rs. In lakh)	Expenditure Incurred (Rs. in lakh)	% of Achievement
Khurda	105.47	105.47	105.47	100%
Puri WL	112.34	107.62	107.62	96%
Rajnagar WL	82.03	77.07	77.07	94%
Nayagarh	144.70	144.70	144.70	100%
Chilika WL	143.44	123.49	123.49	86%
Chandaka WL	82.33	82.33	82.10	100%
City Forests	17.12	17.12	17.12	100%
Bhadrakh WL	4.91	4.91	4.91	100%
<b>Total</b>	<b>692.35</b>	<b>662.72</b>	<b>662.49</b>	<b>96%</b>

**Table C5.6.1.5: Financial Statement Bhubaneswar Circle – Infrastructure Development and Nursery Management**

Division	Amount sanctioned (Rs. In lakh)	Amount released (Rs. In lakh)	Expenditure Incurred (Rs. In lakh)	% of Achievement
Khurda	45.03	45.03	45.03	100%
Puri WL	102.44	102.44	102.44	100%
Rajnagar WL	40.81	40.81	40.81	100%
Nayagarh	68.78	68.78	68.78	100%
Chilika WL	7.50	7.50	7.50	100%
Chandaka WL	71.17	71.17	71.17	100%
City Forests	60.54	60.54	60.54	100%
Bhadrakh WL	31.65	31.65	31.65	100%
<b>Total</b>	<b>427.91</b>	<b>427.91</b>	<b>427.91</b>	<b>100%</b>





In subsequent subsections division-wise observations are presented. The data has been collected from field level and specific to the activities being observed. Thus, this may not add-up to the circle totals.

## 6.2 (C5.1) Bhadrak Wildlife Division

### 6.2.1 (C5.1) Overall Physical and Financial Progress Analysis

No.	Sector	Allocation (Rs. In lakh)	Expenditure (Rs. In lakh)	Percentage
1	Forestry	142.28	136.12	96
2	Wildlife	82.90	82.90	100
	<b>Total</b>	<b>225.18</b>	<b>219.02</b>	<b>98</b>

All physical targets of new plantation, maintenance and SMC activities were fully completed.

### 6.2.2 (C5.1) Finding on activities under Compensatory Afforestation

No activity has been observed under the category in this division.

### 6.2.3 (C5.1) Finding on activities under catchment Area Treatment (CAT) Plan

No activity has been observed under the category in this division.

### 6.2.4 (C5.1) Finding on the activities under Integrated Wildlife Management

Under Integrated Wildlife Management the major assets created are the anti-poaching barrack. Other activities like engagement of wildlife protection squad, monitoring of assessment and protection wildlife habitat, improvement of wildlife habitat, tracker engagement, protection/support of anti-depredation activities, strengthening of communication facilities for protection of wildlife etc. have been undertaken.

### 6.2.5 (C5.1) Finding on the activities under NPV fund (A) and NPV fund (B)

From the NPV funds, new creation and maintenance works have been done. Under AR Plantation 15 ha. area developed through Mangrove (Hypocotyl) Plantation.

2<sup>nd</sup> year maintenance covered 26 ha. area and 27 ha. area was covered in 3<sup>rd</sup> year maintenance. The casualty replacement has been done and overall, the plantations are in good condition.

In nursery management in 05 nurseries about 2 lakh seedlings were raised. For raising and maintenance of seedling, an amount of Rs. 40.71 lakh was spent.

### 6.2.6 (C5.1) Update on e-green portal

The portal is updated.

### 6.2.7 (C5.1) Other Observations

The infrastructure developed includes Range Officer residence, forester quarter, forest guard quarter etc. The constructions are being utilized properly.

### 6.2.8 (C5.1) Field Survey Images



## 6.2 (C5.2) Chandaka WL Division

### 6.2.1 (C5.2) Overall Physical and Financial Progress Analysis

No.	Sector	Allocation (Rs. In lakh)	Expenditure (Rs. In lakh)	Percentage
1	Forestry	827.66	827.66	100
2	Wildlife	425.99	425.99	100
	<b>Total</b>	<b>1253.65</b>	<b>1253.65</b>	<b>100</b>

During 2022-23 there was provision for Block Plantation 12.71 ha., 267.21 ha. plantation creation and maintenance of 75.09 ha. The expenditure incurred was Rs. 360.04 lakh.

All physical targets have been fully achieved.

1. Under SMC work in forest area 500 ha was covered in four sites with an expenditure of Rs 175.00 lakh. The data reflect that 500 ha area covered under SMC works through RCC check dam, loose boulders check dam etc. in four sites. One site was physically verified and it was observed that the measures taken were effective and functional to control runoff and thus preventing loss of soil by surface soil erosion. About 10% siltation is seen in the check dam
2. The infrastructure developed includes one forester quarter and three forest guard quarters, watch tower etc. These are being utilized properly.
3. The protection of forest through consolidation was done by Geo referencing of notified forest block covering 1084 ha. The expenditure incurred is Rs 3.79 lakh.

#### **6.2.2 (C5.2) Finding on activities under Compensatory Afforestation**

Under CA/PCA an amount of Rs. 11.86 lakh has been spent for 29.80 ha area development. Operations like PO for block plantation 12.71 ha, creation of Block Plantation 4.5 ha and maintenance of 2<sup>nd</sup> year plantation 10.72 ha, 5<sup>th</sup> year plantation 1.46 ha and 7<sup>th</sup> year plantation 0.4 ha area have been carried out. Overall condition of plantation is good.

#### **6.2.3 (C5.2) Finding on activities under Catchment Area Treatment (CAT) Plan**

No activity has been observed under the category in this division.

#### **6.2.4 (C5.2) Finding on the activities under Integrated Wildlife Management**

For execution of wildlife management plan the various activities undertaken are the construction of watch tower, maintenance of forest road, anti-depredation activities, deployment of vehicles, purchase of equipment for driving wild animals, Transportation and fixing charges of Elephant depredation, awareness programme, training programme for primary response team, cost of vehicle/POL /maintenance etc. In all an amount of Rs. 425.99 lakh have been spent on these activities.

The watch tower at Sundarpur was physically verified - the quality of the tower is very good and purpose of the asset is fulfilled. The maintenance work done on one forest road was also physically verified and the condition of the road was found to be good.

#### **6.2.5 (C5.2) Finding on the activities under NPV fund (A) and NPV fund (B)**

About 250 ha. has been planted under NPV scheme. AR of Other Indigenous Species @1600 plant/ha was done at four sites and maintenance done over 62.5 ha area of 3<sup>rd</sup> year Fodder & Fruit plantation at four sites. Around, 4 of the 8 plantation sites have been physically verified. Over all condition of the plantations are satisfactory, average survival is 94%.

Around, 6.00 lakh of plant of different species (mainly Amla, Pijuli, Beal, Kanchan, Katha Badam, Bada Chakunda, Amboda, Piasal, Bamboo etc.) were raised under nursery management. The expenditure incurred was Rs. 126.20 lakh. Most of the seedlings have been already planted. The health of the seedlings seen is very good.

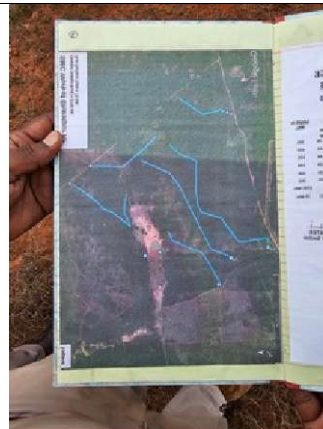
#### **6.2.6 (C5.2) Update on e-green portal**

Separate cell has been prepared for this work. More care should be taken for uploading the information on the portal.

6.2.7 (C5.2) Field Survey Images



SMC Work (2022-23), Bhartapur



Map of SMC Bhartapur RF



Watch Tower (2022-23), Sundarpur



Forest Road maintenance



AR 18.75 ha (2022-23), Bhola PF



CA 10.37 ha. (2022-23), Tulsadeipur PF Chandka



## 6.2 (C5.3) Chilika Wildlife Division

### 6.2.1 (C5.3) Overall Physical and Financial Progress Analysis

#### Physical

	Activity	1 <sup>st</sup> Year (2022-23)	2 <sup>nd</sup> Year (2021-22)	3 <sup>rd</sup> Year (2020-21)	4 <sup>th</sup> Year (2019-20)	Total (ha.)
<b>1</b>	<b>Creation</b>					
a.	AR inland	15 ha.				15
b.	AR <i>Casuarina</i> Coastal	35 ha.				35
c.	ANR with GAP- @200 seedlings/ha	150 ha.				150
<b>2</b>	<b>Maintenance</b>					
a.	AR		10	10	0	20
b.	ANR		200	135	200	535

#### Financial

Forest Wing	- Rs. 192.43 lakh
Wildlife Wing	- Rs. 81.44 lakh
<b>Total</b>	<b>- Rs. 273.87 lakh</b>

### 6.2.2 (C5.3) Finding on activities under Compensatory Afforestation

No activity has been observed under the category in this division.

### 6.2.3 (C5.3) Finding on activities under Catchment Area Treatment (CAT) Plan

No activity has been observed under the category in this division.

### 6.2.4 (C5.3) Finding on the Activities Integrated Wildlife Management Plan

Works in the bird sanctuary, Irrawaddy Dolphin area management and other inland herbivores including elephant tracking and corridor management has been done in Rambha (WL) Range. Mostly activities such as engagement of protection squad and anti-degradation work, anti-poaching work and vehicle for protection has been done in this category.

### 6.2.5 (C5.3) Finding on the Activities under NPV Fund (A) and NPV Fund (B)

**NPV Fund (A):** AR 50 ha. + ANR – 150 ha.

**NPV Fund (B):** Maintenance – AR- 20 ha. and ANR- 535 ha.

### 6.2.6 (C5.3) Update on e-green Portal

E-green watch data update is done at Division level and all physical & financial data uploaded along with GPS maps data.

### 6.2.7 (C5.3) Other Observations

In this division very less work has been taken up under CAMPA. The limited land mass and bird sanctuary management is the limitations.

The coastal shelter belt of *Casuarina* plantations was verified in Chilika and Satapada Range. Inland activities are mostly confined to Rambha Range. Seedlings raised in Rambha over 1 lakh and *Casuarina* 1.375 lakh are good. Record keeping is also very good.

### 6.2.8 (C5.3) Field Survey Images

	
<p align="center"><b>ANR with Gap 100 Ha. Plantation (2020-21) Rambh Range</b></p>	<p align="center"><b>AR 30 ha. Plantation (2022-23), Satpada Range</b></p>
	
<p align="center"><b>AR 10 Ha. Casuarina Plantation Khirisahi</b></p>	<p align="center"><b>AR 5 ha. Casuarina Plantation Siandi</b></p>

## 6.2 (C5.4) City Forest Division

### 6.2.1 (C5.4) Overall Physical and Financial Progress Analysis

Sector	Allocation (Rs. In lakh)	Expenditure (Rs. In lakh)	Expenditure %



Forest	371.85	371.85	100
Wildlife	69.28	69.28	100
<b>Total</b>	<b>441.13</b>	<b>441.13</b>	<b>100</b>

For forest protection and fire protection/control operation Rs. 91.35 lakh was spent. All the targets of new plantation and maintenance activities have been completed.

**6.2.2 (C5.4) Finding on activities under Compensatory Afforestation**

No activity has been observed under the category in this division.

**6.2.3 (C5.4) Finding on activities under Catchment Area Treatment (CAT) Plan**

No activity has been observed under the category in this division.

**6.2.4 (C5.4) Finding on the activities under Integrated Wildlife Management**

Under wild life management the main activities have been the protection and anti-depredation activities, engagement of wildlife protection squads, monitoring of assessment and protection wildlife habitat, improvement of wildlife habitat, maintenance of water etc.

**6.2.5 (C5.4) Finding on the activities under NPV fund (A) and NPV fund (B)**

From NPV funds some new creation and maintenance works has been done. Under AR plantation area of 10 ha. has been developed through other indigenous species. 30 ha. area developed through ANR plantation like Other Indigenous Misc. Species plantation. In addition, 2<sup>nd</sup> year maintenance covered 50 ha area.

In nursery management, 08 nurseries raised about 2.18 lakh seedling. Rs 138.30 lakh was spent for raising and maintenance of these seedlings.

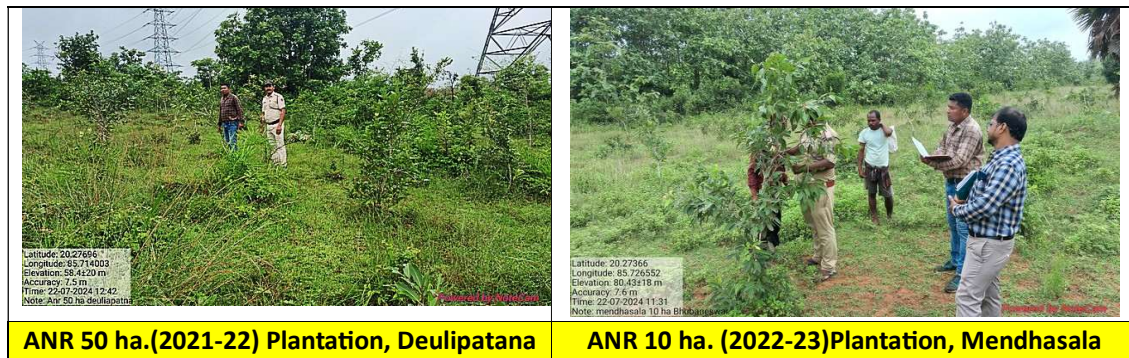
**6.2.6 (C5.4) Update on e-green portal**

Details of all activities under CAMPA APO 22-23 have been uploaded in the portal.

**6.2.7 (C5.4) Other Observations**

Infrastructure development: The constructed Range office, Range Officer residence, forester quarter, forest guard quarter, culverts, causeways, and maintenance of forest road are good and utilized properly.

**6.2.8 (C5.4) Field Survey Images**





## 6.2 (C5.5) Khurda Division

### 6.2.1 (C5.5) Overall Physical and Financial Progress Analysis

No.	Sector	Allocation (Rs. In lakh)	Expenditure (Rs. In lakh)	Percentage
1	Forestry	1168.08	1168.08	100
2	Wildlife	138.08	138.08	100
	<b>Total</b>	<b>1306.16</b>	<b>1306.16</b>	<b>100</b>

With the above allotment, the activities undertaken included-

1. CA/PCA - plantation and maintenance activities - 82.68 ha.
2. Creation and maintenance under NPV plantation - 995 ha.
3. Regeneration of degraded bamboo Forests (SSO Bamboo) 2661.223 ha.
4. 613.178 ha. area covered through Soil and Moisture Conservation works in forest area. The data reflect that 613.178 ha area has been covered under SMC works through loose boulders check dam. It was observed that the measures taken were effective and functional to control runoff and thus preventing loss of soil by surface soil erosion.
5. Infrastructure development: 03 Forester Quarters, 06 Forest Guard Quarters, and 06 causeways were constructed and maintenance of 25 km. Forest Roads was done. The infrastructure created is being utilized properly.
6. For forest protection and fire protection and control the sum of Rs. 188.27 lakh was spent on activities like - provisioning of mobility by hired vehicle, casual engagement of local youth to

assist regular staff of state, wages for firefighting squads, expenditure for fire vehicle, creation and maintenance of fire line, procurement of fire blower including fuel and others accessories, logistic to the fire protection squad, training on forest fire control and prevention to the frontline forest staff and awareness campaign.

### **6.2.2 (C5.5) Finding on activities under Compensatory Afforestation**

For CA/PCA an amount of Rs.12.99 lakh has been spent for developing plantations over 82.68 ha. This included:

1. PO for block plantation 10.58 ha,
2. maintenance of 3<sup>rd</sup> year plantation 24.28 ha and
3. maintenance of 5<sup>th</sup> year plantation 47.82 ha.

Over all the condition of plantation is good.

### **6.2.3 (C5.5) Finding on activities under Catchment Area Treatment (CAT) Plan**

No activity has been observed under the category in this division.

### **6.2.4 (C5.5) Finding on the activities under Integrated Wildlife Management**

Anti-depredation activities, deployment of vehicles, purchase of equipment for driving wild animals, awareness programmes etc., were undertaken at a cost of Rs. 138.08 lakh.

### **6.2.5 (C5.5) Finding on the activities under NPV fund (A) and NPV fund (B)**

Around, 995 ha area has been planted during the financial year under NPV scheme and maintenance works were done in 1227.5 ha area of 2<sup>nd</sup> year, 3<sup>rd</sup> year and 4<sup>th</sup> year plantation. New plantations were created at 05 sites covering 90 ha. area under AR plantation. The remaining 905 ha was under ANR plantation at 15 sites. Maintenance of previously created plantations was done at 21 sites.

06 of the 41 sites covering 225 ha. have been physically verified. Over all condition of the plantations is satisfactory. The average survival of the six sites is 83%.

With CAMPAs funds 08 lakh seedlings of different species (Karanch, Amla, Neem, Simakaya, Jamun, Pranesh, Arjun, Bahara, Sunari, Kath Badam, Pasta Badam, Fanfana, Beal, Mahula, Mango, *Terminalia* etc) were raised. The expenditure incurred is Rs. 123.16 lakh for maintenance of 18 months old seedling. Most of the seedlings have been already planted. The health of the seedlings seen is very good.

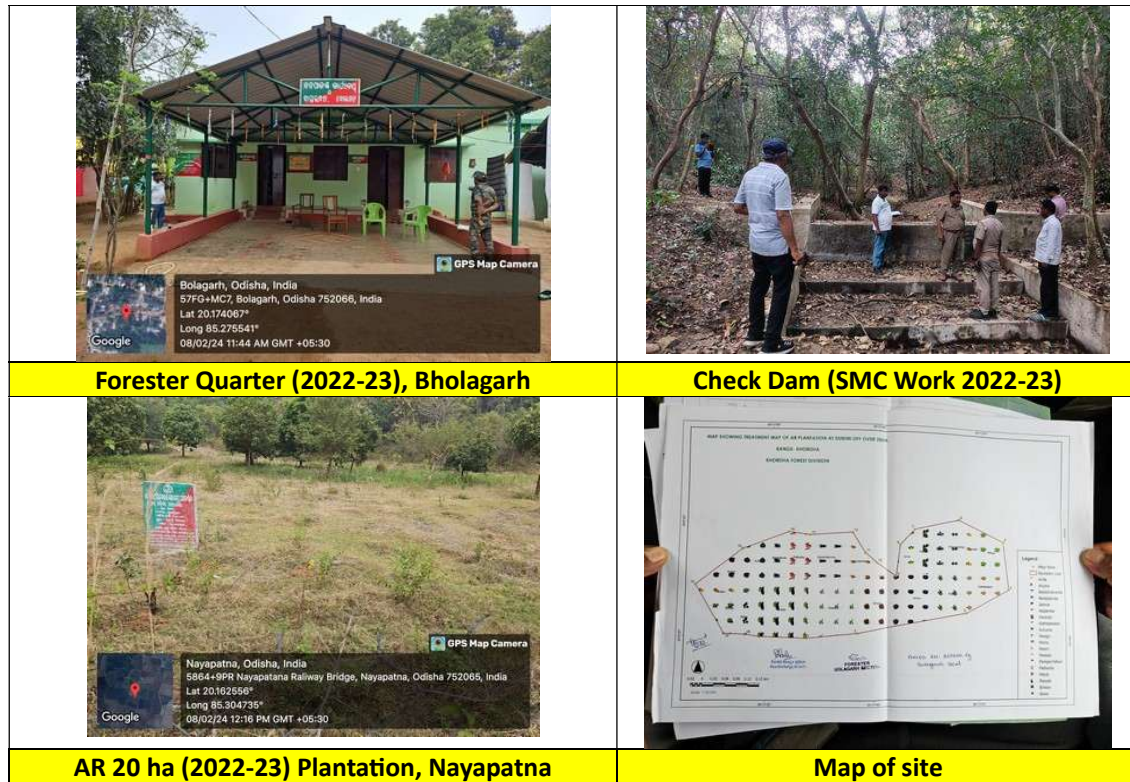
### **6.2.6 (C5.5) Update on e-green portal**

Separate cell has been prepared for this work. More care should be taken for uploading the information on the portal.

### **6.2.7 (C5.5) Other Observations**

No observations are identified.

### 6.2.8 (C5.5) Field Survey Images



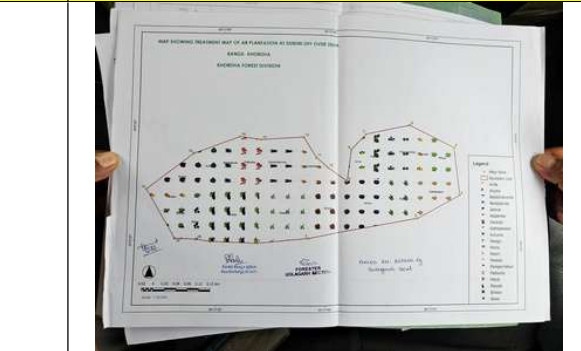
**Forester Quarter (2022-23), Bholagarh**



**Check Dam (SMC Work 2022-23)**



**AR 20 ha (2022-23) Plantation, Nayapatna**



**Map of site**

## 6.2 (C5.6) Nayagarh Division

### 6.2.1 (C5.6) Overall Physical and Financial Progress Analysis

No.	Sector	Allocation (Rs. In lakh)	Expenditure (Rs. In lakh)	Percentage
1	Forestry	2110.33	2085.40	99
2	Wildlife	97.93	96.36	98
	<b>Total</b>	<b>2208.26</b>	<b>2181.76</b>	<b>98.50</b>

All physical targets of new plantation, maintenance and SMC activities were fully completed. For forest protection and fire protection/control operations, Rs. 272.72 lakh was spent. All physical targets of new plantation, maintenance of plantations, regeneration of degraded bamboo forests (SSO Bamboo) and SMC were fully completed. The department has executed some soil and moisture conservation activities like loose boulders check dam (LBCD), Gabion check dam, RCC check dam, WHS, retaining wall in the plantation area as well as assigned the forest area.

Four out of 8 such sites were visited and it was observed that soil and moisture conservation measures undertaken were effective and functional to control runoff and thus preventing loss of soil by surface soil erosion, reduce soil compaction, improve soil fertility, conserve, or drain water and harvest (excess) water.

### 6.2.2 (C5.6) Finding on activities under Compensatory Afforestation

Under Compensatory Afforestation (CA) or Penal Compensatory Afforestation (PCA) there was P.O. for 2023-24 of 17.78 ha., 2<sup>nd</sup> year maintenance of 164.434 ha., 3<sup>rd</sup> year maintenance of 209.434 ha.

### 6.2.3 (C5.6) Finding on activities under catchment Area Treatment (CAT) Plan

No activity has been observed under the category in this division.

### 6.2.4 (C5.6) 4.1.4 Finding on the activities under Integrated Wildlife Management

Under this component the activities undertaken were mainly - protection and anti-depredation activities, wildlife protection squad, monitoring of wildlife and protection wildlife habitat, improvement of wildlife habitat, cost of vehicle/ POL /maintenance, strengthening of communication facilities for protection of wild life, supply of anti-depredation equipment, engagement of fire watchers, construction & maintenance of infrastructure for protection of wildlife etc.

### 6.2.5 (C5.6) Finding on the activities under NPV fund (A) and NPV fund (B)

NPV funds were used for the new creation and maintenance of plantations. Under AR Plantation 61 ha. was developed through Bald Hill plantation and Other Indigenous Misc. Species. 1400 ha. was developed through ANR plantation like Fodder and Fruits & Other Indigenous Misc. Species plantation. 2<sup>nd</sup> year maintenance covered 1040 ha area, 3<sup>rd</sup> year maintenance covered 1166 ha. and 590 ha. area covered in 4<sup>th</sup> year maintenance.

Under nursery management, 14.40 lakh seedlings were raised in 21 nurseries and for this Rs 467.68 lakh was spent.

### 6.2.6 (C5.6) Update on e-green portal

The portal is updated.

### 6.2.7 (C5.6) Other Observations

The infrastructure developed includes forester quarter, forest guard quarter, Causeway, and Culverts etc. The constructions are being utilized properly.

### 6.2.8 (C5.6) Field Survey Images





## 6.2 (C5.7) Puri Wildlife Division

### 6.2.1 (C5.7) Overall Physical and Financial Progress Analysis

No.	Sector	Allocation (Rs. In lakh)	Expenditure (Rs. In lakh)	Percentage
1	Forestry	716.73	632.12	88
2	Wildlife	595.62	577.57	97
	<b>Total</b>	<b>1312.35</b>	<b>1209.69</b>	<b>92.5</b>

For forest protection and fire protection/control operation Rs. 2.11 lakh has been spent. All physical targets of new plantation, maintenance and SMC activities were fully completed.

### 6.2.2 (C5.7) Finding on activities under Compensatory Afforestation

No activity is observed under the category in this division.

### 6.2.3 (C5.7) Finding on activities under catchment Area Treatment (CAT) Plan

No activity is observed under the category in this division.

### 6.2.4 (C5.7) Finding on the activities under Integrated Wildlife Management

Under wild life management the main activities were protraction and anti-depredation activities, the engagement of wildlife protection squad, monitoring of assessment and protection wildlife habitat, improvement of wildlife habitat, strengthening of communication facilities for protection of wild life, construction & maintenance of infrastructure for protection of wildlife etc.

### 6.2.5 (C5.7) Finding on the activities under NPV fund (A) and NPV fund (B)

NPV fund have been used foe new creation and maintenance works. AR plantation of 313 ha. has been developed through Mangrove (Hypocotyl) Plantation, other indigenous species and *Casurina*. 226 ha

area developed through ANR plantation of Fodder and Fruits & Other Indigenous Misc. Species plantation.

Also, 2<sup>nd</sup> year maintenance covered 196.1 ha area, 3<sup>rd</sup> year maintenance covered 110 ha area and 20 ha area covered in 4<sup>th</sup> year maintenance.

In 9 nurseries about 2.18 lakh seedlings were raised. For raising and maintenance of these seedlings Rs 57.18 lakh was spent.

**6.2.6 (C5.7) Update on e-green portal**

The portal is updated.

**6.2.7 (C5.7) Other Observations**

The infrastructure developed includes Range Office, Range Officer residence, forester quarter, forest guard quarter, maintenance of forest roads etc. The constructions are being utilized properly.

**6.2.8 (C5.7) Field Survey Images**





## 6.2 (C5.8) Rajnagar Wildlife Division

### 6.2.1 (C5.8) Overall Physical and Financial Progress Analysis

No.	Sector	Allocation (Rs. In lakh)	Expenditure (Rs. In lakh)	Percentage
1	Forestry	423.03	376.39	90
2	Wildlife	311.88	260.67	83.5
	<b>Total</b>	<b>734.91</b>	<b>637.06</b>	<b>86.75</b>

All physical targets of new plantation, maintenance activities have been fully achieved.

### 6.2.2 (C5.8) Finding on activities under Compensatory Afforestation

From Compensatory Afforestation (CA) or Penal Compensatory Afforestation (PCA) there was 1<sup>st</sup> year creation of 63.12 ha. of plantation.

### 6.2.3 (C5.8) Finding on activities under catchment Area Treatment (CAT) Plan

No activity has been observed under the category in this division.

### 6.2.4 (C5.8) Finding on the activities under Integrated Wildlife Management

Under wild life management mainly activities like wildlife protection squad, monitoring of assessment and protection wildlife habitat, improvement of wildlife habitat tracker engagement, protection of



forest, anti-depredation activities, strengthening of communication facilities for protection of wild life etc. were undertaken.

**6.2.5 (C5.8) Finding on the activities under NPV fund (A) and NPV fund (B)**

From NPV many new creation and maintenance work has been done. AR Plantation of 122 ha. has been developed through Mangrove (Hypocotyl) and *Casaurina* Plantation, 420 ha area developed through ANR plantation like Other Indigenous Misc. Species plantation.

Also, 2<sup>nd</sup> year maintenance covered 380 ha. and 80 ha. was covered in 3<sup>rd</sup> year maintenance. The health of the plants is on an average good. The casualty replacement has also been done.

**6.2.6 (C5.8) Update on e-green portal**

Portal is updated.

**6.2.7 (C5.8) Other Observations**

The infrastructure developed includes, forester quarter, forest guard quarter, culvert and maintenance of roads etc. The constructions are being utilized properly.

**6.2.8 (C5.8) Field Survey Images**



## 6.2 (C6) Koraput Circle

There are 5 forest divisions in Korapur Circle, and all are territorial divisions, viz., Jeypore, Koraput, Malkangiri, Nabarangapur, and Rayagada.

Subsequent 5 tables provide information for the Circle, followed by division-wise observations organized under 8 sub-sections. In Koraput Circle total expenditure incurred is around Rs. 125.19 Cr. of which Rs. 122.85 Cr. has been spent by the forest wing, and around Rs. 2.34 Cr. has been spent by the wildlife wing of the forest department.

**Table C6.6.1.1: Financial Achievements in Koraput Circle as per the APO (Rs. In lakh)**

Name of Division	Forestry Activities (General)	Wildlife Management	Total Expenditure Incurred
Jeypore	2,211.83	-	2,211.83
Koraput	2,704.27	-	2,704.27
Malkangiri	2,142.10	24.00	2,166.10
Nabarangapur	1,874.12	62.50	1,936.62
Rayagada	3,352.88	147.68	3,500.56
<b>Total</b>	<b>12,285.21</b>	<b>234.18</b>	<b>12,519.39</b>

**Table C6.6.1.2: Study Coverage in Koraput Circle – Plantation CA/PCA/NPV (Creation & Maintenance) including Without Gap, SMC & SSO (Bamboo)**

Division	Area Covered (ha)	Evaluated Area (ha.)	% of area evaluated	No. of Total Sites	Sample to be covered	No. of Sites covered	% of Verification
Rayagada	22,281.11	2,106.88	9%	381	38	38	10%
Koraput	15,464.29	1,656.00	11%	285	29	45	16%
Jeypore	12,180.67	1,264.67	10%	257	26	30	12%
Nabarangpur	8,876.00	797.00	9%	155	16	31	20%
Malkangiri	15,912.00	2,121.00	13%	192	19	29	15%
<b>Total</b>	<b>74,714.07</b>	<b>7,945.55</b>	<b>11%</b>	<b>1270</b>	<b>127</b>	<b>173</b>	<b>14%</b>

**Table C6.6.1.3: Study Coverage in Koraput Circle – Infrastructure Development and Nursery Management**

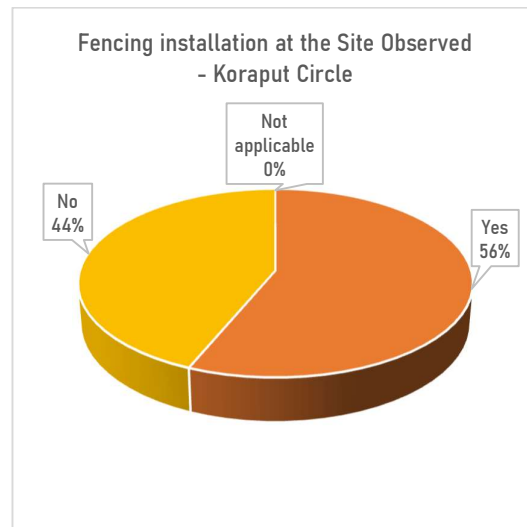
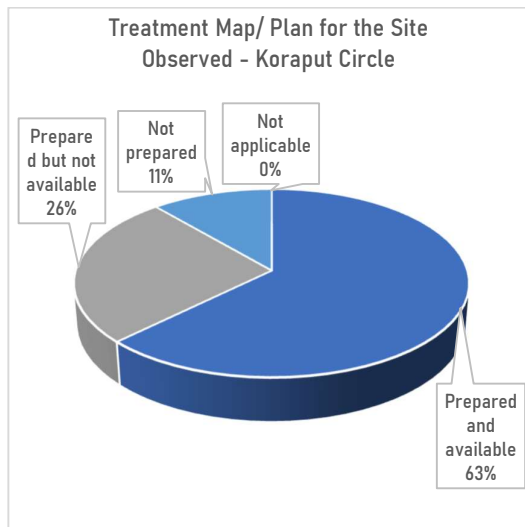
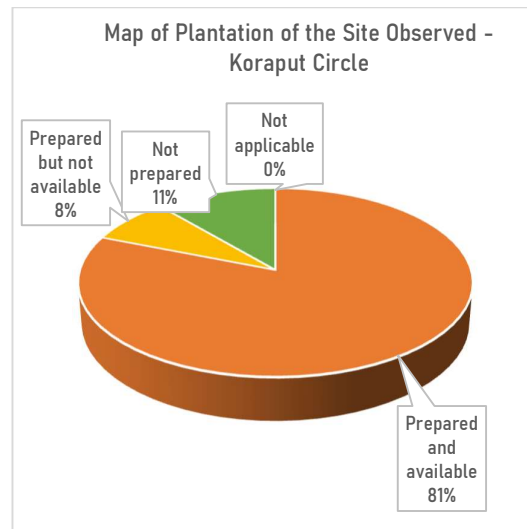
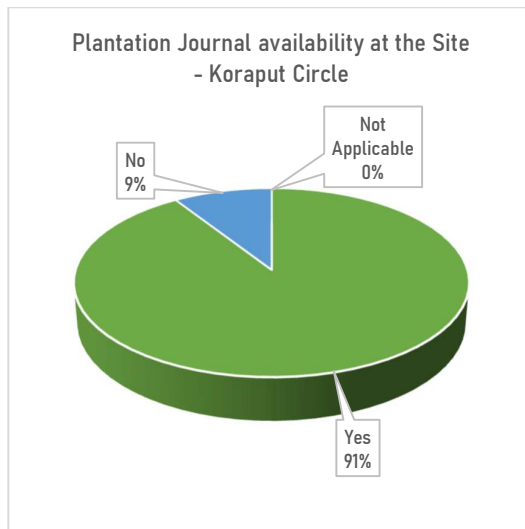
Division	No. of Total Sites	Sample to be Covered	No. of Sites covered	% of Verification
Rayagada	30	3	6	20%
Koraput	26	3	14	54%
Jeypore	13	1	3	23%
Nabarangpur	43	4	8	19%
Malkangiri	19	2	5	26%
<b>Total</b>	<b>131</b>	<b>13</b>	<b>36</b>	<b>27%</b>

**Table C6.6.1.4: Financial Statement Koraput Circle – Plantation CA/PCA/NPV (Creation & Maintenance) including Without Gap, SMC & SSO (Bamboo)**

Division	Amount sanctioned (Rs. In lakh)	Amount released (Rs. In lakh)	Expenditure Incurred (Rs. in lakh)	% of Achievement
Rayagada	328.86	328.86	328.86	100%
Koraput	495.06	495.11	494.77	100%
Jeypore	304.45	304.45	304.45	100%
Nabarangpur	213.27	212.12	212.12	99%
Malkangiri	154.60	153.50	153.50	99%
<b>Total</b>	<b>1496.25</b>	<b>1494.04</b>	<b>1493.70</b>	<b>100%</b>

**Table C6.6.1.5: Financial Statement Koraput Circle – Infrastructure Development and Nursery Management**

Division	Amount sanctioned (Rs. In lakh)	Amount released (Rs. In lakh)	Expenditure Incurred (Rs. in lakh)	% of Achievement
Rayagada	53.76	53.76	53.76	100%
Koraput	145.03	145.03	145.03	100%
Jeypore	43.69	41.65	40.15	92%
Nabarangpur	105.45	104.21	101.15	96%
Malkangiri	40.09	40.09	40.09	100%
<b>Total</b>	<b>388.01</b>	<b>384.73</b>	<b>380.18</b>	<b>98%</b>



In subsequent subsections division-wise observations are presented. The data has been collected from field level and specific to the activities being observed. Thus, this may not add-up to the circle totals.

## **6.2 (C6.1) Jeypore Division**

### **6.2.1 (C6.1) Overall Physical and Financial Progress Analysis**

The allocation was Rs. 2394.48 lakh under forestry sector against which the expenditure incurred was Rs. 2211.83 lakh. - achievement of 92%. On forest protection and fire protection/control operation the expenditure incurred was Rs. 189.09 lakh.

The physical targets of new plantation, maintenance of degraded bamboo forests (SSO Bamboo) etc. have been fully attained along with the Ama Jangala Yojana (AJY). In case of SMC, only 700 ha. area was covered against target of 1000 ha. Therefore, the achievement is only 70%.

### **6.2.2 (C6.1) Finding on activities under Compensatory Afforestation**

Under Compensatory Afforestation (CA) or Penal Compensatory Afforestation (PCA) new plantation of only 7 ha. was taken up.

### **6.2.2 (C6.1) Finding on activities under Catchment Area Treatment (CAT) Plan**

In Catchment Area Treatment the division has executed some soil and moisture conservation activities like loose boulders check dam (LBCD), staggered trenches were prepared in the plantation area as well as assigned the forest area.

In all, 3 out of 5 sites were visited and it was observed that soil and moisture conservation measures undertaken were found effective and functional to control runoff and thus preventing loss of soil by surface soil erosion, reduce soil compaction, improve soil fertility, conserve, or drain water and harvest (excess) water.

### **6.2.4 (C6.1) Finding on the activities under Integrated Wildlife Management**

No activity has been observed under the category in this division.

### **6.2.5 (C6.1) Finding on the activities under NPV fund (A) and NPV fund (B)**

From this sub-head some new creation and some maintenance works done. Under AR plantation 170 ha. area developed through Bald hill plantation & Other Indigenous Misc. Species; 1600 ha area developed through ANR plantation like medicinal species & Other Indigenous Misc. Species plantation.

Also 2<sup>nd</sup> year maintenance covered 1219 ha area, 3<sup>rd</sup> year maintenance covered 585 ha area and 600 ha area covered in 4<sup>th</sup> year maintenance.

In 41 nurseries about 20.33 lakh seedlings have been raise from the funds available for Nursery Management. Rs. 522.35 lakh expenditure incurred including AJY.



### **6.2.6 (C6.1) Update on e-green portal**

Details of all activities under CAMPA APO 22-23 have been uploaded in the portal.

### **6.2.7 (C6.1) Other Observations**

Infrastructure development: The constructed forester quarter, forest guard quarter, are good and are being utilized properly.

### **6.2.8 (C6.1) Field Survey Images**

 <p>Latitude: 18.822974                  Longitude: 82.274496                  Elevation: 549.84214 m                  Accuracy: 3.4 m                  Time: 28-04-2024 16:13                  Note: sindhigaon PSE bamboo field</p>	 <p>Latitude: 18.819885                  Longitude: 82.197297                  Elevation: 521.19222 m                  Accuracy: 3.9 m                  Time: 01-05-2024 13:13                  Note: Sindhigaon bamboo field</p>
<b>SSO Bamboo 100 ha Bopariguda Sindhigaon (2022-23)</b>	<b>SSO Bamboo 400 ha Hadhanra khal (2022-23)</b>
	 <p>Latitude: 18.874824                  Longitude: 82.284111                  Elevation: 677.97411 m                  Accuracy: 3.9 m                  Time: 27-04-2024 11:05                  Note: Phukiguda</p>
<b>Sample of map that was available at site</b>	<b>Plantation Phukiguda</b>
 <p>Latitude: 19.129894                  Longitude: 82.731566                  Elevation: 659.59119 m                  Accuracy: 3.9 m                  Time: 25-04-2024 11:49                  Note: Mohilaguda 50 hec ANR</p>	 <p>Latitude: 19.267603                  Longitude: 82.541123                  Elevation: 998.0136 m                  Accuracy: 3.2 m                  Time: 04-15-2024 16:04                  Note: Miyawaki Plantation, CAMPA</p>
<b>ANR 50 Ha (2020-21), Mohilaguda AJY, Boriguma</b>	<b>Miyawaki Plantation (2021-22), Kotapada</b>

## 6.2 (C6.2) Koraput Division

### 6.2.1 (C6.2) Overall Physical and Financial Progress Analysis

In the CAMPA APO 2022-23 there was an allocation of Rs. 2704.27 lakh from the forestry sector. The entire sum was spent. For forest protection and fire protection/control operation Rs. 224.64 lakh expenditure has been incurred.

All physical targets of new plantation, maintenance, management of degraded bamboo forests (SSO Bamboo) and SMC activities have been fully achieved including Ama Jangala Yojana (AJY). The department has executed some soil and moisture conservation activities like RCC check dam, loose

boulders check dam (LBCD), staggered trenches and percolation pit were prepared in the plantation area as well as assigned the forest area.

Seven sites out of 15 sites were visited and it was seen that soil and moisture conservation measures undertaken were effective and functional to control runoff and thus preventing loss of soil by surface soil erosion, reduce soil compaction, improve soil fertility, conserve, or drain water and harvest (excess) water.

**6.2.2 (C6.2) Finding on activities under Compensatory Afforestation**

Under Compensatory Afforestation (CA) / Penal Compensatory Afforestation (PCA) Tall Tree plantation of 6490 numbers, 4<sup>th</sup> year maintenance of 1079 ha. and 264 ha of 7<sup>th</sup> year plantation maintenance was done.

**6.2.3 (C6.2) Finding on activities under Catchment Area Treatment (CAT) Plan**

No activity has been observed under the category in this division.

**6.2.4 (C6.2) Finding on the activities under Integrated Wildlife Management**

No activity has been observed under the category in this division.

**6.2.5 (C6.2) Finding on the activities under NPV fund (A) and NPV fund (B)**

NPV funds were used for new creation and maintenance works. Under AR Plantation 300 ha area developed through Bald hill plantation & Other Indigenous Misc. Species, 1260 ha area developed through ANR plantation like medicinal species & Other Indigenous Misc. Species plantation.

In addition, 2<sup>nd</sup> year maintenance covered 721 ha area, 3<sup>rd</sup> year maintenance covered 1441 ha area and 600 ha area covered in 4<sup>th</sup> year maintenance. The villagers were found to be assisting in protection of the plantations.

Under nursery management, the funds have been used at 40 nurseries for raising about 19.90 lakh seedlings. The expenditure was Rs. 497.30 lakh including AJY.

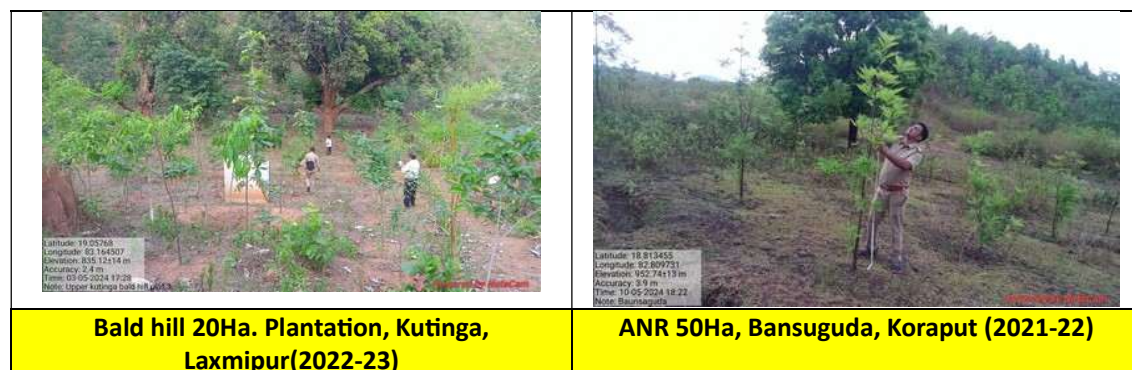
**6.2.6 (C6.2) Update on e-green portal**

Details of all activities under CAMPA APO 22-23 have been uploaded in the portal.

**6.2.7 (C6.2) Other Observations**

Infrastructure development: The constructed forester quarter, forest guard quarter, culvert and maintenance of forest road are satisfactory and are being utilized properly.

**6.2.8 (C6.2) Field Survey Images**





## 6.2 (C6.3) Malkangiri Division

### 6.2.1 (C6.3) Overall Physical and Financial Progress Analysis

No.	Sector	Allocation (Rs. In lakh)	Expenditure (Rs. In lakh)	Percentage
1	Forestry	2142.10	2142.10	100
2	Wildlife	24.00	24.00	100
	<b>Total</b>	<b>2166.10</b>	<b>2166.10</b>	<b>100</b>

For forest protection and fire protection/control operation expenditure of Rs. 200.20 lakh has been incurred.

The physical targets of new plantation, maintenance, degraded bamboo forests (SSO Bamboo) and SMC activities have been attained in totality including Ama Jangala Yojana (AJY). Some soil and moisture conservation structures that include RCC check dam, loose boulders check dam (LBCD), staggered trenches and percolation pit have been made in the plantation area as well as assigned the forest area.

In all, 9 sites out of 12 sites were visited and it was observed that soil and moisture conservation measures undertaken were effective and functional to control runoff and thus preventing loss of soil by surface soil erosion, reduce soil compaction, improve soil fertility, conserve, or drain water and harvest (excess) water.

**6.2.2 (C6.3) Finding on activities under Compensatory Afforestation**

No activity has been observed under the category in this division.

**6.2.3 (C6.3) Finding on activities under Catchment Area Treatment (CAT) Plan**

No activity has been observed under the category in this division.

**6.2.4 (C6.3) Finding on the activities under Integrated Wildlife Management**

Under wildlife management one watch tower has been built.

**6.2.5 (C6.3) Finding on the activities under NPV fund (A) and NPV fund (B)**

New creation and maintenance works done from NPV funds. Under AR plantation 95 ha. area was developed through Other Indigenous Misc. Species. 1660 ha. area developed through ANR plantation like medicinal species and Other Indigenous Misc. Species plantation.

Also, 2<sup>nd</sup> year maintenance covered 1141 ha., 3<sup>rd</sup> year maintenance covered 916 ha. and 600 ha area was covered in 4<sup>th</sup> year maintenance. The condition of the plantations is generally good.

Nursery management funds were spent on 8 nurseries where about 20.41 lakh seedlings were raised at a cost of Rs. 502.70 lakh including AJY. At present most of the 18-month seedling have been planted out.

**6.2.6 (C6.3) Update on e-green portal**

Details of all activities under CAMPA APO 22-23 have been uploaded in the portal.

**6.2.7 (C6.3) Other Observations**

Infrastructure development: The constructed forest guard quarter, culvert and are satisfactory and are being utilized properly.

**6.2.8 (C6.3) Field Survey Images**







## 6.2 (C6.4) Nabrangpur Division

### 6.2.1 (C6.4) Overall Physical and Financial Progress Analysis

No.	Sector	Allocation (Rs. In lakh)	Expenditure (Rs. In lakh)	Percentage
1	Forestry	1874.12	1874.12	100
2	Wildlife	62.50	62.50	100
	<b>Total</b>	<b>1936.62</b>	<b>1936.62</b>	<b>100</b>

Around, Rs. 203.86 lakh was spent on forest protection and fire protection /control operations. All physical targets of new plantation, maintenance, degraded bamboo forests (SSO Bamboo) and SMC have been completed including Ama Jangala Yojana (AJY). The department has executed some soil and moisture conservation activities like RCC check dam, loose boulders check dam (LBCD), staggered trenches and percolation pit, WHS, Sub-surface dyke, contour stone bunds, earthen bunds etc. in the plantation area as well as at assigned sites the forest area.

In all, 10 sites out of 15 sites were visited and it was observed that soil and moisture conservation measures undertaken were found effective and functional to control runoff and thus preventing loss of soil by surface soil erosion, reduce soil compaction, improve soil fertility, conserve, or drain water and harvest (excess) water.

**6.2.2 (C6.4) Finding on activities under Compensatory Afforestation**

No activity has been observed under the category in this division.

**6.2.3 (C6.4) Finding on activities under catchment Area Treatment (CAT) Plan**

No activity has been observed under the category in this division.

**6.2.4 (C6.4) Finding on the activities under Integrated Wildlife Management**

Under wildlife management the main activities are wildlife protection squad, tracker engagement, supply of anti-depredation equipment to primary response team, publicity and awareness programme, training to primary response team, transportation and fixing charges, cost of vehicle/POL /maintenance etc.

**6.2.5 (C6.4) Finding on the activities under NPV fund (A) and NPV fund (B)**

Under AR Plantation 50 ha. area developed through Other Indigenous Misc. species plantations. 1160 ha. area developed through ANR plantation like medicinal species & Other Indigenous Misc. Species plantation.

Also, 2<sup>nd</sup> year maintenance covered 1146 ha., 3<sup>rd</sup> year maintenance covered 2220 ha. and 600 ha. was covered in 4<sup>th</sup> year maintenance. The casualty replacement has been done. The condition of the plantations is generally satisfactory.

In nursery management, in 36 nurseries about 16.50 lakh seedlings were raised. For raising and maintenance of seedling an amount of Rs. 449.14 lakh was spent.

**6.2.6 (C6.4) Update on e-green portal**

The portal is updated.

**6.2.7 (C6.4) Other Observations**

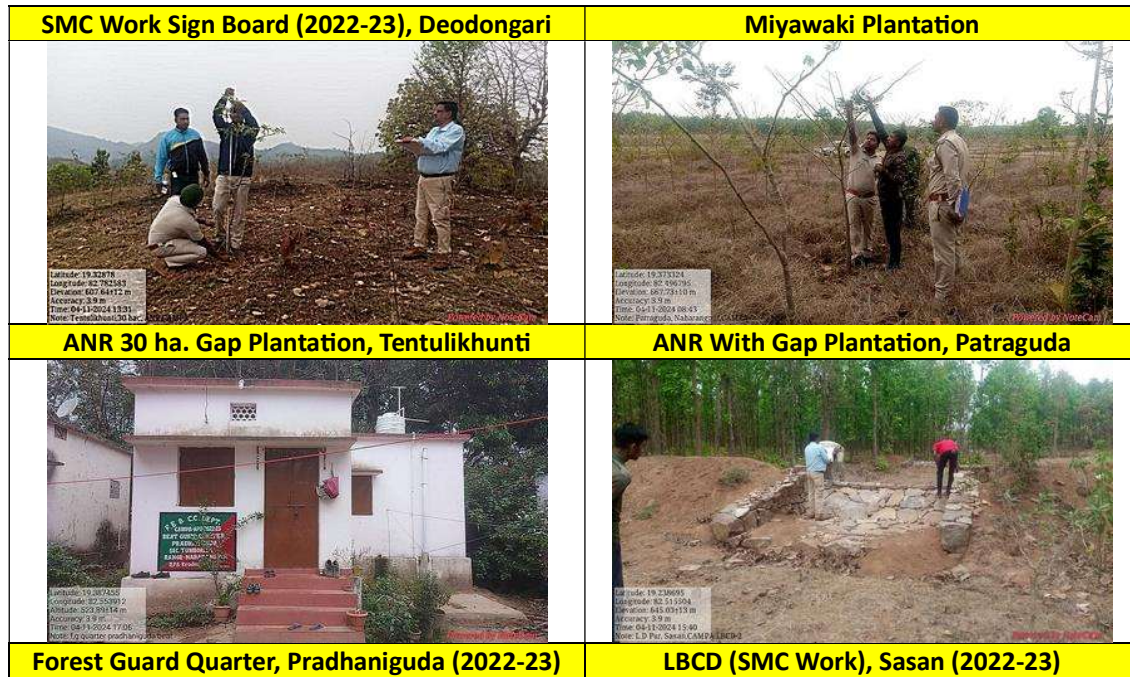
The infrastructure developed includes forester quarter, forest guard quarter, culverts etc. The constructions are being utilized properly.

**6.2.8 (C6.4) Field Survey Images**



**Mini Central Nursery Kosagamuda**

**Central Nursery Patramunda**



## 6.2 (C6.5) Rayagada Division

### 6.2.1 (C6.5) Overall Physical and Financial Progress Analysis

The physical progress is as follows:

Activity	1 <sup>st</sup> Year (Creation) (2022-23)	2 <sup>nd</sup> Year (2021-22)	3 <sup>rd</sup> Year (2020-21)	4 <sup>th</sup> Year (2019-20)	Total (ha.)
CA- Tall tree- Urban plantation in Block- 600 Nos					600
CA- Bald Hill	-	17.38	-	146.11	163.49
CA- AR (Block)	-	-	19.67	50	69.67
CA- ANR+800 seedlings	-	-	-	258.64	258.64
CA- ANR+400 seedlings (NPV plantation)	-	8.51	-	-	8.51
Bald Hill Plantation	150	445	100		
AR- Indigenous+1000	100				
AR- Fodder & Fruit +1600	30	55	05		
AR- Fodder & Fruit +500	30	-	-	500	
ANR- Vanya Silk+ 500	20				
ANR Other Misc+200	1500	2000	3000		
RET (ANR)+200	-	130	20		
ANR RET without Gap	-	20	03		
Nursery (Jan/2023)	6,24,000 seedlings				
AJY- ANR+200 Gap	-	2200	-	-	
AJY- ANR without Gap	-	2545	-	-	
SSO Bamboo	16 Coupes, 5900 Hectare, 1,77,000 clumps				
SMC in Forest Area	1000 Hectare in 43 Forest sites;				

Infrastructure	Road Repair- 13 km, Forester Quarter- 03, Forest Guard Quarter - 08, Protection Vehicle- 07, Forest Boundary Digitization- 695, Fire line- 800 km, Squad- 60 personnel
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**Financial Achievements**

**a. Forest sector**

Allotment (Rs. in Lakh)	Expenditure (Rs. in Lakh)
3352.88	3352.88

No surrender statement and no wildlife wing report was available for Evaluation.

**6.2.2 (C6.5) Finding on activities under Compensatory Afforestation**

Around, 500.313 ha. and 600 tall trees planted.

**6.2.3 (C6.5) Finding On activities under Catchment area treatment (CAT) Plan**

No activity was observed under the category in this division.

**6.2.4 (C6.5) Finding on the activities under Integrated Wildlife Plan**

No information is available.

**6.2.5 (C6.5) Finding on the activities under NPV fund (A) and NPV fund (B)**

**NPV (A)** Creation - 1830 ha. achieved.

**NPV (B)** Maintenance - 2<sup>nd</sup> year- 7345 ha., 3<sup>rd</sup> year- 3128 ha. and 4<sup>th</sup> year 500 ha., Total 10973 ha.

**6.2.6 (C6.5) Update on e-green portal**

Portal is updated.

**6.2.7 (C6.5) Other Observations**

1. Lot of variety of works have been taken up. The CA 2<sup>nd</sup> Year Bald Hill of Rayagada Range (Fr. Kuna Behera) site was very good and visited by Dist. Administration & State level other department officers.
2. SMC and ANR plantation work of Gunupur and Muniguda Range are very good.
3. Bauxite deposit & Barren hill sites have taken up for plantation in Tikiri & Kashipur Ranges are very good.
4. There is scope for improvement in record keeping and updating.

6.2.8 (C6.5) Field Survey Images



## 6.2 (C7) Rourkela Circle

There are 5 forest divisions in Rourkela Circle, and all are territorial divisions, viz., Bonai, Deogarh, Keonjhar, Rourkela, and Sundargarh.

Subsequent 5 tables provide information for the Circle, followed by division-wise observations organized under 8 sub-sections. In Rourkela Circle total expenditure incurred is around Rs. 98.32 Cr. of which Rs. 78.6 Cr. has been spent by the forest wing, and around Rs. 19.72 Cr. has been spent by the wildlife wing of the forest department.

**Table C7.6.1.1: Financial Achievements in Rourkela Circle as per the APO (Rs. In lakh)**

Name of Division	Forestry Activities (General)	Wildlife Management	Total Expenditure Incurred
Bonai	1,170.47	580.17	1,750.64
Deogarh	1,253.51	273.75	1,527.26
Keonjhar	2,155.47	684.68	2,840.15
Rourkela	1,746.05	292.91	2,038.96
Sundargarh	1,535.48	140.05	1,675.53
<b>Total</b>	<b>7,860.98</b>	<b>1,971.56</b>	<b>9,832.54</b>

**Table C7.6.1.2: Study Coverage in Rourkela Circle – Plantation CA/PCA/NPV (Creation & Maintenance) including Without Gap, SMC & SSO (Bamboo)**

Division	Area Covered (ha)	Evaluated Area (ha.)	% of area evaluated	No. of Total Sites	Sample to be Covered	No. of Sites covered	% of Verification
Sundargarh	9,973.28	1,443.19	14%	110	11	12	11%
Rourkela	8,620.92	1,243.72	14%	131	13	23	18%
Bonai	9,760.10	1,493.30	15%	104	10	11	11%
Deogarh	5,761.15	257.87	4%	79	8	7	9%
Keonjhar	9,133.73	835.84	9%	204	20	24	12%
<b>Total</b>	<b>43,249.18</b>	<b>5,273.91</b>	<b>12%</b>	<b>628</b>	<b>63</b>	<b>77</b>	<b>12%</b>

**Table C7.6.1.3: Study Coverage in Rourkela Circle – Infrastructure Development and Nursery Management**

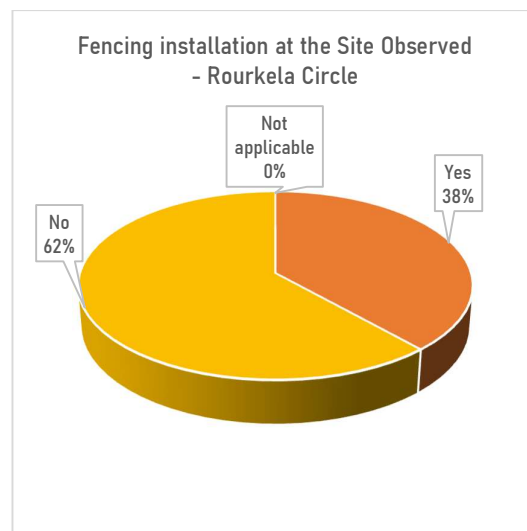
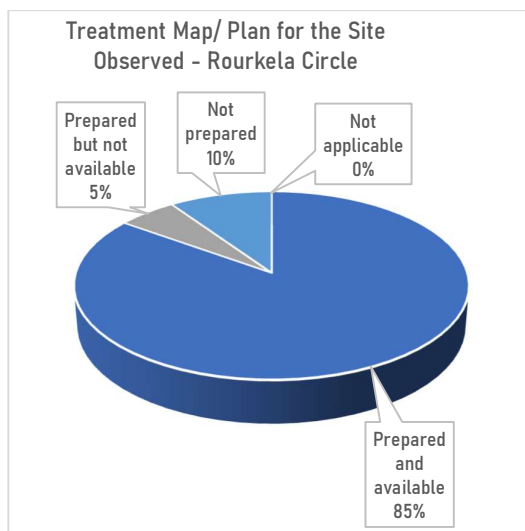
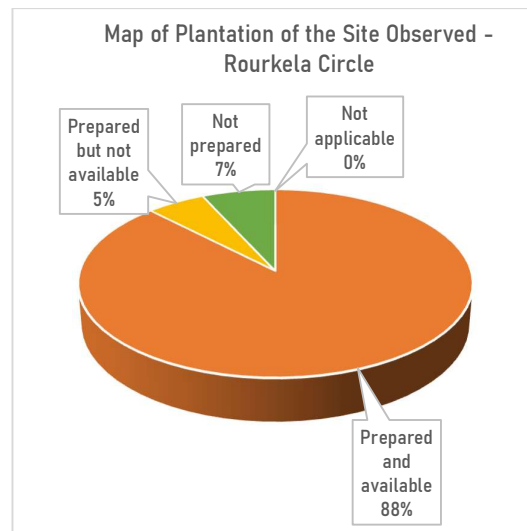
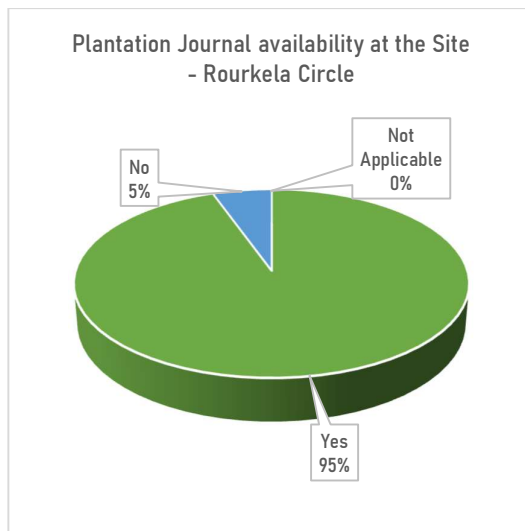
Division	No. of Total Sites	Sample to be Covered	No. of Sites covered	% of Verification
Sundargarh	21	2	4	19%
Rourkela	40	4	6	15%
Bonai	19	2	5	26%
Deogarh	49	5	8	16%
Keonjhar	28	3	6	21%
<b>Total</b>	<b>157</b>	<b>16</b>	<b>29</b>	<b>18%</b>

**Table C7.6.1.4: Financial Statement Rourkela Circle – Plantation CA/PCA/NPV (Creation & Maintenance) including Without Gap, SMC & SSO (Bamboo)**

Division	Amount sanctioned (Rs. In lakh)	Amount released (Rs. In lakh)	Expenditure Incurred (Rs. in lakh)	% of Achievement
Sundargarh	151.49	104.65	104.65	69%
Rourkela	213.89	122.88	122.88	57%
Bonai	110.90	79.15	79.15	71%
Deogarh	49.52	49.52	49.52	100%
Keonjhar	146.34	146.34	141.46	97%
<b>Total</b>	<b>672.15</b>	<b>502.54</b>	<b>497.66</b>	<b>74%</b>

**Table C7.6.1.5: Financial Statement Rourkela Circle – Infrastructure Development and Nursery Management**

Division	Amount sanctioned (Rs. In Lakh)	Amount released (Rs. In Lakh)	Expenditure Incurred (Rs. in Lakh)	% of Achievement
Sundargarh	39.26	39.26	39.26	100%
Rourkela	63.96	62.16	62.16	97%
Bonai	47.18	44.08	44.08	93%
Deogarh	64.92	62.67	62.67	97%
Keonjhar	174.36	174.36	174.36	100%
<b>Total</b>	<b>389.69</b>	<b>382.54</b>	<b>382.54</b>	<b>98%</b>



In subsequent subsections division-wise observations are presented. The data has been collected from field level and specific to the activities being observed. Thus, this may not add-up to the circle totals.

## **6.2 (C7.1) Bonai Division**

### **6.2.1 (C7.1) Overall Physical and Financial Progress Analysis**

The total expenditure from CAMPA APO 2022-23 is Rs. 1750.64 lakh. Of this Rs.1170.47 lakh was spent in general forest activities and the rest amount Rs. 580.17 lakh was spent in wild life management. An amount of Rs. 462.80 lakh has been spent towards plantation activities under CA/PCA and NPV.

Under Ama Jungle Yojana Rs. 35.81 lakh was spent on plantation activities like 2<sup>nd</sup> year maintenance without gap planting with the participation of nearby villagers forming VSS. Rs. 118.44 lakh were spent on SSO of degraded bamboo forest over an area of 4700 ha. in nine forest blocks. On forest protection Rs.163.06 lakh, on fire protection activities Rs.64.42 lakh and in Infrastructure development Rs. 105.94 lakh has been spent.

### **6.2.2 (C7.1) Finding on activities under Compensatory Afforestation**

Activities like PO for AR, ANR and 1<sup>st</sup> year creation of AR and Tall tree plantation and maintenance activities of 2<sup>nd</sup> year, 3<sup>rd</sup> year and 4<sup>th</sup> to 8<sup>th</sup> year has been carried out. Compensatory plantation is very necessary in Bonai Division as there is a lot of mining activity in the area. An amount of Rs. 69.50 lakh has been spent on compensatory activities. Plantations are in good condition.

### **6.2.3 (C7.1) Finding on activities under catchment Area Treatment (CAT) Plan**

No activity has been observed under the category in this division.

### **6.2.4 (C7.1) Finding on the activities under Integrated Wildlife Management**

For wildlife management activities Rs. 580.17 lakh has been spent. Activities like anti-depredation work, purchase of anti-depredation equipment, creation of barriers like solar fence and trenches have been done. Payment of compensation amount for crop damage and house damage and human death due to wildlife was also done from this fund.

### **6.2.5 (C7.1) Finding on the activities under NPV fund (A) and NPV fund (B)**

Plantations of new areas and their maintenance has been carried out over an area of 2610 ha. at 57 sites in seven Ranges. Creation of AR (other indigenous), ANR@500 plants /ha (Vanya silk and Fodder & Fruit), ANR @200 plants /ha (other indigenous) was carried out over an area of 890 ha. in six ranges at 19 sites.

Similarly, 3<sup>rd</sup> year maintenance ANR @200 plants/ha was taken up in Six sites over an area of 600 ha. Further 4<sup>th</sup> year maintenance of AR @1600 (3 sites) over an area of 40 ha and ANR @200 (13 sites) over an area of 500 ha was also done. In case of 4<sup>th</sup> year plantations, it has been already started merging with the natural forest. The condition plantations is good.

### **6.2.6 (C7.1) Update on e-green portal**

It is maintained at the Division Office.

### **6.2.7 (C7.1) Other Observations**

There are no additional observations.

### **6.2.8 (C7.1) Field Survey Images**



 <p>Latitude: 21.93926                  Longitude: 85.03933                  Elevation: 366.94122 m                  Accuracy: 2.8 m                  Time: 03-02-2024 12:44                  Note: Bonai Kuliposh 13.8 ha 2023</p>	 <p>Latitude: 21.70217                  Longitude: 85.07928                  Elevation: 303.29122 m                  Accuracy: 3.0 m                  Time: 03-02-2024 12:05                  Note: Bonai Kuliposh talbahali baraguda 90 ha 2023</p>
<p><b>ANR 13.8 ha (2022-23) Bonai Kuliposh</b></p>	<p><b>ANR 90 ha (2022-23) Vanya silk Talbahali Baraguda</b></p>
 <p>Latitude: 21.93027                  Longitude: 85.03885                  Elevation: 356.78166 m                  Accuracy: 2.3 m                  Time: 03-02-2024 10:51                  Note: Bonai Kuliposh 15.4 ha</p>	 <p>Latitude: 21.77827                  Longitude: 84.96991                  Elevation: 199.75219 m                  Accuracy: 3.8 m                  Time: 03-02-2024 11:51                  Note: Bonai Dharanidharipali 5.99 ha 2023</p>
<p><b>ANR @500/ha 15.4 ha(2022-23) Kuliposh</b></p>	<p><b>Ar 5.99 ha (2022-23) Dharanidharipali</b></p>
 <p>Latitude: 21.87677                  Longitude: 84.94901                  Elevation: 209.26122 m                  Accuracy: 3.2 m                  Time: 03-02-2024 15:59                  Note: Bonai bonai nursery</p>	 <p>GOVT. OF ODISHA                  TIKAYATPALI (T) NURSERY                  INTER DIVISION CAMP, BHINGHAT                  SCHEME - CAMPA - 20023                  NO. OF SEEDLINGS - 20,000 Nos                  1. Talbali 6. Ambe                  2. Bahada 7. Pandu                  3. Karanja 8. Sisu                  4. Arjuna 9. Bamboe                  5. Aishan 10. Kumbhi                  BONAI RANGE, BONAI DIVISION</p> <p>Latitude: 21.67992                  Longitude: 84.95994                  Elevation: 222.94122 m                  Accuracy: 3.0 m                  Time: 03-02-2024 13:00                  Note: Bonai Bhinghat nursery 2023</p>
<p><b>Bonai Nursery (2022-23)</b></p>	<p><b>Tikayatpali Nursery (2023-24)</b></p>
 <p>Latitude: 21.70083                  Longitude: 84.93962                  Elevation: 221.91111 m                  Accuracy: 9.9 m                  Time: 03-02-2024 17:18                  Note: Bonai bonai tikayatpali FG quarter</p>	 <p>Latitude: 21.55975                  Longitude: 84.96906                  Elevation: 200.87125 m                  Accuracy: 1.0 m                  Time: 03-02-2024 16:07                  Note: Bonai bonai elephant proof trench</p>
<p><b>Forest Guard Quarter Tikayatpali (2022-23)</b></p>	<p><b>Elephant proof trench Bonai (2022-23)</b></p>

## 6.2 (C7.2) Deogarh Division

### 6.2.1 (C7.2) Overall Physical and Financial Progress Analysis

Total amount of Rs. 1527.26 lakh was spent from the APO 2022-23. Out of which Rs. 273.75 lakh was from the wild life management plan and the rest Rs. 1253.51 lakh was from the general forest part of the allocation.

Towards SSO of degraded bamboo spread over an area of 150 ha. in two forest blocks, the amount of Rs. 63.99 lakh was spent. Further plantation activities like ANR without gap planting and ANR with gap planting has been carried out over an area of 3100 ha. with the participation of nearby villagers by forming one legal body called VSS under AJY (Ama Jungle Yojana).

Around, Rs. 134.03 lakh spent towards forest protection. Fire protection activities like engagement of fire-fighting squads, vehicle, purchase of blowers and awareness meeting with public and staff have been undertaken.

#### **6.2.2 (C7.2) Finding on activities under Compensatory Afforestation**

Very limited plantation activities seen in this Division. An amount of Rs. 93.82 lakh spent towards 2<sup>nd</sup> year maintenance of plantations over an area of 658.121 ha in 12 sites. Similarly, 3<sup>rd</sup> year maintenance done over 77.452 ha. area by spending Rs. 4.10 lakh in one site. 5<sup>th</sup> year maintenance done at a site of 35.58 ha. at cost of Rs.2.12 lakh. Total amount spent under CA activities was Rs. 100.03 lakh. The condition of the plantations is good.

#### **6.2.3 (C7.2) Finding on activities under catchment Area Treatment (CAT) Plan**

No activity has been observed under the category in this division.

#### **6.2.4 (C7.2) Finding on the activities under Integrated Wildlife Management**

An amount of Rs.273.75 lakh spent in wildlife management activities. These include purchase of anti-depredation activities, construction of barriers like solar fence, awareness campaign and payment of compensation amount towards crop damage, house damage and human death due to attack of wild animals.

#### **6.2.5 (C7.2) Finding on the activities under NPV fund (A) and NPV fund (B)**

Under NPV fund, plantation activities like AR @1600/ha (bald hill and other indigenous) and ANR (vanyasilk, RET and other Indigenous) has been created in the 1<sup>st</sup> year over an area of 620 ha. Simultaneously, maintenance activities like 3<sup>rd</sup> year and 4<sup>th</sup> year were done over an area of 1270 ha. An amount of Rs. 272.96 lakh has been spent.

#### **6.2.6 (C7.2) Update on e-green portal**

Information and data relating to CAMPAs activities are being uploaded at division level. There is ample scope for improvement, that is, the task should be performed regularly as a matter of routine.

#### **6.2.7 (C7.2) Other Observations**

There are no additional observations.

#### **6.2.8 (C7.2) Field Survey Images**

 <p>Latitude: 21.378113                  Longitude: 85.183119                  Elevation: 134.72x100 m                  Accuracy: 12.0 m                  Time: 28-08-2024 12:16                  Note: Jenapasi ANR Plantation</p>	 <p>Latitude: 21.342009                  Longitude: 84.764297                  Elevation: 192.94x36 m                  Accuracy: 15.4 m                  Time: 27-08-2024 12:44                  Note: Kankarkho PRF AR Plantation</p>
<p><b>ANR @200 Plant 100Ha (2022-23) Jenapasi</b>                      <b>10 Ha AR Plantation@1600(2022-23) Kankarkho PRF</b></p>	
 <p>Latitude: 21.611022                  Longitude: 84.792746                  Elevation: 205.39x100 m                  Accuracy: 9.1 m                  Time: 28-08-2024 13:53                  Note: Dangapal ANR Plantation</p>	 <p>Latitude: 21.420237                  Longitude: 84.480043                  Elevation: 523.22x100 m                  Accuracy: 11.9 m                  Time: 27-08-2024 16:57                  Note: Kansar SSO Bamboo Forest</p>
<p><b>ANR @500 Vanya Silk Plantation (2022-23) Dangapal</b>                      <b>SSO Bamboo Kansar</b></p>	
 <p>Latitude: 21.415324                  Longitude: 85.120993                  Elevation: 170.71x93 m                  Accuracy: 9.2 m                  Time: 24-08-2024 13:01                  Note: Ranja Village Forest Road</p>	 <p>Latitude: 21.723164                  Longitude: 84.650341                  Elevation: 385.45x100 m                  Accuracy: 10.2 m                  Time: 28-08-2024 16:17                  Note: Panibhandara Culvert</p>
<p><b>15 K.m Forest Road Ranja PRF(2022-23)</b>                      <b>Culvert Panibhandara (2022-23)</b></p>	
 <p>Latitude: 21.431708                  Longitude: 85.194998                  Elevation: 70.0x100 m                  Accuracy: 10.3 m                  Time: 28-08-2024 13:52                  Note: Palahara CN</p>	 <p>Latitude: 21.602583                  Longitude: 84.705128                  Elevation: 257.34x100 m                  Accuracy: 13.2 m                  Time: 28-08-2024 14:05                  Note: Barkote Range Boundary Wall</p>
<p><b>Central Nursery, Palahara (2022-23)</b>                      <b>Boundary Wall at Barkote Range (2022-23)</b></p>	
 <p>Latitude: 21.609408                  Longitude: 84.770113                  Elevation: 257.24x100 m                  Accuracy: 7.4 m                  Time: 28-08-2024 14:08                  Note: Kantapali FGQ</p>	 <p>Latitude: 21.352899                  Longitude: 84.705202                  Elevation: 71.3x100 m                  Accuracy: 12.5 m                  Time: 28-08-2024 13:48                  Note: Maylagiri Fire Line</p>
<p><b>Forest Guard Quarter (2022-23), Kantapali</b>                      <b>Fireline Maylagiri</b></p>	

## **6.2 (C7.3) Keonjhar Division**

### **6.2.1 (C7.3) Overall Physical and Financial Progress Analysis**

An amount of Rs. 2155.47 lakh was spent from APO 22-23 under general forest head. From the Wild life Management head, an amount of Rs. 684.68 lakh has been spent. In case of AJY Rs.120.55 lakh was spent at 68 sites by forming VSS in villages. An area of 2650 ha. has been treated under ANR without Gap planting. Under NPV an amount of Rs. 231.08 lakh was spent for AR and ANR activities. Under the forest protection head Rs. 178.92 lakh spent towards the payment of hired vehicle and engagement of squad. Similarly, activities like hired vehicle, engagement of fire response team, creation of fire line and its maintenance, purchase of blower and awareness training to public and staff has been done. Rs.109.93 lakh has been spent for protection of forest from fire. For development of infra-structure, Rs.138.16 lakh was spent on construction of quarters for Forest Guard and Forester, culverts, causeways, and forest roads.

### **6.2.2 (C7.3) Finding on activities under Compensatory Afforestation**

Maximum activities like PO for AR and ANR and its maintenance up to 8<sup>th</sup> year has been carried out under CA. Keonjhar Division is having mining activities. So a good amount of forest area has been diverted for non-forest activities. To compensate the loss of forests, many plantation and related activities have been taken up in the division. In case of PO, an amount of Rs.69.38 lakh was spent towards AR, ANR and tall tree plantation over 457.2862 ha of area in 14 sites.

Similarly in 1<sup>st</sup> year creation an amount of Rs. 290.98 lakh has been spent for plantation activities like ANR, AR, Bald hill plantation and tall tree plantation in 35 sites. Further 2<sup>nd</sup> year activities over 4 sites, 3<sup>rd</sup> year activities in 18 sites, 4<sup>th</sup> year in 6 sites, 5<sup>th</sup> year in 6 sites, 6<sup>th</sup> year in one site, 7<sup>th</sup> year at 15 sites and 8<sup>th</sup> year in one site has been taken up. Overall, an amount of Rs.1002.33 lakh has been utilized toward plantation activities from the CAMPA APO 2022-23. Since all the plantations under CA are being maintained up to 10<sup>th</sup> year, the condition of the plantations is good.

### **6.2.3 (C7.3) Finding on activities under catchment Area Treatment (CAT) Plan**

No activities have been observed under the category in this division.

### **6.2.4 (C7.3) Finding on the activities under Integrated Wildlife Management**

An amount of Rs. 684.68 lakh has been spent in the activities under Wild Life Management Plan. These include anti-depredation activities, anti-depredation equipment, barriers like trenches and solar fencing etc. Additionally, payment of compensation amounts due to crop damage, house damage, killing of domestic animals and death of human beings resulting from conflict with wild animals was also incurred from this fund.

### **6.2.5 (C7.3) Finding on the activities under NPV fund (A) and NPV fund (B)**

Plantation activities like 1<sup>st</sup> year creation and 3<sup>rd</sup> year and 4<sup>th</sup> year maintenance were carried over an area of 1745 ha in 36 sites. The activities include ANR Vanya Silk @ 500 plants/ha, other indigenous @200 plants/ha and Bald hill plantation @1600plants/ha. The condition of plantation is good.





### **6.2.6 (C7.3) Update on e-green portal**

All the related information under the activities of CAMPA APO 22-23 has been uploaded in the e-green portal in the Division office as well as Range Office.

### **6.2.7 (C7.3) Other Observations**

There are no additional observations.

### 6.2.8 (C7.3) Field Survey Images

 <p>Latitude: 21.64204                  Longitude: 85.42062                  Elevation: 544.0814 m                  Accuracy: 1.4 m                  Date: 07-18-2024 12:28                  Range: Kanjihar (T)                  Section: B. J. P.</p>	 <p>Latitude: 21.52154                  Longitude: 85.39225                  Elevation: 312.2433 m                  Accuracy: 1.4 m                  Date: 07-17-2024 11:58                  Range: Kanjihar (T)                  Section: B. J. P.</p>
<p><b>ANR 119.77ha.(2016-17) Jagar, Kumudi</b></p>	<p><b>Bald hill 32.26 ha(2022-23) Lunjajhar Kanjipani</b></p>
 <p>Latitude: 21.69517                  Longitude: 85.42066                  Elevation: 437.7913 m                  Accuracy: 1.4 m                  Date: 07-18-2024 17:44                  Range: Kanjihar (T)                  Section: B. J. P.</p>	 <p>Latitude: 21.64203                  Longitude: 85.42075                  Elevation: 695.2614 m                  Accuracy: 1.4 m                  Date: 07-18-2024 12:42                  Range: Kanjihar (T)                  Section: B. J. P.</p>
<p><b>ANR Banspal (2022-23)</b></p>	<p><b>ANR Sukati Beat (2016-17)</b></p>
 <p>Latitude: 21.69513                  Longitude: 85.42066                  Elevation: 433.9625 m                  Accuracy: 1.4 m                  Date: 07-18-2024 17:21                  Range: Kanjihar (T)                  Section: B. J. P.</p>	 <p>Latitude: 21.43725 N                  Longitude: 85.34308 E                  Elevation: 507.2663 m                  Accuracy: 1.2 m                  Date: 07-29-2024 11:18                  Range: Kanjihar (T)                  Section: Banspal (B)</p>
<p><b>Fencing and SMC works, Bansapal, Suakati Beat(2022-23)</b></p>	<p><b>Nursery Padampur (2021-22)</b></p>
 <p>Latitude: 21.69509                  Longitude: 85.42075                  Elevation: 432.2174 m                  Accuracy: 1.4 m                  Date: 07-18-2024 17:21                  Range: Kanjihar (T)                  Section: B. J. P.</p>	 <p>Latitude: 22.5187 N                  Longitude: 85.3434 E                  Elevation: 486.2814 m                  Accuracy: 2.7 m                  Date: 08-02-2024 13:07                  Range: Kanjihar (T)                  Section: Banspal (B)</p>
<p><b>SMC work at Bansapal plantation site, Suakati Beat (2022-23)</b></p>	<p><b>Forest Guard Quarter Purusotamapur (2022-23)</b></p>

## 6.2 (C7.4) Rourkela Division

### 6.2.1 (C7.4) Overall Physical and Financial Progress Analysis

An amount Rs.2038.96 lakh was utilized by Rourkela Division from CAMPA APO 2022-23. Out of this expenditure from Wild life head is Rs. 292.91 lakh and Rs. 1746.05 lakh from the Forest Management head. Under Forest Management works like plantations including creation and its maintenance under CA/PCA and NPV has been carried out in the field. Beside this under Ama Jungle Yojana, ANR without Gap planting was taken up over an area of 2360 ha (2<sup>nd</sup> year and 3<sup>rd</sup> year maintenance) with participation of villagers forming VSS at village level. SSO of degraded bamboo over an area of 300 ha. was also taken up at a cost of Rs.7.50 lakh.

**6.2.2 (C7.4) Finding on activities under Compensatory Afforestation**

Under CA/PCA 516.7985 ha. of area was taken up in 1<sup>st</sup> year creation. From which, block plantation is 8.22 ha., 0.0225 ha is ANR @200/ ha. and the rest 508.556 ha. was taken up under ANR @400/ha. Other activities are all the 2<sup>nd</sup>, 3<sup>rd</sup>, 4<sup>th</sup>, 5<sup>th</sup>, 6<sup>th</sup> and 8<sup>th</sup> year maintenance of plantations. At these maintenance sites, except two sites all are small sized areas. An amount of Rs.476.52 lakh was spent for these plantation activities during CAPMPA APO 20. 22-23. Condition of plantations is good.

**6.2.3 (C7.4) Finding on activities under catchment Area Treatment (CAT) Plan**

No activities has been observed under the category in this division.

**6.2.4 (C7.4) Finding on the activities under Integrated Wildlife Plan**

Under State CAMPA Wild life Plan an amount of Rs.292.91 lakh was released and spent on works like anti-depredation activities, purchase of equipment, erection of barriers like solar fencing, trench fencing. Two anti-poaching barracks was also constructed in the field.

**6.2.5 (C7.4) Finding on the activities under NPV fund (A) and NPV Fund (B)**

Under this scheme, several plantations and their maintenance has been taken up. In this creation, activities like ANR @500 plants/ha., RET/Medicinal @200 plants/ha., other indigenous @200 plants/ha., over 1600 ha. was taken up.

Similarly, maintenance of 2<sup>nd</sup> year, 3<sup>rd</sup> year and 4<sup>th</sup> year plantations over an area of 3239 ha. was taken up. On paper it is different scheme, but in the field, it is only AR. In case of ANR, plantation is being taken up in AR mode. It was also noticed in the field that the species planted are not according to the prescriptions of the scheme except in the Bald Hill plantations. Even there, it is noticed that species are not selected according to the requirements of the sites that is, those species to be preferably planted at the top hills are not planted there. Thus, the aim of taking up site specific plantation that will suit the existing site-specific needs are not fulfilled. However, despite this, the overall condition of plantations is good.

**6.2.6 (C7.4) Update on e-green watch Portal**

All inputs uploaded at range level and site is updated.

**6.2.7 (C7.4) Other Observations**

There are no additional observations.

**6.2.8 (C7.4) Field Survey Images**





## 6.2 (C7.5) Sundergarh Division

### 6.2.1 (C7.5) Overall physical and financial progress analysis

In case of forestry sector (general) target of Rs. 1535.48 lakh has been achieved. Similarly in case of wildlife wings the total target of Rs. 140.05 lakh has been achieved. All targets allotted to the division have been achieved fully with a slight variation in financial target. An amount of Rs.50.68 lakh has been

refunded under CAMPA APO 2022-23(forest Wings). As per records an amount of Rs. 5 lakh and Rs. 1.75 lakh has been refunded under IWLMP and NPV (Wildlife) respectively.

As per records, during 22-23 there was different type of ANR (other indigenous, RET) and its maintenance, AR etc. under CA, PCA and NPV. SSO (Bamboo) target has been achieved.

#### **6.2.2 (C7.5) Finding on activities under Compensatory Afforestation**

Sundergarh Division is situated mainly in IB Valley. There is heavy underground coal stock in Gopalpur Range and Hemgiri Range of the Division. At present coal mines are in operation by M/S- OPGC, NTPC, and MCL. In future this may increase. As a result, huge quantities of forest area will be diverted for non-forestry purpose and accordingly CA plantations will be raised to compensate the loss either in Sundergarh Division or in any place in Odisha as per the availability of suitable land. In Sundergarh Division CA/PCA plantations has been raised over 78 sites with an expenditure of Rs.210.97 lakh. Overall, the condition of plantation is good.

#### **6.2.3 (C7.5) Funding on activities under Catchment Area Treatment (CAT) Plan**

No activity has been observed under the category in this division.

#### **6.2.4 (C7.5) Finding on the activities under integrated Wildlife Management**

Sundergarh division is prone to human animal conflict. So, vehicles, trackers, squad members were deployed for the purpose. Compensation was distributed was provided on urgent basis to mitigate agitation by local populations.

#### **6.2.5 (C7.5) Finding on activities under NPV Fund (A) and NPV Fund (B)**

A number of plantations have been raised under NPV like creation, maintenance etc. An amount of Rs. 898.23 lakh has been spent towards creation of AR, ANR and its maintenance in 83 no of sites. One Bald Hill plantation has been successfully raised in Sundergarh Range and the growth is satisfactory.

Visited one AR plantation in Hemgiri Range where bamboo is the predominant crop and now the area looks like a bamboo plantation. Growth is excellent. Also, Hemgiri Range is famous for its bamboo plantation.

Whatever be the type of plantation in the scheme, it is in AR mode in the field. But in case of ANR, wherever there is shades, growth of the saplings is not satisfactory. It was found that in case of ANR (RET species/medicinal), proper care was not taken in the selection of species especially in RET. Species must be selected as per the scheme and purpose. Also, appropriate species should be raised in the nursery as per the scheme – this reflects an inconsistency in planning for the plantation.

#### **6.2.6 (C7.5) Update in e-green portal**

It was observed that details of all activities under CAMPA 22-23 have been uploaded in the portal. Print out copy has been provided from the office.

#### **6.2.7 (C7.5) Other Observations**

There are no additional observations.



6.2.8 (C7.5) Filed Survey Images

 <p>Latitude: 22.364393              Longitude: 84.071862              Elevation: 364.39119 m              Accuracy: 11 m              Time: 07-10-2024 11:21              Meta: sandarparh mahulgaon 0016-2024 C7.5</p>	 <p>Latitude: 22.432507              Longitude: 84.063073              Elevation: 441.15191 m              Accuracy: 7.6 m              Time: 07-10-2024 12:59              Meta: sandarparh tilia 02 hr 2024 plantation</p>
<p><b>ANR 100 ha (2017-18) Mahulgaon</b></p>	<p><b>ANR 25 ha. (2022-23) Tilia</b></p>
 <p>Latitude: 22.045485              Longitude: 84.760592              Elevation: 390.37125 m              Accuracy: 3.7 m              Time: 07-11-2024 12:02              Meta: sandarparh gadajore 0016-2024 2022-23</p>	 <p>Latitude: 22.447817              Longitude: 84.072745              Elevation: 536.0127 m              Accuracy: 9.4 m              Time: 07-10-2024 13:30              Meta: sandarparh tilia 50 hr 2024 plantation</p>
<p><b>ANR 40 ha. (2022-23) Gadajore</b></p>	<p><b>ANR 50 ha (2022-23) RET Plantation Tilia</b></p>
 <p>Latitude: 22.072705              Longitude: 84.074900              Elevation: 329.69216 m              Accuracy: 3.2 m              Time: 07-11-2024 10:12              Meta: sandarparh medinipur CA 2019/2021-22</p>	 <p>Latitude: 22.276455              Longitude: 84.040992              Elevation: 226.02122 m              Accuracy: 1.3 m              Time: 07-10-2024 11:31              Meta: sandarparh range subdega 002</p>
<p><b>CA ANR 15.1Ha (2020-21) Medinipur</b></p>	<p><b>Beat Officer Quarter, Subdega Beat (2022-23)</b></p>

## 6.2 (C8) Sambalpur Circle

There are 6 forest divisions in this circle, of which 4 are territorial divisions and 2 are wildlife divisions, viz., Bamara WL, Bargarh, Hirakhud WL, Jharsuguda, Rairakhhol, and Sambalpur.

Subsequent 5 tables provide information for the Circle, followed by division-wise observations organized under 8 sub-sections. In Sambalpur Circle total expenditure incurred is around Rs. 83.13 Cr. of which Rs. 71.82 Cr. has been spent by the forest wing, and around Rs. 11.31 Cr. has been spent by the wildlife wing of the forest department.

**Table C8.6.1.1: Financial Achievements in Sambalpur Circle as per the APO (Rs. In lakh)**

Name of Division	Forestry Activities (General)	Wildlife Management	Total Expenditure Incurred
Bamara WL	1,522.90	320.49	1,843.39
Bargarh	1,424.03	36.38	1,460.41
Hirakhud WL	265.04	296.22	561.26
Jharsuguda	697.07	149.11	846.18
Rairakhhol	1,740.69	198.88	1,939.56
Sambalpur	1,532.02	130.08	1,662.10
<b>Total</b>	<b>7,181.75</b>	<b>1,131.15</b>	<b>8,312.90</b>

**Table C8.6.1.2: Study Coverage in Sambalpur Circle – Plantation CA/PCA/NPV (Creation & Maintenance) including Without Gap, SMC & SSO (Bamboo)**

Division	Area Covered (ha)	Evaluated Area in ha.	% of area evaluated	No. of Total Sites	Sample to be Covered	No. of Sites covered	% of Verification
Jharsuguda	2,279.28	241.37	11%	75	8	8	11%
Sambalpur	6,016.39	710.00	12%	72	7	11	15%
Rairakhhol	9,296.08	975.00	10%	82	8	10	12%
Bargarh	7,157.02	1,570.00	22%	81	8	9	11%
Bamara WL	9,769.26	772.50	8%	101	10	13	13%
Hirakhud WL	400.00	182.80	46%	4	0.4	1	25%
<b>Total</b>	<b>34,918.03</b>	<b>4,451.67</b>	<b>13%</b>	<b>415</b>	<b>42</b>	<b>52</b>	<b>13%</b>

**Table C8.6.1.3: Study Coverage in Sambalpur Circle – Infrastructure Development and Nursery Management**

Division	No. of Total Sites	Sample to be Covered	No. of Sites covered	% of Verification
Jharsuguda	20	2	5	25%
Sambalpur	25	3	9	36%
Rairakhhol	36	4	6	17%
Bargarh	25	3	3	12%
Bamara WL	51	5	5	10%
Hirakhud WL	40	4	4	10%
<b>Total</b>	<b>197</b>	<b>20</b>	<b>32</b>	<b>16%</b>

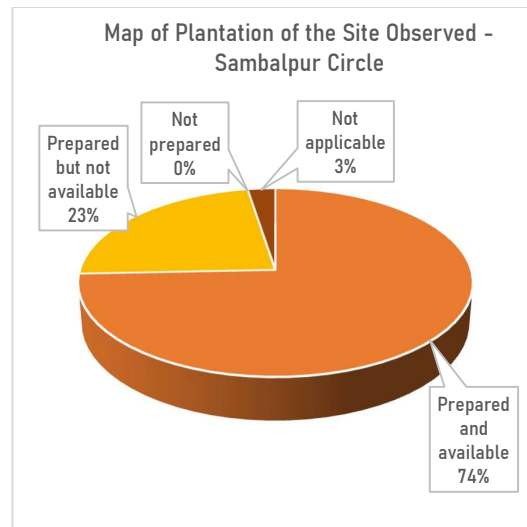
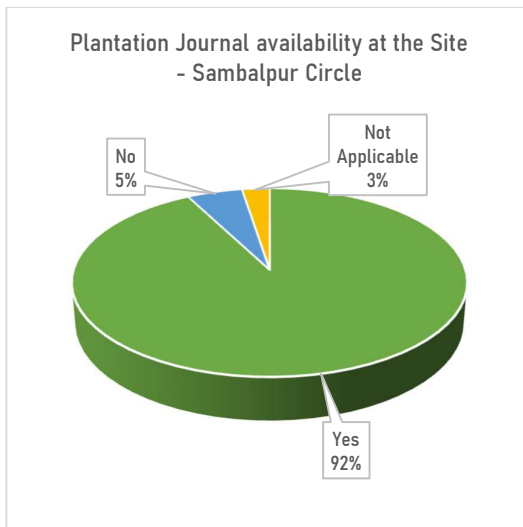
**Table C8.6.1.4: Financial Statement Sambalpur Circle – Plantation CA/PCA/NPV (Creation & Maintenance) including Without Gap, SMC & SSO (Bamboo)**

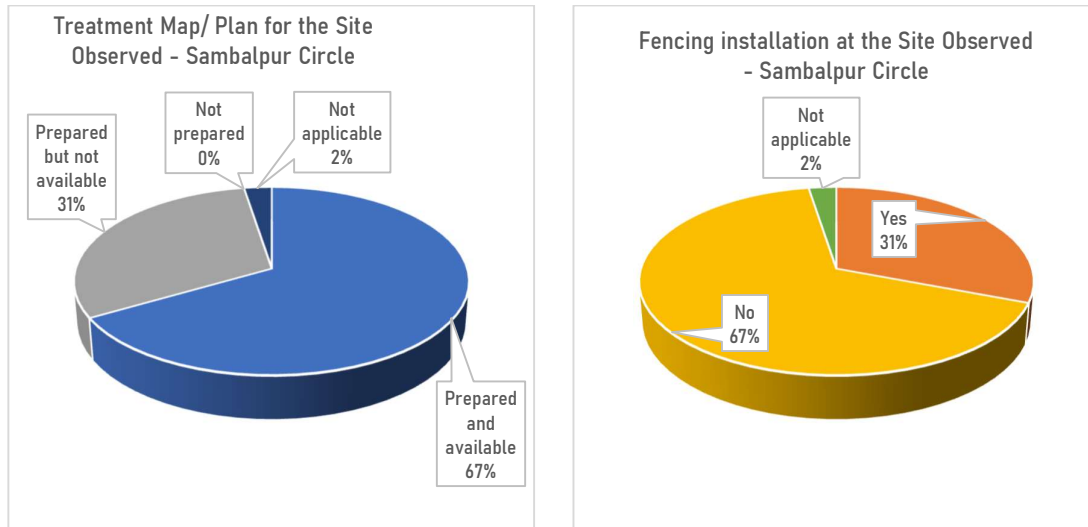
Division	Amount sanctioned (Rs. In lakh)	Amount released (Rs. In lakh)	Expenditure Incurred (Rs. in lakh)	% of Achievement
Jharsuguda	78.41	47.76	47.76	61%
Sambalpur	183.03	176.63	176.63	97%
Rairakhhol	131.48	68.13	68.13	52%

Division	Amount sanctioned (Rs. In lakh)	Amount released (Rs. In lakh)	Expenditure Incurred (Rs. in lakh)	% of Achievement
Bargarh	197.93	185.94	185.93	94%
Bamara WL	71.56	70.50	70.50	99%
Hirakhud WL	63.98	63.98	63.98	100%
<b>Total</b>	<b>726.39</b>	<b>612.94</b>	<b>612.93</b>	<b>84%</b>

**Table C8.6.1.5: Financial Statement Sambalpur Circle – Infrastructure Development and Nursery Management**

Division	Amount sanctioned (Rs. In Lakh)	Amount released (Rs. In Lakh)	Expenditure Incurred (Rs. in Lakh)	% of Achievement
Jharsuguda	60.27	60.27	60.02	100%
Sambalpur	98.82	98.82	98.82	100%
Rairakhol	28.27	28.27	28.27	100%
Bargarh	21.19	21.19	21.19	100%
Bamara WL	28.99	28.99	28.99	100%
Hirakhud WL	33.39	33.39	33.39	100%
<b>Total</b>	<b>270.93</b>	<b>270.93</b>	<b>270.68</b>	<b>100%</b>





In subsequent subsections division-wise observations are presented. The data has been collected from field level and specific to the activities being observed. Thus, this may not add-up to the circle totals.

## 6.2 (C8.1) Bamra (WL) Division

### 6.2.1 (C8.1) Overall Physical and Financial Progress Analysis

In Bamra Wildlife Division during 22-23 there was a large target of plantation activities that included ANR (other indigenous, RET) and its maintenance, AR etc. All the targets allotted to the division have been fully achieved with a slight variation in financial target.

In the Forestry sector (general) the achievement has been Rs. 1405.69 lakh against the target of 1405.71 lakh. In case of wildlife management, the total target of Rs. 320.49 lakh has been achieved. The targets for AJY, SSO of Bamboo, SMC have all been achieved. SMC like percolation pits, staggered trenches, LBCD in nalas, wire mesh LBCD were prepared in the plantation area as well as assigned area in ANR plantations. SMC structures are also being prepared in separate blocks of forest area which is good and result oriented.

In Sauntimal PRF where SMC work has been created over an area of 70 ha., was visited. A graded guide bund of 760 m. has been created on the foothills of boundary line along with one diaphragm and LBCD of 4m. and 8m. span with an expenditure of Rs. 24.50 lakh. The four LBCDs has been constructed on the foot of the nalas. The quality of work is excellent. Minimum siltation was observed due to low rainfall. In future water table of this area will be surely increase.

### 6.2.2 (C8.1) Finding on activities under Compensatory Afforestation

Due to construction of infrastructure, expansion of roads, industrial plants etc., a lot of forest land is being diverted for non-forestry purpose. To compensate the loss, at present more emphasis is being given on Compensatory Afforestation with a maintenance upto 10<sup>th</sup> year. In Bamra (Wildlife) Division, there was no allotment for new creation. Only maintenance of 5<sup>th</sup> year plantation ANR@200 plants/ha over 213.34 ha has been achieved. The condition of plantation is good.

### 6.2.3 (C8.1) Finding on activities under Catchment Area Treatment (CAT) Plan

No activity has been observed under the category in this division.

**6.2.4 (C8.1) Finding on the Activities Integrated Wildlife Management Plan**

In this wildlife division, different works like de-silting of water bodies inside sanctuary area, construction of anti- poaching barrack for use by staff, publicity and awareness programme with signage, cattle vaccination, weed eradication, purchase of anti-depredation equipment and fire-fighting equipment has been carried out. Further, meadows have been developed in the forest area to create more and easy food facilities to the herbivorous like deer, barking deer, sambar etc. It is envisaged that as the wild animals will get plenty of food inside forest area, man animal conflict will reduce as the wild animals will not go to the villages in search of food.

**6.2.5 (C8.1) Finding on the Activities under NPV Fund (A) and NPV Fund (B)**

No new creation has been done during 22-23. But different types ANR and AR maintenance has been carried out. Team visited AR plantations and ANR plantations. Type of plantation is different but practically it is all in AR plantations mode in the field with a space of 2.5 X 2.5 m. between plants. In case of ANR, where there are enough blanks and sunlight, the growth of plants is excellent. It is observed in ANR plantation of Kurmimunda PRF 50 ha of 20 -21 Kuchinda range, the growth and vigor of plants is satisfactory.

Similarly, in case of AR plantations such as in Ramjhali AR 15 ha in Kuchinda Range, and Fatamunda AR in Laidaguna PRF of Jamankira Range, the growth of plants is excellent. It was observed that the top of some plants (neem and amla) has dried - perhaps due to shortage of water during summer season.

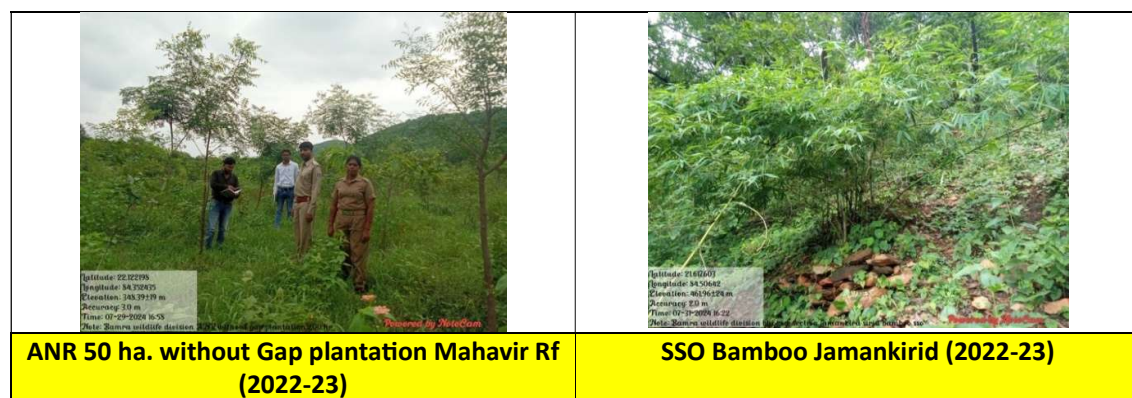
**6.2.6 (C8.1) Update on e-green Portal**

Details of all activities under CAMPA during 22-23 have been uploaded in the portal. Print out copy has been collected from office.

**6.2.7 (C8.1) Other Observations**

There are no additional observations.

**6.2.8 (C8.1) Filed Survey Images**



 <p>Latitude: 21.61297              Longitude: 84.32199              Elevation: 864.54122 m              Distance: 8.2 m              Time: 09-09-2023 07:03              Note: Bamra wildlife division, Bhojpur (east wing)</p>	 <p>Latitude: 21.509472              Longitude: 84.372257              Elevation: 364.69113 m              Distance: 15 m              Time: 07-21-2023 12:31              Note: Bamra wildlife division, Jamankira, Chharamunda (west wing)</p>
<b>Causeway, Sirid, Bhojpur (2022-23)</b>	<b>Guard Well Jamankira Chelamunda (2022-23)</b>
 <p>Latitude: 93.88897              Longitude: 84.923075              Elevation: 370.82112 m              Distance: 13 m              Time: 02-29-2020 12:25              Note: Bamra wildlife division, Jamankira, Chharamunda (west wing)</p>	 <p>Latitude: 21.69921              Longitude: 84.357365              Elevation: 309.25112 m              Distance: 13 m              Time: 08-10-2023 08:45              Note: Bamra wildlife division, Jamankira, Chharamunda (west wing)</p>
<b>AJY 50 ha., Jamankira (2020-21)</b>	<b>Tablakota Forest Guard Quarter (2022-23)</b>

## 6.2 (C8.2) Bargarh Division

### 6.2.1 (C8.2) Overall Physical and Financial Progress Analysis

Under CA/PCA Rs.130.27 lakh was released and an amount of Rs.31.07 lakh was spent.

From the Rs. 199.86 received under NPV, Rs.194.17 lakh was spent on creation and maintenance of plantations and balance of Rs. 5.69 lakh was surrendered.

For SSO Bamboo sum of Rs. 68.04 lakh and for SMC amount of Rs. 77.00 lakh has been spent.

For forest protection including fire management, Rs. 136.99 lakh was spent.

Out of the total expenditure of Rs. 1460.41 lakh, the sum of Rs. 1424.03 lakh was from the Forest wing and Rs. 36.38 lakh was from the wild life management portion.

### 6.2.2 (C8.2) Finding on activities under Compensatory Afforestation

Under CA/PCA an amount of Rs. 31.07 lakh spent towards PO (ANR) of 9.584 ha. From this APO, Rs. 31.07 lakh was spent toward 2<sup>nd</sup> year, 3<sup>rd</sup> year and 7<sup>th</sup> year maintenance of 262.394 ha. The condition of plantation is good.

### 6.2.3 (C8.2) Finding on activities under catchment Area Treatment (CAT) Plan

Under the CAT Plan, SMC structure like LBCD and Check Dams were undertaken 4 forest blocks of 3 ranges namely Bhatli Range, Ghess Range and Paikmal Range over in an area of 220 ha. In all, 201 number of LBCD and 10 number of Check Dams have been constructed. Work is good enough. Already siltation is seen and in future, there will be positive impact with increase in ground water table.

**6.2.4 (C8.2) Finding on the activities under Integrated Wildlife Management**

Amount of Rs. 36.38 lakh has been spent toward deployment of vehicle, anti-depredation activities and purchase anti-depredation equipment, payment of compensation for damage to crops and houses by wild animals.

**6.2.5 (C8.2) Finding on the activities under NPV fund (A) and NPV fund (B)**

Under NPV plantation activities like creation of ANR over 1280 ha. at 21 sites, AR over 20 ha. at 03 sites has been done. Similarly, 2<sup>nd</sup> year maintenance has been done in 1360 ha. ANR and AR 3<sup>rd</sup> year maintenance has been done over 1050 ha. and 4<sup>th</sup> year maintenance over 255 ha. has been carried out.

The choice of species should be strictly followed as per the scheme to fulfill the objectives of taking up the plantation activities. Over all condition of plantation was found to be good.

**6.2.6 (C8.2) Update on e-green portal**

Attention should be given to upgrade the e- green portal.

**6.2.7 (C8.2) Other Observations**

There are no additional observations.

**6.2.8 (C8.2) Field Survey Images**

<p align="center"><b>100Ha. ANR @200 Plant, Jagatipali, SDBR RF(2022-23)</b></p>	<p align="center"><b>Bamboo SSO Bargarh, Dechuan (2022-23)</b></p>
<p align="center"><b>RCC Check Dam, Bhatli Range Dechuan (2022-23)</b></p>	<p align="center"><b>RCC Check Dam, Ghess, Malaikhaman (2022-23)</b></p>

 <p>Latitude: 21.091763              Longitude: 83.280369              Elevation: 265.31221 m              Accuracy: 19 m              Time: 07-20-2024 11:57              Date: Bargarh ghess, mellachamunda, net by qadim</p>	 <p>Latitude: 21.66704              Longitude: 83.37093              Elevation: 329.37235 m              Accuracy: 3.0 m              Time: 07-20-2024 13:57              Date: Bargarh, Bha-Shaali, net by qadim</p>
<p><b>Forest Gurad Quarter, Ghees, Mellachamunda (2022-23)</b></p>	<p><b>Forest Guard Quarter, Bhatli, Junani (2022-23)</b></p>
 <p>Latitude: 21.603772              Longitude: 83.56825              Elevation: 333.0113 m              Accuracy: 17 m              Time: 07-20-2024 16:49              Date: Bargarh, dechuan, UGEDC</p>	 <p>Latitude: 21.696642              Longitude: 83.30815              Elevation: 372.36235 m              Accuracy: 3.0 m              Time: 07-20-2024 13:51              Date: Bargarh ghess, tel, 20.2, net by qadim</p>
<p><b>LBCD, Bargarh, Dechuan</b></p>	<p><b>AR 20 ha (2019-20) plantation Maintenance Bargarh Ghess</b></p>

## 6.2 (C8.3) Hirakud Wildlife Division

### 6.2.1 (C8.3) Overall Physical and financial Progress Analysis

Under the APO of 2022-23 - from the Forest Wing a sum of Rs. 265.04 lakh was released and utilized. Similarly amount of Rs. 296.22 lakh from the Wildlife Wing was released and spent.

Activities like SMC, development and maintenance of forest roads and culverts, causeways have been carried out in the field. With the available funds, Continuous Trench Bund has been constructed along the boundary of Reserve Forest, that act as a SMC structure. It is designed in such a fashion that the outer wall of the trench is perpendicular to the base and the inner side is sloped, so that the animals that happen to fall in the trench will come may get out but cannot go outside the RF due to that perpendicular wall. Also, the dugout earth is stacked on outer side of the trench and this increases the height and it acts like a barrier to the animals outside Reserve Forest and such animals are not able to enter the forest area.

### 6.2.2 (C8.3) Finding on Activities under Compensatory Plantation

No activity has been observed under the category in this division.

### 6.2.3 (C8.3) Finding on Activities under Catchment Area Treatment (CAT) Plan

No activity has been observed under the category in this division..



**6.2.4 (C8.3) Finding on the Activities under Integrated Wildlife Management**

Activities like maintenance of meadows, weeds eradication, cattle vaccination, purchase of Fire-fighting equipment, fire line creation and its maintenance, deployment of firefighting squad, purchase of anti-depredation equipment and many other items have been done in this fund.

After relocation of villages from Debrigarh Sanctuary, meadows have been developed near the banks of the Hirakud Reservoir. As a result, many herbivorous animals coming to Dam for water, and graze in the grasslands. During the evaluation many Barking deer and spotted deer were seen grazing the grassland at about 10.30 am to 11.30 am.

Moreover, to see the beauty of nature, watch towers have been constructed with the pillars of palm tree and others wooden materials. No concrete has been utilized. The towers are thatched with local straw.

**6.2.5 (C8.3) Finding on the Activities under NPV Fund (A) and NPV Fund (B)**

No activities.

**6.2.6 (C8.3) Update on e-green watch Portal**

The portal is updated.

**6.2.7 (C8.3) Other Observations**

There are no additional observations.

**6.2.8 (C8.3) Field Survey Images**





## 6.2 (C8.4) Jharsuguda Division

### 6.2.1 (C8.4) Overall Physical and Financial Progress analysis

The division was allocated funds as follows:

1. Forest wing: Rs.697.07 lakh and
2. Wild life Management Plan: Rs.149.11 lakh.

From the above, under CA/PCA plantation activities and maintenance amount of Rs. 124.79 lakh was provided to take up activities over 827.3 ha. Similarly, an amount of Rs. 17.99 lakh was provided for creation and maintenance under NPV and other schemes. Rs. 82.01 lakh provided for construction of Forest Guard and Forester quarters and forest roads etc. For fire protection Rs. 47.25 lakh and Rs. 120.65 lakh for forest protection have also been allotted and spent. Works like engagement of fire squad, fire vehicle, creation of fire line and purchase of blower has been done from the fire head.

### 6.2.2 (C8.4) Finding on activities under Compensatory Afforestation

In Jharsuguda District big plants like Vedant Aluminum Ltd, OPGC power plant, in Brajarajnar coal mines are being established. So much more importance has been given for plantation activities under CA/PCA. Amount of Rs. 124.79 lakh has been spent in these plantation programmes. Operations like PO, 1<sup>st</sup> year creation, 2<sup>nd</sup> year, 3<sup>rd</sup> year, 4<sup>th</sup> year, 5<sup>th</sup> year and 7<sup>th</sup> year maintenance have been carried out.

CA plantation at Kechobahal 17.3735 ha of 22-23 was visited. The boundary has been secured with a trench. Growth of plantation is excellent. Over all condition of the plantation is good.

### 6.2.3 (C8.4) Finding On activities under Catchment area treatment (CAT) Plan

Several activities were planned under the CAT plan, but the study team could not observe any activity under the category in this division.

### 6.2.4 (C8.4) Finding on the activities under Integrated Wildlife Plan

Works like anti-depredation activities, deployment of vehicles, and purchase of equipment for driving wild animals and payment of compensation amount for crop damage and house damage has been incurred in this head. An amount of Rs. 149.11 lakh has been spent on these activities.

### 6.2.5 (C8.4) Finding on the activities under NPV fund (A) and NPV fund (B)

Area of nearly 1450 ha. was treated under NPV scheme. Of this 100 ha was AR and rest 1350 ha. was ANR. An amount of Rs. 174.99 lakh has been spent under NPV for activities like creation and maintenance. Overall condition of the plantations is good.

### 6.2.6 (C8.4) Update on e-green portal

Separate cell has been prepared for this work. More care should be taken for uploading the information on the portal. One print copy has been provided by them for reference.

### 6.2.7 (C8.4) Other Observations

There are no additional observations.

### 6.2.8 (C8.4) Field Survey Images



## **6.2 (C8.5) Redhakhol Division**

### **6.2.1 (C8.5) Overall Physical and Financial Progress Analysis**

In the APO 2022-23, the total sum of Rs. 1939.56 lakh has been spent – of this Rs.1740.67 lakh was from the Forest wings and Rs. 198.88 lakh from the Wildlife Management head. Under Forest wings works like plantations and maintenance, Subsidiary Silvicultural Operations of Bamboo, SMC, Forest protection, Fire management etc. have being carried out. Amounts of Rs.76.90 lakh and Rs.215.98 lakh have been spent on forest fire mitigation and forest protection respectively.

With the available funds, SMC structures like LBCD were constructed in 17 Forest Blocks at an expenditure of Rs. 350 lakh in all Ranges of the Division. Quality of work is good. Around, 56 nos. of GBCD have been prepared in Hatidhara RF (Comp.11), Kholgarh RF (Comp.26) and Kholgarh RF (Comp.36).

### **6.2.2 (C8.5) Finding on activities under Compensatory Afforestation**

Not many activities under CA/PCA. Only 139 ha. of 2<sup>nd</sup> year maintenance and 7.08 ha. of 7<sup>th</sup> year maintenance has been carried out in this head. Total amount of Rs.14.3 lakh has been spent from CAMPAs APO 2022-23.

### **6.2.3 (C8.5) Finding On activities under Catchment Area Treatment (CAT) Plan**

No activity was observed under the category in this division.

### **6.2.4 (C8.5) Finding on the activities under Integrated Wildlife Plan**

An amount of Rs. 198.88 lakh has been spent towards works like anti-depredation activities, purchase of anti-depredation equipment, payment of compensation for crop damage and house damage and human death due to human-animal conflict.

### **6.2.5 (C8.5) Finding on the activities under NPV fund (A) and NPV fund (B)**

An amount of Rs. 430.34 lakh has been spent in this head. Activities like creation under RET and other indigenous species, maintenance work of the 2<sup>nd</sup> year, 3<sup>rd</sup> year and 4<sup>th</sup> year has been carried out. At one site of Naktideul Range Kholgarh RF, the plantation done is showing very good growth and height. But at RET plantation in Kholgarh RF it was found that it had been raised as per usual ANR with no RET species to be seen in this plantation.

### **6.2.6 (C8.5) Update on e-green portal**

All the data relating to CAMPAs is being uploaded at the concerned Range Office. The Data Entry Operators are uploading data of their own. In the Division there is no cell exclusively for the portal. Print copies have been collected by from Range Offices.

### **6.2.7 (C8.5) Other Observations**

There are no additional observations.

6.2.8 (C8.5) Field Survey Images

 <p>Latitude: 21.27777              Longitude: 84.49499              Elevation: 266.28150 m              Accuracy: 14 m              Time: 07-09-2024 10:09              Note: Yechakhat naktiduel kh...</p>	 <p>Latitude: 21.27079              Longitude: 84.49183              Elevation: 266.35150 m              Accuracy: 10 m              Time: 07-09-2024 10:02              Note: Yechakhat naktiduel kh...</p>
<p><b>ANR 100 ha. (2022-23) Tikilipada VSS, Kholgarh</b></p>	<p><b>ANR 50 ha. Plantation (2022-23), Naktidela, Kholgarh</b></p>
 <p>Latitude: 21.10315              Longitude: 84.62959              Elevation: 302.138 m              Accuracy: 10 m              Time: 07-09-2024 10:21              Note: Yechakhat naktiduel, Jamujora, Odisha</p>	 <p>Latitude: 21.21963              Longitude: 84.70999              Elevation: 291.0123 m              Accuracy: 14 m              Time: 07-09-2024 10:53              Note: Yechakhat naktiduel, Tikilipada, Odisha</p>
<p><b>Forest Guard Quarter, Naktiduel Koing (2022-23)</b></p>	<p><b>Forest Guard Quarter, Jamujora (2022-23)</b></p>
 <p>Latitude: 21.16041              Longitude: 84.60604              Elevation: 328.1273 m              Accuracy: 10 m              Time: 07-09-2024 10:04              Note: Yechakhat naktiduel, landimal r/o: (C8.5)</p>	 <p>Latitude: 21.12249              Longitude: 84.65042              Elevation: 330.1413 m              Accuracy: 10 m              Time: 07-09-2024 10:37              Note: Yechakhat naktiduel, r/o naktiduel to chudiyakhat</p>
<p><b>LBCD Naktiduel, Landimal (2022-23)</b></p>	<p><b>Causeway, Naktiduel (2022-23)</b></p>
 <p>Latitude: 21.14734              Longitude: 84.28316              Elevation: 271.0123 m              Accuracy: 10 m              Time: 07-09-2024 10:17              Note: Yechakhat kholgarh, od...</p>	 <p>Latitude: 21.14353              Longitude: 84.40044              Elevation: 304.2122 m              Accuracy: 13 m              Time: 07-09-2024 11:43              Note: Yechakhat hatidhara C5 50 ha plantation 2023</p>
<p><b>Watch Tower, Kholgarh (2022-23)</b></p>	<p><b>ANR 50 ha. Plantation (2022-23), Rairakhol, Hathidhara</b></p>

## **6.2 (C8.6) Sambalpur Division**

### **6.2.1 (C8.6) Overall Physical and Financial Progress Analysis**

Plantations and their maintenance have been carried out under NPV as well as CA/PCA. Under CA/PCA an amount of Rs. 278.71 lakh has been spent in PO, creation, and its maintenance. Similarly, an amount of Rs. 279.07 lakh has been spent under NPV toward creation, its maintenance. In SSO and SMC amounts of Rs. 60.47 lakh and Rs. 208.95 lakh respectively have been spent. Besides the above, funds also spent in forest protection, Forest Fire and construction of infrastructure like Range Office, residence, forest road, causeways and culverts.

### **6.2.2 (C8.6) Finding on activities under Compensatory Afforestation**

Compensatory plantation is raised to compensate the loss due to diversion of forest land for non-forestry purpose. Accordingly, to have a successful plantation maintenance for 10<sup>th</sup> year has been allotted in the cost norms. Moreover, funds have also been provided for watch and ward. A site at Basiapara-Birsingarh of area 55 ha ANR @400 plants /ha raised during 2020-21 was visited. Seedlings of 18 months were utilized in the plantation at the site. The progress and growth is of medium quality. More care must be taken to improve the condition of the plantation.

### **6.2.3 (C8.6) Finding on activities under Catchment Area Treatment (CAT) Plan**

No activity has been observed under the category in this division.

### **6.2.4 (C8.6) Finding on the Activities Integrated Wildlife Management Plan**

Amount of Rs. 130.08 lakh has been spent on wild life management. Works like forest protection and fire protection has been carried out. Further anti-depredation work, payment of compensation for loss due to crop damage and house damage by wild animals etc. has been done from this fund.

### **6.2.5 (C8.6) Finding on the Activities under NPV Fund (A) and NPV Fund (B)**

Under this head an amount of Rs. 279.07 lakh has been spent toward the creation of 910 ha. of ANR @200 plants/ha and one Bald Hill Plantation of 15 ha @1600/ha. Similarly, Rs. 67.15 lakh has been spent in maintenance of previous plantation up to 4<sup>th</sup> year.

### **6.2.6 (C8.6) Update on e-green Portal**

E-green portal is being updated in the division office. Print copy of their updating has been provided by the office. Care should be taken to ensure timely upload of the data.

### **6.2.7 (C8.6) Other Observations**

There are not additional observations.

### **6.2.8 (C8.6) Field Survey Images**



Latitude: 21.57711  
 Longitude: 83.977339  
 Elevation: 229.84119 m  
 Accuracy: 3.0 m  
 Time: 07-15-2024 13:33  
 Note: Sambalpur Dharma tabloi WMP 2016 plantation

**ANR 50 ha. (2019-20) Tabloi, Dharma**



Latitude: 21.26222  
 Longitude: 84.039908  
 Elevation: 229.65116 m  
 Accuracy: 3.0 m  
 Time: 07-15-2024 13:29  
 Note: Sambalpur Sadar basia para, basia para WMP 2016 plantation

**ANR (2020-21) 60 ha. maintenance, Basiapara, Sadar**



Latitude: 21.22525  
 Longitude: 84.18727  
 Elevation: 221.61116 m  
 Accuracy: 3.0 m  
 Time: 07-15-2024 09:43  
 Note: Sambalpur Sadar diaphragm wall

**Diaphragm Wall, Sadar (2022-23)**



Latitude: 21.22572  
 Longitude: 84.18473  
 Elevation: 216.43227 m  
 Accuracy: 7.5 m  
 Time: 07-15-2024 09:23  
 Note: Sambalpur Sadar masonry check dam

**Masonry Check Dam, Sadar (2022-23)**



Latitude: 21.22406  
 Longitude: 84.18746  
 Elevation: 206.63116 m  
 Accuracy: 3.0 m  
 Time: 07-15-2024 10:16  
 Note: Sambalpur Sadar Recharge pit

**Recharge Pit, Sadar (2022-23)**

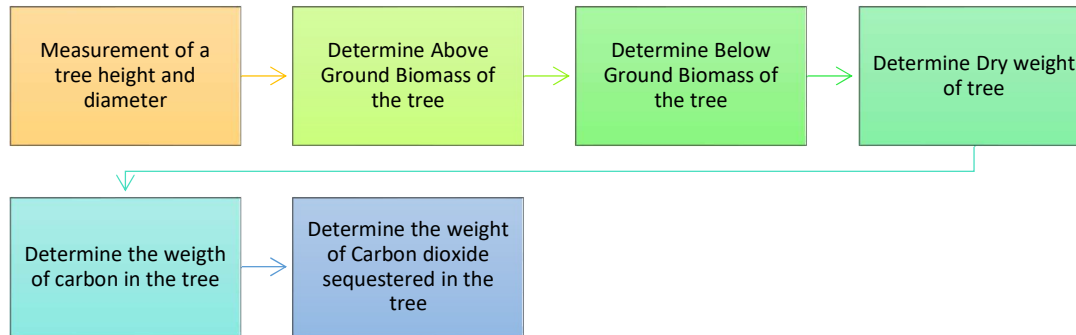


Latitude: 21.22231  
 Longitude: 84.192633  
 Elevation: 221.31116 m  
 Accuracy: 13 m  
 Time: 07-15-2024 10:05  
 Note: Sambalpur Sadar wire mesh

**Wire Mesh, Sadar (2022-23)**

### 6.3 CO<sub>2</sub> Sequestration of the Plantations under CAMPA

CO<sub>2</sub> sequestration from the plants planted in the plantation area has been attempted to calculate<sup>1</sup> under the evaluation. The process of calculation includes following steps:



As we know that the ecosystems of forests are dynamic and complex. These involves crucial ecological process thereby unfolding significant implications on the carbon balance worldwide. This capability is not merely a passive feature of these ecosystems but a fundamental aspect of the photosynthetic process, wherein trees and plants convert CO<sub>2</sub> and sunlight into energy, essential for their growth and sustenance. The role of CO<sub>2</sub> uptake in forests extends far beyond mere carbon sequestration and has influence on biomass accumulation. Distribution of biomass is central to understanding how trees store carbon. The CO<sub>2</sub> absorbed from the atmosphere is assimilated into both AGB and BGB. As a tree matures, its capacity to sequester carbon increases, making older trees more efficient at absorbing CO<sub>2</sub>. This relationship highlights the significance of forest conservation and the role mature trees play in mitigating climate change. By understanding and supporting these natural processes, capacity of forests to act as carbon sinks, thereby contributing to global efforts to balance our planet’s carbon cycle and combat the escalating challenges of climate change. Trees biomass comprises of Above-Ground Biomass (AGB) and Below-Ground Biomass (BGB). AGB include parts of the tree that are visible above the soil line viz., trunk, branches, leaves, and any fruits or flowers. Whereas BGB consists of the roots, which, though less visible, are equally crucial for the tree’s stability and nutrient uptake.

To determine the amount of CO<sub>2</sub> absorbed by trees, two critical measurements are taken direction which includes its diameter, measured in cm, and its height, measured in meters. These measurements are essential for calculating both the Above-Ground Biomass (AGB) and Below-Ground Biomass (BGB). The AGB is calculated by the formula  $0.25 \times D \times H$  (Diameter in feet) x H (Height in inch). The BGB, which comprises the tree’s root system, accounts for approximately 20% of the AGB. Therefore, BGB can be calculated as  $0.2 \times \text{AGB}$ . So, total Biomass comes out to  $\text{AGB} + \text{BGB}$ . On average, a tree consists of 72.5% dry matter and 27.5% moisture content. To calculate the tree’s dry weight, we could multiply the total weight of the tree by 72.5% i.e 0.725 means  $\text{Total Dry Weight (TDW)} = \text{TB} \times 0.725$ . Carbon occupies 50% of the total dry weight. Therefore,  $\text{Total Carbon (TC)} = \text{TDW} \times 0.5$ .

With the value of total carbon, we can calculate the value of CO<sub>2</sub> equivalent sequestered on a tree. CO<sub>2</sub> has one molecule of Carbon and two molecules of Oxygen. Therefore, to determine the weight of carbon dioxide sequestered in the tree, multiply the weight of carbon in the tree by 3.67.

CO<sub>2</sub> weight =  $\text{TC} \times 3.67$ . It is worth noting that the CO<sub>2</sub> weight above represents the CO<sub>2</sub> sequestered in the entire lifetime of the tree. To ascertain the annual or yearly rate of CO<sub>2</sub> sequestration, divide the total weight of CO<sub>2</sub> absorbed by the tree’s age. This is the simplest way to calculate how much a tree can sequester. It may not be the most accurate but it does gives a closer look on the same.

<sup>1</sup> Method adopted from an article of Bas Fransen at <https://www.ecomatcher.com/how-to-calculate-co2-sequestration/>



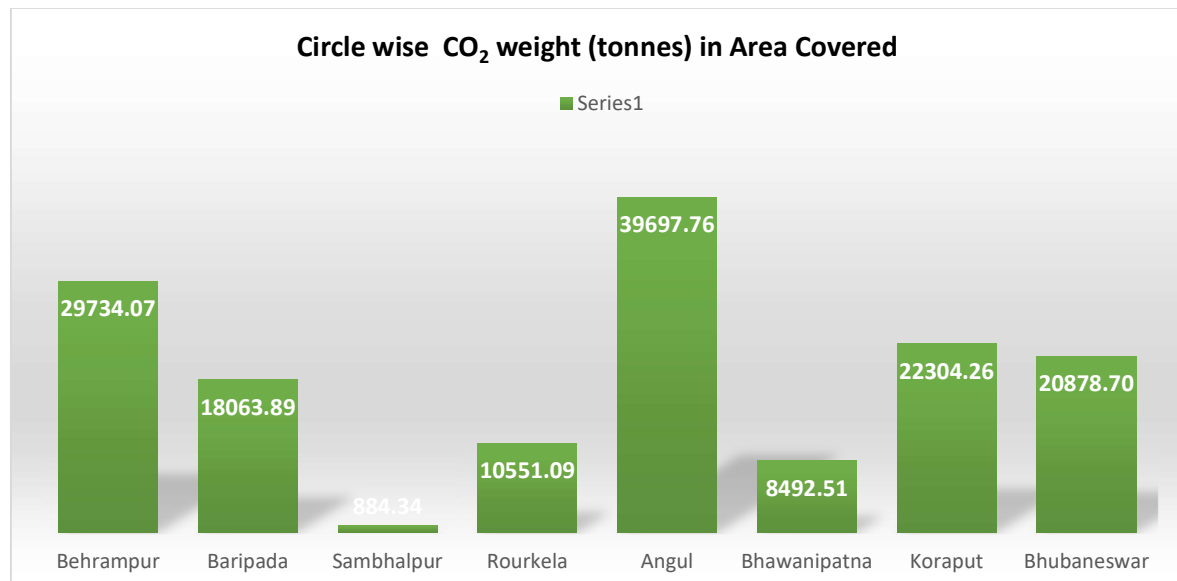
Based on data collected from the concerned officials of the department and field survey. An estimated carbon dioxide sequestered from the plantations under CAMPA in the year under references indicate that out of total 28998.71 ha. the CO<sub>2</sub> weight is estimated as 150606.63 tonnes. The overall average comes out to 5.19 tonnes per ha. It is based on total number of plants found and their average height and girth which varies model-wise, site-wise and species wise. Circle-wise total planted area, total CO<sub>2</sub> sequestration and average CO<sub>2</sub> sequestration is given in the table below:

**Table 6.9: Circle-wise CO<sub>2</sub> Sequestration under CAMPA in Odisha**

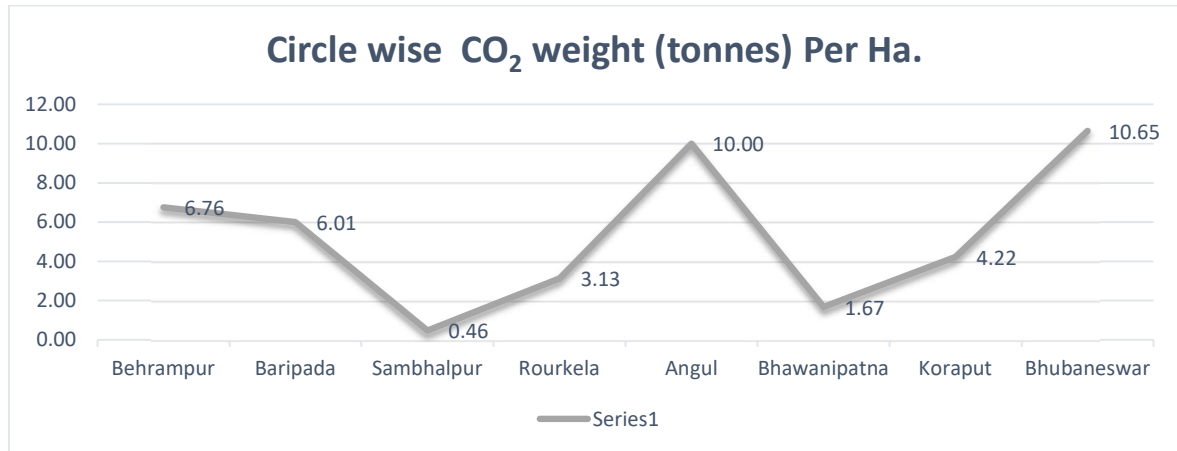
Sl. No	Name of Circle	Area covered under Survey (ha.)	CO <sub>2</sub> weight in Tonnes	Per Ha. CO <sub>2</sub> weight in Tonnes
1	Behrampur	4397.69	29734.07	6.76
2	Baripada	3006.92	18063.89	6.01
3	Sambhalpur	1926.37	884.34	0.46
4	Rourkela	3373.91	10551.09	3.13
5	Angul	3970.40	39697.76	10.00
6	Bhawanipatna	5077.17	8492.51	1.67
7	Koraput	5285.55	22304.26	4.22
8	Bhubaneswar	1960.70	20878.70	10.65
	<b>Total</b>	<b>28998.71</b>	<b>150606.63</b>	<b>5.19</b>

N.B. Few sites not depicted above

The maximum CO<sub>2</sub> sequestration is reported in Angul circle (39697.76 tonnes) followed by Behrampur circle (29734.07 tonnes) and then Koraput circle (22304.26 tonnes). Good CO<sub>2</sub> sequestration are also reported in Bhubaneswar and Baripada circles. Lowest CO<sub>2</sub> sequestration has been in Sambhalpur circle (884.34 tonnes) followed by Bhawanipatna circle (8492.51 tonnes). Average i.e. per Ha. CO<sub>2</sub> sequestration has been observed in highest in Bhubaneswar circle (10.65 ton per ha.) followed by in Angul circle (10 ton per ha.). Lowest has been reported in case of Sambhalpur circle (0.46 ton per ha.) followed by Bhawanipatna (1.67 ton per ha.). Overall average comes to 5.19 tonnes per ha. The following graphs shows a glimpse of CO<sub>2</sub> sequestered under CAMPA in Odisha for the year under reference.



**Figure 6.1: Circle wise CO<sub>2</sub> weight (tonnes) in Area Covered**



**Figure 6.2: Circle wise CO<sub>2</sub> weight (tonnes) per ha.**

It is notable that the CO<sub>2</sub> weight calculation has resulted in variations across sites due to plantation models adopted, number of plants planted as per model, and area of the sampled plantation site vis-à-vis survival percentage, and growth parameters (including girth and height). Model wise distribution of selected plantation sites in different circles across the entire state indicate that under AR plantation model (having different sub categories including block plantation, bald hill plantation, etc.) where 1000 or 1600 plants per ha. were planted, the proportion was highest in Bhubaneswar (41.82%) circle followed by Berhampur (36.00%) circle and then Koraput (29.58%) circle. On the other hand, the lowest proportion of AR model plantation site selected was in Sambhalpur (12.50%) circle, followed by Rourkela (16.44%) and then Bhawanipatna (27.18%) circle.

Likewise, under ANR plantation model wherein either 200 plants/ha. or somewhere 500 plants/ha. have been planted, highest proportion of such sites is in Sambhalpur circle (82.50%) followed by Rourkela (72.60%) and then Baripada (68.63%) circle. Whereas under ANR model lowest proportion has been recorded in Bhubaneswar (40.00%) circle, followed by Berhampur (49.60%) circle and then Angul (55.00%) circle. A percentage wise and circle wise distribution of sites selected under plantations during evaluation is given in the table below:

**Table 6.10: Model-wise and circle wise distribution of number of sampled sites (percentage wise)**

Sl. No.	Circle	AR plantation @ 1000/1600 plants / ha including block, bald hill, etc.	RET with Gap @ 300 plants/ha.	Casuarina plantation @ 2500 plants per ha.	AR Bamboo plantation 400 plants per ha.	ANR plantation with gap @ 200 / 500 plants per ha.	ANR fodder and fruit species @ 500 plants per ha.	Avenue plantation @ 250 plants per ha.	Miyawaki Plantation @ 8000 plants per ha.	Mangrove plantation @4445 plants per ha.	Other	Total %
1	Berhampur	36.00	4.00	1.60	7.20	49.60	1.60	0.00	0.00	0.00	0.00	100.00
2	Baripada	27.45	1.96	0.00	1.96	68.63	0.00	0.00	0.00	0.00	3.92	100.00
3	Sambhalpur	12.50	0.00	0.00	2.50	82.50	2.50	0.00	0.00	0.00	2.50	100.00
4	Rourkela	16.44	0.00	0.00	0.00	72.60	6.85	4.11	0.00	0.00	0.00	100.00
5	Angul	28.75	0.00	0.00	6.25	55.00	5.00	2.50	2.50	0.00	2.50	100.00
6	Bhawanipatna	27.18	1.94	0.00	2.91	66.99	0.97	0.00	0.00	0.00	0.00	100.00
7	Koraput	29.58	2.82	0.00	1.41	61.27	0.00	2.11	2.82	0.00	0.00	100.00
8	Bhubaneswar	41.82	0.00	14.55	0.00	40.00	0.00	0.00	0.00	3.64	0.00	100.00

It is pertinent to mention that under Miyawaki plantation model where in total 8000 plants were planted, under Mangrove plantation total plants planted were 4445 plants per ha. and Casuarina plantation model where in 2500 plants were planted per ha., the CO<sub>2</sub> weight have shown variations in the results also. Also, total plantation area in the selected site has also been a major factor in total CO<sub>2</sub> weight results.

In accordance to above, a list of plantation model wise distribution of number of sites selected in the sampled area is given below:

**Table 6.11: Model-wise and circle wise distribution of number of sampled sites (percentage wise)**

Sl. No.	Circle	AR plantation @ 1000/1600 plants / ha including block, bald hill, etc.	RET with Gap @ 300 plants/ha.	Casuarina plantation @ 2500 plants per ha.	AR Bamboo plantation 400 plants per ha.	ANR plantation with gap @ 200 / 500 plants per ha.	ANR fodder and fruit species @ 500 plants per ha.	Avenue plantation @ 250 plants per ha.	Miyawaki Plantation @ 8000 plants per ha.	Mangrove plantation @4445 plants per ha.	Other	Total
1	Berhampur	45	5	2	9	62	2	0	0	0	0	125
2	Baripada	14	1	0	1	35	0	0	0	0	0	51
3	Sambhalpur	5	0	0	1	33	1	0	0	0	0	40
4	Rourkela	12	0	0	0	53	5	3	0	0	0	73
5	Angul	23	0	0	5	44	4	2	0	0	2	80
6	Bhawanipatna	28	2	0	3	69	1	0	0	0	0	103
7	Koraput	42	4	0	2	87	0	3	4	0	0	142
8	Bhubaneswar	23	0	8	0	22	0	0	0	2	0	55

As already mentioned above, the main reason for low CO<sub>2</sub> weight in Sambhalpur circle has been that the majority of sites fall in the selected sample were under ANR plantation (82.50%) wherein only 200 plants were planted followed by AR plantation model (12.50%) where in around 1600 or 1000 plants have been planted. Similarly, the maximum per ha. CO<sub>2</sub> weight has been calculated in Bhubaneswar circle where in under ANR plantation model 40.00% sites were selected whereas under AR plantation model 41.82% sites fall. The maximum average weight of CO<sub>2</sub> has been recorded in Bhubaneswar circle @10.65 tonnes per ha. whereas minimum in Sambhalpur circle @ 0.46 ton per ha.

Likewise, a selected comparison of three divisions including Angul, Kalahandi South and Kalahandi North has been done and depicted in the table below:

**Table 6.12: Number of sites selected in selected three divisions**

Sl. No.	Division	ANR plantation model (200 /500 plants per ha.)	%	AR plantation model (1600/1000 plants per ha.)	%	RET with Gap plants	%	Bamboo	%	Total sites selected	%	Average CO <sub>2</sub> weight in tonnes per ha.
1	Angul	15	88.24	1	5.88	0	0.00	1	5.88	17	100.00	1.07
2	Kalahandi South	9	56.25	6	37.50	1	6.25	0	0.00	16	100.00	3.97
3	Kalahandi North	14	87.50	2	12.50	0	0.00	0	0.00	16	100.00	1.27

In Angul division out of total 17 selected sites, 15 were (88.24%) were under ANR model. Likewise in Kalahandi north out of total 16 selected plantation sites, 14 (87.50%) were under ANR model, whereas in Kalahandi South division, 9 (56.25%) were under ANR plantation model sites and 6 (37.50%) were under AR plantation model. Accordingly, out of these three divisions, CO<sub>2</sub> weight has been maximum in Kalahandi south division that was 3.97 tonnes/ha., followed by Kalahandi north division @ 1.27 tonnes per ha. and minimum in Angul division @ 1.07 tonnes/ha. Site wise details of CO<sub>2</sub> calculated are given in the **Annexure 4** of this report.

The above indicates that the plantations undertaken under the CAMPA in different circles in Odisha have yielded environmental benefits also including Carbon sequestration. These plantations would surely yield better results in future for which proper protection measures need to be ensured including social as well as physical fencings. Such environmental benefits need to be captured more scientifically using appropriate tools and techniques and should be documented at a regular time of interval. It is anticipated that as the trees would grow the environmental benefits are bound to multiply further.

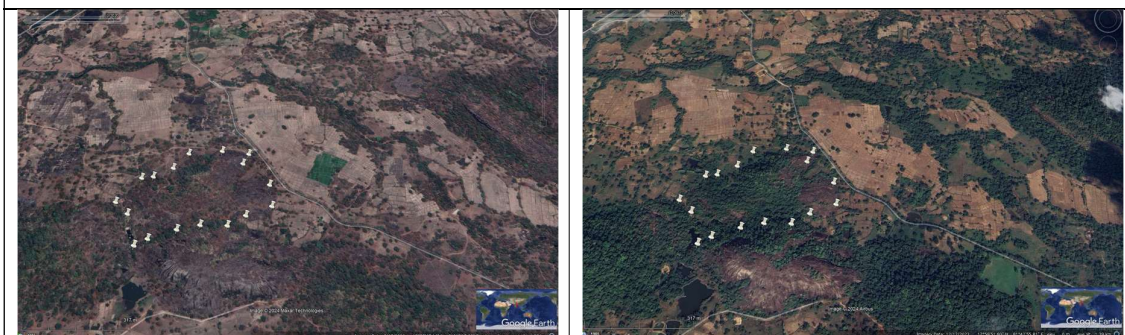
The CO<sub>2</sub> sequestered benefits are calculated based on plantations undertaken in the plantation areas. There would be more Carbon sequestered if protection provided to the natural growing plants/trees and carbon restored in the soils are considered. The Carbon sequestration of the naturally grown plants/trees in the plantation sites/areas would surely add on its weight. Greater impact would be in the ANR sites wherein naturally grown plants/trees have already been existing. It is recommended that these aspects would need further examination. Refer **Annex 2 Change Detection of Activity through Satellite Imageries**.



**Before and After: Khalakhala RF over-10ha, Athgarh Sadar Beat, Athgarh Sadar Section, Athgarh Forest Range, Athgarh Forest Division**



**Before and After: Bald Hill Plantation at Pikusi Over 10.0 ha area 2022-23 (Mundigarh A DPF); Rayagada Division**



**Before and After: Miyawaki Plantation 5.0 ha (2021-22), Site: Motu, Section: Motu, Range: Motu; Malkangiri Division**

## 6.4 Biodiversity Index

Rich biodiversity is an indicator of a healthy ecosystem. It also provides a wide range of goods and services that are essential for the sustenance of the biota. Conservation and sustainable use of biodiversity is an indicator of sustainable development. Unfortunately, increasing anthropogenic activities and over-exploitation of the resources existing in an ecosystem have destroyed its homeostasis and altered the habitat of the native species. This has threatened the survival of endemic species making them endangered. Similarly, destruction of wildlife habitats has remained the leading threat to biodiversity.

The species diversity of planted plants has been determined with the Shannon-Wiener diversity index (Shannon & Wiener, 1963). The Concentration of Dominance (CD) was also calculated to evaluate the level of dominance of a species within a community and was expressed by Simpson's index (Simpson, 1949). Diversity parameters such as species richness, diversity index (H') and concentration of dominance (Cd) varied in different plantation sites and models. Species richness, which refers to the number of different species in a given area generally ranged from 2 to 26 species per plantation, barring few exceptions, showing floral diversity. Higher species richness indicates a more complex and potentially more stable ecosystem, as it indicates a greater diversity of ecological niches being occupied. The diversity index (H') a measure that combines both the number of species and their relative abundance, ranges from 0.01 to 2.31. A diversity index closer to 1 indicates a more even distribution of the community, where no single species dominates the ecosystem. Conversely, a low diversity index indicates the dominance of one or fewer species, which can lead to lower ecosystem resilience and stability. The dominance concentration, which ranges from 0.0002 to 1.00, reflects the extent to which one or a few species dominate the plantations. A dominance concentration close to 1 indicates that one species overwhelmingly dominates the ecosystem, possibly leading to lower biodiversity and resilience of the ecosystem. Conversely, a lower dominance concentration indicates a more balanced distribution of species, which may contribute to a more stable and resilient ecosystem. The observed variation in species richness, diversity index and dominance concentration illustrate the complex interplay of ecological factors in these plantations. The findings provide a comprehensive view with notable differences in diversity levels among plantation sites.

Overall, plantations were carried out in the Odisha state in total 8 Circles under different models, and showed different biodiversity index. Highest biodiversity is observed under the plantations carried out under ANR model, followed by AR plantation model. Good biodiversity is also observed under Avenue plantation and Bald Hill plantation. Even good biodiversity is shown in case of Miyawaki plantation model. Low biodiversity is observed under bamboo and mangrove plantations. Highest bio diversity of 2.29 is observed in the following sites under ANR model of plantation:

Circle	Division	Range	Site
Behrampur	Parlakhemudi	Mohana	Ustapada
Behrampur	Ghumsur North	Barahkuda	Gallery RF C/16
Bhawanipatna	Khariar	Khariar	Mantritorai
Sambhalpur	Bamara WL	Bamara	Mahavir RF
Rourkela	Rourkela	Banki	South Champajharana
Angul	Cuttak	Dalijora	Anjira

During the field visits to 46 divisions, more than 100 tree species were observed under plantations which includes Amla, Bamboo, Dolichandan, Holoptelea, Karanja, Gambhari, Jack Fruit, Neem, Rosewood, Sissoo, *Salia Bixa oreleana*, Jamun, Mango, Piasal, Arjuna, Mehagani, Cashew, Custard

Apple, Simli, Bahada, Acacia, Kala Sirisa, Pahadi Sissoo, Sunari, Sandal Wood, Phanphana, *Mallotus*, Red Sandal, Kamala Gundi, Patuli, Tamarind, Behla, Kusum, Guava/Pijuli, Phasi, Neem, Simaruba, Asana, Mundumudi, Kaitha, Rain Tree, *S. foetida*, Kanchana, Sahaja, Simakayan, Casuarina, *Pithecellobium*, Mahula, Alur, Bali Sissoo, Chakunda, Cassia, Dhala Sirisa, Lembu, Charmja, Gangasiuli, Katha Badam, Ram Phal, Kala Bhalia, Harida, *Holoptelia*, Baula, Bada Chakunda, Radhachuda, Bandham, Sal, Kasi, Bahawa, Mitikina, Beera, M. Kendu, Dimiri, Bahala Kumbhi, Panasa, Barakoli, Jhaun, Aswastha, Bara, Tentuli, Chhatran, Sana Chakunda, Krushna Chuda, Sidha, Subabul, Churla, Dahal Sirish, Ankul, Pista Badam, Mangium, Bija, Bada Chakunda, Dhaura, Paladhua, Mundi, Ashoka, Dhaurmja, Pipal, Kumbi, Bandhan, Atta, Ambada, Nidrabati, Reetha, Jeutha, Bhalia, Boula, Seman, Banian, Dalimba, Barakoli, Dharm, Khirni, Bahal, Kuler, Shija, Bordi, Nageswar, Panasa, Haldu, Thelka, Imli, Paladhua, Osta, Bana Bhalia, Muchukunda, Tut/Mulberry, Kumbhi, Silver Oak, Maha Bodhi, Rai, Seduka, Bandari, Kalichua, Sinduka, Dalimba, Somakarya, Henjal, Pireli, Pane Jambhari and Jangal Jalebi.

A brief description of circle wise biodiversity observed is given below. Refer **Annex 4: Diversity Index and Carbon Analysis**

#### **Behrampur Circle**

Biodiversity in the Behrampur Circle displayed considerable variation, ranging from 0 to 2.29. The Ghumsur North and Parlakhmudi divisions recorded the highest index at Gallery RF C/16 and Ustapada sites, respectively with a value of 2.29 each. The Phulbani Division also demonstrated good biodiversity across all plantations, each exhibiting indices above 1. Likewise, the Ghumsur South and Behrampur Divisions exhibited notable species richness, with many plantations exceeding a diversity index of 1. Also the Parlakhemundi Division recorded high indexes at the Kurlunda plantation (2.18), while several plantations across divisions, including Sarabadi, Boxipalli Gokharkuda, Dutiasahi UDPF K. Nuagam, Ratnei DPF, Satabahada, and Gohili Lankagarh RF, reported a biodiversity index of 0 due to planting of single species such as *Phasi*, *Casuarina*, and *Salia Bamboo*.

#### **Baripada Circle**

The Baripada Circle presented a range of biodiversity indices, from 0 to 2.28, with the Tameipal plantation in the Keonjhar WL Division achieving the highest index at 2.28. The Baripada Division exhibited diversity values between 1.01 and 2.21, indicating moderate species richness across its plantations. Two plantations in the Balasore Division recorded a biodiversity index of 0, attributable to single plantations of *Bamboo* and *Jhaun*. Meanwhile, the Karanjia Division displayed strong biodiversity, with indices ranging from 1.06 to 2.15. In the Rairangpur and Keonjhar WL Divisions, several plantations recorded values exceeding 2, underscoring the richness of species in these regions.

#### **Sambalpur Circle**

Biodiversity index in the Sambalpur Circle ranged from 0 to 2.29, reflecting varying levels of species diversity. The Sambalpur Division performed well, with diversity values ranging between 1.03 and 2.27, indicative of robust biodiversity across many sites. In contrast, the Dechuan plantation in the Bargarh Division recorded a biodiversity index of 0, attributed to the presence of only *Bamboo*. Other divisions such as Rariakhol, Jharsuguda, and Bamara WL exhibited strong species richness, with most plantations maintaining biodiversity indices above 1. The Mahavir RF plantation in the Bamara WL Division posted the highest index in the circle at 2.29.

### **Rourkela Circle**

The Rourkela Circle demonstrated a relatively high range of biodiversity, with indices falling between 0.70 and 2.29. Notably, no plantations in this circle reported an index of 0, signaling the absence of single plantations. The Sundargarh and Rourkela Divisions were prominent for their high biodiversity, with the lowest recorded indices being 1.2 and 1.09, respectively. However, certain areas within the Bonai, Keonjhar, and Deogarh Divisions revealed lower levels of biodiversity, underscoring the variability within the circle.

### **Angul Circle**

In the Angul Circle, biodiversity indices spanned from 0 to 2.29, indicating both rich and poor species diversity across different plantations. The Angul and Athamallik Divisions displayed a wide range of diversity, with certain plantations showing high richness while others exhibited minimal diversity. The Cuttack Division predominantly showed strong biodiversity (Anjira site showing highest of 2.29), with indices above 1.5 in most locations, though a few sites recorded lower values. The Dhenkanal Division had three sites with biodiversity indices below 1, reflecting poorer species richness. Conversely, in the Athagarh Division, all but one plantation exhibited significant species diversity, although seven plantations reported a biodiversity index of 0 due to single planting of species like *Arjuna* and *Bamboo*.

### **Bhawanipatna Circle**

The Bhawanipatna Circle showed varying levels of biodiversity, with indices ranging from 0 to 2.29. The Sunabeda WL Division displayed strong biodiversity, with values exceeding 1.5 in many plantations. The Bolangir Division, however, had a few sites with poor species diversity. In contrast, the Khariar and Subarnapur Divisions generally exhibited significant biodiversity, although a few locations recorded lower values. The Kalahandi South and North Divisions emerged as the richest in terms of biodiversity, with the majority of sites showing high indices, except for one plantation that recorded a value of 0.7, primarily due to singles of *Phasi*, *Bamboo*, and *Arjuna*.

### **Koraput Circle**

Biodiversity across the Koraput Circle was generally strong, with indices ranging from 0 to 2.27. The Rayagada Division stood out with consistently high biodiversity across its plantations. Only two out of 18 sites in the Malkangiri Division exhibited poor species richness. Similarly, the Koraput, Jeypore, and Nabarangapur Divisions reported considerable biodiversity, although a few plantations showed lower indices.

### **Bhubaneswar Circle**

In the Bhubaneswar Circle, biodiversity values were generally high, with City Forest, Bhubaneswar (BBSR), showing indices between 1.5 and 2.1. However, certain areas in the Rajnagar WL and Bhadrak WL Divisions had low biodiversity due to single plantations of *Casuarina*, *Rai*, and *Jhaun*. The Chilika WL Division demonstrated notable species richness, except for one site where only *Casuarina* was planted. In the Puri WL and Nayagarh Divisions, several sites exhibited poor biodiversity, with indices below 1, while other sites reported values ranging from 1.5 to 2. The Khordha Division had one site with low biodiversity, but most plantations recorded indices between 1.5 and 2.1. The Chandaka WL Division showed strong biodiversity, with indices ranging from 1.75 to 2.1 across most of its sites.

## 6.5 Impact Analysis of SMC Activities

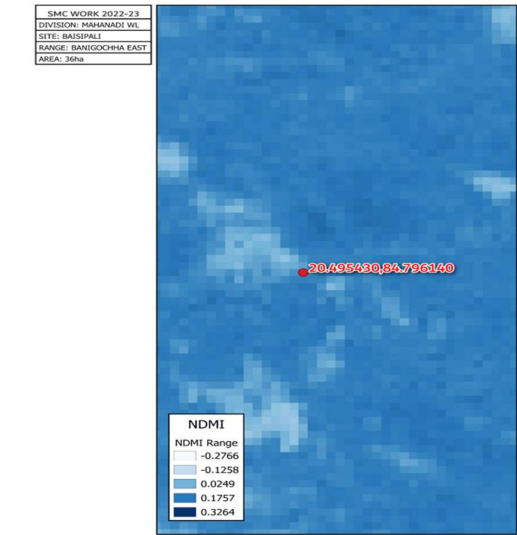
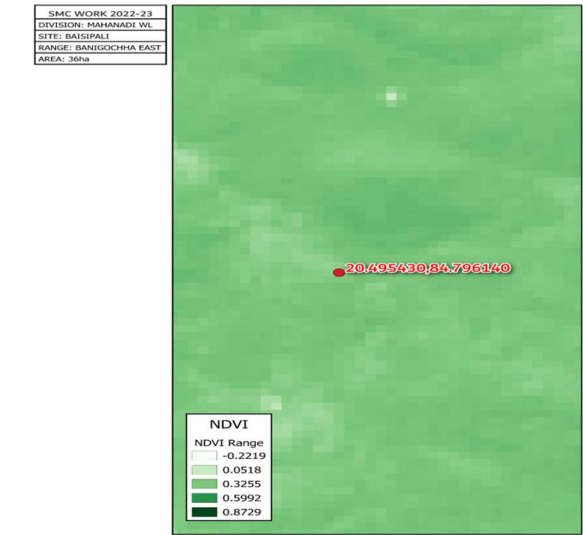
In this study, Normalized Difference Vegetation Index (NDVI) and normalized difference Soil Moisture Index (NDMI) analysis was carried out on satellite data of November/ December 2023.

The Normalized Difference Soil Moisture Index is used to determine Soil vegetation water content and monitor droughts. The value range of the NDMI is (-)1 to 1. Negative values of NDMI (values approaching -1) correspond to barren soil devoid of moisture. Values around zero (-0.2 to 0.4) generally correspond to water stress. High, positive values represent high canopy without water stress (approximately 0.4).

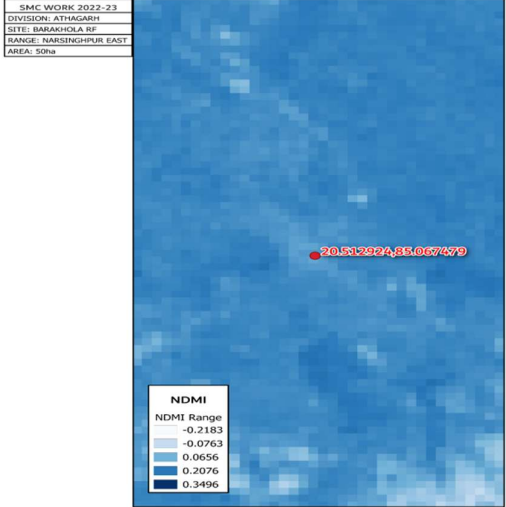
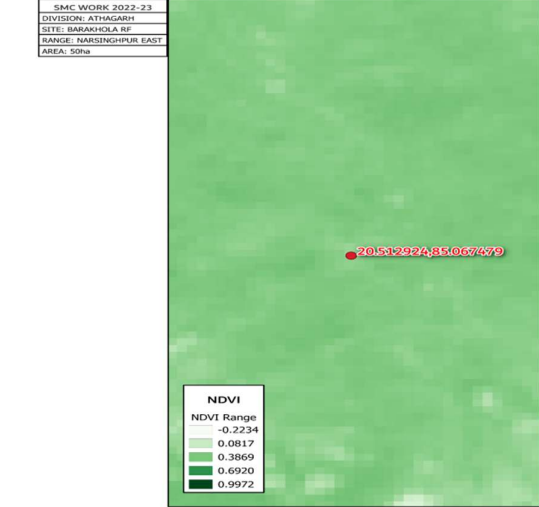
The Normalized Difference Vegetation Index is a simple, but effective index for quantifying green vegetation. It is a measure of the state of vegetation health based on how plants reflect light at certain wavelengths. The value range of the NDVI is -1 to 1. Negative values of NDVI (values approaching -1) correspond to water. Values close to zero (-0.1 to 0.1) generally correspond to barren areas of rock, sand, or snow. Low, positive values represent shrub and grassland (approximately 0.2 to 0.4), while high values indicate temperate and tropical rainforests (values approaching 1).

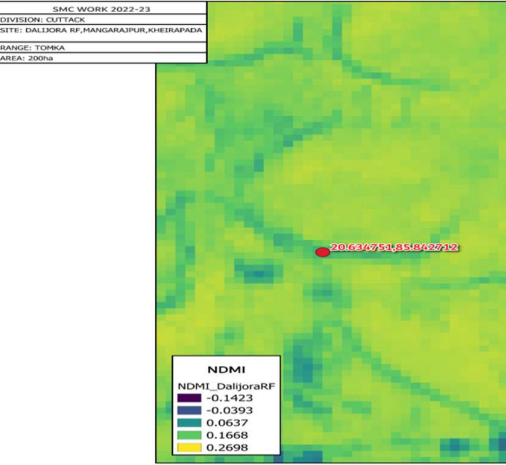
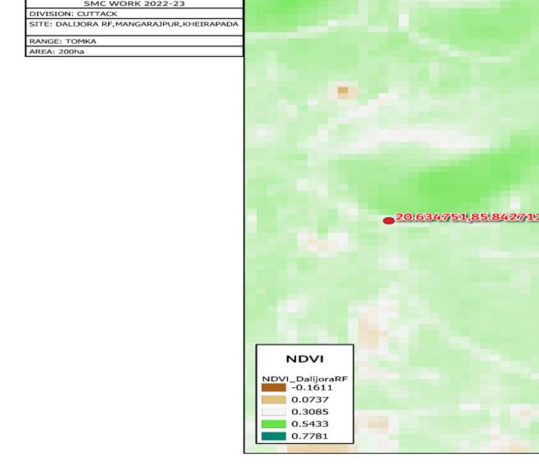
The value of NDVI of sample area on an average is 0.20 (maximum recorded 0.387 & minimum recorded 0.006) and NDMI is 0.16 (maximum recorded 0.398 & minimum recorded 0.026). The Satellite Imageries analysis data indicate that the Soil Moisture Conservation (SMC) activities like construction of RCC Check Dam / water harvesting structure, Loose Boulders Check Dam (LBCD), Graded Earthen Bunds, Staggered Trench, Sub-Surface Dyke etc. are successful and the purpose of the construction is also served. The status of moisture is good. Refer **Annex 3: Value of NDVI and Soil Moisture Index estimated through Satellite Imageries Analysis.**

Site wise some analysis with images are presented below:

1. Mahanadi Wildlife Division	Angul Circle
Name of Range: Banigochha East	Catchment Area: 36 ha
Name of Site: Baisipali RF	Current Status: Good
Activity: Loose Boulders Check Dam (LBCD), Water Harvesting Structure (WHS) and Sub-Surface Dyke	
	
The majority of the catchment area has - 0.1 soil moisture index and some areas even have more than 0.3 value indicating a successful SMC work.	The majority of the catchment area has -0.2 soil moisture index and some areas even have more than 0.5 value indicating a successful SMC work.

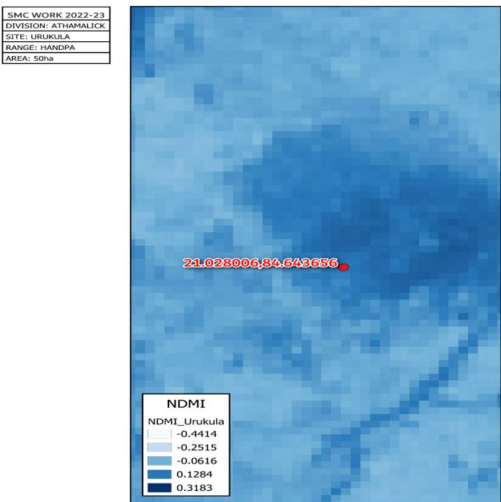
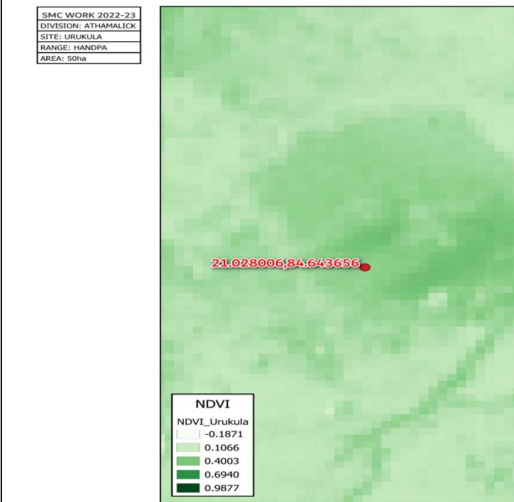


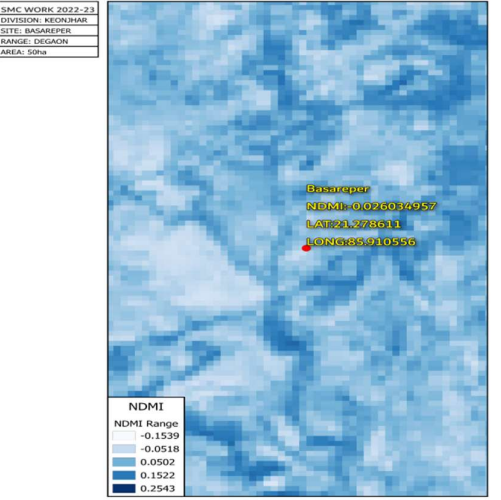
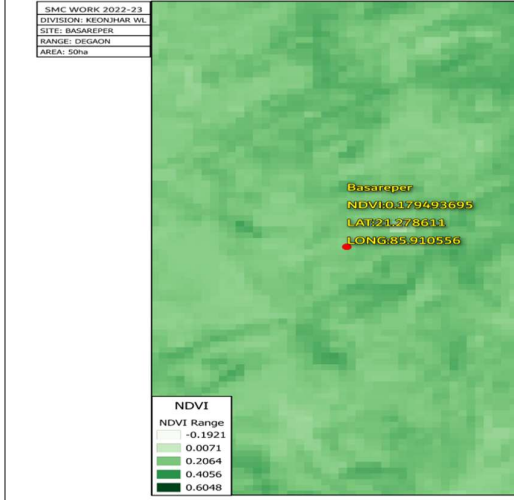
<b>2.: Athagarh Division</b>	<b>Angul Circle</b>
Name of Range: Narsinghpur West	Catchment Area: 100 ha
Name of Site: Barakhola RF	Current Status: Good
Activity: Construction of RCC Check Dam & Loose Boulders Check Dam (LBKD)	
	
Most of the catchment area has -0.07 soil moisture index and some areas even have more than 0.2 value indicating a successful SMC work. The satellite image used in this analysis is of December, 2023	Most of the catchment area has 0.08 soil moisture index and some areas even have more than 0.6 value indicating a successful SMC work. The satellite image used in this analysis is of December, 2023

<b>3. Cuttack Division</b>	<b>Angul Circle</b>
Name of Range: Tomka	Catchment Area: 200 ha
Name of Site: Dalijora RF, Kheirapada	Current Status: Good
Activity: Construction of Graded Earthen Bunds	
	
Most of the catchment area has -0.03 soil moisture index and some areas even have more than 0.2 value indicating a successful SMC work. The satellite image used in this analysis is of November, 2023	Most of the catchment area has 0.07 vegetation index and some areas even have more than 0.5 value indicating a successful SMC work. The satellite image used in this analysis is of November, 2023.

<b>4. Dhenkanal Division</b>	<b>Angul Circle</b>
Name of Range: Hindol	Catchment Area: 50 ha
Name of Site: Koi RF	Current Status: Good
Activity: Construction of RCC Check Dam (WHS)	
Most of the catchment area has -0.09 soil moisture index and some areas even have more than 0.3 value indicating a successful SMC work. The satellite image used in this analysis is of December, 2023.	Most of the catchment area has 0.1 vegetation index and some areas even have more than 0.9 value indicating a successful SMC work. The satellite image used in this analysis is of December, 2023.

<b>5. Angul Division</b>	<b>Angul Circle</b>
Name of Range: Angul	Catchment Area: 40 ha
Name of Site: Krishna Chakra PRF	Current Status: Good
Activity: Construction of Loose Boulders Check Dam (LBCD)	
The majority area of the Catchment area has 0.06 soil moisture index and some areas even have more than 0.3 value indicating a successful SMC work. The satellite image used in this analysis is of December, 2023.	The majority area of the Catchment area has 0.07 vegetation index and some areas even have more than 0.4 value indicating a successful SMC work. The satellite image used in this analysis is of December, 2023.

<b>6. Athamalik Division</b>	<b>Angul Circle</b>
Name of Range: Handpa	Catchment Area: 50 ha
Name of Site: Urukula	Current Status: Good
Activity: Construction of	
	
The majority area of the Catchment area has -0.2 soil moisture index and some areas even have more than 0.3 value indicating a successful SMC work. The satellite image used in this analysis is of December, 2023.	The majority area of the Catchment area has 0.1 soil moisture index and some areas even have more than 0.6 value indicating a successful SMC work. The satellite image used in this analysis is of December, 2023.

<b>7. Keonjhar WL Division</b>	<b>Baripada Circle</b>
Name of Range: Degaon	Catchment Area: 50 ha
Name of Site: Basareper	Current Status: Good
Activity: Staggered Trench	
	
The majority area of the cluster has -0.05 soil moisture index and some areas even have more than 0.2 value indicating a successful SMC work. The satellite image used in this analysis is of December, 2023.	The majority area of the cluster has -0.1 soil moisture index and some areas even have more than 0.4 value indicating a successful SMC work. The satellite image used in this analysis is of December, 2023.

<b>8. Baripada Division</b>	<b>Baripada Circle</b>
Name of Range: Deuli	Catchment Area: 50 ha
Name of Site: Chandua RF, Vill- Nuhamalia	Current Status: Good
Activity: Construction of Water Body (Water Harvesting Structure)	
<p>SMC WORK 2022-23          DIVISION: BARIPADA          SITE: CHANDUA RF          RANGE: DEULI          AREA: 50ha</p> <p>Chandua RF, Village- Nuhamalia          NDMI: 0.017815334          LAT: 22.183393          LONG: 86.706208</p> <p><b>NDMI</b>          NDMI Range          -0.1539          -0.0518          0.0502          0.1522          0.2543</p>	<p>SMC WORK 2022-23          DIVISION: BARIPADA          SITE: CHANDUA RF          RANGE: DEULI          AREA: 50ha</p> <p>Chandua RF, Village- Nuhamalia          NDVI: 0.199964806          LAT: 22.183393          LONG: 86.706208</p> <p><b>NDVI</b>          NDVI Range          -0.1921          0.0071          0.2064          0.4056          0.6048</p>
The majority area of the cluster has -0.05 soil moisture index and some areas even have more than 0.2 value indicating a successful SMC work. The satellite image used in this analysis is of December, 2023.	The majority area of the cluster has -0.1 soil moisture index and some areas even have more than 0.4 value indicating a successful SMC work. The satellite image used in this analysis is of December, 2023.

<b>9. Karanjia Division</b>	<b>Baripada Circle</b>
Name of Range: Karanjia	Catchment Area: ha
Name of Site: Ghagi-RF	Current Status: Good
Activity: Construction of Loose Boulders Check Dam (LBCD)	
<p>SMC WORK 2022-23          DIVISION: KARANJIA          SITE: GHAGI RF          RANGE: KARANJIA          AREA: 50ha</p> <p>Ghagi-RF          NDMI: 0.08463296          LAT: 21.5215          LONG: 85.5136</p> <p><b>NDMI</b>          NDMI Range          -0.1539          -0.0518          0.0502          0.1522          0.2543</p>	<p>SMC WORK 2022-23          DIVISION: KARANJIA          SITE: GHAGI RF          RANGE: KARANJIA          AREA: 50ha</p> <p>Ghagi-RF          NDVI: 0.322450578          LAT: 21.5215          LONG: 85.5136</p> <p><b>NDVI</b>          NDVI Range          -0.1921          0.0071          0.2064          0.4056          0.6048</p>
The majority area of the cluster has -0.05 soil moisture index and some areas even have more than 0.2 value indicating a successful SMC work. The satellite image used in this analysis is of December, 2023.	The majority area of the cluster has -0.1 soil moisture index and some areas even have more than 0.4 value indicating a successful SMC work. The satellite image used in this analysis is of December, 2023.

<b>10. Keonjhar WL Division</b>	<b>Baripada Circle</b>
Name of Range: Brahmanipal	Catchment Area: ha
Name of Site: Rebara-RF	Current Status: Good
Activity: Staggered Trench	
The majority area of the cluster has -0.05 soil moisture index and some areas even have more than 0.2 value indicating a successful SMC work. The satellite image used in this analysis is of December, 2023.	The majority area of the cluster has -0.1 soil moisture index and some areas even have more than 0.4 value indicating a successful SMC work. The satellite image used in this analysis is of December, 2023.

<b>11. Nabarangapur Division</b>	<b>Koraput Circle</b>
Name of Range: Dabugam	Catchment Area: 50 ha
Name of Site: Barli RF	Current Status: Good
Activity: Construction of RCC Check Dam (WHS), Loose Boulders Check Dam (LBCD)	
The majority area of the cluster has -0.06 soil moisture index and some areas even have more than 0.3 value indicating a successful SMC work. The satellite image used in this analysis is of December, 2023.	The majority area of the cluster has 0.008 soil moisture index and some areas even have more than 0.4 value indicating a successful SMC work. The satellite image used in this analysis is of December, 2023.

<b>12. Malkangir Division</b>	<b>Koraput Circle</b>
Name of Range: Kalimela	Catchment Area: 100 ha
Name of Site: Bhejngiwada URL	Current Status: Good
Activity: Construction of Loose Boulders Check Dam (LBCD), RCC Check Dam (WHS)	
The majority area of the cluster has -0.06 soil moisture index and some areas even have more than 0.3 value indicating a successful SMC work. The satellite image used in this analysis is of December, 2023.	The majority area of the cluster has 0.008 soil moisture index and some areas even have more than 0.4 value indicating a successful SMC work. The satellite image used in this analysis is of December, 2023.

<b>13. Jeypore Division</b>	<b>Koraput Circle</b>
Name of Range: Boriguma	Catchment Area: 200 ha
Name of Site: Chikima PRF	Current Status: Good
Activity: Construction of Loose Boulders Check Dam (LBCD)	
The majority area of the cluster has -0.06 soil moisture index and some areas even have more than 0.3 value indicating a successful SMC work. The satellite image used in this analysis is of December, 2023.	The majority area of the cluster has 0.008 soil moisture index and some areas even have more than 0.4 value indicating a successful SMC work. The satellite image used in this analysis is of December, 2023.

<b>14. Rayagada Division</b>	<b>Koraput Circle</b>
Name of Range: Gunupur	Catchment Area: 100 ha
Name of Site: Pedakonda RF	Current Status: Good
Activity: Construction of Loose Boulders Check Dam (LBCD), Graded Earthen Bunds, Trench	
The majority area of the cluster has -0.06 soil moisture index and some areas even have more than 0.3 value indicating a successful SMC work. The satellite image used in this analysis is of December, 2023.	The majority area of the cluster has 0.008 soil moisture index and some areas even have more than 0.4 value indicating a successful SMC work. The satellite image used in this analysis is of December, 2023

<b>15. Nayagarh Division</b>	<b>Bhubaneswar Circle</b>
Name of Range: Khanda Pada	Catchment Area: 50 ha
Name of Site: Guriabari RF	Current Status: Good
Activity: Construction of RCC Check Dam (WHS), Loose Boulders Check Dam (LBCD)	
The majority area of the cluster has -0.1 soil moisture index and some areas even have more than 0.1 value indicating a successful SMC work. The satellite image used in this analysis is of December, 2023.	The majority area of the cluster has 0.006 soil moisture index and some areas even have more than 0.3 value indicating a successful SMC work. The satellite image used in this analysis is of December, 2023.

<b>16. Nayagarh Division</b>	<b>Bhubaneswar Circle</b>
Name of Range: Nayagarh	Catchment Area: 250 ha
Name of Site: Hatimunda RF	Current Status: Good
Activity: Construction of Construction of RCC Check Dam (WHS)	
The majority area of the cluster has -0.1 soil moisture index and some areas even have more than 0.1 value indicating a successful SMC work. The satellite image used in this analysis is of December, 2023.	The majority area of the cluster has 0.006 soil moisture index and some areas even have more than 0.3 value indicating a successful SMC work. The satellite image used in this analysis is of December, 2023

<b>17. Nabrangpur Division</b>	<b>Koraput Circle</b>
Name of Range: Nabrangpur	Catchment Area: 100 ha
Name of Site: LD Pur Sasan RF	Current Status: Good
Activity: Construction of Loose Boulders Check Dam (LBCD), Sub-Surface Dyke, LBCD	
The majority area of the cluster has -0.06 soil moisture index and some areas even have more than 0.3 value indicating a successful SMC work. The satellite image used in this analysis is of December, 2023	The majority area of the cluster has 0.008 soil moisture index and some areas even have more than 0.4 value indicating a successful SMC work. The satellite image used in this analysis is of December, 2023



## 7. Case Studies/ Best Practices

### Case 1: Relocation of Villages from Debrigarh WLS – A win-win for the villagers and the wildlife

To provide adequate prey to large carnivores “Wildlife Habitat Management” was taken up intensively during current year to enhance habitat productivity and to increase the density and composition of ungulates inside Debrigarh Wildlife Sanctuary. The Sanctuary is home to approximately 40 species of mammals, 234 species of birds, 41 species of reptiles, 12 species of amphibians and more than 80 species of butterflies. The human habitations within Debrigarh often underwent negative interactions with wild animals due to crop depredation. In 2022 and 2023, 400 families of 4 villages from Debrigarh Sanctuary were relocated and resettled outside the Sanctuary.

In 2023 and 2024 about 500 hectares of land recovered after relocation has been converted to productive grasslands with nutritious fodder for the ungulates. More than 10,000 kg grass seeds of *Heteropogon*, *Dicanthium*, *Chloris*, *Themeda*, wild bajra etc. have been broadcasted during these years beside maintenance of grasslands of these species along with *Vetiveria*, *Saccharum*, *Oplismenus* etc. Two "Relief Enclosures", of 2 ha. each have been erected within the grasslands for long-term management.

Regular training of frontline staff has been carried out round the year for seasonal maintenance of meadows along with sessions on identification and propagation techniques. At Debrigarh 6 kinds of habitat i.e. grazing, browsing, resting, hiding, breeding and nestling has been curated systematically for the herbivores in the meadows.

It has been observed that the movement of carnivores has become more frequent in these locations now due to gathering of ungulates. Spatial separation of human beings and the animals by relocation of villages from Debrigarh Sanctuary has brought good results for both animals and humans.



**View of grasslands developed in the lands vacated by villagers**

On one hand, the creation of grassland in the relocated space is providing better habitat for the ungulates and consequently better conditions for the carnivores. This has also checked the animal movement to adjoining human habitations and cultivated areas thereby reducing the incidents of man-animal conflict.

On the other hand, the villagers who had lived inside forest without electricity, health services, road connectivity, education, deprived of all basic facilities of life have now got an opportunity to lead healthy, happy and better lives post relocation, fulfilling their social as well as economical

needs. All 400 families have already received Rs. 15 lakh compensation (each family is also drawing monthly interest money from their fixed deposits), 10 decimal patta land and now they are constructing their own 'Biju Pucca Ghars' while residing in the relocation colonies created by Forest Department outside the Sanctuary. Permanent Community halls are used for their social functions and during day time school is operational. Thus this is a win-win situation for the villagers and the wild animals.

## Case 2: A plantation for Green Cover and Soil Water Conservation - Aska Range of Ghumusur South Forest Division

Scheme – CAMPA APO-2022-23 – NPV Plantation

Type – Bald Hill Plantation – Area-10 Hct

Status – SULIAGUDA DPF

Site – KENDUPALLI

GPS – N-19.38.40.1 E-84.33.15.7



This is the tale of the conversion of a degraded patch of DPF having very eroded soil with calcareous deposits into a patch of green forests with improvement in soil and water conservation.

The appropriateness of the species planted, that includes neem (*Azadirachta indica*), karanja (*Pongamia pinnata*), gambhar (*Gmelina arborea*), sissoo (*Dalbergia sissoo*), rosewood (*Dalbergia latifolia*), bamboo, red sander (*Pterocarpus santalinus*) and amla (*Emblica officinalis*) is reflected in the high survival of 99.8%. The saplings are showing excellent growth with neem having reached average height of 3.0 m., amla 2.7 m., sissoo 2.9 m., karanja 2.1 m., rosewood 2 m. and bamboo (salia) 3.8 m. The average girth is above 18 cm. Secondary growth is noticed on bark surface of all species. This is associated with the digging of 6000 staggered trenches for Soil Moisture Conservation.

The entire effort is recorded in a well maintained plot wise pitting register and plot wise grid line for species planted.

The Green Fence of Bamboo and Agave planted in quincunx pattern has developed into a green boundary fence that is able to keep cattle and other domesticated animals out of the planted area.

The adjoining agricultural fields already enjoy improved water flow for longer periods. Thus the agriculture and thereby the local economy is already being impacted in a positive way.

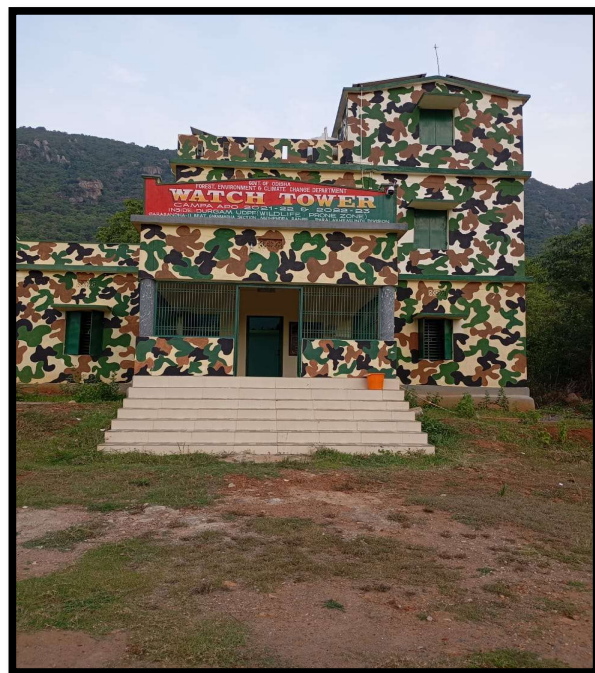
Thus, the aims and objectives of raising plantation to cover a Bald Hill and turning it into a wooded patch of greenery with multiple benefits for public utility and humanity are admirably met with at this site. This has become possible due to the all-out efforts of the staff with timely and proper intervention of all planting and post planting activities.

### Case 3: A Towering Structure for Forest and Wildlife Conservation

Division – Parlakhemundi  
Range – Mohendra  
Section – Garabandha  
Scheme – CAMPA APO- 2021-22/ 2022-23  
Work – Watch Tower  
Site – Durgaon UDPF

The remote forests of Durgaon have moderate forest growth, but are excellent habitat for wildlife species like sambar (*Rusa unicolor*), spotted deer (*Axis axis*), porcupine (*Erethizon dorsatum*), leopard (*Panthera pardus*), star tortoise (*Geochelone elegans*), barking deer (*Muntiacus muntjak*), king cobra (*Ophiophagus hannah*), etc. It is covered with RET species like red sander (*Pterocarpus santalinus*), Kataka (*Strichnox patatoram*) & Piasal (*Pterocarpus marsupium*).

The well-constructed Watchtower with camouflage colouring within this forest is a masterstroke. It will help to greatly enhance the protection of this exceedingly valuable patch of forest. The composite building with accommodation for staff and extended viewing tower will greatly enhance the ability of the staff to provide protective cover to these wild resources rich area. Visiting officials and tourists alike will be able to see and enjoy the natural wonders of the forests.



#### Case 4: Control of Podu Cultivation by motivating Tribal villagers

Scheme CAMPA APO: 2022-23  
Component: Bald Hill Plantation – 10 ha.  
Circle: Brahmapur  
Division: Balliguda  
Range: Belgarh  
Site: Pikusi



The Belgarh and Kotgada ranges of the Balliguda Forest Division have large tracts of land under ‘podu’ or shifting cultivation. Lying near the Kotgada Wildlife Sanctuary, these areas are a constant source of threat to the conservation of the Sanctuary with fires resulting from crop residue burning that often spread into the protected area alongside a variety of other biotic pressures.

Using the CAMPA funds the staff of Belgarh Range decided to raise a plantation on a patch of land that was under podu. The first challenge was in convincing the local tribal villagers is abandoning the practice of podu and in converting it into a patch of forest with growth of multiple variety of trees. After overcoming the first and the biggest hurdle of convincing the farmers and getting their whole hearted cooperation, the department embarked on raising a Bald Hill Plantation consisting of multiple species that included sissoo (*Dalbergia sissoo*), neem (*Azadirachta indica*), Baheda (*Terminalia bellirica*), peepul (*Ficus religiosa*), amla (*Emblica officinalis*), karanja (*Pongamia pinnata*), jamun (*Syzygium cumini*), phasi (*Anogeissus acuminata*) and bamboo. The objective was to raise a multi-species multi-tiered and forested area from which the villagers would be able to derive multiple benefits. The issue of soil moisture conservation has been addressed through contour bunding and staggered trenches.

The success of the plantation is evident from the fact that the survival of the plantation is 98% and the average height of the saplings is about 3 m. The image above shows the height of the saplings clearly along the tree line on the ridge.

The plantation site has been visited by many senior forest officials including the Regional Chief Conservator of Forests, the Divisional Forest Officer, the Assistant Conservator of Forests and the local Range Officer along with local elected members of the community and staff of NGO's and all of them have contributed to greening of the area by planting a tree each. The trees so planted have been marked by circling with bricks and a colourful entry gate to the plantation has also been erected.

In the short span of time since the plantation was raised, there are reports of reduced incidents of fire damage to the Sanctuary during the fire season. Thus, the benefits from the plantation have started to flow and as it takes the shape of a wooded area, there is bound to be a reduction in soil erosion, improvement in soil moisture levels and improvement in the soil quality besides the numerous benefits that will accrue from the multiple species that have been planted. Evidently, a job well done.

### Case 5: A Shelterbelt Plantation from the Costal Belt – Satapada Range of Chilika Wildlife Division

Scheme – CAMPA APO-2022-23 – NPV (1) Scheme

Type – Shelterbelt Plantation – Area-30 Ha.

Location – Rambhartia PRF

Site – Manikapatna



Over the years, large sections of the coastal plantations have been heavily damaged by the cyclones named 'HUDHUD', 'PHAILIN' and 'TITILI'. The loss of these shelter belts have had grave implication for the farmers in the adjoining regions as the sand from the coast was blown onto the agricultural fields by the oceanic winds making farming a difficult proposition.

To make up for the loss of the valuable shelterbelts, under the provisions CAMPA 2022-23, a plantation of *Casuarina equisetifolia* has been done over an area of 30 ha in Rambhartia PRF in Satpada Range.

The plantation is a successful one with a survival of 99.3% and shows uniform growth of upto 2 m. Most of the saplings have acquired a bushy shape with many lateral branches. Even in the short span of time since the plantation has been raised, it has started functioning like a wind break with shelterbelt effect. The watering holes that had been dug to provide water to the saplings are now being used by the wild animals that have started occupying the restored habitat. These include deer, mongoose, porcupine, jackal and lizards.

Thus, the palisade developed along the coast over a length of about 4 km has started providing the inland side protection from sand laden winds from the seaward side. Species like *Ipomoea biloba* have started creeping along the ground improving the ground cover and binding the soil.

In addition, the plantation activity has provided a source of income to the local villagers who had been deprived of livelihood due to the area being in the sector that is declared a no fishing zone for the conservation of Oliver Ridley Turtles.

Thus, the plantation has started providing many ecosystem and economic services in a very short period, and these are bound to increase manifold as the plantation develops fully.

## 8. SSO Bamboo

Under the CAMPA APO 2022-23, SSO Bamboo activities were taken in 27 divisions covering 76464.72 ha area where expenditure incurred Rs. 1,944.46 lakh. Activities are mainly removal of all dead and dry clump, high stumps and hanging branches and clean up to arm's reach, Removal of climber's damaging the clumps, General tying up of the clumps, Soil mounding in the clumps for better re-generation of the clumps, Stone mounding in downhill side of bamboo clumps keeping distance upto 50 cm and above, Removal of all mal formed, twisted, Insect attacked than and top broken bamboos etc. Table 6.13 below depicts an overview of the work done in the APO.

**Table 6.13: Division-wise Physical and Financial Status under SSO of Bamboo**

Name of Circle	Name of Division	Regeneration of Degraded bamboo Forests (SSO Bamboo)	
		Physical (ha)	Financial (Rs. in lakh)
Angul	Angul	870	20.73
	Dhenkanal	560	14.11
	<b>TOTAL</b>	<b>1430</b>	<b>34.84</b>
Bhubaneswar	Khurda	2661.223	70.56
	Nayagarh	5400	136.08
	<b>TOTAL</b>	<b>8061.223</b>	<b>206.64</b>
Berhampur	Phulbani	7800	196.56
	Baliguda	6000	151.20
	Boudh	3900	98.28
	Gh.South	4700	118.44
	Gh.North	3800	95.76
	Berhampur	1135.5	30.24
	<b>TOTAL</b>	<b>27335.5</b>	<b>690.48</b>
Sambalpur	Sambalpur	2400	60.47
	Rairakhol	1000	25.20
	Bargarh	2700	68.04
	Bamara WL	2300	57.96
	<b>TOTAL</b>	<b>8400</b>	<b>211.67</b>
Rourkela	Sundargarh	900	22.68
	Rourkela	300	7.56
	Bonai	4700	118.44
	Deogarh	2365	63.99
	<b>TOTAL</b>	<b>8265</b>	<b>212.67</b>
Bhabanipatna	Kalahandi( N)	5014	133.56
	Kalahandi (S)	500	12.60
	Subarnapur	140	3.52
	Bolangir	1419	37.80
	Khariar	900	22.68
	<b>TOTAL</b>	<b>7973</b>	<b>210.16</b>
Koraput	Rayagada	5900	148.68
	Koraput	2300	57.96
	Jeypore	1800	45.36
	Malkangiri	5000	126.00
	<b>TOTAL</b>	<b>15000</b>	<b>378.00</b>
	<b>Grand Total</b>	<b>76464.723</b>	<b>1944.46</b>

Under the CAMPA APO special focus was given on improving the quality and productivity of the bamboo forests.

Based on the field observations visiting 62 sample SSO bamboo sites across 25 forest divisions falling in 7 Circles, substantiated scrutiny of documents and interactions with the field formations following becomes evident:

- 1) The CAMPA provided necessary funds for improving the existing bamboo forests, which otherwise was getting deteriorated due to paucity of funds for undertaking necessary silvicultural operations;
- 2) The decongestion and treatment of clumps have resulted in the regeneration of new culms;
- 3) Elimination of dead/ damaged clumps, and opening and turning up of soil has provided water percolation, and in turn promoted growth of new and rigorous clumps;
- 4) Half-moon trenches & Circular trenches have been done effectively and supporting the conservation of soil and water resulting in generation of new culms;
- 5) During the period no fire incidence were reported in the sample area;
- 6) GPS Coordinates have been updated for all the treated areas. Topo-sheets are also available for the sites;
- 7) Site records and Clumps Registers are well maintained and updated;
- 8) Damages by elephant were observed at some sites. The clumps that were damaged by foraging elephants have been given new lease of life, as the damaged clumps would otherwise have perished;
- 9) Field staff is sufficiently skilled in executing the treatment of bamboo;
- 10) Visible improvement is evident between the treated bamboo areas in comparison to the adjoining untreated bamboo areas. Such practice should be continued in future.





**Table 6.14: Division wise Findings of Sample Bamboo SSO Works**

Name of Division	Bamboo SSO worked in ha	Sample Bamboo SSO Area	No. of Sample Clump Studied	Maintenance of Register (Yes/ No)	Average Nos. of Culms per Clump					Status of SMC works (Average/ Good/ Very Good)	Fire incidence (Yes/ No)	Topo-sheet map available (Yes/ No)
					1 <sup>st</sup> Year	2 <sup>nd</sup> Year	3 <sup>rd</sup> Year	4 <sup>th</sup> Year & Above	Overall Average			
Angul	870.0	17	22	Yes	9	5	6	3	23	Good	No	Yes
Dhenkanal	560.0	11	14	Yes	7	4	4	3	17	Good	No	Yes
Nayagarh	5400.0	108	54	Yes	7	5	7	4	22	Good	No	Yes
Phulbani	7800.0	156	195	Yes	9	8	7	5	29	Very Good	No	Yes
Baliguda	6000.0	120	150	Yes	9	8	6	5	27	Very Good	No	Yes
Boudh	3900.0	78	98	Yes	8	7	7	6	26	Good	No	Yes
Ghumusur (S)	4700.0	94	118	Yes	13	8	4	5	29	Very Good	No	Yes
Ghumusur (N)	3800.0	76	95	Yes	8	6	7	5	25	Good	No	Yes
Berhampur	1135.5	23	28	Yes	7	4	4	3	18	Very Good	No	Yes
Sambalpur	2400.0	48	60	Yes	6	4	5	3	17	Good	No	Yes
Rairakhol	1000.0	20	25	Yes	6	5	3	3	16	Good	No	Yes
Bargarh	2700.0	54	68	Yes	6	6	4	3	19	Good	No	Yes
Bamara WL	2300.0	46	58	Yes	6	5	5	3	19	Good	No	Yes
Sundargarh	900.0	18	23	Yes	6	5	5	6	22	Very Good	No	Yes
Bonai	4700.0	94	47	Yes	6	5	4	3	18	Good	No	Yes
Deogarh	2365.0	47	59	Yes	7	5	5	5	21	Good	No	Yes
Kalahandi (N)	5014.0	100	125	Yes	8	5	5	5	22	Good	No	Yes
Kalahandi (S)	500.0	10	13	Yes	7	5	5	4	20	Good	No	Yes
Subarnapur	140.0	3	4	Yes	7	5	4	3	18	Very Good	No	Yes
Bolangir	1419.0	28	35	Yes	8	6	5	4	22	Good	No	Yes
Khariar	900.0	18	23	Yes	6	5	4	3	17	Good	No	Yes
Rayagada	5900.0	118	59	Yes	7	5	3	3	17	Good	No	Yes
Koraput	2300.0	46	58	Yes	6	5	4	3	18	Good	No	Yes
Jeypore	1800.0	36	45	Yes	5	5	4	3	16	Average	No	Yes
Malikangiri	5000.0	100	125	Yes	8	6	7	5	25	Good	No	Yes
<b>Grand Total</b>		<b>1469</b>	<b>1601</b>	<b>Yes</b>	<b>7</b>	<b>5</b>	<b>5</b>	<b>4</b>	<b>21</b>	<b>Good</b>	<b>No</b>	<b>Yes</b>

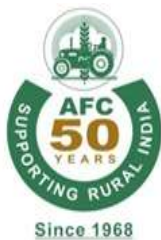
## **9. Key Suggestions**

Based on the field observations, scrutiny of documents and interactions with the field formations including some senior frontline officials, the following recommendations are presented:

1. The nursery practices can be further supported by ensuring that only seeds from known good sources are used for raising the saplings. This will ensure the use of only quality planting material. Protocols for identification of plus trees and collection of seeds as per seasonality should be followed rigorously.
2. Raising of saplings in nurseries should be aligned with the changing policies and priorities at the national and state levels.
3. The plantation models should be decided considering the suitability of species and biodiversity values of the areas.
4. The choice of species must be decided considering the requirements of the sites. If suitable stocks are not available in the nearest nursery, then alternative arrangements should be made.
5. System for undertaking independent quality checks of the construction works should be adopted by engaging specialized agency, if possible or any other suitable organization.
6. The uploading of inputs at the e-green watch portal must be made a matter of routine. The format could be adopted for all departmental plantation and field work activities.
7. The mapping of biodiversity recovery and mapping of other success protocols could be made a part of the regular monitoring routines.
8. The visit of senior officials and the routine recording of their directions and status of implementation of their directives should be made a part of the activities of the field staff.
9. Enhanced people's participation especially in protection and conservation works should be made a regular part of the protocols – more so in the protected areas.
10. The skill of staff working in nurseries, in wildlife conservation and other such selected sectors should be upgraded with training to promote the acquisition of specialized skills.
11. An award and reward system could be considered for the frontline staff for the implementation of CAMPA works.
12. The maintenance of plantations could have a concurrent component for measurement of sample plots for monitoring of change so that there is some data available about the effectiveness of the inputs.

<END>

# Annexures

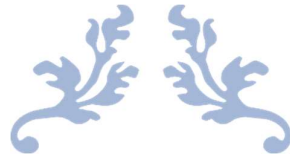


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# GUIDELINES AND FORMS

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**CAMPA Projects Third-Party Evaluation for FY 2022-23**



All Survey Teams must study the Guidelines for Sampling and Data Collection and record information on prescribed forms.

**REVISION 1**

**FEBRUARY 14, 2024**

**AFC India Ltd.  
New Delhi**

## Guidelines for Data Collection under the CAMPA Evaluation

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#### Note:

- 1) Plantation activities  
Form 1 and Form 1A
- 2) Nursery Management  
Form 2
- 3) SMC activities  
Form 3
- 4) Infrastructure and Other activities  
Form 4
- 5) E-green Watch updating  
Form 5
- 6) Publicity and Capacity Development  
Form 6

## **1. Evaluation of Plantation Works (Use Form 1 and Form 1A)**

### **Sampling method and Sampling %**

- Range-wise list of plantation sites will be collected from the divisions
- Two Ranges from each division where maximum areas covered under the afforestation activities will be selected
- In each selected Forest Range serial number will be given to all the sites
- 10% of the total sites provided as per the list will be randomly selected utilizing Random Number Table
- 2% of the area will be enumerated for each sampled site by laying plots of size 33m x 33m (approx. 0.1 ha.)
- The plots will be laid randomly on the diagonal starting from one corner of the treatment/ plantation site
- Photograph along with GPS location (using mobile app)

### **DATA COLLECTION**

- Suitability of location of plantation
- Year of plantation
- Area of the plantation
- Suitability of planted species per agro-climatic conditions
- Name & Number of species planted
- Spacing of plantation
- Type of planting: AR/Block/ANR/Avenue/Fruit & fodder/ Miyawaki/ RET/ Bamboo/ Bald Hill/ River bank/ Canal-side/Others
- Number of plants planted/ Spacing
- Average height of plants
- Average collar girth
- Silvicultural operation such as weeding, fencing, fertilizer application etc. and Protection measures etc.
- Maintenance of Plantation Journal/clump register & Nurseries

### **Criteria for Evaluation (based on count in 0.1 ha sample plot)**

- Survival %
- Average plant height (in cm)
- Average DBH/ Collar Girth (in cm)
- Average number of seedlings planted
- Status of natural regeneration/coppicing status of stump, if any

**Note:** Score obtained based on the “Scoring of Plantation” based on the criteria like plantation journal & its updation, treatment map, SMC measures, survival%, Height & growth etc.

## **2. Evaluation of SMC Works (Use Form 2)**

### **Sampling method and Sampling %**

- Range-wise list of SMC sites will be collected from the divisions
- Two Ranges from each division where maximum set of SMC activities undertaken will be selected
- In each selected Forest Range serial number will be given to all the sites
- 10% of the total sites provided as per the list will be randomly selected utilizing Random Number Table
- Photograph along with GPS location (using mobile app)

### **Data Collection**

- DPR prepared / Sanction letter
- Types of structure
- No. /volume
- Treatment Map available in Register of SMC
- Numbers per ha
- Extent of Siltation
- Efficacy of the Structures
- Extent of stabilization of gullies
- Comparative enhancement of ground water table
- Comparative assessment of the Vegetation cover in the area
- Status of regeneration
- Record maintenance like MB, GPS location

### **Criteria for Evaluation (based on sample site)**

- Quality/suitability of SMC structures
- Staggered trench, Percolation Pit, Contour bund, graded bund, Gully Plugging, WHS, etc.
- Design and number of structures as per Norms/ Specification
- Effectiveness of structures (siltation check and stabilization of erosion/ gullies, improvement in soil moisture regime and regeneration) – observation based supported by photograph to be rated in two categories – a) Satisfactory, b) Not satisfactory
- Gaps, if any observed, will share with field as well as senior team for taking corrective measures

### **3. Evaluation of Infrastructure Works (Use Form 2)**

#### **Sampling method and Sampling %**

- Range-wise list of sites will be collected from the divisions
- 10% of the total sites provided as per the list will be randomly selected utilizing Random Number Table
- Photograph along with GPS location (using mobile app)

#### **Data Collection**

- DPR/ Estimates for the structure
- Types of structure
- Work Order and Estimated Cost
- Completion status/ Commissioning of structure
- Specification/ norms followed for construction of structure
- Deviations/ cost over-run
- Utilization and maintenance of structure

#### **Criteria for Evaluation (based on sample site)**

- Completion of structure as per Work Order/ specification
- Any deviation from plan and estimate
- Usability and utility
- Construction quality (observation based supported by photograph to be rated in two categories – a) Satisfactory, b) Not satisfactory)



## 4. Evaluation of Wildlife Management Works

### Sampling method and Sampling %

- Range-wise list of different wildlife management activities will be collected from the divisions
- Two Ranges from each division where maximum activities taken up will be selected, if any activities will be missing in two sampled ranges, alternate range(s) will be selected to cover the activities
- In each selected Forest Range serial number will be given to all the sites
- 10% of the total sites provided as per the list will be randomly selected utilizing Random Number Table

### Data Collection

- Protection and Anti-Depredation Activities
- Forest Fire Prevention and Control Operations
- Improvement of Wildlife Habitat
- 3.1 Augmentation of food and water resources
- 3.2 Monitoring assessment and protection of wildlife habitat
- 3.3 Habitat Management
- 3.4 Corridor Management
- 3.5 Management of Special Habitats
- 3.6 Contingency & Overhead Expenditure
- Establishment, operation and maintenance of animal rescue centre and veterinary treatment facilities for wild animals
- Management of biological diversity and biological resources
- Voluntary Relocation of Villages from Protected Areas and Tiger Reserve
- Strengthening of Communication facilities for Protection of Wildlife
- Construction & Maintenance of Infrastructure for Protection of Wildlife
- Research Activities
- Publicity & Awareness Programmes

### Criteria for Evaluation (based on sample site)

- Completion of interventions
- Any deviation from plan and estimate in case of anti-poaching barrack/watch tower/animal rescue center/anti-poaching check gate
- Usability and utility
- Present conditions and utility
- Construction quality (observation based supported by photograph to be rated in two categories – a) Satisfactory, b) Not satisfactory)

## 5. Evaluation of Other Works

### Sampling method and Sampling %

- Range-wise list of other activities carried out will be collected from the divisions
- Two Ranges from each division where maximum activities taken up will be selected, if any activities will be missing in two sampled ranges, alternate range(s) will be selected to cover the activities
- 10% of the total activities provided as per the list will be randomly selected utilizing Random Number Table

### Criteria for Evaluation (based on sample site)

Activity wise suitable criteria will be applied.

# **DATA/ INFORMATION COLLECTION FORMS**

### Form 1: Plantation Site Observations

<b>Name of Expert</b>			<b>Date of site visit</b>	
<b>Name of Division</b> <input type="checkbox"/> Territorial <input type="checkbox"/> Wildlife			<b>Name of Range</b>	
<b>Discussion with/ Field Visit with</b>	<b>Name of Person</b>		<b>Contact</b>	
<b>Information on Plantation Sites</b>				
<b>Name of site visited</b>			<b>GPS Coordinate taken</b> <input type="checkbox"/> Yes/ <input type="checkbox"/> No	<b>Lat</b>
				<b>Long</b>
<b>Model of plantation activity observed</b> (please tick one or more)	<b>A. Creation</b> <input type="checkbox"/> AR 1000/ 1600 plants/ha <input type="checkbox"/> ANR 200/ 500 plants/ha <input type="checkbox"/> Block Plantation 1600 plants/ha <input type="checkbox"/> Casuarina / Mangrove 2500 plants/ha <input type="checkbox"/> Avenue Plantation <input type="checkbox"/> <b>B. Maintenance</b> <input type="checkbox"/> Maintenance _____ Year (Model _____)		<b>Photograph taken</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <b>Number of Photos taken</b> _____ (Please use GPS enabled apps for taking photos)	
<b>APO ref.</b> (Please specify the reference – item number; page number)	<b>Main head name:</b>		<b>Working Plan/ Management Plan Ref.</b> (to be checked at Division level)	(Please specify the reference from Working/ Management Plan – item number; page number)
	<b>Sub-head name:</b>			
<b>Year of creation of work</b>		<b>Area covered (ha.)</b> _____	<b>Status of work at the time of field visit</b>	
<b>SANCTION AND EXPENDITURE</b>				
<b>Amount sanctioned (Rs. In Lakhs)</b>		<b>Amount released (Rs. In Lakhs)</b>		<b>Expenditure reported as per account statements (Rs. In Lakhs)</b>
<b>Plantation Journal</b>				
<b>Plantation Journal available at site during field visit</b> <input type="checkbox"/> Yes/ <input type="checkbox"/> No	<b>Beat Register available at site level</b> <input type="checkbox"/> Yes/ <input type="checkbox"/> No	<b>Plantation Journal/ Clump Register</b>	<input type="checkbox"/> Regularly updated <input type="checkbox"/> Not regularly updated <input type="checkbox"/> Not updated at all	
<b>Map of plantation sites/ photographs of site</b>	<input type="checkbox"/> Prepared and available <input type="checkbox"/> Prepared but not available (Reason _____) <input type="checkbox"/> Not Prepared	<b>Treatment plan/ map</b>	<input type="checkbox"/> Prepared and available <input type="checkbox"/> Prepared but not available (Reason _____) <input type="checkbox"/> Not Prepared	
<b>SIGN BOARD AND FENCING AT SITE</b>				
<b>Sign Board Installed at site</b> <input type="checkbox"/> Yes / <input type="checkbox"/> No	<b>Construct of Sign Board</b> <input type="checkbox"/> Angle Iron <input type="checkbox"/> Cement-Brick	<b>Information Display</b> <input type="checkbox"/> Fresh paint / display <input type="checkbox"/> Old paint/ unclear display	<b>Condition of Sign Board</b> <input type="checkbox"/> Good <input type="checkbox"/> Partially damaged <input type="checkbox"/> Completely damaged	
<b>FENCING AT SITE</b>				
<b>Fencing done around the site</b> <input type="checkbox"/> Yes / <input type="checkbox"/> No	<b>Type of fencing</b> <input type="checkbox"/> Brush-wood <input type="checkbox"/> Barbed-wire/ Wire mesh	<b>Type of fence-post</b> <input type="checkbox"/> Angle-iron <input type="checkbox"/> Bamboo/ Wood (treated/ not treated)	<b>Condition of fencing</b> <input type="checkbox"/> Good <input type="checkbox"/> Partially damaged <input type="checkbox"/> Completely damaged	

SMC			
SMC activities undertaken along with plantation	<input type="checkbox"/> Yes <input type="checkbox"/> No	SMC Work specification and count	<input type="checkbox"/> Staggered Trench L ___ m x W ___ m x H/D ___ m  <input type="checkbox"/> Number of trenches constructed _____ (nos.)
Quality of SMC works	<input type="checkbox"/> Satisfactory quality <input type="checkbox"/> Not satisfactory quality	Effectiveness of SMC works	<input type="checkbox"/> Adequately effective <input type="checkbox"/> Not adequately effective
Please write your remarks on quality		Please write your remarks on effectiveness	
<b>General Observations</b>			
Remarks on site suitability/ rationale			
Remarks on Selection of species			
Remarks on quality of plantation and average height of plants			
Remarks on survivability and quality			
Remarks on Weeding/ general maintenance of site			
Remarks on visits by senior officers as per site inspections recoded in Plantation Journal			
Other Observations, if any			





**Form 3: SMC structures**

<b>Name of Expert</b>		<b>Date of site visit</b>	
<b>Name of Division</b> <input type="checkbox"/> Territorial / <input type="checkbox"/> Wildlife		<b>Name of Range</b>	
<b>Name of site visited</b>		<b>GPS Coordinate taken</b> <input type="checkbox"/> Yes/ <input type="checkbox"/> No	<b>Lat</b>
			<b>Long</b>
<b>Type of structure</b>	<b>Name of Structure</b>	<b>Size / Dimension (in m)</b>	<b>Quantity (Nos.)</b>
	Loose Boulders Check Dam (LBCD)	L ___ x W ___ x H/D ___	
	Graded Earthen Bunds	L ___ x W ___ x H/D ___	
	Sub-surface Dike	L ___ x W ___ x H/D ___	
	Check-dam (Concrete)	L ___ x W ___ x H/D ___	
	Trench	L ___ x W ___ x H/D ___	
<b>Work Order/ Sanction Letter</b>	<input type="checkbox"/> Available/ Seen; Ref. _____ <input type="checkbox"/> Not available/ not seen	<b>MB</b>	<input type="checkbox"/> Available/ Seen <input type="checkbox"/> Not available/ not seen
<b>Year of Creation</b>		<b>Current Status</b>	
<b>SANCTION AND EXPENDITURE</b>			
<b>Amount sanctioned (Rs. In Lakhs)</b>	<b>Amount released (Rs. In Lakhs)</b>	<b>Expenditure reported as per account statements (Rs. In Lakhs)</b>	
<b>QUALITY AND EFFECTIVENESS</b>			
<b>Quality of SMC works</b>	<input type="checkbox"/> Satisfactory quality <input type="checkbox"/> Not satisfactory quality	<b>Effectiveness of SMC works</b>	<input type="checkbox"/> Adequately effective <input type="checkbox"/> Not adequately effective
<b>Remarks and Observations</b>			
<b>Site Observation</b>			
<b>Remarks on site suitability/ rationale</b>			
<b>Remarks on quality of structure</b>			
<b>Remarks on effectiveness of structure</b>			



**Form 4: Infrastructure and Other activities** (Information to be collected Range-wise; please use separate sheet)

Name of Expert			Date of site visit		
Name of Division/ Institution/ Office	<input type="checkbox"/> Territorial / <input type="checkbox"/> Wildlife <input type="checkbox"/> Others (specify) _____	Name of Range			
Name of site visited			GPS Coordinate taken <input type="checkbox"/> Yes/ <input type="checkbox"/> No	Lat	
				Long	
Type of structure/ Item/ Human Resource	Name of Structure/ Item/ Human Resource	Specification/ Make / Dimension (in m)/ Location	Quantity (Nos.)	Cost (Rs. Lakh)	
Work Order/ Sanction Letter	<input type="checkbox"/> Available/ Seen; Ref. <input type="checkbox"/> Not available/ not seen	MB	<input type="checkbox"/> Available/ Seen <input type="checkbox"/> Not available/ not seen		
Year of Creation		Current Status			
<b>SANCTION AND EXPENDITURE (For the Range)</b>					
Amount sanctioned (Rs. In Lakhs)		Amount released (Rs. In Lakhs)	Expenditure reported as per account statements (Rs. In Lakhs)		
<b>QUALITY AND EFFECTIVENESS</b>					
Quality of works/ items	<input type="checkbox"/> Satisfactory quality <input type="checkbox"/> Not satisfactory quality	Effectiveness of works/ items	<input type="checkbox"/> Adequately effective <input type="checkbox"/> Not adequately effective		
<b>Remarks and Observations</b>					
Observation on structure/ items					
Remarks on suitability/ rationale					
Remarks on quality/ Workmanship					
Remarks on effectiveness					

**Form 5: E-green Watch Update** (To be checked at Division level)

<b>Name of Expert</b>		<b>Date of site visit</b>	
<b>Name of Division</b> <input type="checkbox"/> Territorial <input type="checkbox"/> Wildlife		<b>E-green Watch awareness</b>	<input type="checkbox"/> IT Staff is aware <input type="checkbox"/> IT Staff is not Aware
<b>Access to E-green Watch portal by survey team</b>	<input type="checkbox"/> Yes, have access <input type="checkbox"/> Do not have access	<b>Internet Connectivity</b>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<b>Update E-green Watch portal</b>	<input type="checkbox"/> Yes, all data has been uploaded <input type="checkbox"/> Data has been partially uploaded ___ % <input type="checkbox"/> Not uploaded / Not aware	<b>Current Status</b>	<input type="checkbox"/> Sample data checked on portal by survey team <input type="checkbox"/> Not checked by survey team as portal access is not shared; <input type="checkbox"/> Other (specify) _____
<b>Remarks and Observations</b>			
<b>Observation/Remarks on E-green Watch update</b>			

**Form 6: Publicity and Capacity Development** (To be collected at Division level for each range; use separate sheet)

<b>Name of Expert</b>		<b>Date of site visit</b>			
<b>Name of Division/ Institution/ Office</b>	<input type="checkbox"/> Territorial / <input type="checkbox"/> Wildlife <input type="checkbox"/> Others (specify) _____	<b>Name of Range</b>			
<b>Work/ Activity</b>	<b>Description</b>	<b>Qty</b>	<b>Remarks</b>		
<b>Awareness</b>					
<b>Publicity</b>					
<b>Work/ Activity</b>	<b>Description</b>	<b>Number of trainings conducted</b>	<b>Number of Staff trained</b>	<b>Type of Staff Trained</b>	<b>Duration of Training (days)</b>
<b>Training</b>					

<END>

## Annex 2: Change Detection of Activity through Satellite Imageries

1. AR Plantation (2022-23) inside Khalakhala RF over-10 ha, Athgarh Sadar Beat, Athgarh Sadar Section, Athgarh Forest Range, Athgarh Forest Division, Angul Circle

Pillar No	Latitude (North)			Longitude (East)			Pillar No	Latitude (North)			Longitude (East)		
	D	M	S	D	M	S		D	M	S	D	M	S
1	20	30	5.5	85	43	11.5	9	20	29	56.4	85	43	26.3
2	20	30	2.9	85	43	9.4	10	20	29	58.9	85	43	25.3
3	20	30	1.0	85	43	7.9	11	20	30	4.3	85	43	24.2
4	20	29	59.1	85	43	6.0	12	20	30	4.7	85	43	21.4
5	20	29	58.7	85	43	6.1	13	20	30	5.2	85	43	19.3
6	20	29	59.7	85	43	11.1	14	20	30	6.3	85	43	18.9
7	20	29	59.5	85	43	13.6	15	20	30	6.1	85	43	16.3
8	20	29	58.2	85	43	18.3	16	20	30	5.7	85	43	13.7



Pre Project Status



Post Project Status

2. Bald Hill Plantation (2022-23) over 10.0 ha area at Pikusi under Mundigarh- A DPF of Rayagada Division, Koraput Circle.

SL No	Latitude (North)	Longitude (East)	SL No	Latitude (North)	Longitude (East)
1	19.9447313	83.6547983	12	19.9460067	83.6520917
2	19.9442367	83.6551283	13	19.9463083	83.6520650
3	19.9437467	83.6553300	14	19.9465533	83.6518350
4	19.9433633	83.6549350	15	19.9469783	83.6521667
5	19.9431750	83.6543900	16	19.9472733	83.6524600
6	19.9430550	83.6539650	17	19.9476783	83.6528287
7	19.9430400	83.6534600	18	19.9480167	83.6532183
8	19.9434617	83.6531600	19	19.9471533	83.6538650
9	19.9440083	83.6531300	20	19.9463967	83.6543417
10	19.9447283	83.6528317	21	19.9458700	83.6545700
11	19.9451783	83.6524367			



Pre Project Status



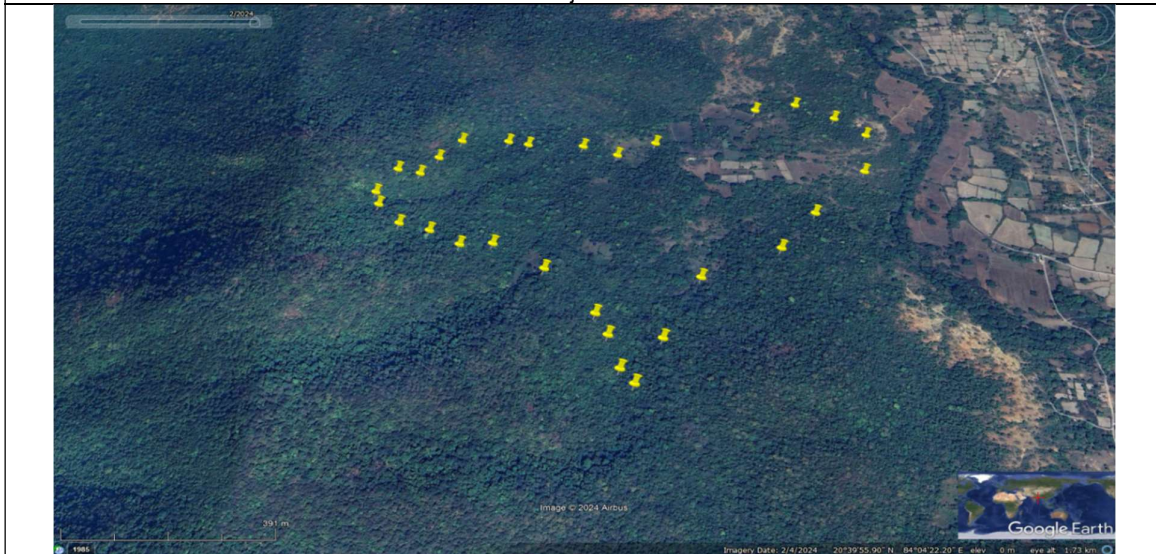
Post Project Status

3. ANR Plantation (2021-22) over 50 ha at Ullipadar of Brahmunigaon PRF, Brahmunigaon Range, Balliguda Division, Berhampur Circle

Pillar No	Latitude (North)			Longitude (East)			Pillar No	Latitude (North)			Longitude (East)		
	D	M	S	D	M	S		D	M	S	D	M	S
1	19	40	04.00	84	4	13.40	16	19	39	42.80	84	4	29.60
2	19	40	01.90	84	4	11.60	17	19	39	48.60	84	4	32.80
3	19	40	00.00	84	4	10.20	18	19	39	51.60	84	4	39.30
4	19	40	00.50	84	4	08.30	19	19	39	55.40	84	4	42.50
5	19	39	57.80	84	4	06.80	20	19	40	00.20	84	4	47.30
6	19	39	56.40	84	4	07.20	21	19	40	04.70	84	4	48.20
7	19	39	54.30	84	4	09.10	22	19	40	06.90	84	4	45.80
8	19	39	53.50	84	4	11.60	23	19	40	08.70	84	4	42.60
9	19	39	52.00	84	4	14.10	24	19	40	08.00	84	4	39.00
10	19	39	52.10	84	4	16.70	25	19	40	03.70	84	4	30.00
11	19	39	49.50	84	4	20.80	26	19	40	02.20	84	4	26.70
12	19	39	45.10	84	4	24.70	27	19	40	03.30	84	4	23.80
13	19	39	43.10	84	4	25.60	28	19	40	03.50	84	4	19.10
14	19	39	40.10	84	4	26.40	29	19	40	03.90	84	4	17.40
15	19	39	38.80	84	4	27.40							



Pre Project Status



Post Project Status

4. RET Without Gap Plantation (2022-23) over 10 ha area at Idikonda RET under Telerai Beat of Kalimela Section, Kalimela Range, Malkangiri Division of Koraput Circle

SL No	Latitude (North)	Longitude (East)	SL No	Latitude (North)	Longitude (East)
1	17.99230	81.71558	10	17.99090	81.71873
2	17.99263	81.71620	11	17.99056	81.71817
3	17.99320	81.71666	12	17.99058	81.71732
4	17.99330	81.71780	13	17.99043	81.71661
5	17.99318	81.71872	14	17.99013	81.71576
6	17.99280	81.71854	15	17.98992	81.71538
7	17.99199	81.71946	16	17.99096	81.71498
8	17.99122	81.71955	17	17.99137	81.71452
9	17.99082	81.81919	18	17.99225	81.71520



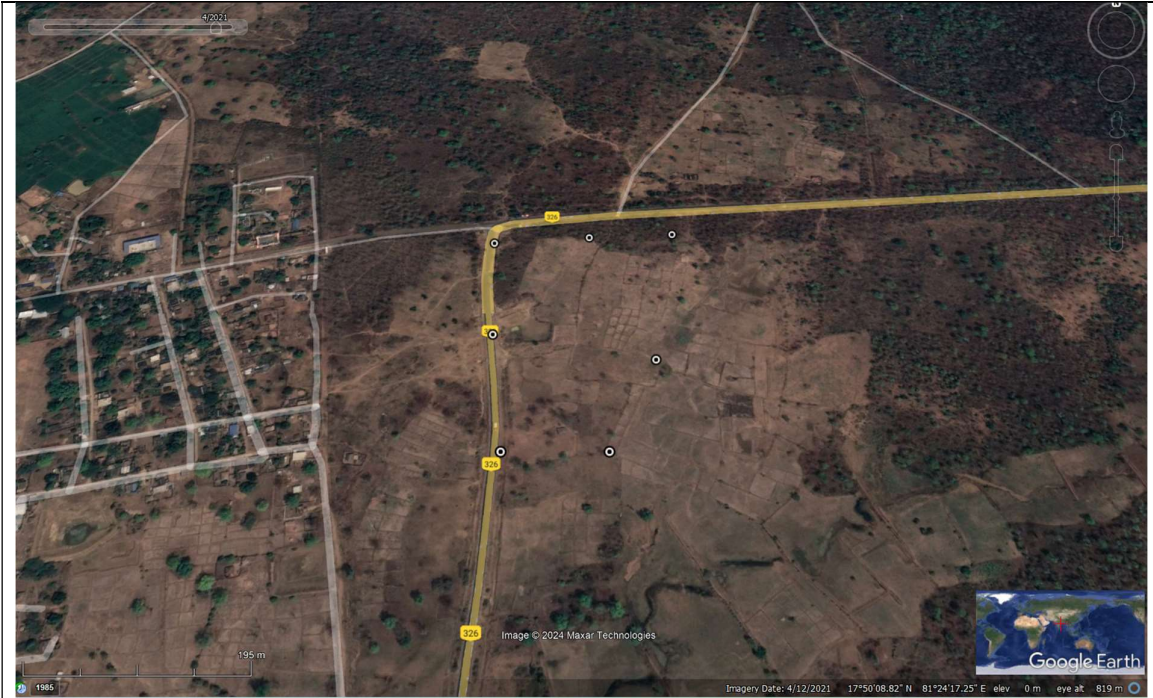
Pre Project Status



Post Project Status

5. Miyawaki Plantation (2021-22) over 5.0 ha area at Motu under Motu Section of Motu Range, Malkangiri Division of Koraput Circle.

SL No	Latitude (North)	Longitude (East)	SL No	Latitude (North)	Longitude (East)
1	17.83333	81.40450	5	17.83058	81.40575
2	17.83342	81.40558	6	17.83058	81.40472
3	17.83347	81.40653	7	17.83200	81.40456
4	17.83167	81.40625	13		



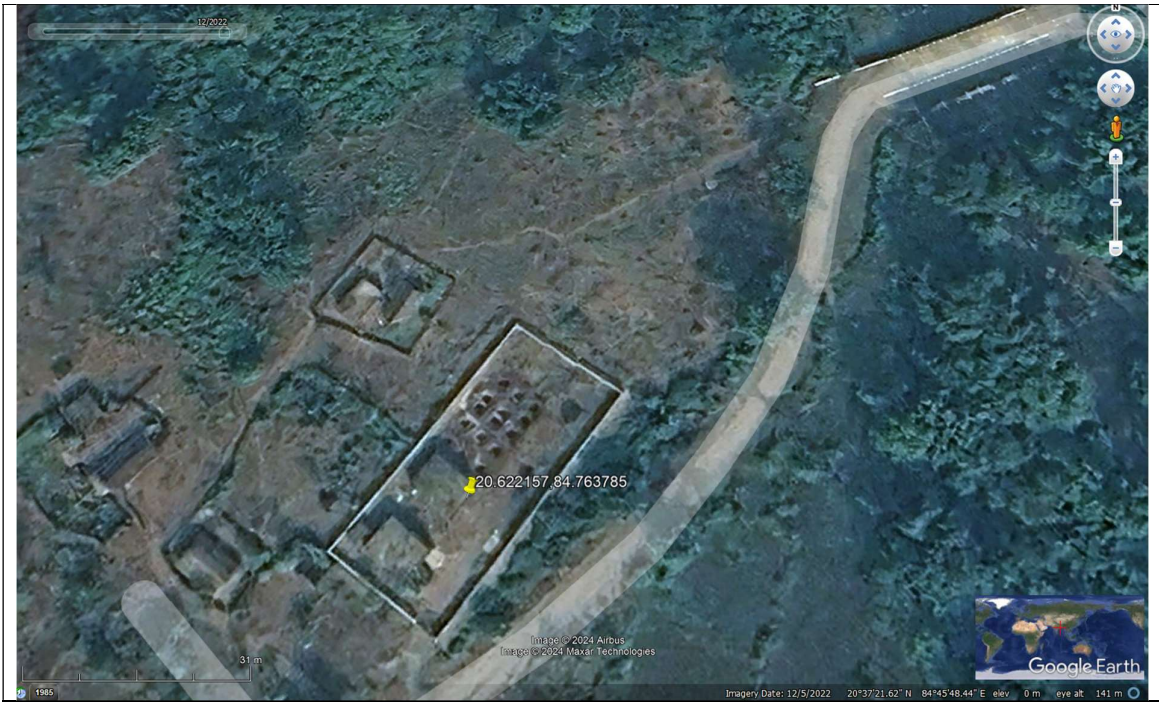
Pre Project Status



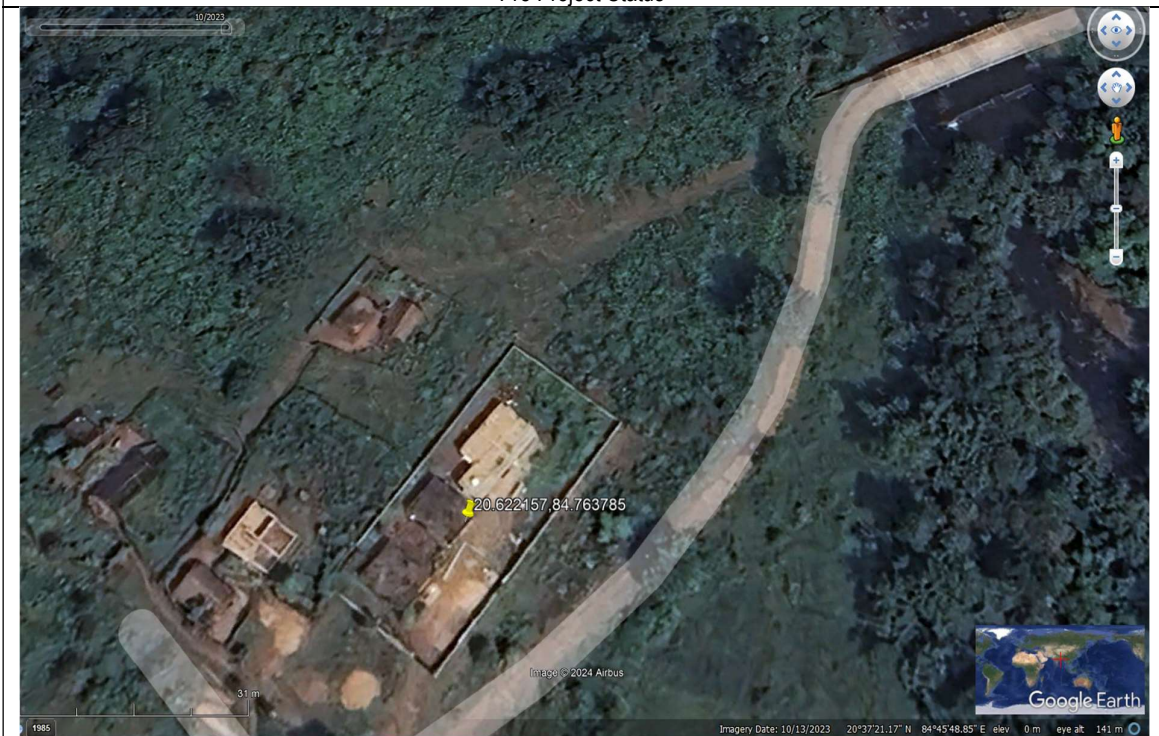
Post Project Status



6. Construction of Forester Quarter at Majhipada under Satakosia WL Division of Angul Circle

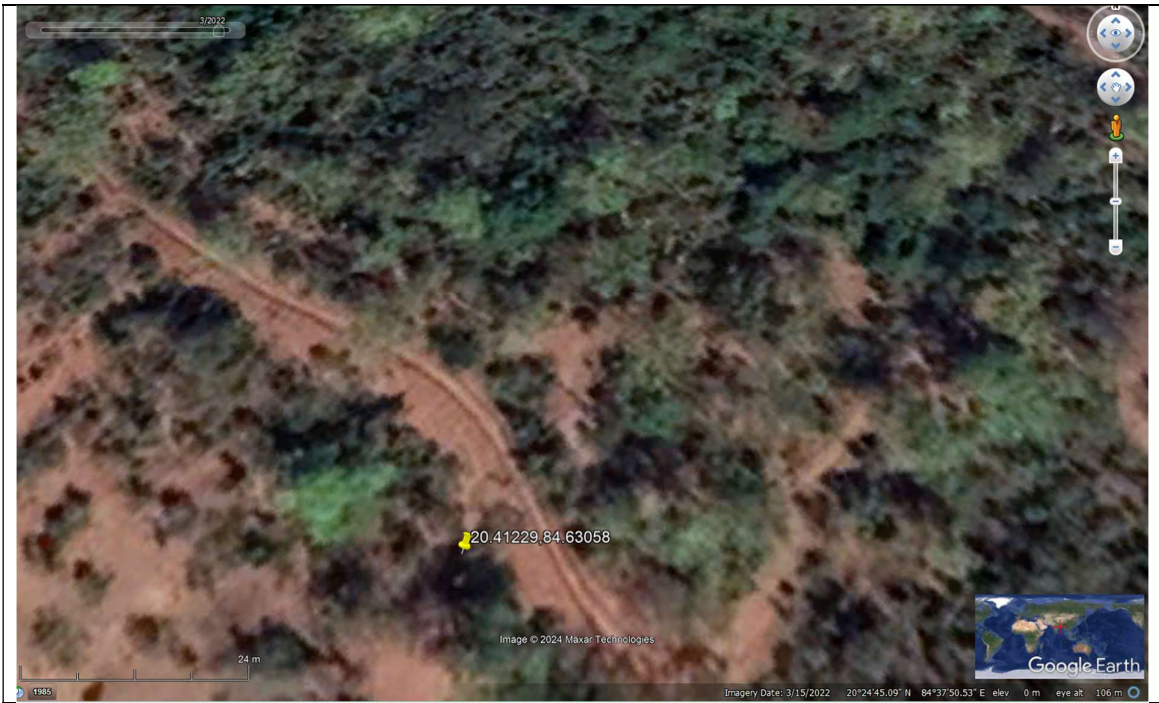


Pre Project Status

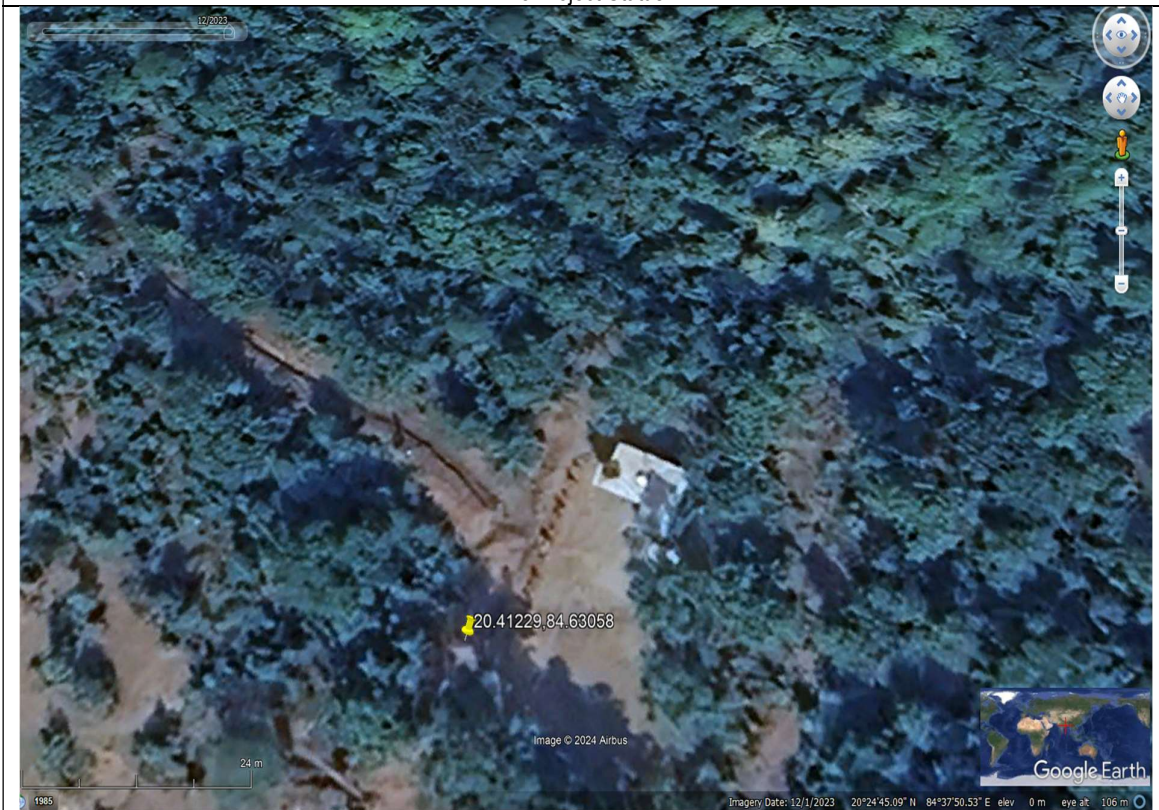


Post Project Status

7. Construction of Anti-poaching Barrack at Kulurkumpa under Banigochha Range of Mahanadi WL Division of Angul Circle



Pre Project Status



Post Project Status

8. Construction of RCC Check Dam at Barakhola RF under Narsinghpur West Range of Athagarh Division of Angul Circle.



Pre Project Status



Post Project Status

9. Construction of Forester Quarter at Nuagaon, Balituha, Kujang Range, Rajnagar WL Division of Bhubaneswar Circle.

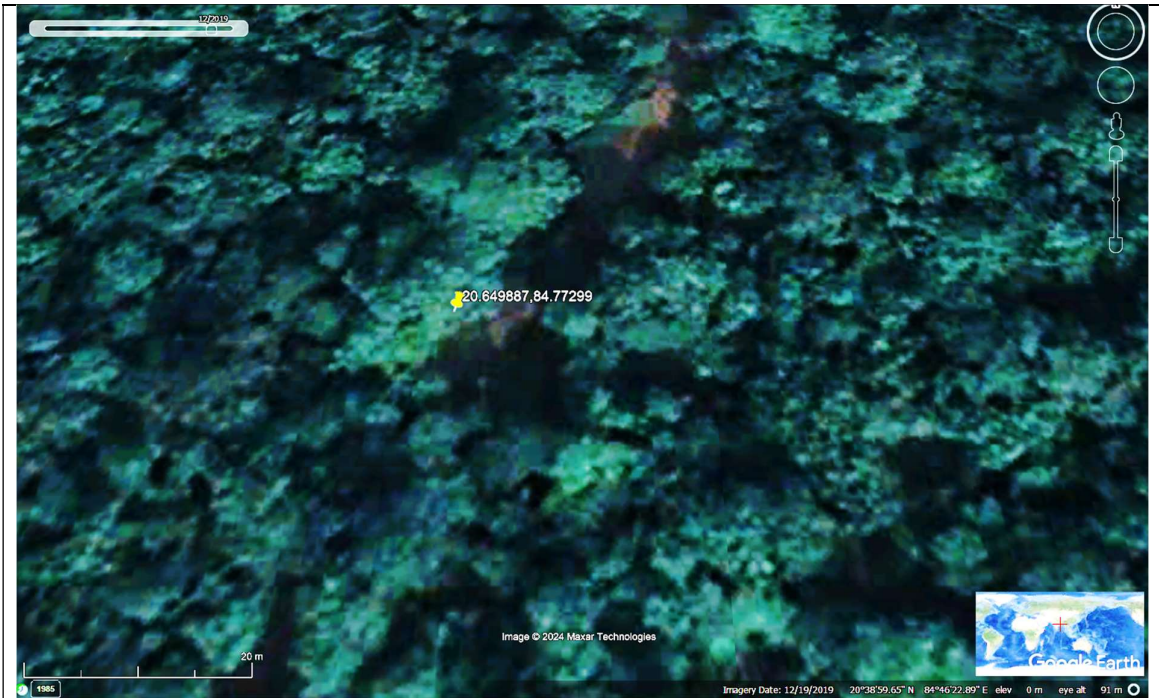


Pre Project Status

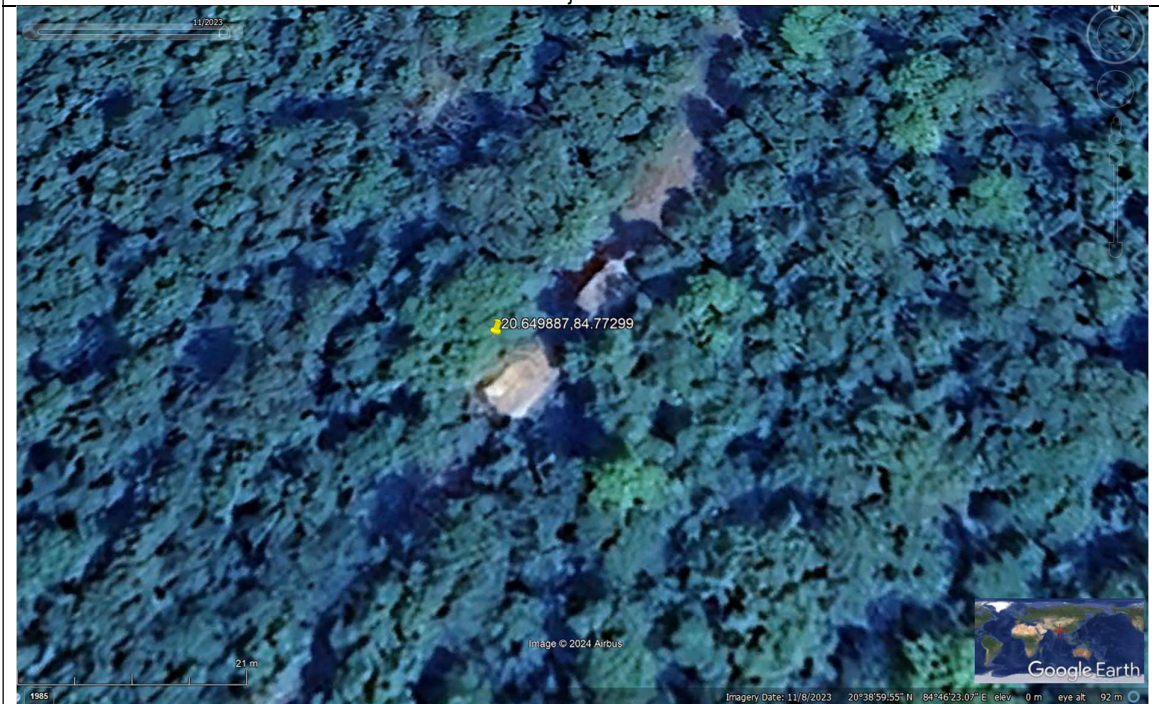


Post Project Status

10. Cause Way, Fireline -Kadalikhola , Satakosia WL Division of Angul Circle.



Pre Project Status



Post Project Status

## ANNEXURE- 3

Value of NDVI and Soil Moisture Index Estimated Through Satellite Imageries Analysis

Sl. No	Name of Circle	Name of SMC Structure	Name of Division	Name of Range	Name of site visited	Lat (N)	Long (E)	Catchment Area (ha)	Value of NDVI (November/ December)	Soil Moisture index	Status of Moisture (Very Good/ Good/ Poor)
1	2	3	4	5	6	7	8	9	10	11	12
1	Angul	Construction of Water Body/ Pond (WHS)	Angul	Bantala	Kanja	20.627673	85.109316	25	0.17594460	0.17255473	Good
2	Angul	Loose Boulders Check Dam (LBCD)	Angul	Angul	Krishna Chakra PRF	20.737780	84.940446	40	0.27781773	0.14281645	Good
3	Angul	Graded Earthen Bunds	Cuttack	Tomka	Kansa Section Bahali Sahi	21.048555	85.848942	200	0.27950257	0.13643137	Good
4	Angul	Graded Earthen Bunds	Cuttack	Tomka	Dalijora RF, Mangarajpur (See) Kheirapada	20.634751	85.842712	200	0.37062255	0.17717163	Good
5	Angul	Construction of RCC Check Dam (WHS)	Dhenkanal	Kamakhaya Nagar West	Sunajhari RF	20.544179	85.550148	50	0.29592788	0.08149116	Good
6	Angul	Construction of RCC Check Dam (WHS)	Dhenkanal	Hindol	Koi RF	20.532315	85.295162	50	0.24904627	0.13937718	Good
7	Angul	Loose Boulders Check Dam (LBCD)	Athagarh	Badamba	Haladiaseni RF C4	20.476699	85.316075	100	0.34826311	0.14973719	Good
8	Angul	Loose Boulders Check Dam (LBCD)	Athagarh	Badamba	Haladiaseni RF C4	20.481442	85.317094		0.37150720	0.17377649	Good
9	Angul	Staggered Trench	Athagarh	Badamba	Haladiaseni RF C4	20.479719	85.317241		0.35155764	0.14310180	Good
10	Angul	Construction of RCC Check Dam (WHS)	Athagarh	Badamba	Haladiaseni RF C4	20.518478	85.214328		0.02901246	0.39846092	Good
11	Angul	Loose Boulders Check Dam (LBCD)	Athagarh	Narsinghpur Easst	Olab RF	20.476699	85.316075	50	0.35614368	0.17753750	Good
12	Angul	Construction of RCC Check Dam (WHS)	Athagarh	Narsinghpur Easst	Olab RF	20.518478	85.214328		0.38758734	0.17753750	Good

Sl. No	Name of Circle	Name of SMC Structure	Name of Division	Name of Range	Name of site visited	Lat (N)	Long (E)	Catchment Area (ha)	Value of NDVI (November/December)	Soil Moisture index	Status of Moisture (Very Good/Good/Poor)
1	2	3	4	5	6	7	8	9	10	11	12
13	Angul	Construction of RCC Check Dam (WHS)	Athagarh	Narsinghpur West	Barakhola RF	20.5129 24	85.0674 79	50	0.336018 68	0.150766 03	Good
14	Angul	Loose Boulders Check Dam (LBCD)	Mahanadi WL	Banigochha East	Baisipali RF	20.4954 30	84.7961 40	36	0.296134 08	0.112092 34	Good
15	Angul	Construction of Water Body/ Pond (WHS)	Mahanadi WL	Banigochha East	Baisipali RF	20.4954 30	84.7961 40		0.296134 08	0.112092 34	Good
16	Angul	Sub-Surface Dyke	Mahanadi WL	Banigochha East	Baisipali RF	20.4954 30	84.7961 40		0.296134 08	0.112092 34	Good
17	Angul	Construction of RCC Check Dam (WHS)	Athamalick	Handpa	Urukula	21.0280 06	84.6436 56	50	0.293597 52	0.027833 72	Good
18	Baripada	Construction of Water Body/ Pond (WHS)	Baripada	Deuli	Chandua RF, Village-Nuhamalia	22.1833 93	86.7062 08	50	0.199964 81	0.017815 53	Good
19	Baripada	Construction of Water Body/ Pond (WHS)	Baripada	Bangiriposhi	Dighi RF Baliasahi	22.1833 48	86.6313 12	50	0.170459 12	0.029079 82	Good
20	Baripada	Loose Boulders Check Dam (LBCD)	Balasore	Kuldiha	Sarisodahi Wala	21.4699 49	86.6888 86	50	0.309438 62	0.103831 92	Good
21	Baripada	Loose Boulders Check Dam (LBCD)	Karanjia	Karanjia	Ghagi-RF	21.5215 00	85.5136 00	50	0.322450 58	0.064632 96	Good
22	Baripada	Staggered Trench	Keonjhar WL	Degaon	Basareper	21.2786 11	85.9105 56	50	0.179493 70	- 0.026034 96	Poor
23	Baripada	Staggered Trench	Keonjhar WL	Brahmanipal	Rebara-RF	21-09- 56.0	85-59- 49.0	50	0.232586 71	0.067297 53	Good
24	Berhampur	Loose Boulders Check Dam (LBCD)	Phulbani	Phiringia	Bandhagada 'A' PRF	20.3052 78	84.1561 11	50	0.089492 78	0.275240 42	Good
25	Berhampur	Construction of RCC Check Dam (WHS)	Phulbani	Phiringia	Bandhagada 'A' PRF	20.3052 78	84.1561 11		0.089492 78	0.275240 42	Good
26	Berhampur	Construction of RCC Check Dam (WHS)	Phulbani	G. Udayagiri	Padangi RF	20.1609 83	84.2404 03	60	0.084941 94	0.241428 76	Good

Sl. No	Name of Circle	Name of SMC Structure	Name of Division	Name of Range	Name of site visited	Lat (N)	Long (E)	Catchment Area (ha)	Value of NDVI (November/December)	Soil Moisture index	Status of Moisture (Very Good/Good/Poor)
1	2	3	4	5	6	7	8	9	10	11	12
27	Berhampur	Staggered Trench	Phulbani	G. Udayagiri	Padangi RF	20.1609 83	84.2404 03		0.084941 94	0.241428 76	Good
28	Berhampur	Loose Boulders Check Dam (LBCD)	Ghumsur South	Aska	Pakidi DPF	19.5567 00	84.6926 43	50	0.130952 97	0.334357 83	Good
29	Berhampur	Construction of RCC Check Dam (WHS)	Ghumsur South	Aska	Pakidi DPF	19.5567 00	84.6926 43		0.130952 97	0.334357 83	Good
30	Berhampur	Loose Boulders Check Dam (LBCD)	Ghumsur South	Buguda	Kiriamba RF	19.8388 07	84.9182 25	60	0.177266 21	0.330679 98	Good
31	Berhampur	Construction of RCC Check Dam (WHS)	Ghumsur South	Buguda	Kiriamba RF	19.8388 07	84.9182 25		0.177266 21	0.330679 98	Good
32	Berhampur	Loose Boulders Check Dam (LBCD)	Ghumsur South	Surada	Pandakhol RF	19.7781 50	84.2701 20	50	0.126508 65	0.295593 29	Good
33	Berhampur	Construction of RCC Check Dam (WHS)	Ghumsur South	Surada	Pandakhol RF	19.7781 50	84.2701 20		0.126508 65	0.295593 29	Good
34	Berhampur	Loose Boulders Check Dam (LBCD)	Berhampur	Samantiapalli	Singharaj RF	19.0240 00	84.2300 80	50	0.114454 08	0.238093 30	Good
35	Berhampur	Construction of RCC Check Dam (WHS)	Berhampur	Samantiapalli	Singharaj RF	19.0240 00	84.2300 80		0.114454 08	0.238093 30	Good
36	Berhampur	Loose Boulders Check Dam (LBCD)	Berhampur	Khallikote	Bhaleri PRF	19.7366 67	84.1319 44	100	0.049286 51	0.252804 46	Good
37	Berhampur	Construction of RCC Check Dam (WHS)	Berhampur	Khallikote	Bhaleri PRF	19.7366 67	84.1319 44		0.049286 51	0.252804 46	Good
38	Berhampur	Loose Boulders Check Dam (LBCD)	Berhampur	Berhampur	Ramaguda RF	19.1616 22	84.4053 00	50	0.017121 85	0.188629 69	Good
39	Berhampur	Graded Earthen Bunds	Berhampur	Berhampur	Ramaguda RF	19.1616 22	84.4053 00		0.017121 85	0.188629 69	Good
40	Berhampur	Loose Boulders Check Dam (LBCD)	Berhampur	Digapahandi	Changudidei DPF	19.3745 28	84.5241 39	50	0.095115 17	0.298143 74	Good



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1	2	3	4	5	6	7	8	9	10	11	12
41	Berhampur	Staggered Trench	Berhampur	Digapahandi	Changudidei DPF	19.374528	84.524139		0.09511517	0.29814374	Good
42	Berhampur	Percolation Pit	Berhampur	Digapahandi	Changudidei DPF	19.376111	84.523056		0.03121052	0.23867431	Good
43	Berhampur	Loose Boulders Check Dam (LBCD)	Parlakhemundi	Mohana	PANIGANDA WEST UDDF	19.551940	83.964320	65	0.18170701	0.37603059	Good
44	Berhampur	Loose Boulders Check Dam (LBCD)	Parlakhemundi	Chandragiri	CHANDRAGIRI- R.F, NARANGINALA	19.306760	84.308230	100	0.11340366	0.21997990	Good
45	Berhampur	Construction of RCC Check Dam (WHS)	Parlakhemundi	Chandragiri	CHANDRAGIRI RF	19.315950	84.292520		0.06916474	0.19185004	Good
46	Berhampur	Loose Boulders Check Dam (LBCD)	Parlakhemundi	Mohana	NALAGHAT UDDF	19.515943	84.044325	65	0.14086081	0.26711217	Good
47	Berhampur	Loose Boulders Check Dam (LBCD)	Parlakhemundi	R.Udaygiri	ORA RF	19.175167	84.207133	56	0.13001405	0.23536840	Good
48	Berhampur	Loose Boulders Check Dam (LBCD)	Balliguda	Brahmunigaon	Rushimal RF 150ha	19.410000	84.034700	150	0.11160538	0.21345586	Good
49	Berhampur	Graded Earthen Bunds	Balliguda	Brahmunigaon	Rushimal RF 150ha	19.410000	84.034700		0.11160538	0.21345586	Good
50	Berhampur	Loose Boulders Check Dam (LBCD)	Balliguda	K. Nuagaon	SMC Patanai R.F	20.050105	84.010443	100	0.13546246	0.29040459	Good
51	Berhampur	Construction of RCC Check Dam (WHS)	Balliguda	K. Nuagaon	SMC Patanai R.F	20.050105	84.010443		0.13546246	0.29040459	Good
52	Berhampur	Staggered Trench	Balliguda	K. Nuagaon	SMC Patanai R.F	20.050105	84.010443		0.13546246	0.29040459	Good
53	Berhampur	Loose Boulders Check Dam (LBCD)	Balliguda	Daringbadi	Sikaketa . Extn R.F	19.998389	84.111444	100	0.08543617	0.26424718	Good
54	Berhampur	Construction of RCC Check Dam (WHS)	Balliguda	Daringbadi	Sikaketa . Extn R.F	19.998389	84.111444		0.08543617	0.26424718	Good

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1	2	3	4	5	6	7	8	9	10	11	12
55	Berhampur	Loose Boulders Check Dam (LBCD)	Balliguda	Balliguda	Anagul R.F	20.3771 94	83.6899 44	100	0.122757 80	0.244182 77	Good
56	Berhampur	Construction of RCC Check Dam (WHS)	Balliguda	Balliguda	Anagul R.F	20.3771 94	83.6899 44		0.122757 80	0.244182 77	Good
57	Berhampur	Staggered Trench	Balliguda	Balliguda	Anagul R.F	20.3771 94	83.6899 44		0.122757 80	0.244182 77	Good
58	Berhampur	Loose Boulders Check Dam (LBCD)	Balliguda	Kotugarh	Lassery RF- 150ha	19.7465 83	83.6681 67	150	0.191140 91	0.358902 60	Good
59	Berhampur	Construction of RCC Check Dam (WHS)	Balliguda	Kotugarh	Lassery RF- 150ha	19.7465 83	83.6681 67		0.191140 91	0.358902 60	Good
60	Berhampur	Staggered Trench	Balliguda	Kotugarh	Lassery RF- 150ha	19.7465 83	83.6681 67		0.191140 91	0.358902 60	Good
61	Berhampur	Loose Boulders Check Dam (LBCD)	Ghumsur North	Tarasing	BramhansahiC/2	20.0941 56	84.7379 35	50	0.161855 61	0.359563 38	Good
62	Berhampur	Loose Boulders Check Dam (LBCD)	Ghumsur North	Jagannath prasad	Inside Jagannath prasad RFC 18	20.0014 33	83.0585 56	50	0.115405 54	0.316491 07	Good
63	Berhampur	Construction of Contour Bund cum Trench	Ghumsur North	Jagannath prasad	Inside Jagannath prasad RFC 18	20.0014 33	83.0585 56		0.115405 54	0.316491 07	Good
64	Berhampur	Construction of RCC Check Dam (WHS)	Ghumsur North	Jagannath prasad	Inside Jagannath prasad RFC 18	20.0014 33	83.0585 56		0.115405 54	0.316491 07	Good
65	Berhampur	Staggered Trench	Ghumsur North	Jagannath prasad	Inside Jagannath prasad RFC 18	20.0014 33	83.0585 56		0.115405 54	0.316491 07	Good
66	Berhampur	Loose Boulders Check Dam (LBCD)	Ghumsur North	Central range Bhanjanagar	Vanjanagar Lathipada section	19.7438 33	83.5013 33	30	0.043928 14	0.086340 98	Good
67	Berhampur	Construction of RCC Check Dam (WHS)	Ghumsur North	Central range Bhanjanagar	Vanjanagar Ltuipada section	19.7438 33	83.5013 33		0.043928 14	0.086340 98	Good
68	Berhampur	Loose Boulders Check Dam (LBCD)	Ghumsur North	Gallery	ChandragirRF.C/3	20.1386 28	84.6319 56	30	0.146599 77	0.328614 89	Good

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69	Berhampur	Construction of RCC Check Dam (WHS)	Ghumsur North	Gallery	ChandragirRF.C/3	20.138628	84.631956		0.14659977	0.32861489	Good
70	Bhawanipatna	Loose Boulders Check Dam (LBCD)	Sunabeda WL	Komna	Charmgad Ichol Nata	20.564392	82.531560	30	0.01684762	0.09039927	Good
71	Bhawanipatna	Loose Boulders Check Dam (LBCD)	Sunabeda WL	Nuapada	Kharghati Nala	20.682926	82.529341	20	0.02430063	0.08339964	Good
72	Bhawanipatna	Staggered Trench	Bolangir	Balangir	Dungi(RF), Antgaon	20.682926	82.529341		0.33602865	0.08339964	Good
73	Bhawanipatna	Construction of RCC Check Dam (WHS)	Bolangir	Titlaghar	Dharapgarh, Barnei (RF)	20.397163	83.211850	200	0.30495292	0.13763694	Good
74	Bhawanipatna	Loose Boulders Check Dam (LBCD)	Bolangir	Titlaghar	Dharapgarh, Barnei (RF)	20.662722	83.358861		0.19502173	0.00158951	Good
75	Bhawanipatna	Construction of RCC Check Dam (WHS)	Bolangir	Muribahal	Muribahal/Tikhari(RF)	20.438283	83.117233		0.34449703	0.14177707	Good
76	Bhawanipatna	Construction of RCC Check Dam (WHS)	Bolangir	Balangir- I	Matkhai	20.654694	83.447917	150	0.34714866	0.15753792	Good
77	Bhawanipatna	Loose Boulders Check Dam (LBCD)	Bolangir	Balangir- I	Matkhai	20.650917	83.452722		0.31076288	0.13956845	Good
78	Bhawanipatna	Construction of RCC Check Dam (WHS)	Bolangir	Saintala	Suliamal	20.806472	83.485000	100	0.17617653	0.01256767	Poor
79	Bhawanipatna	Loose Boulders Check Dam (LBCD)	Khariar	Komna	Chhata PRF	20.452752	82.613208	70	-	0.09222429	Good
80	Bhawanipatna	Graded Earthen Bunds	Khariar	Komna	Chhata PRF	20.452752	82.613208		-	0.09222429	Good

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81	Bhawanipatna	DYKE	Khariar	Komna	Chhata PRF	20.452752	82.613208		-0.00590265	0.09222429	Good
82	Bhawanipatna	Construction of RCC Check Dam (WHS)	Khariar	Komna	Chhata PRF	20.452752	82.613208		-0.00590265	0.09222429	Good
83	Bhawanipatna	Loose Boulders Check Dam (LBCD)	Khariar	Komna	Lodra PRF	20.562191	82.688308	70	0.14092180	0.06463458	Good
84	Bhawanipatna	Graded Earthen Bunds	Khariar	Komna	Lodra PRF	20.562191	82.688308		0.14092180	0.06463458	Good
85	Bhawanipatna	Loose Boulders Check Dam (LBCD)	Khariar	Khairiar	Bajni Prf Smc Work	20.397400	82.605147	70	0.01608347	0.13507105	Good
86	Bhawanipatna	Loose Boulders Check Dam (LBCD)	Khariar	Khairiar	Dharam Sagar Prf	20.441390	82.695247	70	0.15736556	0.13371451	Good
87	Bhawanipatna	Loose Boulders Check Dam (LBCD)	Subarnapur	Binika	Arjunpur RF	20.851577	83.853896	200	0.17538983	-0.02324301	Poor
88	Bhawanipatna	Construction of RCC Check Dam (WHS)	Subarnapur	Binika	Arjunpur RF	20.851577	83.853896		0.17538983	-0.02324301	Poor
89	Bhawanipatna	Loose Boulders Check Dam (LBCD)	Kalahandi South	Th Rampur Saisurni	Mohangiri PRF	19.566091	83.158289	50	0.28268003	0.12956066	Good
90	Bhawanipatna	Loose Boulders Check Dam (LBCD)	Kalahandi South	Ranibahal	Mukhiguda	19.421148	82.838429	60	0.27512315	0.11205786	Good
91	Bhawanipatna	Loose Boulders Check Dam (LBCD)	Kalahandi South	Karlapat	Nehela RF	19.792927	83.113524	50	0.26818860	0.11385953	Good
92	Bhawanipatna	Staggered Trench	Kalahandi South	Karlapat	Nehela RF	19.792927	83.113524		0.26818860	0.11385953	Good

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1	2	3	4	5	6	7	8	9	10	11	12
93	Bhawanipatna	Loose Boulders Check Dam (LBCD)	Kalahandi South	Ranibahal	Mukhiguda	19.121145	82.838421	60	0.30021545	0.09264827	Good
94	Bhawanipatna	Staggered Trench	Kalahandi South	Dharamagarh	Sargiguda RF	19.668632	82.606648	50	0.25986159	0.03796522	Good
95	Bhawanipatna	Loose Boulders Check Dam (LBCD)	Kalahandi South	Biswanath Pur	Sikerkupa/ Somajhola	19.959174	83.432401	50	0.29776368	0.13734342	Good
96	Bhawanipatna	Loose Boulders Check Dam (LBCD)	Kalahandi North	Kesinga	Tulang Padar	20.289167	83.320833	30	0.30979413	0.17043258	Good
97	Bhawanipatna	Construction of RCC Check Dam (WHS)	Kalahandi North	Kesinga	Tulang Padar	20.284444	83.330000		0.23435843	0.07563830	Good
98	Bhawanipatna	Loose Boulders Check Dam (LBCD)	Kalahandi North	Bhawanipatna	Dalguma	19.821771	83.103286	100	0.33930779	0.16189136	Good
99	Bhawanipatna	Loose Boulders Check Dam (LBCD)	Kalahandi North	Narla	Gundrupi	20.098718	83.538980	70	0.25176471	0.03406470	Good
100	Bhawanipatna	Staggered Trench	Kalahandi North	Narla	Gundrupi	20.113139	83.539222		0.35118204	0.14219069	Good
101	Bhawanipatna	Loose Boulders Check Dam (LBCD)	Kalahandi North	M Rampur	Goten	20.174073	83.590326	50	0.28959663	0.19063148	Good
102	Bhawanipatna	Staggered Trench	Kalahandi North	M Rampur	Goten	20.047472	83.472694		0.31337950	0.06815223	Good
103	Bhawanipatna	Loose Boulders Check Dam (LBCD)	Kalahandi North	Bhawanipatna	Palsijharan	20.003967	83.091676		0.32069463	0.12390294	Good
104	Bhawanipatna	Loose Boulders Check Dam (LBCD)	Kalahandi North	Narla	Samarkata	20.027972	83.412639	50	0.36746025	0.13734342	Good
105	Bhawanipatna	Staggered Trench	Kalahandi North	Narla	Samarkata	20.027972	83.412639		0.36746025	0.13734342	Good
106	Bhawanipatna	Loose Boulders Check Dam (LBCD)	Kalahandi North	Bhawanipatna	Kadaighati RF	19.454789	83.357891	50	0.10033747	0.01826109	Good

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107	Bhawanipatna	Loose Boulders Check Dam (LBCD)	Kalahandi North	Kegaon	Sikhba Borda Section	20.119096	82.949685		0.35563648	0.17833240	Good
108	Bhawanipatna	Construction of RCC Check Dam (WHS)	Kalahandi North	Bhawanipatna	Bimalapadar	19.866548	83.252457	70	0.32055625	0.13313732	Good
109	Bhubaneswar	Loose Boulders Check Dam (LBCD)	Nayagarh	Khanda Pada	Guriabari Rf	20.284541	85.071566	50	0.31280288	0.12229224	Good
110	Bhubaneswar	Construction of RCC Check Dam (WHS)	Nayagarh	Khanda Pada	Guriabari Rf	20.284541	85.071566		0.31280288	0.12229224	Good
111	Bhubaneswar	Construction of RCC Check Dam (WHS)	Nayagarh	Nayagarh	Hatimunda Rf	20.249733	85.052643	250	0.33762637	0.12430842	Good
112	Bhubaneswar	Construction of Water Body/Pond (WHS)	Nayagarh	Nayagarh	Hatimunda Rf	20.249733	85.052643		0.33762637	0.12430842	Good
113	Koraput	Loose Boulders Check Dam (LBCD)	Rayagada	Gunupur	Pedakonda RF	19.041500	83.845740	100	0.28035969	0.12437358	Good
114	Koraput	Graded Earthen Bunds	Rayagada	Gunupur	Pedakonda RF	19.041500	83.845740		0.28035969	0.12437358	Good
115	Koraput	Staggered Trench	Rayagada	Gunupur	Pedakonda RF	19.041500	83.845740		0.28035969	0.12437358	Good
116	Koraput	Gabion Structure Bond	Rayagada	Gunupur	Pedakonda RF	19.041500	83.845740		0.28035969	0.12437358	Good
117	Koraput	Loose Boulders Check Dam (LBCD)	Rayagada	Muniguda	Panimunda	19.687760	83.444400		0.34308451	0.11045449	Good
118	Koraput	CC Trench	Malkangiri	Mathili	Gobinda Pali	18.619098	82.237845	50	0.15069364	0.12235270	Good
119	Koraput	Construction of RCC Check Dam (WHS)	Malkangiri	Mathili	Gobinda Palli	18.619098	82.237845		0.15069364	0.12235270	Good
120	Koraput	CC Trench	Malkangiri	Kalimela	Bhejangiwada URL	18.033290	81.835004	100	0.27710280	0.10964688	Good

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121	Koraput	Loose Boulders Check Dam (LBCD)	Malkangir	Kalimela	Bhejangiwada URL	18.033290	81.835004		0.27710280	0.10964688	Good
122	Koraput	Percolation Pit	Malkangir	Kalimela	Bhejangiwada URL	18.033290	81.835004		0.27710280	0.10964688	Good
123	Koraput	Construction of RCC Check Dam (WHS)	Malkangir	Kalimela	Bhejangiwada URL	18.033290	81.835004		0.27710280	0.10964688	Good
124	Koraput	Construction of RCC Check Dam (WHS)	Malkangir	Mathili	Dharamghadri	18.585247	82.285382	50	0.24486428	0.06125783	Good
125	Koraput	Loose Boulders Check Dam (LBCD)	Malkangir	Mathili	Dharamghadri	18.585247	82.285382		0.24486428	0.06125783	Good
126	Koraput	Percolation Pit	Malkangir	Mathili	Dharamghadri	18.585247	82.285382		0.24486428	0.06125783	Good
127	Koraput	Loose Boulders Check Dam (LBCD)	Nabarangapur	Nabrangpur	Jagannathpur RF	19.306760	84.308230	80	0.21997990	0.11340366	Good
128	Koraput	Construction of RCC Check Dam (WHS)	Nabarangapur	Raigarh	Hatigam RF	19.315950	84.292520	71	0.24378537	0.08402703	Good
129	Koraput	Loose Boulders Check Dam (LBCD)	Nabarangapur	Umarkot	Rajpur PRF	19.538758	82.073080	40	0.06788247	0.04050893	Good
130	Koraput	Construction of RCC Check Dam (WHS)	Nabarangapur	Kodinga	Jharsam RF	19.353029	82.304904	50	0.17734826	0.02613856	Good
131	Koraput	Construction of RCC Check Dam (WHS)	Nabarangapur	Dabugam	Barli RF	19.324230	82.310370	50	0.27307630	0.04109370	Good
132	Koraput	Loose Boulders Check Dam (LBCD)	Nabarangapur	Dabugam	Barli RF	19.324230	82.310370		0.27307630	0.04109370	Good
133	Koraput	Graded Earthen Bunds	Nabarangapur	Nabrangpur	LD Pur Sasan RF	19.141798	82.305845	100	0.07523713	0.07116466	Good
134	Koraput	Loose Boulders Check Dam (LBCD)	Nabarangapur	Nabrangpur	LD Pur Sasan RF	19.141798	82.305845		0.07523713	0.07116466	Good

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135	Koraput	Sub-Surface Dyke	Nabarangapur	Nabrangpur	LD Pur Sasan RF	19.141798	82.305845		0.07523713	0.07116466	Good
136	Koraput	Staggered Trench	Nabarangapur	Nabrangpur	LD Pur Sasan RF	19.141798	82.305845		0.07523713	0.07116466	Good
137	Koraput	Loose Boulders Check Dam (LBCD)	Jeypore	Gupteswar	Podeiguda	18.652624	82.268527	80	0.32883352	0.10873705	Good
138	Koraput	Loose Boulders Check Dam (LBCD)	Jeypore	Jeypore	Malikota PRF	19.306760	82.308230	150	0.20200475	0.00784177	Good
139	Koraput	Loose Boulders Check Dam (LBCD)	Jeypore	Boriguma	Chikima PRF	19.040457	82.502892	200	0.22930762	0.09444027	Good
140	Koraput	Staggered Trench	Koraput	Narayan Patna	Badsarpalli	18.922298	82.286850	50	0.18158928	0.04362059	Good
141	Koraput	Staggered Trench	Koraput	Narayan Patna	Dugum	18.828040	83.201842	50	0.34155175	0.10006599	Good
142	Koraput	Loose Boulders Check Dam (LBCD)	Koraput	Semiliguda	Jagindagar LBCD	18.675963	82.720263	50	0.30959663	0.11736955	Good
143	Koraput	Loose Boulders Check Dam (LBCD)	Koraput	Lamtaput	Mokakhanda PRF 70h	18.568974	82.587142	70	0.25605774	0.02686311	Good
144	Koraput	Construction of RCC Check Dam (WHS)	Koraput	Lamtaput	Jamukhanda RF Check dam 80H	18.548226	82.145896	80	0.12475730	0.03280095	Good
145	Sambalpur	Loose Boulders Check Dam (LBCD)	Sambalpur	Sambalpur Sadar	Jarang DPF	21.228925	84.184662	100	0.32754326	0.18516636	Good
146	Sambalpur	Construction of RCC Check Dam (WHS)	Sambalpur	Sambalpur Sadar	Jarang DPF	21.228925	84.184662		0.32754326	0.18516636	Good
147	Sambalpur	Diaphragm wall	Sambalpur	Sambalpur Sadar	Jarang DPF	21.228925	84.184662		0.32754326	0.18516636	Good
148	Sambalpur	Loose Boulders Check Dam (LBCD)	Sambalpur	Dhama	Dhama Bhaluguard	21.257795	83.992342	100	0.04362410	0.27276033	Good



Sl. No	Name of Circle	Name of SMC Structure	Name of Division	Name of Range	Name of site visited	Lat (N)	Long (E)	Catchment Area (ha)	Value of NDVI (November/December)	Soil Moisture index	Status of Moisture (Very Good/Good/Poor)
1	2	3	4	5	6	7	8	9	10	11	12
149	Sambalpur	Construction of RCC Check Dam (WHS)	Sambalpur	Dhama	Dhama Bhaluguard	21.257795	83.992342		0.04362410	0.27276033	Good
150	Sambalpur	Diaphragm wall	Sambalpur	Dhama	Dhama Bhaluguard	21.257795	83.992342		0.04362410	0.27276033	Good
151	Sambalpur	Loose Boulders Check Dam (LBCD)	Bargarh	Bhatli	Khaliadhipa	21.597583	83.563790	60	0.25215107	0.13481364	Good
152	Sambalpur	Construction of RCC Check Dam (WHS)	Bargarh	Bhatli	Khaliadhipa	21.597583	83.563790		0.25215107	0.13481364	Good
153	Sambalpur	Loose Boulders Check Dam (LBCD)	Bargarh	Ghess	Malaikhamcon RF	21.236760	83.236760	50	0.18776762	0.18166712	Good
154	Sambalpur	Construction of RCC Check Dam (WHS)	Bargarh	Ghess	Malaikhamcon RF	21.244446	83.228889		0.19695409	0.16337053	Good
155	Sambalpur	Loose Boulders Check Dam (LBCD)	Rairakhol	Rairakhol	Hatidhara RF, C-II	21.087845	84.442340	60	0.30150113	0.15141454	Good
156	Sambalpur	Loose Boulders Check Dam (LBCD)	Rairakhol	Naktideul	Lampaphlui DRF, Dahima VSS	21.140051	84.606513	50	0.29978487	0.14939013	Good
157	Sambalpur	Loose Boulders Check Dam (LBCD)	Bamra WL	Jamankira	Chhemunda	21.513642	84.369300	50	0.28192437	0.14691025	Good
158	Sambalpur	Construction of Contour Bund cum Trench	Hirakhud WL	Lakhanpur WL	Lakhanpur	21.638456	84.376513	50	0.27975684	0.11677748	Good
								6678	0.20206010	0.15764182	

## ANNEX – 4 Diversity Index and Carbon Analysis

Sample Site wise Survival %, Health of the Plant, Diversity index & Carbon Analysis												Diversity		Total CO <sub>2</sub> Weight (kg)
Sl. No.	Circle	Division	Range	Site visited	Model of plantation activity (Creation / Maintenance)	Year of creation	Area Treated / covered (ha.)	Status of work at the time of field visit	Survivable Percentage	Average Height of plants (cm)	Average Colar Girth (cm)	Diversity index (H')	Concentration of dominance (Cd)	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	Berhampur	Phulbani	G. Udayagiri	Padasahi	AR Plantation @ 1600 plants/ha	2022-23	10	Good	98%	242	10	0.93903	0.15405	25957.55
2	Berhampur	Phulbani	G. Udayagiri	Bhanjapadar PRF	AR Block plantation @ 1600 plants/ha	2022-23	5	Very Good	98%	287	13	1.32977	0.25408	74198.63
3	Berhampur	Phulbani	Phiringia	Majhipada	AR Bald Hill Plantation @ 1600 plants/ha	2022-23	10	Good	97%	324	16	1.94802	0.12872	262618.17
4	Berhampur	Phulbani	Tikabali	Tangedi	2 <sup>nd</sup> Year Maintenance, Bald Hill (@1600 plants/ha)	2021-22	10	Good	89%	214	15	1.96947	0.15677	155121.86
5	Berhampur	Phulbani	Phiringia	Jargipadar	3 <sup>rd</sup> Year Maint., Rare Endemic Threatened (RET) with Gap	2020-21	20	Good	88%	182	16	1.03361	0.46119	40035.16
6	Berhampur	Phulbani	Tikabali	Tikabali RF	3 <sup>rd</sup> Year Maintenance, RET with Gap @200 plants/ha	2020-21	20	Very Good	91%	177	13	0.48248	0.69540	16387.31
7	Berhampur	Phulbani	G. Udayagiri	Budhomaka	ANR Plantation with Gap @ 200 plants/ha	2022-23	100	Very Good	99%	218	13	1.20855	0.39440	169211.72
8	Berhampur	Phulbani	Phiringia	Babdingia	ANR Plantation with Gap @ 200 plants/ha	2022-23	100	Good	93%	150	12	1.73105	0.12487	38765.44
9	Berhampur	Phulbani	Tikabali	Mankadamah	ANR Plantation with Gap @ 200 plants/ha	2022-23	100	Good	92%	154	12	2.04472	0.41511	89218.81
10	Berhampur	Phulbani	Phiringia	Tarripodar	3 <sup>rd</sup> Year Maintenance, ANR with Gap @ 200 plants/ha	2020-21	100	Good	86%	163	16	2.07448	0.13347	200155.52
11	Berhampur	Phulbani	G. Udayagiri	Bhanjapadar PRF	AR Block plantation @ 1600 plants/ha	2022-23	5	Very Good	99%	283	13	1.27137	0.45979	74001.95
12	Berhampur	Phulbani	Tikabali	Tikabali RF	3 <sup>rd</sup> Year Maintenance, RET (with Gap)	2020-21	20	Very Good	91%	177	13	0.70778	0.36650	17328.00
13	Berhampur	Phulbani	Phiringia	Majhipada, Daisara RF	AR Bald Hill Plantation @ 1600 plants/ha	2022-23	10	Good	97%	320	15	2.28332	0.10038	232855.35
14	Berhampur	Ghumusur South	Aska	Suliaguda, DPF	AR Bald Hill Plantation @ 1600 plants/ha	2022-23	10	Very Good	97%	287	12	1.60747	0.17082	183785.72
15	Berhampur	Ghumusur South	Badaguda	Sarabadi	AR Plantation @ 1600 plants/ha	2022-23	10	Very Good	97%	161	11	0.00000	1.00000	56183.62
16	Berhampur	Ghumusur South	Aska	Kalasuta Machhakhai DPF	AR Block plantation @ 1600 plants/ha	2022-23	20	Very Good	96%	431	19	1.91597	0.16488	911635.76
17	Berhampur	Ghumusur South	Buguda	Sandhachulia RF Badakholi	2 <sup>nd</sup> Year Maintenance, AR Plantation	2021-22	5	Good	90%	196	14	1.59974	0.25238	60382.33
18	Berhampur	Ghumusur South	Buguda	Panchubhuti 'A' RF	3 <sup>rd</sup> Year Maintenance, AR Plantation	2020-21	5	Excellent	96%	316	12	1.97019	0.18439	78380.51
19	Berhampur	Ghumusur South	Surada	Kharikuti	4 <sup>th</sup> Year Maintenance, AR Plantation	2019-20	15	Good	84%	390	16	1.75915	0.20023	87306.19
20	Berhampur	Ghumusur South	Surada	Bandhagochha RF Genja	ANR Plantation with Gap @ 200 plants/ha	2022-23	50	Good	94%	137	12	2.07448	0.13347	36782.56
21	Berhampur	Ghumusur South	Polasara	Pandiripada RL Khumula	ANR Plantation with Gap @ 200 plants/ha	2022-23	50	Good	95%	210	11	1.47908	0.32722	65099.02

Sample Site wise Survival %, Health of the Plant, Diversity index & Carbon Analysis												Diversity		Total CO <sub>2</sub> Weight (kg)
Sl. No.	Circle	Division	Range	Site visited	Model of plantation activity (Creation / Maintenance)	Year of creation	Area Treated / covered (ha.)	Status of work at the time of field visit	Survivable Percentage	Average Height of plants (cm)	Average Color Girth (cm)	Diversity index (H')	Concentration of dominance (Cd)	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
22	Berhampur	Ghumusur South	Aska	K Nuagada Pakidi DPF	ANR Plantation with Gap @ 200 plants/ha	2022-23	50	Good	96%	220	12	1.09425	0.27119	76363.43
23	Berhampur	Ghumusur South	Surada	Muliapalli Bandhagocha RF	ANR Plantation with Gap @ 200 plants/ha	2022-23	30	Good	98%	183	11	1.75915	0.20023	28843.67
24	Berhampur	Ghumusur South	Surada	Mandiachakuli Dhaugaon RF	ANR Plantation with Gap @ 200 plants/ha	2022-23	30	Good	96%	194	12	1.73445	0.21571	47673.05
25	Berhampur	Ghumusur South	Surada	Dhepaguda RF	ANR Fodder and Fruits Species @500 plants/ha	2022-23	50	Good	98%	156	12	2.18629	0.05217	91589.47
26	Berhampur	Ghumusur South	Polasara	Sodaka 'A' DPF Kendubadi	ANR Fodder and Fruits Species @500 plants/ha	2022-23	50	Good	96%	451	12	1.95999	0.16075	314065.07
27	Berhampur	Ghumusur South	Buguda	Kudapada RF	3 <sup>rd</sup> Year Maintenance, RET- Protection	2020-21	70	Very good	100%	529	79	1.81106	0.17903	8367185.57
28	Berhampur	Ghumusur South	Buguda	Kiriamba	3 <sup>rd</sup> Year Maintenance, ANR @ 200 plants/ha	2020-21	60	Good	92%	319	18	1.97987	0.20624	239423.84
29	Berhampur	Ghumusur South	Buguda	Nagiri RF	4 <sup>th</sup> Year Maintenance, ANR Plantation @ 200 plants/ha	2019-20	50	Good	80%	158	12	1.48677	0.35713	42750.76
30	Berhampur	Berhampur	Berhampur	Tamana	3 <sup>rd</sup> Year Maintenance, AR Plantation	2020-21	3.8	Very Good	95%	391	18	1.84633	0.18390	254177.69
31	Berhampur	Berhampur	Khallikote	Biraligada Ranibar 'B' DPF	6 <sup>th</sup> Year Maintenance, Bald Hill Plantation	2017-18	25	Good	93%	548	21	2.06274	0.19331	1797084.75
32	Berhampur	Berhampur	Samantiapalli	Manikapur, Sandhabhuja UDPF	AR Plantation @ 1600 plants/ha	2022-23	5	Good	93%	161	12	2.00501	0.10923	43863.70
33	Berhampur	Berhampur	Berhampur	Boxipalli	Casuarina Plantation @2500 plants/ ha	2022-23	10	Good	92%	154	11	0.00000	1.00000	87300.36
34	Berhampur	Berhampur	Khallikote	Gokharkuda	Casuarina Plantation @2500 plants/ ha	2022-23	10	Excellent	95%	150	11	0.00000	1.00000	88177.37
35	Berhampur	Berhampur	Berhampur	Singipur	AR Bald Hill Plantation @ 1600 plants/ha	2022-23	10	Very Good	94%	170	13	1.83275	0.22412	94885.96
36	Berhampur	Berhampur	Digapahandi	Khandakhudi	AR Bald Hill Plantation @ 1600 plants/ha	2022-23	10	Very Good	93%	187	12	2.20434	0.28847	114165.23
37	Berhampur	Berhampur	Khallikote	Mathakhola PRF	AR Bald Hill Plantation @ 1600 plants/ha	2022-23	20	Very Good	91%	169	15	2.12354	0.15221	237555.66
38	Berhampur	Berhampur	Berhampur	Tamana	ANR Plantation with Gap @ 200 plants/ha	2022-23	25	Good	95%	351	12	1.73007	0.18730	49248.85
39	Berhampur	Berhampur	Samantiapalli	Masanibada, Dutiasahi UDPF	ANR Plantation @ 200 plants/ha	2022-23	50	Good	90%	177	12	1.03514	0.48624	39754.70
40	Berhampur	Berhampur	Samantiapalli	Jarada, Rushimal DPF	ANR Plantation with Gap @ 200 plants/ha	2022-23	50	Good	93%	246	16	1.33840	0.41175	197840.41
41	Berhampur	Berhampur	Khallikote	Badaghati	ANR Plantation with Gap @ 200 plants/ha	2022-23	50	Excellent	96%	390	17	1.83275	0.22412	228221.21
42	Berhampur	Berhampur	Samantiapalli	Panipata, Jhagadapalli UDPF	2 <sup>nd</sup> Year Maintenance, Bald Hill Plantation	2021-22	10	Good	94%	198	13	2.10131	0.30610	105472.53
43	Berhampur	Berhampur	Digapahandi	Badua, Gaida DPF	2 <sup>nd</sup> Year Maintenance, Bald Hill Plantation	2021-22	10	Good	85%	298	15	2.09874	0.40728	226513.95
44	Berhampur	Berhampur	Samantiapalli	Baniabasa, Dutiasahi	2 <sup>nd</sup> Year Maintenance, AR Bamboo Plantation	2021-22	10	Good	86%	182	12	0.00000	1.00000	18387.02

Sample Site wise Survival %, Health of the Plant, Diversity index & Carbon Analysis												Diversity		Total CO <sub>2</sub> Weight (kg)
Sl. No.	Circle	Division	Range	Site visited	Model of plantation activity (Creation / Maintenance)	Year of creation	Area Treated / covered (ha.)	Status of work at the time of field visit	Survivable Percentage	Average Height of plants (cm)	Average Colar Girth (cm)	Diversity index (H')	Concentration of dominance (Cd)	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
				UDPF										
45	Berhampur	Berhampur	Digapahandi	K.Nuagam, Ratnei DPF	2 <sup>nd</sup> Year Maintenance, AR Bamboo 400 plants/ha	2021-22	15	Good	84%	437	11	0.00000	1.00000	57891.08
46	Berhampur	Berhampur	Samantiapalli	Bansigaon, Rushimal DPF	2 <sup>nd</sup> Year Maintenance, ANR Plantation	2021-22	50	Good	92%	320	22	2.27875	0.28486	312831.76
47	Berhampur	Berhampur	Digapahandi	Moreibadi, Kerandimalo DPF	3 <sup>rd</sup> Year Maintenance, ANR Plantation	2020-21	100	Good	83%	424	21	2.02854	0.15185	761426.41
48	Berhampur	Berhampur	Khallikote	Sankuda, Sahakhola DPF	4 <sup>th</sup> Year Maintenance, ANR Plantation (with Gap)	2019-20	20	Good	84%	441	19	1.73007	0.18730	110413.71
49	Berhampur	Berhampur	Samantiapalli	Jamasahi, Bengisahi UDPF	4 <sup>th</sup> Year Maintenance, ANR Plantation @ 200 Plants/ha	2019-20	40	Good	84%	313	16	1.25417	0.31934	53435.43
50	Berhampur	Berhampur	Digapahandi	Lunilathi	4 <sup>th</sup> Year Maintenance, AR Plantation	2019-20	15	Good	79%	423	18	1.31255	0.41162	625462.16
51	Berhampur	Parlakhemundi	Romani	Chadiapada	ANR Plantation with Gap @ 200 plants/ha	2022-23	50	Good	84%	182	12	1.47566	0.53636	40758.43
52	Berhampur	Parlakhemundi	Mohana	Ustapada	2 <sup>nd</sup> Year Maintenance, AJY, ANR@ 200/500 Plant/ ha	2021-22	50	Good	92%	145	11	2.29302	0.25746	32035.42
53	Berhampur	Parlakhemundi	Mohana	Rekamere	2 <sup>nd</sup> Year Maintenance, AJY, ANR Plantation	2021-22	50	Good	74%	134	11	1.83707	0.20078	32001.37
54	Berhampur	Parlakhemundi	Mahendra	Labanyagada	4 <sup>th</sup> Year Maintenance, ANR Plantation	2019-20	100	Good	90%	325	17	1.42658	0.28922	386593.38
55	Berhampur	Parlakhemundi	Ramagini	Subhadrapur	4 <sup>th</sup> Year Maintenance, Bamboo Plant	2019-20	20	Good	100%					
56	Berhampur	Parlakhemundi	Mahendra	Durgam, UDPF	3 <sup>rd</sup> Year Rare Endemic Threatened (RET)	2020-21	30	Good	95%					
57	Berhampur	Parlakhemundi	Kashinagar	D.Jaypur	3 <sup>rd</sup> Year Maintenance, ANR Plantation	2020-21	50	Good	94%	340	16	0.59976	0.59044	167459.17
58	Berhampur	Parlakhemundi	Devagiri	Kurlanda	3 <sup>rd</sup> Year Maintenance, ANR Plantation	2020-21	50	Very Good	70%	406	14	0.93251	0.48540	115558.45
59	Berhampur	Parlakhemundi	R.Udayagiri	Tarangada	3 <sup>rd</sup> Year Maintenance, ANR Plantation	2020-21	50	Good	73%	365	16	2.18456	0.16745	153669.28
60	Berhampur	Parlakhemundi	Chandragiri	Ankulanala(Luduludia)	3 <sup>rd</sup> Year Maintenance, AR-Bamboo Plant	2020-21	30	Good	79%	441	12	1.82873	0.15605	128307.12
61	Berhampur	Parlakhemundi	R.Udayagiri	Kindosing A,N,R With Gap	ANR Plantation with Gap @ 200 plants/ha	2022-23	50	Very Good	89%	200	11	0.00000	1.00000	46310.93
62	Berhampur	Parlakhemundi	R.Udayagiri	Ora R.FF Tarabha	ANR Plantation with Gap @ 200 plants/ha	2022-23	50	Excellent	83%	204	11	1.91457	0.18418	46641.56
63	Berhampur	Parlakhemundi	Devagiri	Kharguda, ANR Gap - 50ha	ANR Plantation with Gap @ 200 plants/ha	2022-23	50	Very Good	88%	278	13	1.65898	0.05529	95322.57
64	Berhampur	Parlakhemundi	Ramagiri	Ramagiri (T.R Colony)	AR Bald Hill Plantation @ 1600 plants/ha	2022-23	10	Good	91%	169	13	1.77053	0.21917	89783.75
65	Berhampur	Parlakhemundi	Chandragiri	Jubagaon, Chandragiri Rf	2 <sup>nd</sup> Year Maintenance, Bald Hill Plantation	2021-22	10	Very Good	71%	220	24	1.57872	0.42877	296820.02
66	Berhampur	Parlakhemundi	Mohana	Athabakhara, Damodua UDPF	AR Bald Hill Plantation @ 1600 plants/ha	2022-23	10	Good	93%	219	15	1.80651	0.19650	155744.03

Sample Site wise Survival %, Health of the Plant, Diversity index & Carbon Analysis												Diversity		Total CO <sub>2</sub> Weight (kg)
Sl. No.	Circle	Division	Range	Site visited	Model of plantation activity (Creation / Maintenance)	Year of creation	Area Treated / covered (ha.)	Status of work at the time of field visit	Survivable Percentage	Average Height of plants (cm)	Average Color Girth (cm)	Diversity index (H')	Concentration of dominance (Cd)	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
67	Berhampur	Parlakhemundi	Mohana	Guluba A UDPF, Nalaghat	2 <sup>nd</sup> Year Maintenance, ANR @ 200 plants/ ha	2021-22	50	Good	88%	237	15	1.93375	0.18318	100139.46
68	Berhampur	Parlakhemundi	Kashinagar	Sara PRF	3 <sup>rd</sup> Year Maintenance, Bald Hill Plantation	2020-21	10	Good	83%	370	13	2.14343	0.25605	185195.10
69	Berhampur	Parlakhemundi	Chandragiri	Subarnagada	2 <sup>nd</sup> Year Maintenance, ANR with Gap Plantation	2021-22	50	Good	76%	303	15	1.85381	0.44376	126235.50
70	Berhampur	Parlakhemundi	Chandragiri	Kerakhal	2 <sup>nd</sup> Year Maintenance, AR-Bamboo Plant	2021-22	20	Good	89%	563	16	1.92483	0.14923	203550.28
71	Berhampur	Parlakhemundi	Ramagiri	Burusing	2 <sup>nd</sup> Year Maintenance, Bald Hill Plantation	2021-22	10	Good	76%	217	12	0.00000	1.00000	80187.77
72	Berhampur	Parlakhemundi	Chandragiri	Satabahada	2 <sup>nd</sup> Year Maintenance, Bamboo Plantation	2021-22	20	Good	49%	620	16	2.10665	0.17082	169576.88
73	Berhampur	Balliguda	K. Nuagaon	Hatisala Damerikia PRF.	AR Plantation @ 1600 plants/ha	2022-23	5	Very Good	91%	217	16	0.00000	1.00000	83782.00
74	Berhampur	Balliguda	Belghav	Pikusu Mundigarh 'A' DPF	AR Plantation @ 1600 plants/ha	2022-23	10	very Good	90%	343	15	1.54239	0.11271	272491.89
75	Berhampur	Balliguda	Brahmunigaon	Srirampur 'e' DPF Dhusarigaon	AR Plantation @ 1600 plants/ha	2022-23	10	Good	89%	203	14	1.83379	0.21937	121067.93
76	Berhampur	Balliguda	Belghav	Guchhaka Mundugarh D.P.F.	AR Plantation @ 1600 plants/ha	2022-23	10	Excellent	80%	333	14	2.27014	0.20040	183173.38
77	Berhampur	Balliguda	Tumudibandha	Gaihurigaon	2 <sup>nd</sup> Year Maintenance, Bald Hill (AR 1000/1600 plants/ha)	2021-22	5	Very Good	89%	426	19	1.50349	0.22856	463061.59
78	Berhampur	Balliguda	Tumudibandha	Gohili	2 <sup>nd</sup> Year Maintenance, AR. Bald Hill Plantation	2021-22	10	Very Good	84%	417	19	1.62663	0.30142	392069.66
79	Berhampur	Balliguda	Daringbadi	Alimaha Adagaon R.F.	AR Block plantation @ 1600 plants/ha	2022-23	10	Very Good	90%	166	10	1.98807	0.20290	47164.65
80	Berhampur	Balliguda	Belghav	Kranjikona	Bamboo Plantation @400 plants/ha	2022-23	10	Good	69%	356	13	0.00000	1.00000	33756.03
81	Berhampur	Balliguda	Tumudibandha	Jama	2 <sup>nd</sup> Year Maintenance, AR (OBDP) Bamboo Plantation	2021-22	10	Very Good	84%	360	14	0.59976	0.59044	50010.22
82	Berhampur	Balliguda	Belghav	Khadapanga	AR Plantation @ 1000/1600 plants/ha	2022-23	10	Good	82%	228	11	2.12950	0.16666	73951.34
83	Berhampur	Balliguda	Tumudibandha	Gohili Lankagarh- RF	3 <sup>rd</sup> Year Maintenance, AR Bamboo plantation	2020-21	10	Good	81%	414	13	0.00000	1.00000	44079.83
84	Berhampur	Balliguda	Tumudibandha	Taliguda	AR Plantation @ 1000/1600 plants/ha	2022-23	10	Very Good	75%	460	21	2.04890	0.16653	483219.67
85	Berhampur	Balliguda	Brahmunigaon	Brahmunigaon PRF Ullipadar	ANR Plantation with Gap @ 200 plants/ha	2022-23	50	Very Good	90%	298	18	1.98017	0.20557	190530.61
86	Berhampur	Balliguda	K. Nuagaon	Dharampur RF	ANR Plantation with Gap @ 200 plants/ha	2022-23	25	Excellent	91%	325	12	1.59908	0.10724	45373.95
87	Berhampur	Balliguda	Kotagarh	Krutibali	ANR Plantation with Gap @ 200 plants/ha	2022-23	60	Good	90%	274	14	1.99471	0.16530	128381.80
88	Berhampur	Balliguda	Belghav	Baragaon Jhiripani A DPF	ANR Plantation with Gap @ 200 plants/ha	2022-23	5	Very Good	84%	212	13	2.08910	0.16059	56391.10
89	Berhampur	Balliguda	Brahmunigaon	Brahmunigaon	2 <sup>nd</sup> Year Maintenance, ANR with gap 200/500plants/ha)	2021-22	50	Very Good	89%	343	20	1.83910	0.16378	238047.97

Sample Site wise Survival %, Health of the Plant, Diversity index & Carbon Analysis												Diversity		Total CO <sub>2</sub> Weight (kg)
Sl. No.	Circle	Division	Range	Site visited	Model of plantation activity (Creation / Maintenance)	Year of creation	Area Treated / covered (ha.)	Status of work at the time of field visit	Survivable Percentage	Average Height of plants (cm)	Average Color Girth (cm)	Diversity index (H')	Concentration of dominance (Cd)	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
90	Berhampur	Balliguda	K. Nuagaon	Balmargaon, Damerikia PRF	2 <sup>nd</sup> Year Maintenance, ANR with Gap + @200/500 plants/ha	2021-22	75	Very Good	81%	324	13	2.18229	0.16090	140896.56
91	Berhampur	Balliguda	Kotagarh	Kalisiguda	2 <sup>nd</sup> Year Maintenance, ANR with Gap + 200/500 plants/ha	2021-22	60	Very Good	79%	314	15	2.05797	0.13527	140308.73
92	Berhampur	Balliguda	Daringbadi	Muchhudipanga Srirampur 'C' DPF	3 <sup>rd</sup> Year Maintenance, ANR + 200/500 plants/ha	2020-21	100	Good	71%	334	13	2.27097	0.19285	168030.58
93	Berhampur	Balliguda	Tumudibandha	Jama Belghar RF	3 <sup>rd</sup> Year Maintenance, ANR + Plantation	2020-21	50	Good	80%	451	19	1.40313	0.22409	269571.75
94	Berhampur	Balliguda	K. Nuagaon	Debacadu	4 <sup>th</sup> Year Maintenance, ANR + @200/500 plants/ha	2019-20	25	Very Good	89%	405	14	0.72124	0.01200	61256.07
95	Berhampur	Balliguda	Kotagarh	Goherigaon Srirampur 'B' DPF	4 <sup>th</sup> Year Maintenance, ANR + Plantation	2019-20	50	Good	68%	396	17	1.51240	0.53636	173526.31
96	Berhampur	Balliguda	Brahmunigaon	Sangadamaha VSS	3 <sup>rd</sup> Year Maintenance, AJY, ANR with Gap @ 200 plants/ha	2020-21	50	Very Good	75%	323	17	1.52789	0.23478	148255.52
97	Berhampur	Balliguda	Brahmunigaon	Kilimera Gadapur RF	3 <sup>rd</sup> Year Maintenance, ANR Plantation without Gap	2020-21	50	Good						
98	Berhampur	Balliguda	Brahmunigaon	Praheti pamka VSS	4 <sup>th</sup> Year, ANR Plantation without gap (AJY)	2019-20	50	Good						
99	Berhampur	Boudh	Manamunda	Putana,RF., C/2	ANR Plantation with Gap @ 200 plants/ha	2022-23	100	Good	90%	151	11	1.49934	0.43596	264754.69
100	Berhampur	Boudh	Puruna Cuttack	ARAGARH-RF	AR plantation @1000 plant /ha	2022-23	20	Good	90%	160	12	1.76281	0.12051	92181.85
101	Berhampur	Boudh	Kantamal	Deogan V.F.5HA CAMPA A.R.	AR Block plantation @ 1600 plants/ha	2022-23	5	Excellent	90%	149	11	0.92916	0.04382	32837.17
102	Berhampur	Boudh	Yanamund	Sindhurpur VF	AR Block plantation @ 1600 plants/ha	2022-23	10	Good	96%	186	12	0.00000	1.00000	52622.96
103	Berhampur	Boudh	Puruna Cuttack	Lakhanpur V.F	AR Block plantation @ 1600 plants/ha	2022-23	5	Very Good	96%	154	17	0.00000	1.00000	69691.36
104	Berhampur	Boudh	Kantamal	B.H.P.2022-23 Kirla R.F	AR Bald Hill Plantation @ 1600 plants/ha	2022-23	5	Very Good	93%	149	11	1.20855	0.39440	28863.41
105	Berhampur	Boudh	Manamunda	B.H.P.2022-23 Mamkadakhasa	AR Block plantation @ 1600 plants/ha	2022-23	5	Good	95%	223	12	1.46177	0.27722	59524.98
106	Berhampur	Boudh	Puruna Cuttack	ajpr RF	ANR Plantation with Gap @ 200 plants/ha	2022-23	200	Good	93%	153	9	2.15367	0.35624	96989.05
107	Berhampur	Boudh	Puruna Cuttack	Arakhapader R.F compat no. 4	ANR Plantation with Gap @ 200 plants/ha	2022-23	40	Very Good	80%	117	13	2.13087	0.12469	65994.59
108	Berhampur	Boudh	Manamunda	Gambhari padar	2 <sup>nd</sup> Year Maintenance, (model AR phasi)	2021-22	8	Very Good	97%	291	14	0.00000	1.00000	133816.50
109	Berhampur	Boudh	Kantamal	Putputigarh RF	ANR Plantation with Gap @ 200 plants/ha	2022-23	100	Good	84%	153	9	1.50040	0.13045	45130.16
110	Berhampur	Boudh	Manamunda	Kadampal RF	3 <sup>rd</sup> Year Maintenance, (model AR )	2020-21	15	Good	72%	389	16	1.15893	0.48702	352981.02
111	Berhampur	Boudh	Boudh	Tarabha VF	4 <sup>th</sup> Year Maintenance, (model AR p/h)	2019-20	30	Good	76%	499	22	1.20012	0.61541	1905175.43

Sample Site wise Survival %, Health of the Plant, Diversity index & Carbon Analysis												Diversity		Total CO <sub>2</sub> Weight (kg)
Sl. No.	Circle	Division	Range	Site visited	Model of plantation activity (Creation / Maintenance)	Year of creation	Area Treated / covered (ha.)	Status of work at the time of field visit	Survivable Percentage	Average Height of plants (cm)	Average Color Girth (cm)	Diversity index (H')	Concentration of dominance (Cd)	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
112	Berhampur	Boudh	Boudh	NgarjunRfc/122	2 <sup>nd</sup> Year Maintenance, (model ANR)	2021-22	70	Good	70%	316	15	1.55765	0.21912	156554.65
113	Berhampur	Boudh	Puruna cuttack	Mundeswar RFC-39	2 <sup>nd</sup> Year Maintenance, (model ANR)	2021-22	100	Very Good	91%	162	12	2.12098	0.12474	99881.33
114	Berhampur	Boudh	Puruna Cuttack	Parapit RF C/A	3 <sup>rd</sup> Year, ANR PLANTATION @ 200 plants/ha	2020-21	100	Excellent	91%	296	15	1.55408	0.10724	274170.81
115	Berhampur	Boudh	Puruna Cuttack	COMPAT-6 ARAGARH RF	4 <sup>th</sup> Year Maintenance, (model ANR)	2019-20	100	Good	69%	478	17	1.73363	0.22248	405595.51
116	Berhampur	Ghumusur North	Jaganath prasad	Kamasargada	3 <sup>rd</sup> year Maintenace (CA) Block+ANR	2020-21	0.899	Average	88%	473	16	1.28980	0.25303	32089.77
117	Berhampur	Ghumusur North	Tarasing	Ambojhara RF Compa-13	2 <sup>nd</sup> year Maintenace (model AR Bamboo)	2021-22	30	Good	74%	309	11	0.64937	0.45186	65530.84
118	Berhampur	Ghumusur North	Mujagada	Darpangia RF. Compt-08	3 <sup>rd</sup> year Maintenace (model AR Bamboo)	2020-21	30	Good	86%	435	12	0.00000	1.00000	123807.24
119	Berhampur	Ghumusur North	Jaganath prasad	Kudutai	AR Plantation @ 1000/1600 plants/ha	2022-23	50	Very Good	91%	293	18	2.11142	0.23296	182066.25
120	Berhampur	Ghumusur North	Gallery	Barahakuda	ANR Plantation with Gap @ 200 plants/ha	2022-23	40	Very Good	90%	201	16	2.29836	0.59137	98056.22
121	Berhampur	Ghumusur North	Central	Ragada RF Compat no.-05	ANR Plantation with Gap @ 200 plants/ha	2022-23	50	Good	96%	282	15	1.25208	0.41414	129976.46
122	Berhampur	Ghumusur North	Gallery	Ranikiari	2 <sup>nd</sup> year Maintenace (model ANR+)	2021-22	50	Good	92%	194	13	2.28786	0.32239	67773.05
123	Berhampur	Ghumusur North	Gallery	Gallery RF Compt.-23	3 <sup>rd</sup> year Maintenace (model ANR+)	2020-21	50	Good	93%	208	15	1.45280	0.28278	92293.63
124	Berhampur	Ghumusur North	Mujagada	Drapangia C/9	3 <sup>rd</sup> year Maintenace (model ANR+)	2020-21	50	Good	82%	366	19	1.57539	0.23816	237302.58
125	Berhampur	Ghumusur North	Gallery	Chadhiapali RF- C/I	4 <sup>th</sup> year Maintenace (model ANR+)	2019-20	50	Good	86%	326	24	0.67847	0.33325	320698.87
1	Baripada	Baripada	Deuli	Biridhi	ANR Plantation with Gap @ 200 plants/ha	2022-23	100	Very Good	98%	173	10	1.01972	0.38947	190725.04
2	Baripada	Baripada	Deuli	Suliapada RF	ANR Plantation with Gap @ 200 plants/ha	2022-23	30	Very Good	94%	195	8	1.41065	0.30015	36755.60
3	Baripada	Baripada	Deuli	Chandua Section	ANR Plantation with Gap @ 200 plants/ha	2022-23	100	Very Good	97%	237	8	1.30532	0.33671	106926.90
4	Baripada	Baripada	Deuli	Nuagaon	ANR Plantation with Gap @ 200 plants/ha	2022-23	20	Very Good	91%	209	10	1.80341	0.20212	16167.14
5	Baripada	Baripada	Bangiriposhi	Baliasahi	AR plantation @1000 plant /ha	2022-23	10	Very Good	94%	247	13	1.86823	0.16366	94797.01
6	Baripada	Baripada	Bangiriposhi	Dighi RF	2 <sup>nd</sup> Year AR Plantation @1600 plants/ha/ Bald Hill	2021-22	10	Very Good	96%	225	11	1.62163	0.10751	136895.36
7	Baripada	Baripada	Bangiriposhi	Baliasahi	2 <sup>nd</sup> Year ANR Plantation @ 200 plants/ha	2021-22	50	Very Good	95%	213	10	1.85808	0.17886	68867.26

Sample Site wise Survival %, Health of the Plant, Diversity index & Carbon Analysis												Diversity		Total CO <sub>2</sub> Weight (kg)
Sl. No.	Circle	Division	Range	Site visited	Model of plantation activity (Creation / Maintenance)	Year of creation	Area Treated / covered (ha.)	Status of work at the time of field visit	Survivable Percentage	Average Height of plants (cm)	Average Color Girth (cm)	Diversity index (H')	Concentration of dominance (Cd)	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
8	Baripada	Balasore WL	Kuldiha	Matikhania	3 <sup>rd</sup> Year ANR Plantation @200/500 plants/ha	2020-21	50	Poor	86%	155	8	2.21457	0.22576	20633.88
9	Baripada	Balasore WL	Jaleswar	Menekasa	3 <sup>rd</sup> Year ANR Plantation @200/500 plants/ha	2020-21	50	Good	97%	190	10	2.02891	0.28918	82870.36
10	Baripada	Balasore WL	Jaleswar	Janiphulia	ANR Plantation with Gap @ 200 plants/ha	2022-23	60	Good	97%	186	9	2.09744	0.12521	48743.43
11	Baripada	Balasore WL	Jaleswar	Rangamatia	3 <sup>rd</sup> Year Bamboo Plantation @200/500 plants/ha	2020-21	10	Good	99%	333		0.00000	1.00000	52651.88
12	Baripada	Balasore WL	Jaleswar	Udaipur Section	AR Plantation @ 1600 plants/ha	2022-23	15	Good	99%	290	16	0.00000	1.00000	301042.01
13	Baripada	Karanja	Saikoswa	Mahudiha	2 <sup>nd</sup> Year ANR Plantation @200/500 plants/ha	2021-22	50	Good	76%	116	6	2.11922	0.15801	10098.63
14	Baripada	Karanja	Karanja	Sarabhadi	ANR Medicinal Plantation @200 plants/ha	2022-23	25	Good	91%	187	7	1.06167	0.03865	8998.14
15	Baripada	Karanja	Karanja	Jambari	3 <sup>rd</sup> Year ANR Plantation @200/500 plants/ha	2020-21	100	Good	92%	381	26	1.80341	0.20212	1076061.69
16	Baripada	Karanja	Karanja	Pokharia-RF	ANR Plantation with Gap @ 200 plants/ha	2022-23	50	Good	95%	181	11	1.62163	0.10751	55180.04
17	Baripada	Karanja	Karanja	Suraposi	ANR Medicinal Plantation @200 plants/ha	2022-23	25	Good	96%	149	8	1.67312	0.24490	13996.68
18	Baripada	Karanja	Karanja	Sanbadposhi	4 <sup>th</sup> Year ANR Plantation @200/500 plants/ha	2019-20	50	Good	82%	277	13	2.15292	0.14493	206769.90
19	Baripada	Karanja	Karanja	Bhanra	AR plantation @1000 plants/ha	2022-23	10	Good	90%	177	8	2.06947	0.15677	21036.12
20	Baripada	Karanja	Karanja	Paudia	4 <sup>th</sup> Year AR Plantation @1000/1600 plants/ha	2019-20	15	Good	95%	425	22	2.07448	0.13347	692396.54
21	Baripada	Karanja	Karanja	Hatisalbeda	4 <sup>th</sup> Year AR Plantation @1000/1600 plants/ha	2019-20	5	Good	82%	430	18	1.48718	0.32716	692568.71
22	Baripada	Rairangpur	Bahalda	Manbir	4 <sup>th</sup> Year ANR Plantation @200/500 plants/ha	2019-20	50	Good	95%	391	13	2.17218	0.12434	290390.79
23	Baripada	Rairangpur	Badampahar	Solakuda	ANR Vanya Silk Plantation @ 500 plants/ha	2022-23	80	Good	98%	185	7	1.22036	0.31738	78314.54
24	Baripada	Rairangpur	Rairangpur	Dahupani	ANR Plantation with Gap @ 200 plants/ha	2022-23	50	Good	91%	172	6	1.95999	0.16075	22971.05
25	Baripada	Rairangpur	Rairangpur	Gorumahisani	2 <sup>nd</sup> Year ANR Plantation @200/500 plants/ha	2021-22	40	Good	79%	198	10	1.82034	0.07455	29500.77
26	Baripada	Rairangpur	Badampahar	Bhalupahadi	AR Plantation @ 1000/1600 plants/ha	2022-23	5	Good	87%	190	8	2.20156	0.12413	41203.17
27	Baripada	Rairangpur	Badampahar	Hatbadra-Seeron	2 <sup>nd</sup> Year AR Plantation @1000/1600 plants/ha	2021-22	20	Good	93%	208	8	2.26656	0.52572	94566.26
28	Baripada	Rairangpur	Badampahar	Hahsikui	2 <sup>nd</sup> Year ANR Plantation @200/500 plants/ha	2021-22	65	Good	94%	305	14	2.05624	0.14882	152673.72
29	Baripada	Rairangpur	Rairangpur	Dangapani	RET ANR Plantation @ 200 plants/ha	2022-23	25	Good	86%	202	6	1.82079	0.14935	11331.08
30	Baripada	Rairangpur	Rairangpur	Jhumkapahadi	ANR Plantation with Gap @ 200 plants/ha	2022-23	50	Good	91%	167	7	2.13034	0.12434	21364.81
31	Baripada	Rairangpur	Badampahar	Dova	2 <sup>nd</sup> Year AR Plantation @1000/1600 plants/ha	2021-22	22	Good	91%	141	7	2.21463	0.36057	57931.57
32	Baripada	Rairangpur	Rairangpur	Bhalkichua	3 <sup>rd</sup> Year ANR Plantation @200/500 plants/ha	2020-21	50	Good	90%	385	18	2.24505	0.15912	249910.80
33	Baripada	Keonjhar WL	Anandapur	Patilo	ANR Plantation with Gap @ 200 plants/ha	2022-23	100	Good	90%	187	8	1.86833	0.27983	52678.10
34	Baripada	Keonjhar WL	Anandapur	Salapada	AR Plantation @ 1600 plants/ha	2022-23	19	Good	93%	198	9	2.22057	0.37985	111596.39



Sample Site wise Survival %, Health of the Plant, Diversity index & Carbon Analysis												Diversity		Total CO <sub>2</sub> Weight (kg)
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1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
35	Baripada	Keonjhar WL	Anandapur	Sontashpur-Rf	3 <sup>rd</sup> Year ANR Plantation @200/500 plants/ha	2020-21	100	Good	83%	278	12	2.28735	0.28486	200249.02
36	Baripada	Keonjhar WL	Anandapur	Koldiha	2 <sup>nd</sup> Year ANR Plantation @200/500 plants/ha	2021-22	50	Good	87%	183	9	1.79855	0.16075	24799.71
37	Baripada	Keonjhar WL	Anandapur	Patilo	4 <sup>th</sup> Year ANR Plantation @200/500 plants/ha	2019-20	100	Good	93%	343	17	2.06947	0.15677	629846.03
38	Baripada	Keonjhar WL	Degaon	Basarepper	2 <sup>nd</sup> Year ANR Plantation @200/500 plants/ha	2021-22	510	Good	96%	230	11	2.24253	0.12297	1057103.87
39	Baripada	Keonjhar WL	Degaon	Asanobahali	4 <sup>th</sup> Year ANR Plantation @200/500 plants/ha	2019-20	72	Good	84%	180	9	1.48421	0.28701	36715.92
40	Baripada	Keonjhar WL	Hadgarh	Matha	6 <sup>th</sup> Year Bald Hill Plantation under CA	2017-18	33	Good	90%	528	29	2.12333	0.24873	6430501.88
41	Baripada	Keonjhar WL	Hadgarh	Dhamurjayapur	AR Plantation @ 1600 plants/ha	2022-23	2	Good	94%	196	7	2.26103	0.12171	7101.60
42	Baripada	Keonjhar WL	Hadgarh	Bahabaradanda	6 <sup>th</sup> Year AR Block Plantation under CA	2017-18	4	Good	78%	377	19	1.45750	0.25656	314430.46
43	Baripada	Keonjhar WL	Brahmanipal	Daitari	3 <sup>rd</sup> Year ANR Plantation @200/500 plants/ha	2020-21	1.98	Good	91%	135	12	0.38401	0.77565	10980.66
44	Baripada	Keonjhar WL	Brahmanipal	Chhutung	2 <sup>nd</sup> Year AJY ANR ANR Plantation @200	2021-22	50	Good	92%	184	9	1.90978	0.20423	54399.51
45	Baripada	Keonjhar WL	Hadgarh	Samara	5 <sup>th</sup> Year ANR Plantation @200/500 plants/ha	2018-19	8.9	Good	93%	722	36	2.22358	0.12510	3288348.30
46	Baripada	Keonjhar WL	Brahmanipal	Ponga	2 <sup>nd</sup> Year AR Plantation @200/500 plants/ha	2021-22	5.28	Poor	56%	53	4	1.27495	0.31153	816.65
47	Baripada	Keonjhar WL	Brahmanipal	Khalpal	AR Plantation @ 1600 plants/ha	2022-23	15	Good	93%	177	7	2.24504	0.13695	47802.18
48	Baripada	Keonjhar WL	Brahmanipal	Khasapada	2 <sup>nd</sup> Year ANR Plantation @1600 plants/ha	2021-22	620	Good	87%	238	11	2.25395	0.25733	655975.50
49	Baripada	Keonjhar WL	Hadgarh	Bahaharadanda	7 <sup>th</sup> year ANR Gap Plantation @200 plant /ha	2016-17	23.76	Good	67%	467	17	1.82833	0.17538	156205.74
50	Baripada	Similpal North WL			Nil									
51	Baripada	Similpal South WL			Nil									
1	Sambalpur	Sambalpur	Sambalpur sadar	Basiapada/Birsnggharh RF	ANR Plantation with Gap @ 200 plants/ha	2022-23	60	Average	76%	85	4	2.20505	0.12547	3356.33
2	Sambalpur	Sambalpur	Sambalpur sadar	Dumberchua/ Munder RF	3 <sup>rd</sup> Year ANR Plantation @200/ ha	2020-21	50	Average	78%	97	5	2.27944	0.40961	10086.40
3	Sambalpur	Sambalpur	Sambalpur sadar	Basiapada/Birsnggharh RF	3 <sup>rd</sup> Year ANR Plantation @200/ ha	2020-21	50	Average	71%	81	4	1.72483	0.23143	18095.72
4	Sambalpur	Sambalpur	Sambalpur sadar	Basiapada/Birsnggharh RF	3 <sup>rd</sup> Year ANR Plantation @200/ ha	2020-21	50	Average	82%	87	4	1.63763	0.06269	13944.69
5	Sambalpur	Sambalpur	Dhama	Larasara TDRF	ANR Plantation with Gap @ 200 plants/ha	2022-23	75	Good	88%	126	6	1.86823	0.16366	15865.61
6	Sambalpur	Sambalpur	Dhama	Tabloi TDRF	ANR Plantation with Gap @ 200 plants/ha	2022-23	75	Good	86%	96	5	1.95999	0.16075	6872.57
7	Sambalpur	Sambalpur	Dhama	Tabloi TDRF	4 <sup>th</sup> Year ANR Plantation @200/ ha	2019-20	50	Average	71%	193	9	1.02905	0.46019	30509.16

Sample Site wise Survival %, Health of the Plant, Diversity index & Carbon Analysis												Diversity		Total CO <sub>2</sub> Weight (kg)
Sl. No.	Circle	Division	Range	Site visited	Model of plantation activity (Creation / Maintenance)	Year of creation	Area Treated / covered (ha.)	Status of work at the time of field visit	Survivable Percentage	Average Height of plants (cm)	Average Color Girth (cm)	Diversity index (H')	Concentration of dominance (Cd)	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
8	Sambalpur	Bargarh	Bhatli	Dechuan RF/Sil Badmal	2 <sup>nd</sup> Year ANR Plantation @200/ 500 plants/ha	2021-22	100	Average	87%	65	3	2.20459	0.21036	4507.64
9	Sambalpur	Bargarh	Bhatli	Dechuan RF	2 <sup>nd</sup> Year Mant. of Bamboo Plantation	2021-22	40	Good	94%			0.00000	1.00000	
10	Sambalpur	Bargarh	Bhatli	SDBR RF,Jagatipali VSS, Keiendapaes	ANR Plantation with Gap @ 200 plants/ha	2022-23	100	Good	96%	91	4	2.23583	0.06762	10119.15
11	Sambalpur	Bargarh	Ghess	Jhanjpahad PRF,Kelenda	ANR Plantation with Gap @ 200 plants/ha	2022-23	100	Good	93%	163	7	1.62163	0.10751	31271.05
12	Sambalpur	Bargarh	Ghess	Jhanjpahad PRF,Kelenda	ANR Plantation with Gap @ 200 plants/ha	2022-23	150	Good	95%	80	4	1.63763	0.06269	10903.41
13	Sambalpur	Bargarh	Ghess	Tal, Padampur	2 <sup>nd</sup> Year ANR Plantation @200/ 500 plants/ha	2021-22	80	Average	91%	140	7	0.99154	0.59434	29465.08
14	Sambalpur	Rairakhol	Rairakhol	Tandabira VSS,AJY	2 <sup>nd</sup> Year ANR Plantation @200 plants/ha	2021-22	25	Average	75%	128	6	1.91544	0.15405	8899.64
15	Sambalpur	Rairakhol	Naktideul	Bijagarh VSS,AJY	2 <sup>nd</sup> Year ANR Plantation @200 plants/ha	2021-22	50	Good	92%	130	7	1.10870	0.53024	17260.00
16	Sambalpur	Rairakhol	Rairakhol	Halidhara RF C-5 , Brahmani Beat	ANR Plantation with Gap @ 200 plants/ha	2022-23	50	Good	85%	92	5	1.91457	0.18418	6444.42
17	Sambalpur	Rairakhol	Rairakhol	Hatidhara RF, C-II	ANR Plantation with Gap @ 200 plants/ha	2022-23	50	Good	91%	95	5	2.26270	0.38026	8828.44
18	Sambalpur	Rairakhol	Naktideul	Dahimal, Lusura, Kadobahal Beat	2 <sup>nd</sup> Year ANR Plantation @200 plants/ha	2021-22	50	Good	90%	141	7	1.68684	0.06488	14235.73
19	Sambalpur	Rairakhol	Naktideul	Kholgarh , C-8; Sarapali Beat	ANR Plantation with Gap @ 200 plants/ha	2022-23	100	Good	95%	160	7	2.27132	0.42395	41693.74
20	Sambalpur	Rairakhol	Naktideul	Kholgarh , C-8	ANR Plantation with Gap @ 200 plants/ha	2022-23	50	Good	95%	204	9	1.67151	0.22425	31267.30
21	Sambalpur	Jharsuguda	Kolabira	Lambdungri PRF	ANR Fodder and Fruits Species @500 plants/ha	2022-23	6	Good	87%	190	8	0.84490	0.49469	6000.83
22	Sambalpur	Jharsuguda	Kolabira	Lambdungri PRF-I	AR plantation @1000 plants/ha	2022-23	16	Good	90%	177	8	2.24858	0.19774	30531.32
23	Sambalpur	Jharsuguda	Kolabira	Lambdungri PRF	ANR Plantation with Gap @ 200 plants/ha	2022-23	50	Good	78%	184	8	1.96665	0.16078	23455.18
24	Sambalpur	Jharsuguda	Kolabira	Lambdungri PRF	2 <sup>nd</sup> Year ANR Plantation @200/ 500 plants/ha	2021-22	50	Very Good	85%	377	16	1.96307	0.20433	143134.91
25	Sambalpur	Jharsuguda	Brajaranagar	Kechhobahal B-PF	AR plantation @1000 plants/ha	2022-23	17	Good	92%	120	6	2.28726	0.42344	34464.93
26	Sambalpur	Jharsuguda	Brajaranagar	Rajpur PRF	AR Plantation @ 1600 plants/ha	2022-23	3	Average	76%	93	5	2.08367	0.15677	1929.83
27	Sambalpur	Jharsuguda	Brajaranagar	Rajpur PRF	ANR Plantation with Gap @ 200 plants/ha	2022-23	50	Average	74%	91	4	1.89964	0.27315	4719.46
28	Sambalpur	Jharsuguda	Brajaranagar	Ullap PRF	3 <sup>rd</sup> Year ANR Plantation @200 plants/ha	2020-21	50	Good	77%	276	11	1.58699	0.22314	99852.19
29	Sambalpur	Bamara WL	Bamra	Mahavir RF	ANR Plantation with Gap @ 200 plants/ha	2022-23	50	Good	91%	169	7	2.29754	0.31508	16823.51
30	Sambalpur	Bamara WL	Jamankira	Bardia	2 <sup>nd</sup> Year ANR Plantation @200 plants/ha	2021-22	50	Good	92%	210	9	2.18043	0.34169	31212.34
31	Sambalpur	Bamara WL	Jamankira	Ajy Tulsiahi VSS	2 <sup>nd</sup> Year ANR Plantation @200 plants/ha	2021-22	50	Good	91%	171	7	1.17653	0.49126	16873.06

Sample Site wise Survival %, Health of the Plant, Diversity index & Carbon Analysis												Diversity		Total CO <sub>2</sub> Weight (kg)
Sl. No.	Circle	Division	Range	Site visited	Model of plantation activity (Creation / Maintenance)	Year of creation	Area Treated / covered (ha.)	Status of work at the time of field visit	Survivable Percentage	Average Height of plants (cm)	Average Colar Girth (cm)	Diversity index (H')	Concentration of dominance (Cd)	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
32	Sambalpur	Bamara WL	Bamra	Talipathar	2 <sup>nd</sup> Year ANR Plantation @200 plants/ha	2021-22	30	Good	90%	200	9	1.69104	0.19995	17115.79
33	Sambalpur	Bamara WL	Bamra	Bandhabar RF (Fuldumer site)	ANR Fodder and Fruits Species @500 plants/ha	2022-23	15	Good	92%	170	7	1.87514	0.20262	12648.88
34	Sambalpur	Bamara WL	Bamra	Brahmanimunda Talsara DPF	ANR Gap RET/ Medicinal plants @200 plants/ha	2022-23	40	Good	94%	167	7	1.68385	0.21557	13825.77
35	Sambalpur	Bamara WL	Bamra	Bandhabar RF Kichinda Site	ANR Other Indigenous Misc species @200 plants/ha	2022-23	50	Good	94%	181	8	1.81146	0.17671	20923.48
36	Sambalpur	Bamara WL	Bamra	AR Plantation Sagra	AR Other Indigenous Species @1600 plants/ha	2022-23	15	Good	93%	182	8	1.83182	0.22649	47802.83
37	Sambalpur	Bamara WL	Bamra	Kinabaga B DPF	3 <sup>rd</sup> year ANR plantation @ 200 plants/ ha	2020-21	50	Good	86%	208	9	1.80310	0.16378	27921.05
38	Sambalpur	Bamara WL	Bamra	Rabandihi PRF	4 <sup>th</sup> year ANR plantation @ 200 plants/ha	2019-20	20	Good	91%	253	10	1.27495	0.31153	21482.30
39	Sambalpur	Hirakhud WL			Nil									
1	Rourkela	Sundargarh	Hamgiri	Biswanathpur	ANR Plantation with Gap @ 200 plants/ha	2022-23	100	Good	87%	91	3	2.00319	0.20727	3706.17
2	Rourkela	Sundargarh	Hamgiri	Ganjanpahad RF	ANR Plantation with Gap @ 200 plants/ha	2022-23	80	Good	83%	86	3	1.23642	0.14575	2977.80
3	Rourkela	Sundargarh	Hamgiri	Ganjanpahad RF	4 <sup>th</sup> Year AR Plantation @1600 plants/ha	2019-20	10	Average	74%	146	7	1.75408	0.17886	83555.53
4	Rourkela	Sundargarh	Hamgiri	Bheluatikira	ANR Plantation with Gap @ 200 plants/ha	2022-23	25	Good	80%	83	3	2.05617	0.13724	726.44
5	Rourkela	Sundargarh	Hamgiri	Budulakhaman	ANR Plantation with Gap @ 200 plants/ha	2022-23	75	Good	82%	98	4	2.27317	0.12399	8160.73
6	Rourkela	Sundargarh	Sundargarh	Tilia RF	ANR Fodder and Fruits Species @500 plants/ha	2022-23	25	Good	82%	135	6	1.66360	0.21883	16159.66
7	Rourkela	Sundargarh	Sundargarh	Mahulgaon RF	6 <sup>th</sup> Year ANR Plantation @ 200 plants/ha	2017-18	100	Average	79%	205	9	1.66832	0.07063	62846.03
8	Rourkela	Sundargarh	Sundargarh	Tilia RF	ANR Fodder and Fruits Species @500 plants/ha	2022-23	50	Good	84%	59	3	1.22036	0.31738	990.81
9	Rourkela	Sundargarh	Sundargarh	Medinipur	2 <sup>nd</sup> Year ANR Plantation @ 200 plants/ha	2021-22	28	Average	79%	93	3	2.07415	0.21303	1301.48
10	Rourkela	Sundargarh	Sundargarh	Medhapur	4 <sup>th</sup> Year AR Plantation @1600 plants/ha	2019-20	10	Average	76%	306	14	1.14155	0.41781	175961.83
11	Rourkela	Sundargarh	Sundargarh	Gadiajore	ANR Fodder and Fruits Species @500 plants/ha	2022-23	40	Good	85%	87	4	1.09760	0.48876	8316.38
12	Rourkela	Rourkela	Bisra	Bandeiba DPF	2 <sup>nd</sup> Year ANR Plantation @200/ 500 plants/ha	2021-22	20	Average	81%	210	9	1.54094	0.30070	14282.33
13	Rourkela	Rourkela	Bisra	Bagdega RF	3 <sup>rd</sup> Year ANR Plantation @200/500 plants/ha	2020-21	80	Good	85%	229	12	1.82833	0.17538	106780.42
14	Rourkela	Rourkela	Banki	Santhelakudar	6 <sup>th</sup> Year ANR Plantation @200/ 500 plants/ha	2017-18	65	Good	80%	268	12	2.27723	0.35571	84922.95
15	Rourkela	Rourkela	Banki	Karda DPF	ANR Plantation with Gap @ 200 plants/ha	2022-23	45	Good	84%	172	8	2.29433	0.29758	54809.78
16	Rourkela	Rourkela	Banki	South champajharan	3 <sup>rd</sup> Year ANR Plantation @200/500 plants/ha	2020-21	100	Very Good	91%	237	12	1.95999	0.16075	156208.39

Sample Site wise Survival %, Health of the Plant, Diversity index & Carbon Analysis												Diversity		Total CO <sub>2</sub> Weight (kg)
Sl. No.	Circle	Division	Range	Site visited	Model of plantation activity (Creation / Maintenance)	Year of creation	Area Treated / covered (ha.)	Status of work at the time of field visit	Survivable Percentage	Average Height of plants (cm)	Average Color Girth (cm)	Diversity index (H')	Concentration of dominance (Cd)	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
17	Rourkela	Rourkela	Banki	Jharbeda	4 <sup>th</sup> Year ANR Plantation @ 200 plants/ha	2019-20	80	Average	93%	262	12	1.63282	0.13219	145561.79
18	Rourkela	Rourkela	Banki	Jharbeda RF Luguda	2 <sup>nd</sup> Year ANR Plantation @200/ 500 plants/ha	2021-22	100	Good	89%	218	8	2.04514	0.11852	53998.84
19	Rourkela	Rourkela	Banki	Jharbeda Rf	3 <sup>rd</sup> Year ANR Plantation @200/500 plants/ha	2020-21	100	Good	81%	216	9	1.79373	0.18437	83563.00
20	Rourkela	Rourkela	Banki	South champajharan	3 <sup>rd</sup> Year ANR Plantation @200/500 plants/ha	2020-21	34	Average	81%	176	8	2.19979	0.16531	13434.34
21	Rourkela	Rourkela	Kuarmunda	Rutukupedi RF	2 <sup>nd</sup> Year ANR Plantation @200/ 500 plants/ha	2021-22	100	Average	83%	175	7	2.19452	0.21571	40961.05
22	Rourkela	Rourkela	Kuarmunda	Rangamati	4 <sup>th</sup> Year AR Plantation @1600 plants/ha	2019-20	10	Average	84%	249	11	2.23328	0.12436	98993.61
23	Rourkela	Rourkela	Banki	Sialikudar F.F	AR Plantation @ 1600 plants/ha	2022-23	5	Good	80%	136	5	1.76582	0.22671	5425.27
24	Rourkela	Rourkela	Banki	Jlarbedh R.F	ANR Plantation with Gap @ 200 plants/ha	2022-23	150	Very Good	91%	136	7	1.87786	0.22273	56093.05
25	Rourkela	Rourkela	Banki	Goudiniposh	2 <sup>nd</sup> Year ANR Plantation @200/ 500 plants/ha	2021-22	40	Good	88%	174	8	1.30958	0.49032	16474.76
26	Rourkela	Rourkela	Banki	Parayposh	2 <sup>nd</sup> Year AR Plantation @1600 plants/ha	2021-22	10	Good	88%	168	8	1.31832	0.05355	33671.24
27	Rourkela	Rourkela	Kuarmunda	Teliposh Dpf	2 <sup>nd</sup> Year AR Plantation @1600 plants/ha	2021-22	5	Good	84%	160	6	1.14686	0.43210	15436.16
28	Rourkela	Rourkela	Kuarmunda	Chataktoli	2 <sup>nd</sup> Year Avenue @400/Rkm	2021-22	2.74	Average	88%	360	18	1.93804	0.33740	14866.54
29	Rourkela	Rourkela	Kuarmunda	Gutidarah, Soma Beda	2 <sup>nd</sup> Year ANR Plantation @200/ 500 plants/ha	2021-22	50	Good	84%	161	7	1.94333	0.25631	17193.56
30	Rourkela	Rourkela	Kuarmunda	Tainsoo Dpf	3 <sup>rd</sup> Year AR Plantation @1600 plants/ha	2020-21	10	Average	81%	161	7	1.73820	0.22668	20228.23
31	Rourkela	Rourkela	Kuarmunda	Harapali R.F	ANR Plantation with Gap @ 200 plants/ha	2022-23	50	Good	84%	154	7	2.24303	0.39968	13849.86
32	Rourkela	Rourkela	Kuarmunda	Rangemati	ANR Plantation with Gap @ 200 plants/ha	2022-23	137	Good	84%	130	6	2.21504	0.13695	30673.26
33	Rourkela	Rourkela	Kuarmunda	Bhaisamunda	ANR Plantation with Gap @ 200 plants/ha	2022-23	50	Good	84%	141	5	1.89588	0.14736	8901.35
34	Rourkela	Bonai	Kuliposh	Gaganaposh	ANR Fodder and Fruits Species @500 plants/ha	2022-23	15.40	Good	88%	93	4	1.20547	0.08950	2554.58
35	Rourkela	Bonai	Kuliposh	Gaganaposh	2 <sup>nd</sup> Year ANR Plantation @200/ 500 plants/ha	2021-22	50.00	Good	89%	152	6	1.82833	0.17538	11815.93
36	Rourkela	Bonai	Kuliposh	Hatibahal	4 <sup>th</sup> Year ANR Plantation @200/500 plants/ha	2019-20	95.38	Good	84%	272	13	1.44010	0.10511	226697.49
37	Rourkela	Bonai	Kuliposh	Haladikanchi	4 <sup>th</sup> Year ANR Plantation @200/500 plants/ha	2019-20	77.66	Average	84%	272	13	1.63763	0.06269	193023.38
38	Rourkela	Bonai	Kuliposh	Gaganaposh	ANR Plantation with Gap @ 200 plants/ha	2022-23	13.86	Good	80%	97	5	0.70522	0.44092	6284.65
39	Rourkela	Bonai	Kuliposh	Brahaguda	ANR Fodder and Fruits Species @500 plants/ha	2022-23	90	Very Good	93%	72	5	1.54094	0.30070	10109.94
40	Rourkela	Bonai	Bonai	Dakmunda	2 <sup>nd</sup> Year ANR Plantation @ 200 plants/ha	2021-22	80	Good	88%	239	11	1.35028	0.21122	90347.78
41	Rourkela	Bonai	Bonai	Bhadimara	4 <sup>th</sup> Year ANR Plantation @ 200 plants/ha	2019-20	50	Very Good	93%	259	12	2.13435	0.24754	76559.73
42	Rourkela	Bonai	Bonai	Kelo	2 <sup>nd</sup> Year AR Plantation @1600 Plant /ha	2021-22	15	Average	75%	133	6	2.26905	0.29362	17964.60
43	Rourkela	Bonai	Bonai	Dharanidharpali	AR Plantation @ 1600 plants/ha	2022-23	5.997	Good	80%	122	7	1.47013	0.27969	9601.63

Sample Site wise Survival %, Health of the Plant, Diversity index & Carbon Analysis												Diversity		Total CO <sub>2</sub> Weight (kg)
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1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
44	Rourkela	Keonjhar	B.J.P	Gupta Ganga	ANR Plantation with Gap @ 200 plants/ha	2022-23	3.63	Good	88%	84	5	1.86823	0.16366	351.30
45	Rourkela	Keonjhar	B.J.P	Jantari	ANR Plantation with Gap @ 200 plants/ha	2022-23	22.84	Good	89%	101	6	2.14755	0.26641	2660.56
46	Rourkela	Keonjhar	B.J.P	Fulbadi	ANR Plantation with Gap @ 200 plants/ha	2022-23	23.19	Good	90%	108	5	2.17720	0.16614	2932.50
47	Rourkela	Keonjhar	B.J.P	Mundala RF	ANR Plantation @400 plants/ha	2022-23	26.00	Good	93%	103	5	2.22354	0.12460	5808.28
48	Rourkela	Keonjhar	B.J.P	Lungajhar	AR Bald Hill Plantation @ 1600 plants/ha	2022-23	32.26	Good	98%	122	6	1.86823	0.16366	30105.67
49	Rourkela	Keonjhar	B.J.P	Tana	6 <sup>th</sup> Year ANR Plantation @ 200/ 500 plants/ha	2017-18	64.33	Good	92%	553	42	2.07448	0.13347	2416834.65
50	Rourkela	Keonjhar	B.J.P	Upper Birikala	3 <sup>rd</sup> Year ANR Plantation @ 200/500 plants/ha	2020-21	12.69	Good	94%	157	6	1.84633	0.18390	4453.42
51	Rourkela	Keonjhar	B.J.P	Champajhar	ANR Plantation with Gap @ 200 plants/ha	2022-23	2.45	Good	94%	129	6	1.63282	0.13219	5589.25
52	Rourkela	Keonjhar	B.J.P	Champajhar	5 <sup>th</sup> Year ANR Plantation @ 400 plants/ha	2018-19	31.00	Good	94%	208	9	2.07448	0.13347	41350.10
53	Rourkela	Keonjhar	B.J.P	Champajhar	7 <sup>th</sup> Year ANR Plantation @ 400 plants/ha	2016-17	20.36	Good	92%	451	26	2.27097	0.19285	494223.56
54	Rourkela	Keonjhar	B.J.P	Podadihi	ANR Plantation with Gap @ 200 plants/ha	2022-23	120.88	Good	93%	123	5	1.55924	0.07611	19348.88
55	Rourkela	Keonjhar	B.J.P	Jatra	4 <sup>th</sup> Year ANR Plantation @ 400 plants/ha	2019-20	41.24	Good	95%	298	18	1.85690	0.05774	347206.87
56	Rourkela	Keonjhar	B.J.P	Jagar RF	7 <sup>th</sup> Year ANR Plantation @ 200 plants/ha	2016-17	119.78	Good	91%	337	26	2.27097	0.19285	2037942.43
57	Rourkela	Keonjhar	B.J.P	Anjar RF	5 <sup>th</sup> Year ANR Plantation @ 400 plants/ha CA	2018-19	31.00	Good	93%	265	14	0.93251	0.28540	127854.30
58	Rourkela	Keonjhar	B.J.P	Talapada	ANR Plantation with Gap @ 200 plants/ha	2022-23	1.30	Very Good	93%	126	6	2.11781	0.08333	241.48
59	Rourkela	Keonjhar	Patna	Bhalupahadi	3 <sup>rd</sup> Year Bald hill Plantation @1600 plants/ha	2020-21	10	Good	99%	197	9	1.63362	0.13189	67341.97
60	Rourkela	Keonjhar	Barbil	Bileipoda to Bhagadpeer Road	2 <sup>nd</sup> Year Avenue Plantation	2021-22	0.9	Good	96%	229	11	1.16988	0.53003	1342.06
61	Rourkela	Keonjhar	Keonjhar sadar	Raghunathpur RF	4 <sup>th</sup> Year ANR Plantation @ 200/500 plants/ha	2019-20	50	Good	97%	360	7	1.82833	0.17538	43717.56
62	Rourkela	Keonjhar	Keonjhar sadar	Basantapur RF	3 <sup>rd</sup> Year ANR Plantation @ 200/500 plants/ha	2020-21	50	Good	97%	259	8	0.84490	0.49469	48542.43
63	Rourkela	Keonjhar	Keonjhar sadar	Basantapur RF(Vanyasilk)	ANR Vanya Silk Plantation @ 500 plants/ha	2022-23	12	Good	99%	105	6	2.10665	0.17082	5056.01
64	Rourkela	Keonjhar	Keonjhar sadar	Raikala RF	ANR Plantation with Gap @ 200 plants/ha	2022-23	50	Good	99%	172	6	1.76582	0.22671	11957.53
65	Rourkela	Keonjhar	Keonjhar sadar	Kandraposhi Maldaroad	8 <sup>th</sup> Year Avenue plantation	2015-16	10	Good	88%	824	76	1.52789	0.23478	2448706.68
66	Rourkela	Keonjhar	Keonjhar sadar	Jadipada RF(Handibhanga VSS)	2 <sup>nd</sup> Year ANR Plantation @ 200/ 500 plants/ha	2021-22	50	Good	96%	201	7	1.82833	0.17538	17156.86
67	Rourkela	Keonjhar	Keonjhar sadar	Maidankel RF(Keri Vss)	2 <sup>nd</sup> Year ANR Plantation @ 200/ 500 plants/ha	2021-22	50	Good	94%	154	6	0.84490	0.49469	13218.57

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1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
68	Rourkela	Deogarh	Pallahara	Jenapasi	ANR Plantation with Gap @ 200 plants/ha	2022-23	100	Good	94%	235	9	0.78639	0.52117	68375.01
69	Rourkela	Deogarh	Riamal	Kankarkhol PRF	AR Plantation @ 1600 plants/ha	2022-23	10	Very Good	98%	209	6	1.26597	0.21869	31938.32
70	Rourkela	Deogarh	Barkote	Mandasila RF	2 <sup>nd</sup> Year ANR @ 800 seedlings	2021-22	22.87	Average	82%	194	6	1.51240	0.53636	23131.12
71	Rourkela	Deogarh	Barkote	Pradhanpat RF (Brundabanpur)	4 <sup>th</sup> Year ANR @ 200 seedlings	2019-20	50	Average	90%	283	7	0.99054	0.01274	30043.48
72	Rourkela	Deogarh	Barkote	Badtaila RF	ANR Vanya Silk Plantation @ 500 plants/ha	2022-23	25	Good	96%	226	7	1.32977	0.25408	37058.98
73	Rourkela	Deogarh	Barkote	Pradhanpat RF (Near Kantapali)	3 <sup>rd</sup> Year ANR @ 500 seedlings GAP Plantation	2020-21	50	Average	68%	411	11	1.53660	0.09004	70608.57
1	Angul	Angul	Talcher	Kanchi Berini (RF) Rabipur	ANR Fodder and Fruits Species @500 plants/ha	2022-23	40	Good	83%	171	7	1.52789	0.23478	30547.07
2	Angul	Angul	Talcher	Silling VF Seepur	ANR Plantation with Gap @ 200 plants/ha	2022-23	0.83	Good	84%	137	5	1.24854	0.34028	109.14
3	Angul	Angul	Talcher	Seepur, Kulei (RF), Dangarbeda	ANR Plantation with Gap @ 200 plants/ha	2022-23	2.77	Good	81%	146	7	1.75408	0.17886	955.63
4	Angul	Angul	Talcher	Seepur RF Kulei	ANR Plantation with Gap @ 200 plants/ha	2022-23	1.20	Very Good	91%	124	4	1.30357	0.53181	101.85
5	Angul	Angul	Talcher	Dena Section Rabipur(RF)	ANR Plantation with Gap @ 200 plants/ha	2022-23	40	Average	77%	152	7	1.82833	0.17538	9714.60
6	Angul	Angul	Talcher	Kamhajena RF	3 <sup>rd</sup> Year ANR Plantation @ 200 plants/ha	2020-21	100	Good	91%	254	11	1.84633	0.18390	143386.45
7	Angul	Angul	Talcher	Godibandha-B7	6 <sup>th</sup> Year ANR Plantation @ 200 plants/ha	2018-19	26	Good	89%	327	15	1.75408	0.17886	74682.24
8	Angul	Angul	Jarapada	Antulia	2 <sup>nd</sup> Year Mant. ANR Plantation @ 200 plants/ha	2021-22	9.6	Good	84%	121	11	0.72124	0.01200	15647.54
9	Angul	Angul	Jarapada	Katada Rf	ANR Plantation with Gap @ 200 plants/ha	2022-23	50	Good	93%	439	12	1.57145	0.16044	96933.17
10	Angul	Angul	Jarapada	Katada Rf	3 <sup>rd</sup> Year ANR Plantation @ 200 plants/ha	2020-21	50	Good	91%	157	8	0.00000	1.00000	20382.78
11	Angul	Angul	Anugul	Badadanda Sahi	2 <sup>nd</sup> Year Bamboo Plantation @400 plants/ha	2021-22	10	Very Good	93%	287	8	1.32977	0.25408	13849.72
12	Angul	Angul	Anugul	Badadanda Sahi	ANR Plantation with Gap @ 200 plants/ha	2022-23	50	Average	79%	163	6	0.84490	0.49469	15176.29
13	Angul	Angul	Anugul	Malibramhani Rf	3 <sup>rd</sup> Year AR Plantation @ 1600 plants/ha	2020-21	1.0	Good	84%	176	6	0.72124	0.01200	1782.01
14	Angul	Angul	Anugul	Parang Rf	ANR Fodder and Fruits Species @ 500 plants/ha	2022-23	2.77	Good	84%	147	5	1.52789	0.23478	1455.07
15	Angul	Angul	Jarapada	Simily Pathar Rf	3 <sup>rd</sup> Year ANR Plantation @ 200 plants/ha	2020-21	50	Very Good	91%	187	10	2.02507	0.18558	39336.54
16	Angul	Angul	Jarapada	Para Prf	3 <sup>rd</sup> Year ANR Plantation @ 200 plants/ha	2020-21	100	Good	98%	268	8	0.00000	1.00000	245283.40
17	Angul	Angul	Jarapada	Machhakula	3 <sup>rd</sup> Year ANR Bamboo Plantation @400 plants/ha	2020-21	10	Very Good	93%					

Sample Site wise Survival %, Health of the Plant, Diversity index & Carbon Analysis												Diversity		Total CO <sub>2</sub> Weight (kg)
Sl. No.	Circle	Division	Range	Site visited	Model of plantation activity (Creation / Maintenance)	Year of creation	Area Treated / covered (ha.)	Status of work at the time of field visit	Survivable Percentage	Average Height of plants (cm)	Average Color Girth (cm)	Diversity index (H')	Concentration of dominance (Cd)	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
18	Angul	Athamallik	Handpa	Katrakani DPF	ANR Plantation with Gap @ 200 plants/ha	2022-23	100	Very Good	94%	218	10	2.07027	0.15917	112182.81
19	Angul	Athamallik	Athamallik	Dhandatopa(Sec), Hatidhar RF	2 <sup>nd</sup> Year Bamboo Plantation @ 400 plants/ha	2021-22	30	Good	94%	193	5	0.00000	1.00000	11093.82
20	Angul	Athamallik	Madhapur	Taldhar Dwatt	3 <sup>rd</sup> Year Block (Dwarf) Plantation @ 1600 plants/ha	2020-21	1.57	Good	84%	270	10	0.66473	0.64141	16336.20
21	Angul	Athamallik	Madhapur	Nuagaon R.F Comp-04	4 <sup>th</sup> Year ANR Plantation @ 200 plants/ha	2020-21	100	Very Good	91%	203	9	0.99361	0.49082	98086.05
22	Angul	Athamallik	Madhapur	Raibahal and Taldhar	2 <sup>nd</sup> Year Block (Dwarf) Plantation @ 1600 plants/ha	2021-22	6.11	Good	94%	200	10	0.59976	0.59044	50867.35
23	Angul	Athamallik	Dhandatopa	Hatidhar R.F	3 <sup>rd</sup> Year Bamboo Plantation @ 400 plants/ha	2020-21	30	Good	94%	270	12	0.68941	0.50373	89611.75
24	Angul	Athamallik	Handpa	Pedipathar	AR plantation @1000 plant /ha	2022-23	45.6	Good	93%	133	8	1.54931	0.07868	79422.29
25	Angul	Athamallik	Dhandatopa	Garudaito Mkadara-Pahal	2 <sup>nd</sup> Year Mant. ANR Plantation @ 200 plants/ha	2021-22	41.66	Very Good	92%	248	11	1.82833	0.17538	53514.99
26	Angul	Athamallik	Handpa	Vruknee	ANR Vanya Silk Plantation @ 500 plants/ha	2022-23	10	Average	79%	120	9	0.00000	1.00000	83709.83
27	Angul	Cuttack	Tomka	Bahali Sahi Managiri(PPF)	ANR Other Indigenous Misc species @ 200 plants	2022-23	250	Good	83%	151	10	2.18229	0.16090	136045.36
28	Angul	Cuttack	Tomka	Managiri PPF Durgapur	2 <sup>nd</sup> Year Mant. ANR Plantation @ 200 plants/ha	2021-22	100	Good	90%	326	80	1.81315	0.05765	378973.09
29	Angul	Cuttack	Dalijora	Barunia	4 <sup>th</sup> Year ANR Plantation @ 200 plants/ha	2019-20	10	Good	97%	379	18	1.39449	0.04050	425797.17
30	Angul	Cuttack	Tomka	Ratha Pada	4 <sup>th</sup> Year ANR Plantation @ 200 plants/ha	2019-20	100	Good	91%	356	18	1.76281	0.12051	241019.68
31	Angul	Cuttack	Sukinda	Nahagiri(DPF), Kankadagodi	3 <sup>rd</sup> Year AR Fodder & Fruit Plantation @ 1600 Plants/ha	2020-21	30	Very Good	92%	282	13	2.24435	0.24754	470682.48
32	Angul	Cuttack	Sukinda	Ransol Mine lease area	4 <sup>th</sup> Year AR Bald Hill Plantation@ 1600 plants	2019-20	28.6	Good	96%	265	12	2.21354	0.12460	212595.67
33	Angul	Cuttack	Dalijora	Barunia Fodder	ANR Fodder and Fruits Species @ 500 plants/ha	2022-23	15	Very Good	98%	135	9	1.83275	0.22412	16351.51
34	Angul	Cuttack	Tomka	Baligotha Duburi Pankapala	4 <sup>th</sup> Year AR Block plantation @1600 plants/ha	2019-20	20	Very Good	93%	299	19	2.18229	0.16090	700399.81
35	Angul	Cuttack	Sukinda	Bhulkipatna	AR Other Indigenous Species @1600 plants/ha	2022-23	30	Good	89%	234	11	2.24253	0.12297	305484.02
36	Angul	Cuttack	Dalijora	Kalakala Cheliapada	3 <sup>rd</sup> Year ANR Plantation @ 200 plants/ha	2020-21	50	Very Good	94%	276	14	1.82833	0.17538	107995.55
37	Angul	Cuttack	Sukinda	Daduko Sukinda	AR Other Indigenous Species @1600 plants/ha	2022-23	20	Good	86%	165	8	2.07086	0.41808	67219.21
38	Angul	Cuttack	Dalijora	Byree Section Bagimula	3 <sup>rd</sup> Year ANR Plantation @ 200 plants/ha	2020-21	50	Good	91%	206	14	1.81315	0.05765	84118.48
39	Angul	Cuttack	Tomka	Champajhar	ANR Other Indigenous Misc species @200 plants/ha.	2022-23	150	Good	91%	207	12	1.91457	0.18418	124076.55

Sample Site wise Survival %, Health of the Plant, Diversity index & Carbon Analysis												Diversity		Total CO <sub>2</sub> Weight (kg)
Sl. No.	Circle	Division	Range	Site visited	Model of plantation activity (Creation / Maintenance)	Year of creation	Area Treated / covered (ha.)	Status of work at the time of field visit	Survivable Percentage	Average Height of plants (cm)	Average Color Girth (cm)	Diversity index (H')	Concentration of dominance (Cd)	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
40	Angul	Cuttack	Dalijora	mangrajpur (See) Chotapada Gaon	8 <sup>th</sup> Year CA AR Plantation @1600 plant /ha	2015-16	50	Good	90%	213	19	1.69625	0.12025	136489.47
41	Angul	Cuttack	Dalijora	Kolha	3 <sup>rd</sup> Year ANR Plantation @ 200 plants/ha	2020-21	50	Good	91%	222	19	0.72124	0.01200	152959.42
42	Angul	Cuttack	Dalijora	Ganamedinipur (See) Ragadaposi	ANR Other Indigenous Misc species @200 plants/ha	2022-23	40	Average	93%	152	11	1.48421	0.28701	26939.48
43	Angul	Cuttack	Dalijora	Mangarajpur (See) Dalike Bereha	3 <sup>rd</sup> Year AR Fooder & Fruit Plantation @ 1600 Plants/ha	2020-21	5	Average	92%	244	15	1.30357	0.53181	123885.24
44	Angul	Cuttack	Dalijora	Mangarajpur Banjiliam	2 <sup>nd</sup> Year Mant. ANR Plantation @ 200 plants/ha	2021-22	100	Very Good	94%	201	17	1.76281	0.12051	227611.13
45	Angul	Cuttack	Dalijora	Teligarh	AR Bald Hill Plantation @ 1600 plants/ha	2022-23	6.8	Good	91%	287	18	1.86823	0.16366	200973.12
46	Angul	Cuttack	Sukinda	Sukara	2 <sup>nd</sup> Year AR Fooder & Fruit Plantation @ 1600 Plants/ha	2021-22	8	Good	92%	205	12	2.18229	0.16090	78988.34
47	Angul	Cuttack	Dalijora	Asia- Charinagal (PRF)	6 <sup>th</sup> Year AR Plantation @1600 plant /ha (CA)	2016-17	42.5	Very Good	92%	1093	41	0.99361	0.49082	23266283.96
48	Angul	Cuttack	Dalijora	Chandikhoh (See) Mahavinayak	Avenue (Tall Tree) Plantation @250 plant/RKM	2022-23	400 meter	Good	97%	223	9	0.68941	0.50373	574.28
49	Angul	Cuttack	Dalijora	Mahavinayak(RF)	3 <sup>rd</sup> Year ANR Plantation @ 200 plants/ha	2020-21	50	Good	94%	252	11	1.82833	0.17538	94796.22
50	Angul	Cuttack	Tomka	Bahali Sahi Mahavinayak Silk	ANR Vanya Silk Plantation @ 500 Plants/ha	2022-23	30	Good	83%	180	9	0.59976	0.59044	38832.85
51	Angul	Cuttack	Dalijora	Anijira	AR Other Indigenous Species @1600 plants/ha	2022-23	8.7	Good	86%	216	11	1.63282	0.13219	83146.13
52	Angul	Cuttack	Dalijora	Ganamadhupur (See) Panturiya	3 <sup>rd</sup> Year AR Bald Hill Plantation @ 1600 plants/ha	2020-21	39.4	Good	89%	218	19	1.81315	0.05765	1008063.63
53	Angul	Cuttack	Tomka	Duburi Pankapala (DPF)	2 <sup>nd</sup> Year AR Fooder & Fruit Plantation @ 1600 Plants/ha	2021-22	8	Good	90%	170	11	1.51240	0.53636	49150.32
54	Angul	Cuttack	Tomka	Managiri Durgapur, Duburi	AR Other Indigenous Species @1600 plants/ha	2022-23	13	Good	83%	210	17	1.54931	0.07868	352939.41
55	Angul	Cuttack	Sukinda	Batolanda	AR Other Indigenous Species @1600 plants/ha	2022-23	9	Average	90%	243	17	0.00000	1.00000	66450.08
56	Angul	Cuttack	Sukinda	Kanchi Chua	ANR Vanya Silk Plantation @ 500 plants/ha	2022-23	9.0	Average	66%	117	11	0.00000	1.00000	8881.32
57	Angul	Cuttack	Dalijora	Anjira(ganamadhupur)	3 <sup>rd</sup> Year AR Bald Hill Plantation @ 1600 plants/ha	2020-21	72.04	Good	90%	287	17	2.29531	0.47521	2167271.51
58	Angul	Cuttack	Tomka	Upper Tomka	2 <sup>nd</sup> Year Mant. ANR Plantation @ 200 plants/ha	2021-22	50	Good	92%	164	15	1.91457	0.18418	101554.39
59	Angul	Dhenkanal	Hindol	Karna pur RF	Bamboo Plantation @ 400 plants/ha	2022-23	70	Very Good	93%	153	9	0.00000	1.00000	65630.15
60	Angul	Dhenkanal	Kapilash	Biswanath Pur	6 <sup>th</sup> Year ANR Plantation @ 200 plants/ha	2018-19	47.76	Good	93%	121	13	1.05174	0.05825	34243.52
61	Angul	Dhenkanal	Kamakshya Nagar	Kankadahadi	ANR Vanya Silk Plantation @ 500 plants/ha	2022-23	42	Good	85%	150	9	0.47556	0.02342	40113.33



Sample Site wise Survival %, Health of the Plant, Diversity index & Carbon Analysis												Diversity		Total CO <sub>2</sub> Weight (kg)
Sl. No.	Circle	Division	Range	Site visited	Model of plantation activity (Creation / Maintenance)	Year of creation	Area Treated / covered (ha.)	Status of work at the time of field visit	Survivable Percentage	Average Height of plants (cm)	Average Colar Girth (cm)	Diversity index (H')	Concentration of dominance (Cd)	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
62	Angul	Dhenkanal	Dhenkanal	Dadhukatei	6 <sup>th</sup> Year Avenue Plantation	2018-19	2.56	Good	89%	330	28	2.18043	0.34169	28825.02
63	Angul	Dhenkanal	Dhenkanal	Kankadahadi	AR Other Indigenous Species @1600 plants/ha	2022-23	40	Good	84%	134	8	1.51240	0.53636	9798.11
64	Angul	Dhenkanal	Hindol	KAI RF B. Pokhari	ANR Plantation with Gap @ 200 plants/ha	2022-23	50	Good	84%	140	8	1.76281	0.12051	17184.09
65	Angul	Dhenkanal	Kamakshya Nagar	Muktapasi Sec Basoi Kankili RF	4 <sup>th</sup> Year ANR Plantation @ 400 plants/ha	2019-20	192	Good	89%	344	11	1.67151	0.22425	636989.50
66	Angul	Dhenkanal	Hindol	Kai RF	2 <sup>nd</sup> Year Mant. ANR Plantation @ 200 plants/ha	2021-22	50	Good	92%	275	13	1.81315	0.05765	151367.85
67	Angul	Dhenkanal	Hindol	AR Block Kartamilla	2 <sup>nd</sup> Year AR Block Plantation @1600 plants/ha	2021-22	15	Good	93%	294	10	1.84633	0.18390	231759.39
68	Angul	Dhenkanal	Hindol	Ambithi (Hindol)	4 <sup>th</sup> Year AR Plantation @1600 plants/ha	2019-20	30	Good	89%	361	12	1.67359	0.22320	498922.45
69	Angul	Dhenkanal	Hindol	Ambithi RF, Hindol Bileikhali	ANR Plantation @ 800 plants/ha	2022-23	5.8	Good	88%	201	9	0.99361	0.49082	15907.16
70	Angul	Dhenkanal	Kamakshya Nagar	Kirtanpur Section	2 <sup>nd</sup> Year Mant. ANR Plantation @ 400 plants/ha	2021-22	267.23	Good	81%	140	4	2.18229	0.16090	56362.06
71	Angul	Dhenkanal	Kamakshya Nagar	Kankadahadi	ANR Vanya Silk Plantation @ 500 Plants/ha	2022-23	42	Good	86%	175	8	0.66473	0.64141	17935.32
72	Angul	Dhenkanal	Kamakshya Nagar	Rangamatia	ANR Fodder and Fruits Species @ 500 plants/ha	2022-23	70	Good	93%	159	8	2.07469	0.12244	83428.99
73	Angul	Dhenkanal	Kapilash	Chatighar	AR Plantation @ 1600 plants/ha	2022-23	10	Good	93%	133	14	2.15097	0.19285	92972.42
74	Angul	Dhenkanal	Kamakshya Nagar	Muktapasi	4 <sup>th</sup> Year ANR Plantation @ 400 plants/ha	2019-20	482	Good	84%	293	19	1.51240	0.53636	4657347.41
75	Angul	Athagarh	Khuntuni	Adala RF	AR Bald Hill Plantation @ 1600 plants/ha	2022-23	10	Very Good	97%	186	7	1.76281	0.12051	31938.84
76	Angul	Athagarh	Khuntuni	Ranibania RF	ANR Plantation with Gap @ 200 plants/ha	2022-23	40	Very Good	87%	185	8	0.84490	0.49469	18618.79
77	Angul	Athagarh	Khuntuni	Ranibania RF	4 <sup>th</sup> Year ANR Plantation @ 200 plants/ha	2019-20	50	Very Good	95%	204	7	2.10665	0.17082	23555.31
78	Angul	Athagarh	Athagarh	Sorisapal	3 <sup>rd</sup> Year ANR Plantation @ 200 plants/ha	2020-21	50	Very Good	88%	267	10	2.18043	0.34169	77499.74
79	Angul	Athagarh	Athagarh	Khalakhaka RF	AR Plantation @ 1600 plants/ha	2022-23	10	Very Good	92%	234	9	1.82833	0.17538	111206.51
80	Angul	Athagarh	Narsinghpur Easst	Olav RF	3 <sup>rd</sup> Year ANR Plantation @ 200 plants/ha	2020-21	50	Very Good	92%	228	8	1.96307	0.20433	35435.31
81	Angul	Mahanadi WL			Nil									
82	Angul	Satkosia WL			Nil									
1	Bhawanipatna	Sunabeda WL	Sunabeda	Aackmistic	ANR Plantation with Gap @ 200 plants/ha	2022-23	45	Very Good	92%	158	8	1.91544	0.15405	18121.97
2	Bhawanipatna	Sunabeda WL	Komna	Jamagaon	ANR Other Indigenous Misc species @ 200 plants/ha	2022-23	25	Very Good	94%	151	7	1.51240	0.53636	183926.98

Sample Site wise Survival %, Health of the Plant, Diversity index & Carbon Analysis												Diversity		Total CO <sub>2</sub> Weight (kg)
Sl. No.	Circle	Division	Range	Site visited	Model of plantation activity (Creation / Maintenance)	Year of creation	Area Treated / covered (ha.)	Status of work at the time of field visit	Survivable Percentage	Average Height of plants (cm)	Average Color Girth (cm)	Diversity index (H')	Concentration of dominance (Cd)	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
3	Bhawanipatna	Sunabeda WL	Komna	Gadgada	ANR Plantation with Gap @ 200 plants/ha	2022-23	30	Very Good	90%	149	9	2.09097	0.19285	13730.04
4	Bhawanipatna	Sunabeda WL	Komna	Dabri	2 <sup>nd</sup> Year Bamboo Plantation @ 400 plant / ha	2021-22	15	Very Good	96%	190	10	0.00000	1.00000	26123.53
5	Bhawanipatna	Sunabeda WL	Komna	Patidanger	ANR Plantation with Gap @ 200 plants/ha	2022-23	50	Very Good	96%	156	7	1.76281	0.12051	16262.23
6	Bhawanipatna	Sunabeda WL	Nuapada	Chandan Pur	ANR Other Indigenous Misc species @ 200 plants	2022-23	35	Very Good	93%	162	9	1.91457	0.18418	19359.13
7	Bhawanipatna	Sunabeda WL	Nuapada	Patora, Fruitland	ANR Fodder and Fruits Species @ 500 plants/ha	2022-23	3	Very Good	94%	144	6	1.83275	0.22412	1367.45
8	Bhawanipatna	Sunabeda WL	Nuapada	Chandra	3 <sup>rd</sup> Year ANR Plantation @ 200 plants/ha	2020-21	50	Very Good	94%	154	8	1.75110	0.05731	22774.74
9	Bhawanipatna	Sunabeda WL	Nuapada	Debta Dongri	2 <sup>nd</sup> Year Bamboo Plantation @400 plants/ha	2021-22	15	Very Good	91%	177	8	0.00000	1.00000	12629.92
10	Bhawanipatna	Sunabeda WL	Nuapada	Borebhadi	ANR Medicinal Plantation @ 200 plants/ha	2022-23	10	Very Good	94%	148	6	1.52789	0.23478	21674.13
11	Bhawanipatna	Bolangir	Balangir- II	Ghudkapala & Bhim Dunguri (RF) Atgaon	AR Bald Hill Plantation @ 1600 plants/ha	2022-23	20	Good	93%	184	13	2.18456	0.11828	182122.88
12	Bhawanipatna	Bolangir	Muribahal	Muribahal	AR High Value Species @ 1600 plants/ha	2022-23	20	Good	91%	227	13	2.18043	0.34169	237816.12
13	Bhawanipatna	Bolangir	Muribahal	Muribahal	ANR Other Indigenous Misc species @ 200 plants	2022-23	50	Good	93%	176	9	2.17607	0.12355	29225.00
14	Bhawanipatna	Bolangir	Balangir-I	Dhumamara, Talijahanan Kharsel(Rf)	3 <sup>rd</sup> Year ANR Plantation @ 200 plants/ha	2020-21	50	Good	93%	175	12	0.66473	0.64141	42723.45
15	Bhawanipatna	Bolangir	Titlagarh	Badmal, Badmal Bamei(Rf)	ANR Fodder and Fruits Species @ 500 plants/ha	2022-23	30	Good	80%	201	10	2.26234	0.21959	58734.38
16	Bhawanipatna	Bolangir	Titlagarh	Badmal(Section), Dharap Garh	2 <sup>nd</sup> Year ANR Plantation @ 200 plants/ha	2021-22	100	Good	90%	158	7	2.21265	0.24401	41138.60
17	Bhawanipatna	Bolangir	Muribahal	Jaintara/Hirapur	ANR Gap RET/ Medicinal plants @ 200 plants/ha	2022-23	50	Good	94%	130	10	0.84490	0.49469	102894.31
18	Bhawanipatna	Bolangir	Balangir- II	Khujen Pali Matka(Rf)	ANR Vanya Silk Plantation @ 500 Plants/ha	2022-23	50	Good	88%	205	10	2.18229	0.16090	144190.38
19	Bhawanipatna	Bolangir	Saintala	Chhanchhada(Seet) Dabjori (Beat)	ANR Other Indigenous Misc species @ 200 plants	2022-23	150	Good	79%	196	11	1.67151	0.22425	219598.08
20	Bhawanipatna	Bolangir	Saintala	Chhanchhada(Seet), Jhiananpali, Raramlala	2 <sup>nd</sup> Year Medicinal Plantation @ 200 plants/ha	2021-22	25	Good	93%	238	12	1.82833	0.17538	133470.53
21	Bhawanipatna	Bolangir	Saintala	Suliamal, Sulia RF	3 <sup>rd</sup> Year ANR Plantation @ 400 plants/ha	2020-21	343	Good	90%	175	8	1.24854	0.34028	39481.50
22	Bhawanipatna	Bolangir	Deogaom	Kanakpur	2 <sup>nd</sup> Year ANR Plantation @ 200 plants/ha	2021-22	50	Good	84%	296	14	1.76281	0.12051	99406.12
23	Bhawanipatna	Bolangir	Lathor	Bagdor	ANR Plantation with Gap @ 200 plants/ha	2022-23	50	Good	81%	183	8	2.18841	0.38441	18702.87
24	Bhawanipatna	Bolangir	Patnagarh	Goelmara	ANR Plantation with Gap @ 200 plants/ha	2022-23	50	Good	89%	141	8	2.04472	0.41511	16480.25
25	Bhawanipatna	Bolangir	Patnagarh	Kiribanji RF	4 <sup>th</sup> Year ANR Plantation @ 200 plants/ha	2019-20	50	Good	92%	328	16	2.23603	0.16478	232661.89

Sample Site wise Survival %, Health of the Plant, Diversity index & Carbon Analysis												Diversity		Total CO <sub>2</sub> Weight (kg)
Sl. No.	Circle	Division	Range	Site visited	Model of plantation activity (Creation / Maintenance)	Year of creation	Area Treated / covered (ha.)	Status of work at the time of field visit	Survivable Percentage	Average Height of plants (cm)	Average Color Girth (cm)	Diversity index (H')	Concentration of dominance (Cd)	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
26	Bhawanipatna	Bolangir	Patnagarh	Mundamahul	4 <sup>th</sup> Year AR Plantation @1600 plants/ha	2019-20	10	Good	94%	268	13	2.15012	0.19285	222909.56
27	Bhawanipatna	Bolangir	Harisalgargh	Bartia	2 <sup>nd</sup> Year ANR Plantation @ 200 plants/ha	2021-22	50	Good	92%	155	6	2.04229	0.16090	13912.74
28	Bhawanipatna	Bolangir	lathor	Masiha	3 <sup>rd</sup> Year ANR Plantation @ 200 plants/ha	2020-21	25	Good	95%	233	8	1.10870	0.53024	12436.66
29	Bhawanipatna	Bolangir	Loisingha	Bagdia	3 <sup>rd</sup> Year ANR Plantation @ 200 plants/ha	2020-21	235	Good	90%	263	11	2.09683	0.06933	718520.98
30	Bhawanipatna	Bolangir	Loisingha	Uchhabapali	ANR Plantation with Gap @ 200 plants/ha	2022-23	50	Good	84%	132	8	2.14097	0.19285	15730.09
31	Bhawanipatna	Bolangir	Loisingha	Thakurapali	AR Plantation @ 1600 plants/ha	2022-23	10	Good	91%	125	6	1.91544	0.15405	16378.28
32	Bhawanipatna	Bolangir	Deogaon	Ratanpur	3 <sup>rd</sup> Year ANR Plantation @ 200 plants/ha	2020-21	8.54	Good	79%	307	12	2.08230	0.12460	12373.62
33	Bhawanipatna	Bolangir	Deogaon	kanakpur	ANR Plantation with Gap @ 200 plants/ha	2022-23	50	Good	80%	183	9	1.80299	0.07181	25084.93
34	Bhawanipatna	Bolangir	Deogaon	Gondgoth	2 <sup>nd</sup> Year AR Plantation @1600 plants/ha	2021-22	10	Good	94%	353	15	1.13972	0.03699	260889.55
35	Bhawanipatna	Bolangir	Harisalgargh	Turla	ANR Plantation with Gap @ 200 plants/ha	2022-23	50	Good	88%	117	6	1.32977	0.25408	7381.31
36	Bhawanipatna	Bolangir	Harisalgargh	Chandili RF	2 <sup>nd</sup> Year ANR Plantation @ 200 plants/ha	2021-22	50	Good	84%	190	7	1.55924	0.07611	19918.70
37	Bhawanipatna	Bolangir	lathor	Birder- 1	4 <sup>th</sup> Year ANR Plantation @ 200 plants/ha	2018-19	50	Average	81%	353	23	0.89988	0.52310	382476.36
38	Bhawanipatna	Bolangir	lathor	Bharuamunda	2 <sup>nd</sup> Year ANR Plantation @ 200 plants/ha	2021-22	50	Good	88%	110	6	1.76582	0.22671	8728.62
39	Bhawanipatna	Bolangir	Harisalgargh	Pingalmunda	3 <sup>rd</sup> Year ANR Plantation @ 200 Plants/ha	2020-21	100	Good	87%	143	15	2.07448	0.13347	82319.79
40	Bhawanipatna	Khariar	Komna	Bisibaha	AR Plantation @ 1600 plants/ha	2022-23	5	Very Good	89%	100	6	1.82833	0.17538	3407.73
41	Bhawanipatna	Khariar	Komna	Deodhara	ANR Plantation with Gap @ 200 plants/ha	2022-23	50	Very Good	91%	148	7	0.00000	1.00000	11602.02
42	Bhawanipatna	Khariar	Komna	Dhernadhara	ANR Plantation with Gap @ 200 plants/ha	2022-23	50	Very Good	85%	128	7	1.76281	0.12051	11987.65
43	Bhawanipatna	Khariar	Komna	Jagrachu	ANR Plantation with Gap @ 200 plants/ha	2022-23	20	Very Good	86%	163	8	0.00000	1.00000	19959.67
44	Bhawanipatna	Khariar	Komna	Pertarpada	3 <sup>rd</sup> Year ANR Plantation @ 200 plants/ha	2020-21	70	Very Good	91%	196	14	1.82833	0.17538	81788.04
45	Bhawanipatna	Khariar	Khariar	Bamasilu, Chandopada	ANR Vanya Silk Plantation @ 500 plants/ha	2022-23	20	Good	95%	177	10	0.59976	0.59044	32077.01
46	Bhawanipatna	Khariar	Nuapada	Silihari Bahara	AR Plantation @ 1600 plants/ha	2022-23	5	Very Good	89%	145	7	2.07448	0.13347	12414.47
47	Bhawanipatna	Khariar	Nuapada	Jhalbahal	2 <sup>nd</sup> Year AR Plantation @1600 plants/ha	2021-22	90	Very Good	95%	140	6	1.75408	0.17886	18750.99
48	Bhawanipatna	Khariar	Khariar	Bansumi	ANR Fodder and Fruits Species @ 500 plants/ha	2022-23	50	Good	89%	130	8	1.91544	0.15405	15598.08
49	Bhawanipatna	Khariar	Khariar	Pandrapthar	2 <sup>nd</sup> Year AR Plantation @1600 plants/ha	2021-22	10	Good	95%	155	11	1.81315	0.05765	57238.78
50	Bhawanipatna	Khariar	Khariar	Budharesa PRF, Kanimunda	3 <sup>rd</sup> Year ANR Plantation @ 200 plants/ha	2020-21	40	Good	93%	160	9	1.54094	0.30070	17408.11
51	Bhawanipatna	Khariar	Khariar	Mantritirai	ANR Plantation with Gap @ 200 plants/ha	2022-23	100	Good	87%	192	8	2.29614	0.15847	47950.84

Sample Site wise Survival %, Health of the Plant, Diversity index & Carbon Analysis												Diversity		Total CO <sub>2</sub> Weight (kg)
Sl. No.	Circle	Division	Range	Site visited	Model of plantation activity (Creation / Maintenance)	Year of creation	Area Treated / covered (ha.)	Status of work at the time of field visit	Survivable Percentage	Average Height of plants (cm)	Average Colar Girth (cm)	Diversity index (H')	Concentration of dominance (Cd)	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
52	Bhawanipatna	Khariar	Khariar	Dharam Sagar PRF	2 <sup>nd</sup> Year ANR Plantation @ 200 plants/ha	2021-22	50	Good	88%	171	7	2.18043	0.34169	17407.81
53	Bhawanipatna	Khariar	Khariar	Boivbhadi, Khariar Road	2 <sup>nd</sup> Year AR Plantation @1600 plants/ha	2021-22	10	Good	90%	160	7	2.07448	0.13347	22605.28
54	Bhawanipatna	Khariar	Khariar	Dudkajhala	2 <sup>nd</sup> Year AR Plantation @1600 plants/ha	2021-22	15	Good	92%	177	8	2.09020	0.12333	45682.15
55	Bhawanipatna	Khariar	Komna	Jharkripada	2 <sup>nd</sup> Year Bamboo Plantation @ 400 plants/ha	2021-22	10	Good	89%	217	11	0.00000	1.00000	17980.74
56	Bhawanipatna	Subamapur	Birka	Anandapur	3 <sup>rd</sup> Year AR Plantation @1600 plants/ha	2020-21	25	Good	96%	167	6	1.48718	0.32716	62042.17
57	Bhawanipatna	Subamapur	Birka	Kaudiamunda	3 <sup>rd</sup> Year AR Plantation @1600 plants/ha	2020-21	30	Good	90%	170	7	2.06947	0.15677	71145.75
58	Bhawanipatna	Subamapur	Mahabirapur	Sangrampur	AR Plantation @ 1600 plants/ha	2022-23	15	Good	86%	134	6	2.04472	0.41511	21314.64
59	Bhawanipatna	Subamapur	Binka	Kaudiamunda	AR Block plantation @ 1600 plants/ha	2022-23	10	Average	84%	160	5	0.00000	1.00000	12535.26
60	Bhawanipatna	Subamapur	Subamapur	Bahirkhaman Rf	2 <sup>nd</sup> Year AR Plantation @1600 plants/ha	2021-22	40	Good	84%	153	9	2.26280	0.29890	82022.15
61	Bhawanipatna	Subamapur	Birka	Saudi	AR Plantation @ 1600 plants/ha	2022-23	20	Good	84%	134	6	1.83275	0.22412	32088.96
62	Bhawanipatna	Subamapur	Subamapur	Duonentchah	3 <sup>rd</sup> Year Conservation of RET Species (without Gap)	2020-21	60	Good	98%	1683	103	0.00000	1.00000	
63	Bhawanipatna	Subamapur	Birka	Bahubasa	4 <sup>th</sup> Year ANR Plantation @ 200 plants/ha	2019-20	50	Poor	79%	179	9	2.23461	0.18204	59194.15
64	Bhawanipatna	Subamapur	Subamapur	Charbhata	3 <sup>rd</sup> year AR Baldhill Plantation @1600 plants/ha	2020-21	15	Good	96%	320	14	2.03012	0.19285	283395.44
65	Bhawanipatna	Subamapur	B.M Pur	Pitamahal	3 <sup>rd</sup> year ANR Plantation @ 400 plants/ha	2020-21	50	Good	94%	167	7	2.09744	0.12521	60016.00
66	Bhawanipatna	Subamapur	Ullunda	C.A Baghapali	3 <sup>rd</sup> year AR Plantation @1600 plants/ha	2020-21	25	Good	76%	170	7	2.18320	0.21675	48435.57
67	Bhawanipatna	Subamapur	Vluada	Kutmeada	ANR Plantation with Gap @ 200 plants/ha	2022-23	50	Good	84%	143	7	1.91544	0.15405	13325.73
68	Bhawanipatna	Subamapur	Ullunda	Padhanpali	AR plantation @1000 plant /ha	2022-23	10	Good	89%	134	6	2.07448	0.13347	16020.03
69	Bhawanipatna	Subamapur	Ullunda	Khyamchay Baldhill	2 <sup>nd</sup> year AR Plantation @ 200 plants/ha	2021-22	15	Good	82%	242	12	2.04472	0.41511	178977.04
70	Bhawanipatna	Subamapur	Binka	Naktamunda	3 <sup>rd</sup> year AR Plantation @1600 plants/ha	2020-21	80	Good	76%	261	14	1.67151	0.22425	137546.14
71	Bhawanipatna	Subamapur	Ullunda	Bishnupur	ANR Plantation with Gap @ 200 plants/ha	2022-23	100	Good	88%	165	7	1.82833	0.17538	25615.13
72	Bhawanipatna	Kalahandi South	Junagarh	Golamunda, Supel	ANR Other Indigenous Misc species @200 plants	2022-23	100	Good	92%	213	10	2.21592	0.39968	87219.66
73	Bhawanipatna	Kalahandi South	Dharamagarh	Kelia	AR Other Indigenous Species @1600 plants/ha	2022-23	20	Good	92%	192	9	2.12237	0.28486	107615.86
74	Bhawanipatna	Kalahandi South	Th. Rampur	Derguda	AR Bald Hill Plantation @ 1600 plants/ha	2022-23	20	Good	83%	207	10	2.12746	0.16487	141620.67
75	Bhawanipatna	Kalahandi South	Th. Rampur	Mohangiri PRF	ANR Other Indigenous Misc species @200 plants/ha	2022-23	150	Average	86%	154	11	2.10665	0.17082	10096.71
76	Bhawanipatna	Kalahandi	Jaipatna	Bhalujor	AR Bald Hill Plantation @ 1600 plants/ha	2022-23	10	Average	93%	153	11	1.91544	0.15405	60828.55

Sample Site wise Survival %, Health of the Plant, Diversity index & Carbon Analysis												Diversity		Total CO <sub>2</sub> Weight (kg)
Sl. No.	Circle	Division	Range	Site visited	Model of plantation activity (Creation / Maintenance)	Year of creation	Area Treated / covered (ha.)	Status of work at the time of field visit	Survivable Percentage	Average Height of plants (cm)	Average Color Girth (cm)	Diversity index (H')	Concentration of dominance (Cd)	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
		South												
77	Bhawanipatna	Kalahandi South	Jaipatna	Pabli	ANR Other Indigenous Misc species @ 200 plants/ha	2022-23	150	Good	86%	214	10	2.27169	0.31493	163130.58
78	Bhawanipatna	Kalahandi South	Karlapat	Sagada	ANR Other Indigenous Misc species @ 200 plants/ha	2022-23	75	Good	93%	80	6	1.76281	0.12051	9904.88
79	Bhawanipatna	Kalahandi South	Th. Rampur	Kenduguda	4 <sup>th</sup> Year ANR with Gap Plantation @ 200 plants/ha	2019-20	100	Good	76%	206	10	1.73820	0.22668	54905.22
80	Bhawanipatna	Kalahandi South	Jaipatna	Khairapada	AR Bald Hill Plantation @ 1600 plants/ha	2021-22	10	Good	89%	210	8	1.89046	0.36828	44484.95
81	Bhawanipatna	Kalahandi South	Junagarh	Jharbandh	ANR Other Indigenous Misc species @200 plants/ha	2022-23	50	Average	93%	265	10	1.75408	0.17886	187426.02
82	Bhawanipatna	Kalahandi South	Dharamagarh	Behera, Ghantiguda	ANR Other Indigenous Misc species @200 plants/ha	2022-23	50	Good	81%	125	7	2.18229	0.16090	10163.83
83	Bhawanipatna	Kalahandi South	Junagarh	Panigaon, Jharbandh	ANR Other Indigenous Misc species @200 plants/ha	2022-23	100	Average	91%	128	7	0.72124	0.01200	21983.60
84	Bhawanipatna	Kalahandi South	Biswanathpur	Sikerkupa	3 <sup>rd</sup> Year ANR with Gap Plantation @ 200 plants/ha	2020-21	110	Good	89%	249	12	1.82833	0.17538	135658.41
85	Bhawanipatna	Kalahandi South	Biswanathpur	Sikerkupa Sargiguda	3 <sup>rd</sup> Year Conservation of RET Species (W/O Gap)	2020-21	5	Average						
86	Bhawanipatna	Kalahandi South	Biswanathpur	Muskuti	AR Bald Hill Plantation @ 1600 plants/ha	2022-23	26.2	Good	91%	188	8	2.06947	0.15677	115137.70
87	Bhawanipatna	Kalahandi South	Th. Rampur	Kandulguda VF	4 <sup>th</sup> Year Bald Hill Plantation @ 1600 plants/ha	2019-20	46.4	Good	87%	331	17	1.54094	0.30070	1297105.73
88	Bhawanipatna	Kalahandi North	Kesinga	Tulang Padar	ANR Plantation with Gap @ 200 plants/ha	2022-23	50	Good	72%	138	8	2.14549	0.36828	19147.04
89	Bhawanipatna	Kalahandi North	Bhawanipatna	Dalguma Alma RF	ANR Plantation with Gap @ 200 plants/ha	2022-23	50	Good	91%	163	14	2.28686	0.21959	61117.18
90	Bhawanipatna	Kalahandi North	Bhawanipatna	Gunang	2 <sup>nd</sup> Year ANR Plantation @ 200 plants/ha	2021-22	50	Good	83%	278	13	1.91544	0.15405	122081.42
91	Bhawanipatna	Kalahandi North	M. Rampur	Telisarabahali	ANR Plantation with Gap @ 200 plants/ha	2022-23	50	Good	91%	162	14	1.76281	0.12051	58454.98
92	Bhawanipatna	Kalahandi North	Narla	Harlanga Urladari	ANR Plantation with Gap @ 200 plants/ha	2022-23	50	Good	94%	159	16	1.32977	0.25408	74553.79
93	Bhawanipatna	Kalahandi North	M. Rampur	Garjipadar	ANR Plantation with Gap @ 200 plants/ha	2022-23	50	Good	88%	168	15	2.18229	0.16090	63159.51
94	Bhawanipatna	Kalahandi North	Bhawanipatna	Palsijhaun Brahmini RF	ANR Plantation with Gap @ 200 plants/ha	2022-23	50	Good	89%	192	11	1.47566	0.53636	77812.23
95	Bhawanipatna	Kalahandi North	Narla	Kamarda	ANR Plantation with Gap @ 200 plants/ha	2022-23	100	Good	91%	138	7	1.76582	0.22671	17879.38

Sample Site wise Survival %, Health of the Plant, Diversity index & Carbon Analysis												Diversity		Total CO <sub>2</sub> Weight (kg)
Sl. No.	Circle	Division	Range	Site visited	Model of plantation activity (Creation / Maintenance)	Year of creation	Area Treated / covered (ha.)	Status of work at the time of field visit	Survivable Percentage	Average Height of plants (cm)	Average Colar Girth (cm)	Diversity index (H')	Concentration of dominance (Cd)	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
96	Bhawanipatna	Kalahandi North	Narla	Samarkata	ANR Plantation with Gap @ 200 plants/ha	2022-23	100	Good	88%	174	14	2.24721	0.21959	112210.91
97	Bhawanipatna	Kalahandi North	Bhawanipatna	Batua	2 <sup>nd</sup> Year ANR Plantation @ 200 plants/ha	2021-22	50	Good	77%	190	10	2.24536	0.16487	33394.07
98	Bhawanipatna	Kalahandi North	Bhawanipatna	Tiknapada	AR Bald Hill Plantation @ 1600 plants/ha	2022-23	5	Good	89%	224	9	2.15012	0.19285	25106.11
99	Bhawanipatna	Kalahandi North	Bhawanipatna	Kapsara	2 <sup>nd</sup> Year ANR Plantation @ 200 plants/ha	2021-22	50	Good	94%	161	8	1.81315	0.05765	38094.09
100	Bhawanipatna	Kalahandi North	Kesinga	Podkham	2 <sup>nd</sup> Year ANR Plantation @ 200 plants/ha	2021-22	50	Good	86%	144	8	1.96307	0.20433	27504.12
101	Bhawanipatna	Kalahandi North	Kegaon	Barjipadar	ANR Plantation with Gap @ 200 plants/ha	2022-23	50	Good	96%	117	8	1.83275	0.22412	16456.17
102	Bhawanipatna	Kalahandi North	Bhawanipatna	Bhatangpadar Pajipatna	AR Bald Hill Plantation @ 1600 plants/ha	2022-23	10	Good	89%	115	7	1.76281	0.12051	19595.17
103	Bhawanipatna	Kalahandi North	Kesinga	Tulang Padar	ANR Plantation with Gap @ 200 plants/ha	2022-23	50	Good	76%	108	7	2.06947	0.15677	7453.75
1	Koraput	Rayagada	Muniguda	Sanabudahada	2 <sup>nd</sup> Year Maint. of Bald Hill Plantation @1600 plants/ha (CA)	2021-22	17.38	Very Good	88%	378	17	2.18229	0.16090	834966.39
2	Koraput	Rayagada	Tikiri	Thutibar	Avenue (Tall Tree) Plantation @250 plants/Rkm.	2022-23	0.6	Good	91%	125	9	1.82833	0.17538	1351.68
3	Koraput	Rayagada	Muniguda	Jamraguda	2 <sup>nd</sup> Year Maint. of ANR Plantation @400 plants/ha (CA)	2021-22	8.51	Very Good	90%	159	11	1.67151	0.22425	10751.67
4	Koraput	Rayagada	Kashipur	Bandhamandi	3 <sup>rd</sup> Year Maint. of AR Plantation @1600 plants/ha (PCA)	2020-21	16.39	Very Good	75%	434	15	2.27097	0.19285	407814.80
5	Koraput	Rayagada	Rayagada	Chuchukona	4 <sup>th</sup> Year Maint. of AR Block Plantation @1600 plants/ha (PCA)	2019-20	50	Good	72%	278	12	2.06947	0.15677	531741.96
6	Koraput	Rayagada	Kashipur	Jadaamba Patch-II	4 <sup>th</sup> Year Maint. of Bald Hill Plantation @1600 plants/ha (CA)	2019-20	42	Very Good	74%	458	15	1.91457	0.18418	1092913.08
7	Koraput	Rayagada	Tikiri	Kodinga	4 <sup>th</sup> Year Maint. of ANR Plantation @ 800 plants/ha (CA)	2019-20	235	Good	71%	415	15	2.20136	0.16487	2370687.66
8	Koraput	Rayagada	Rayagada	Sanapodia	AR Bald Hill Plantation @ 1600 plants/ha	2022-23	20	Excellent	95%	486	19	1.95999	0.16075	1530270.12
9	Koraput	Rayagada	Tikiri	Thutibar	AR Bald Hill Plantation @ 1600 plants/ha	2022-23	15	Good	97%	145	10	2.09445	0.21959	67938.56
10	Koraput	Rayagada	Tikiri	Perps-AR	AR plantation @1000 plant /ha	2022-23	15	Very Good	89%	133	10	1.81315	0.05765	37976.56
11	Koraput	Rayagada	Gunupur	Dalama	AR Fodder and Fruit Plantation @ 1600 plants/ha	2022-23	10	Good	79%	137	11	2.18043	0.34169	43124.57
12	Koraput	Rayagada	Gudari	Merenda PRF	ANR Fodder and Fruits Species @500	2022-23	10	Very Good	85%	228	10	2.07448	0.13347	24460.92

Sample Site wise Survival %, Health of the Plant, Diversity index & Carbon Analysis												Diversity		Total CO <sub>2</sub> Weight (kg)
Sl. No.	Circle	Division	Range	Site visited	Model of plantation activity (Creation / Maintenance)	Year of creation	Area Treated / covered (ha.)	Status of work at the time of field visit	Survivable Percentage	Average Height of plants (cm)	Average Color Girth (cm)	Diversity index (H')	Concentration of dominance (Cd)	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
					plants/ha									
13	Koraput	Rayagada	Kashipur	Adarmajhi	ANR Vanya Silk Plantation @ 500 Plants/ha	2022-23	6	Excellent	93%	226	11	0.99361	0.49082	16102.03
14	Koraput	Rayagada	Muniguda	kachapai	ANR Plantation with Gap @ 200 plants/ha	2022-23	50	Very Good	88%	148	10	2.09020	0.12333	25498.29
15	Koraput	Rayagada	Rayagada	Karajhola	ANR Plantation with Gap @ 200 plants/ha	2022-23	100	Good	89%	226	10	1.83275	0.22412	87214.00
16	Koraput	Rayagada	K. Singhpur	Kottaguda	ANR Other Indigenous Misc species @200 plants/ha	2022-23	100	Good	93%	267	11	1.76281	0.12051	110578.31
17	Koraput	Rayagada	Gunupur	Durukupa	2 <sup>nd</sup> Year Maint. of ANR Plantation @ 200 plants/ha	2021-22	100	Good	75%	170	10	2.18229	0.16090	50609.38
18	Koraput	Rayagada	Gudari	Sriramraju	2 <sup>nd</sup> Year Maint. of ANR Plantation @ 200 plants/ha	2021-22	100	Good	78%	218	11	1.83275	0.22412	92235.45
19	Koraput	Rayagada	Gunupur	Kujenpri	2 <sup>nd</sup> Year Maint. of ANR Plantation @ 200 plants/ha	2021-22	50	Excellent	91%	540	17	1.47566	0.53636	323435.56
20	Koraput	Rayagada	Gudari	Balipanga	2 <sup>nd</sup> Year Maint. of AR Bloch Plantation @600 plants/ha	2021-22	10	Excellent	89%	337	12	1.91457	0.18418	149684.24
21	Koraput	Rayagada	Gunupur	Durukupa	2 <sup>nd</sup> Year Maint. of AR Bald Hill Plantation	2021-22	20	Very Good	85%	238	14	1.76582	0.22671	288414.67
22	Koraput	Rayagada	K. Singhpur	Mutukuni	2 <sup>nd</sup> Year Maint. of Bald Hill Plantation @1600 plants/ha	2021-22	15	Very Good	80%	262	11	2.18229	0.16090	153342.51
23	Koraput	Rayagada	Gunupur	Sitapur	2 <sup>nd</sup> Year Maint. of Bald Hill Plantation @1600 plants/ha	2021-22	20	Good	71%	211	12	2.14574	0.28486	161038.17
24	Koraput	Rayagada	Muniguda	Bandhguda	2 <sup>nd</sup> Year Maint. of Bald Hill Plantation @1600 plants/ha	2021-22	16	Excellent	87%	242	12	1.83275	0.22412	213794.64
25	Koraput	Rayagada	Rayagada	Lellibadi	2 <sup>nd</sup> Year Maint. of RET Species (with Gap) @ 200 plants/ha.	2021-22	50	Good	81%	238	11	2.07448	0.13347	50182.92
26	Koraput	Rayagada	Tikiri	Gokulmunda	2 <sup>nd</sup> Yr. Maint. without Gap (Conservation of RET Species)	2021-22	10	Good						
27	Koraput	Rayagada	Rayagada	Badakosupadu, Kosupadu PRF	3 <sup>rd</sup> Year Maint. of ANR Plantation @ 200 plants/ha	2020-21	50	Good	79%	212	12	1.82833	0.17538	54167.60
28	Koraput	Rayagada	Kashipur	Basangamali	3 <sup>rd</sup> Year Maint. of ANR Plantation @ 200 plants/ha	2020-21	200	Very Good	84%	364	15	1.81315	0.05765	574362.82
29	Koraput	Rayagada	Tikiri	Balkapai	3 <sup>rd</sup> Year Maint. of ANR Plantation @ 200 plants/ha	2020-21	100	Very Good	78%	296	14	2.18229	0.16090	200848.90
30	Koraput	Rayagada	Gudari	Milikapanga	3 <sup>rd</sup> Year Maint. of AR Bloch Plantation @ 600 plants/ha	2020-21	5.0	Very Good	91%	330	11	1.75408	0.17886	56616.51
31	Koraput	Rayagada	Muniguda	Khuntabadi	3 <sup>rd</sup> Year Maint. of RET Species (with Gap) @ 200 plants/ha.	2020-21	10	Very Good	84%	133	10	1.95999	0.16075	5396.45
32	Koraput	Rayagada	Tikiri	Sargiguda	3 <sup>rd</sup> Year Maint. of Bald Hill Plantation @1600 Plants/ha	2020-21	30	Excellent	84%	299	14	2.04472	0.41511	536724.09

Sample Site wise Survival %, Health of the Plant, Diversity index & Carbon Analysis												Diversity		Total CO <sub>2</sub> Weight (kg)
Sl. No.	Circle	Division	Range	Site visited	Model of plantation activity (Creation / Maintenance)	Year of creation	Area Treated / covered (ha.)	Status of work at the time of field visit	Survivable Percentage	Average Height of plants (cm)	Average Colar Girth (cm)	Diversity index (H')	Concentration of dominance (Cd)	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
33	Koraput	Rayagada	Muniguda	Durukona	4 <sup>th</sup> Year Maint. of ANR Plantation @ 200 plants/ha	2019-20	50	Good	73%	412	13	2.10665	0.17082	282976.32
34	Koraput	Rayagada	Muniguda	Durukona	4 <sup>th</sup> Year Maint. of ANR Plantation @ 200 plants/ha	2019-20	50	Good	74%	400	18	1.54094	0.30070	476085.22
35	Koraput	Rayagada	Muniguda	Majhijuda	2 <sup>nd</sup> Year Maint. of ANR Plantation @ 200 plants/ha (AJY)	2020-21	50	Very Good	85%	268	11	1.48421	0.28701	59406.70
36	Koraput	Rayagada	Gunupur	Badachampa	2 <sup>nd</sup> Year Maint. of ANR Plantation @ 200 plants/ha (AJY)	2021-22	25	Good	79%	238	10	0.99361	0.49082	27757.83
37	Koraput	Rayagada	Gunupur	Sampini ANR with gap	2 <sup>nd</sup> Year Maint. of ANR Plantation @ 200 plants/ha (AJY)	2021-22	50	Good	71%	283	12	1.82833	0.17538	63911.56
38	Koraput	Rayagada	Muniguda	Biripada	2 <sup>nd</sup> Year Maint. of ANR Plantation @ 200 plants/ha (AJY)	2021-22	50	Very Good	84%	269	11	1.67151	0.22425	52388.10
39	Koraput	Rayagada	Gunupur	Kebidi AJY	2 <sup>nd</sup> Year Maint. of ANR Plantation @ 200 plants/ha	2021-22	25	Very Good	86%	273	10	1.24854	0.34028	26388.21
40	Koraput	Rayagada	Tikiri	Karnipai(AJY), Sankarada Section	2 <sup>nd</sup> Year Maint. of ANR Plantation @ 200 plants/ha	2021-22	50	Good	78%	311	11	1.48421	0.28701	63059.64
41	Koraput	Rayagada	Gunupur	Karubai Kandajam RF	3 <sup>rd</sup> Year Maint. ANR @ 200 plants/ha (Without Gap)	2020-21	25	Good						
42	Koraput	Rayagada	Muniguda	Panimunda	3 <sup>rd</sup> Year Maint. of ANR @ 200 plants/ha (Without Gap)	2020-21	50	Good						
43	Koraput	Malkangiri	Balimela	Nilapari	ANR Plantation with Gap @ 200 plants/ha	2022-23	40	Good	93%	289	16	1.82833	0.17538	140759.65
44	Koraput	Malkangiri	Matheili	Gabinda Pally	2 <sup>nd</sup> Year Maint. of ANR Plantation @ 200 plants/ha	2021-22	35	Good	92%	218	13	0.72124	0.01200	52569.36
45	Koraput	Malkangiri	Chittrakunda	Champajhol Rekhapali	2 <sup>nd</sup> Year Maint. of ANR Plantation @ 200 plants/ha	2021-22	50	Good	93%	129	15	1.54094	0.30070	60706.03
46	Koraput	Malkangiri	Motu	Motu RF	2 <sup>nd</sup> Year Maint. of Miyawaki Plantation	2021-22	1	Very Good	99%	454	16	2.18229	0.16090	294329.16
47	Koraput	Malkangiri	Kalimela	Idikonda	RET ANR Plantation @ 200 Plants/ha	2022-23	10	Very Good	96%	162	5	2.04472	0.41511	2311.20
48	Koraput	Malkangiri	Balimela	Alelchaguda	2 <sup>nd</sup> Year Maint. of ANR Plantation @ 200 plants/ha	2021-22	30	Good	92%	253	13	1.95999	0.16075	49950.61
49	Koraput	Malkangiri	Chittrakunda	Rajukonda	4 <sup>th</sup> Year Maint. of AR Plantation @1600 plants/ha	2019-20	10	Good	94%	244	10	1.75408	0.17886	134716.01
50	Koraput	Malkangiri	Chittrakunda	Lambasingh	2 <sup>nd</sup> Year Maint. of ANR Plantation @ 200 plants/ha	2021-22	50	Good	94%	273	11	1.76281	0.12051	82516.26
51	Koraput	Malkangiri	Handpa	Handpa R.F Camp 01 Ichhapur Beat	2 <sup>nd</sup> Year Maint. of AR Block Plantation @1600 plants/ha	2021-22	20	Average	91%	210	10	2.18229	0.16090	135298.86
52	Koraput	Malkangiri	Chittrakunda	Bardabandha	2 <sup>nd</sup> Year Maint. of AR Plantation @1600 plants/ha	2021-22	10	Good	93%	248	11	2.18043	0.34169	157704.68



Sample Site wise Survival %, Health of the Plant, Diversity index & Carbon Analysis												Diversity		Total CO <sub>2</sub> Weight (kg)
Sl. No.	Circle	Division	Range	Site visited	Model of plantation activity (Creation / Maintenance)	Year of creation	Area Treated / covered (ha.)	Status of work at the time of field visit	Survivable Percentage	Average Height of plants (cm)	Average Color Girth (cm)	Diversity index (H')	Concentration of dominance (Cd)	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
53	Koraput	Malkangiri	Chitrakunda	Hataguda	AR plantation @1000 plant /ha	2022-23	5	Good	88%	244	11	1.82833	0.17538	35094.57
54	Koraput	Malkangiri	Balimela	Nilapari	ANR Plantation with Gap @ 200 plants/ha	2022-23	40	Good	91%	218	8	1.81315	0.05765	27577.95
55	Koraput	Malkangiri	Balimela	Janiguda	ANR Plantation with Gap @ 200 plants/ha	2022-23	15	Good	91%	260	10	1.22036	0.31738	37032.42
56	Koraput	Malkangiri	Chitrakunda	Hataguda	ANR Plantation with Gap @ 200 plants/ha	2022-23	50	Good	84%	158	6	1.54094	0.30070	9655.43
57	Koraput	Malkangiri	Malkangiri	Pandripani	4 <sup>th</sup> Year Maint. of ANR Plantation @ 200 plants/ha	2019-20	30	Good	88%	317	19	1.48421	0.28701	128627.21
58	Koraput	Malkangiri	Malkangiri	MV- 17, Singhraj Khuta	4 <sup>th</sup> Year Maint. of ANR Plantation @ 200 plants/ha	2019-20	50	Good	94%	640	32	0.68941	0.50373	1284299.30
59	Koraput	Malkangiri	Malkangiri	Pandripani	2 <sup>nd</sup> Year Maint. of ANR Plantation @ 200 plants/ha	2021-22	20	Good	94%	144	5	2.17228	0.16487	3318.83
60	Koraput	Malkangiri	Matheili	Gadiahi(Prf)	ANR Plantation with Gap @ 200 plants/ha	2022-23	30	Good	94%	184	6	1.81315	0.05765	9701.62
61	Koraput	Nabarangapur	Dabagam	Semla RF, Dabagam	2 <sup>nd</sup> Year Maint. of AR Plantation @1600 Plants/ha	2021-22	50	Good	98%	465	15	0.84490	0.49469	215554.61
62	Koraput	Nabarangapur	Dabagam	Haldia, Bijapur RF	4 <sup>th</sup> Year Maint. of ANR Plantation @ 200 plants/ha	2019-20	50	Good	93%	181	10	1.91457	0.18418	31802.05
63	Koraput	Nabarangapur	Dabagam	Barli RF, Dabagam	AR plantation @1000 plant /ha	2022-23	10	Average	89%	194	6	1.75408	0.17886	18206.90
64	Koraput	Nabarangapur	Raighar	Hatigram RF	ANR Plantation with Gap @ 200 plants/ha	2022-23	15	Poor	88%	198	6	1.05223	0.43029	4265.13
65	Koraput	Nabarangapur	Raighar	Nakoti Simada Hatigam RF	2 <sup>nd</sup> Year Maint. of ANR Plantation @ 200 plants/ha	2021-22	10	Average	91%	197	11	1.54094	0.30070	9667.12
66	Koraput	Nabarangapur	Raighar	Kabaka Mata Revenue Land- Ar	2 <sup>nd</sup> Year Maint. of ANR Plantation @ 200 plants/ha	2021-22	10	Average	80%	306	11	1.22036	0.31738	25708.44
67	Koraput	Nabarangapur	Umarkota	Bamboo Plant 20h Karka RF	3 <sup>rd</sup> Year Maint. of Bamboo Plantation @ 200 plants/ha	2020-21	20	Good	90%	194	6	1.61572	0.19925	17291.23
68	Koraput	Nabarangapur	Kodinga	Dongra-Rf Kodinga	4 <sup>th</sup> Year Maint. of ANR Plantation @ 200 plants/ha	2019-20	50	Good	92%	194	6	1.48421	0.28701	19647.90
69	Koraput	Nabarangapur	Kodinga	Deodongari PRF	3 <sup>rd</sup> Year Maint. of ANR Plantation @ 200 plants/ha	2020-21	70	Average	81%	230	6	0.99361	0.49082	31702.68
70	Koraput	Nabarangapur	Kodinga	Kusimi PRF	2 <sup>nd</sup> Year Maint. of AR Plantation @ 1600 Plants/ha	2021-22	10	Good	65%	432	14	2.10665	0.17082	306824.26
71	Koraput	Nabarangapur	Kodinga	Altigarm RF	ANR Plantation with Gap @ 200 plants/ha	2022-23	50	Good	76%	127	4	1.32977	0.25408	3946.08
72	Koraput	Nabarangapur	Kodinga	Kusimi PRF	ANR Plantation with Gap @ 200 plants/ha	2022-23	80	Average	86%	132	5	1.75408	0.17886	9718.05
73	Koraput	Nabarangapur	Umarkota	RET Plant Chatkabar RF	ANR Plantation with Gap @ 200 plants/ha	2022-23	10	Good	71%	133	5	2.07448	0.13347	930.89
74	Koraput	Nabarangapur	Umarkota	Telnorli RF, Telnordi, Umarkot	ANR Plantation with Gap @ 200 plants/ha	2022-23	80	Good	65%	125	4	1.76221	0.22625	6023.87

Sample Site wise Survival %, Health of the Plant, Diversity index & Carbon Analysis												Diversity		Total CO <sub>2</sub> Weight (kg)
Sl. No.	Circle	Division	Range	Site visited	Model of plantation activity (Creation / Maintenance)	Year of creation	Area Treated / covered (ha.)	Status of work at the time of field visit	Survivable Percentage	Average Height of plants (cm)	Average Color Girth (cm)	Diversity index (H')	Concentration of dominance (Cd)	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
75	Koraput	Nabarangapur	Nabarangapur	Podagad RF, Badagam	3 <sup>rd</sup> Year Maint. of AR Plantation @1600 Plants/ha	2020-21	20	Good	82%	306	11	0.84490	0.49469	426815.50
76	Koraput	Nabarangapur	Jharigam	Nuaguda	3 <sup>rd</sup> Year Maint. of ANR Plantation @ 200 plants/ha	2020-21	10	Good	89%	122	4	1.61572	0.19925	740.00
77	Koraput	Nabarangapur	Jharigam	Purniguda Modna	4 <sup>th</sup> Year Maint. of ANR Plantation @ 200 plants/ha	2019-20	100	Average	88%	317	19	1.75408	0.17886	472854.52
78	Koraput	Nabarangapur	Nabarangapur	Patraguda, Nabarangapur	ANR Plantation with Gap @ 200 plants/ha	2022-23	50	Good	96%	231	8	0.72124	0.01200	3983.94
79	Koraput	Nabarangapur	Nabarangapur	Sindhiguda	ANR Plantation with Gap @ 200 plants/ha	2022-23	30	Good	94%	184	6	1.47566	0.53636	7643.25
80	Koraput	Nabarangapur	Nabarangapur	Taragam RF	2 <sup>nd</sup> Year Miyawaki Plantation	2021-22	1	Good	99%	451	16	2.18229	0.16090	275054.23
81	Koraput	Nabarangapur	Nabarangapur	Beta Jhoram	4 <sup>th</sup> Year Maint. of AR Plantation @1600 plants/ha	2019-20	20	Good	96%	317	19	0.87981	0.59401	790791.34
82	Koraput	Jeypore	Boipariguda	Dholpur	2 <sup>nd</sup> Year Maint. of ANR Plantation @ 200 plants/ha	2021-22	50	Good	84%	240	11	1.47870	0.27368	78158.34
83	Koraput	Jeypore	Boipariguda	Ganrabeda	AR Plantation @ 1600 plants/ha	2022-23	5	Good	77%	432	14	1.64633	0.10622	186601.25
84	Koraput	Jeypore	Boipariguda	Chanhadapadar	2 <sup>nd</sup> Year Maint. of ANR Plantation @ 200 plants/ha	2021-22	50	Good	93%	197	11	1.14686	0.43210	47136.93
85	Koraput	Jeypore	Boipariguda	Umuriaguda	2 <sup>nd</sup> Year Maint. of Bamboo Plantation @ 400 plants/ha	2021-22	10	Good	91%	201	10	1.54094	0.30070	7555.39
86	Koraput	Jeypore	Boipariguda	Malaguda VSS	ANR Plantation with Gap @ 200 plants/ha	2022-23	50	Good	96%	220	8	1.27503	0.34585	31980.11
87	Koraput	Jeypore	Boipariguda	Jatiaguda VSS	ANR Plantation with Gap @ 200 plants/ha	2022-23	50	Average	87%	264	7	1.47013	0.27969	27234.29
88	Koraput	Jeypore	Boipariguda	Mundiguda VSS	ANR Plantation with Gap @ 200 plants/ha	2022-23	50	Good	70%	159	7	1.55408	0.10724	11063.30
89	Koraput	Jeypore	Borigumma	Benasur	AR Plantation @ 1600 plants/ha	2022-23	5.06	Good	98%	175	9	1.86823	0.16366	32774.09
90	Koraput	Jeypore	Borigumma	Mahulaguda	ANR Plantation with Gap @ 200 plants/ha	2022-23	50	Good	84%	314	15	1.75408	0.17886	122313.13
91	Koraput	Jeypore	Borigumma	sangudora	2 <sup>nd</sup> Year Maint. of AR Bald Hill @1600 plants/ha	2021-22	10	Good	80%	166	7	1.76221	0.22625	20374.57
92	Koraput	Jeypore	Kotpad	Tenghguda	2 <sup>nd</sup> Year Maint. of ANR Plantation @ 200 plants/ha	2021-22	30	Good	71%	293	11	0.66473	0.64141	29576.37
93	Koraput	Jeypore	Gupteswar	Goyekund	2 <sup>nd</sup> Year Maint. of ANR Plantation @ 200 plants/ha	2021-22	30	Good	86%	264	7	0.97296	0.42033	22651.91
94	Koraput	Jeypore	Gupteswar	Pujariguda (Dhandrakhol RF)	2 <sup>nd</sup> Year Maint. of ANR Plantation @ 400 plants/ha	2021-22	20	Good	81%	189	8	1.76281	0.12051	15071.51
95	Koraput	Jeypore	Gupteswar	Majhiguda RF	2 <sup>nd</sup> Year Maint. of ANR Plantation @ 400 plants/ha	2021-22	40	Good	96%	220	8	1.32977	0.25408	53552.15
96	Koraput	Jeypore	Gupteswar	Padeiguda	ANR Plantation with Gap @ 200 plants/ha	2022-23	50	Good	95%	173	8	1.54094	0.30070	19093.10

Sample Site wise Survival %, Health of the Plant, Diversity index & Carbon Analysis												Diversity		Total CO <sub>2</sub> Weight (kg)
Sl. No.	Circle	Division	Range	Site visited	Model of plantation activity (Creation / Maintenance)	Year of creation	Area Treated / covered (ha.)	Status of work at the time of field visit	Survivable Percentage	Average Height of plants (cm)	Average Colar Girth (cm)	Diversity index (H')	Concentration of dominance (Cd)	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
97	Koraput	Jeypore	Kundra	Kodolimunda	3 <sup>rd</sup> Year Maint. of ANR Plantation @ 200 plants/ha	2020-21	30	Good	78%	432	14	2.10665	0.17082	140180.94
98	Koraput	Jeypore	Kundra	Disariguda	ANR Plantation with Gap @ 200 plants/ha	2022-23	30	Good	89%	216	9	1.76281	0.12051	20191.25
99	Koraput	Jeypore	Jeypore	Ghatagumar	Avenue (Tall Tree) Plantation @250 plant/Rkm	2020-21	25	Good	96%	162	6	2.04472	0.41511	7617.28
100	Koraput	Jeypore	Jeypore	Mazurmunda PRF	ANR Medicinal Plantation @ 200 Plants/ha	2022-23	1.61	Good	77%	342	56	1.48421	0.28701	1067323.25
101	Koraput	Jeypore	Jeypore	Biriguda	4 <sup>th</sup> Year Maint. of AR Plantation @ 1600 plants/ha	2019-20	10	Good	97%	166	8	1.76221	0.22625	39343.11
102	Koraput	Jeypore	Kotapada	Kotapada	2 <sup>nd</sup> Year Miyawaki Plantation	2021-22	1	Good	99%	454	19	1.47566	0.53636	333273.50
103	Koraput	Jeypore	Kundra	Sindhigaon PRF	4 <sup>th</sup> Year Maint. of AR Plantation @1600 plants/ha	2019-20	10	Good	74%	246	12	1.81315	0.05765	97944.87
104	Koraput	Jeypore	Kotapada	Phukiaguda (PRF)	4 <sup>th</sup> Year Maint. of AR Plantation @1600 plants/ha	2019-20	8	Good	76%	465	16	2.06947	0.15677	260809.89
105	Koraput	Jeypore	Jeypore	Sangabadi (1)	ANR Plantation with Gap @ 200 plants/ha	2022-23	40	Good	89%	222	11	2.27880	0.21675	40805.85
106	Koraput	Jeypore	Jeypore	Sangabadi (2)	ANR Plantation with Gap @ 200 plants/ha	2022-23	60	Good	87%	268	12	1.76281	0.12051	85899.19
107	Koraput	Koraput	Laxmipur	Laxmipur Alias Nalachua R.F	3 <sup>rd</sup> Year Maint. of ANR Plantation @ 200 plants/ha	2020-21	100	Good	92%	197	11	1.24854	0.34028	94631.21
108	Koraput	Koraput	Laxmipur	Upper Kutinga	AR Bald Hill Plantation @ 1600 plants/ha	2022-23	20	Good	94%	184	9	1.55408	0.10724	111501.79
109	Koraput	Koraput	Narayan patna	Kumbhari	Avenue (Tall Tree) Plantation @250 plants/Rkm	2022-23		Good	93%	267	12	0.99361	0.49082	44421.06
110	Koraput	Koraput	Narayan patna	Gadar Guda	AR Bald Hill Plantation @ 1600 plants/ha	2022-23	10	Good	84%	240	11	1.61572	0.19925	128608.46
111	Koraput	Koraput	Narayan patna	Badsarpli	2 <sup>nd</sup> Year Maint. of AR Plantaion@ 1600 plants/ha	2021-22	50	Average	80%	306	11	0.84490	0.49469	153604.40
112	Koraput	Koraput	Narayan patna	Bijayghati	AR Bald Hill Plantation @ 1600 plants/ha	2022-23	15	Average	77%	432	14	2.10665	0.17082	606191.69
113	Koraput	Koraput	Narayan patna	Duma dangar	AR Bald Hill Plantation @ 1600 plants/ha	2022-23	20	Good	95%	199	8	1.96307	0.20433	82675.79
114	Koraput	Koraput	Narayan patna	Tala Pottesu	3 <sup>rd</sup> Year Maint. of ANR Plantation @ 200 plants/ha	2020-21	50	Average	96%	220	8	0.72124	0.01200	32060.79
115	Koraput	Koraput	Narayan patna	Almanda	ANR Plantation with Gap @ 200 plants/ha	2022-23	50	Good	88%	273	8	0.66473	0.64141	36028.32
116	Koraput	Koraput	Simeliguda	Kulab	3 <sup>rd</sup> Year Maint. of ANR Plantation @ 200 plants/ha	2020-21	50	Average	69%	310	13	0.89783	0.46907	70915.46
117	Koraput	Koraput	Simeliguda	Bilaput	ANR Plantation with Gap @ 200 plants/ha	2021-22	50	Average	88%	399	11	1.08938	0.33966	89721.37
118	Koraput	Koraput	Simeliguda	Bada Tema	3 <sup>rd</sup> Year Maint. of Bald Hill Plantaion@ 1600 plants/ha	2020-21	15	Average	76%	388	13	1.37079	0.25785	283080.00

Sample Site wise Survival %, Health of the Plant, Diversity index & Carbon Analysis												Diversity		Total CO <sub>2</sub> Weight (kg)
Sl. No.	Circle	Division	Range	Site visited	Model of plantation activity (Creation / Maintenance)	Year of creation	Area Treated / covered (ha.)	Status of work at the time of field visit	Survivable Percentage	Average Height of plants (cm)	Average Color Girth (cm)	Diversity index (H')	Concentration of dominance (Cd)	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
119	Koraput	Koraput	Simeliguda	Sunki	ANR Vanya Silk Plantation @ 500 plants/ha	2022-23	40	Good	93%	139	5	0.00000	1.00000	14398.84
120	Koraput	Koraput	Simeliguda	Gangapaniguda	Bamboo Plantation @ 400 plants/ha	2022-23	20	Good	94%	159	7	0.00000	1.00000	10761.45
121	Koraput	Koraput	Simeliguda	Kaladi	AR plantation @ 1000 plant /ha	2022-23	200	Good	89%	156	6	1.95999	0.16075	28548.13
122	Koraput	Koraput	Simeliguda	Bimariput	2 <sup>nd</sup> Year Maint. of ANR @ 200 Plants/ha	2021-22	50	Average	98%	465	15	1.32890	0.27547	226601.59
123	Koraput	Koraput	Balda	Cheptamita	2 <sup>nd</sup> Year Maint. of ANR @ 200 Plants/ha AJY	2021-22	50	Poor						
124	Koraput	Koraput	Balda	Khinbar	AR plantation @1000 plant /ha	2022-23	20	Good	98%	175	8	1.53951	0.22758	70423.88
125	Koraput	Koraput	Balda	Padua	4 <sup>th</sup> Year Maint. of ANR Plantation @ 200 plants/ha	2019-20	100	Good	92%	188	7	1.33648	0.27169	33316.17
126	Koraput	Koraput	Balda	Khuda	2 <sup>nd</sup> Year Maint. of ANR @ 200 Plants/ha	2021-22	50	Good	98%	286	9	0.82146	0.49557	47806.48
127	Koraput	Koraput	Lamataput	Bhalupada	2 <sup>nd</sup> Year Maint. of ANR Plantation @ 200 plants/ha	2021-22	85	Poor	95%	353	11	0.38344	0.77609	174014.76
128	Koraput	Koraput	Lamataput	Jyantigiri	2 <sup>nd</sup> Year Maint. of ANR Plantation @ 200 plants/ha	2021-22	50	Average	81%	230	6	1.26962	0.26134	18668.63
129	Koraput	Koraput	Lamataput	Kantipada	ANR Plantation with Gap @ 200 plants/ha	2022-23	50	Average	53%	127	4	1.33119	0.32275	2733.20
130	Koraput	Koraput	Lamataput	Litimaliguda	2 <sup>nd</sup> Year Maint. of ANR Plantation @ 200 plants/ha	2021-22	40	Poor	76%	175	9	1.03361	0.46119	16573.93
131	Koraput	Koraput	Lamataput	Kakulpada	4 <sup>th</sup> Year Maint. of ANR Plantation @ 200 plants/ha	2019-20	50	Average	84%	300	8	0.00000	1.00000	33051.95
132	Koraput	Koraput	Lamataput	Tontaput A	ANR Fodder and Fruits Species @500 plants/ha	2022-23	20	Average	76%	147	5	1.24291	0.41139	5443.19
133	Koraput	Koraput	Koraput	Masiput	2 <sup>nd</sup> Year Maint. of Bald Hill Plantaion @1600 plants/ha	2021-22	15	Good	84%	228	6	1.54723	0.22365	49901.68
134	Koraput	Koraput	Koraput	Pondi	2 <sup>nd</sup> Year Maint. of Bald Hill Plantaion @1600 Plants/ha	2021-22	5	Average	95%	235	5	1.43649	0.28042	11868.91
135	Koraput	Koraput	Koraput	Manbar	2 <sup>nd</sup> Year Maint. of Miyawaki Plantation @ 8000 plants/ha	2021-22	1	Good	99%	454	16	1.97064	0.16105	298098.40
136	Koraput	Koraput	Koraput	Bagra VSS	ANR Plantation with Gap @ 200 plants/ha	2022-23	50	Good	97%	255	5	1.32748	0.27644	20742.67
137	Koraput	Koraput	Koraput	Jarti Station	2 <sup>nd</sup> Year Maint. of ANR Plantation @ 200 plants/ha	2021-22	60	Average	66%	235	5	0.86270	0.33282	12450.42
138	Koraput	Koraput	Koraput	Podagada	ANR Gap RET/ Medicinal plants @200 plants	2022-23	50	Very Good	93%	186	10	1.29093	0.30244	31749.73
139	Koraput	Koraput	Koraput	Bhanjapadar	AR Bald Hill Plantation @ 1600 plants/ha	2022-23	20	Good	83%	214	9	0.00000	1.00000	87894.95
140	Koraput	Koraput	Koraput	Baunsaguda	2 <sup>nd</sup> Year Maint. of ANR Plantation @ 200 plants/ha	2021-22	50	Average	64%	272	9	1.38755	0.28450	68834.39
141	Koraput	Koraput	Koraput	Janiguda	4 <sup>th</sup> Year Maint. of ANR @ 200 plants/ha (Without Gap)	2019-20	100	Average						

Sample Site wise Survival %, Health of the Plant, Diversity index & Carbon Analysis												Diversity		Total CO <sub>2</sub> Weight (kg)
Sl. No.	Circle	Division	Range	Site visited	Model of plantation activity (Creation / Maintenance)	Year of creation	Area Treated / covered (ha.)	Status of work at the time of field visit	Survivable Percentage	Average Height of plants (cm)	Average Color Girth (cm)	Diversity index (H')	Concentration of dominance (Cd)	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
142	Koraput	Koraput	Koraput	Mathalput	2 <sup>nd</sup> Year Maint. of RET/Medicinal Plant.@ 200 Plants/ha	2021-22	50	Good	91%	193	8	1.77922	0.19907	26852.47
1	Bhubaneswar	City Forest, BBSR	Bhubaneswar Range	Mendhasala	ANR Plantation with Gap @ 200 plants/ha	2022-23	30	Good	80%	160	14	2.10665	0.17082	36585.65
2	Bhubaneswar	City Forest, BBSR	Bhubaneswar Range	Mendhasala	AR plantation @1000 plant /ha	2022-23	10	Good	88%	159	15	1.91457	0.18418	73023.95
3	Bhubaneswar	City Forest, BBSR	Bhubaneswar Range	Deuliatpatna	2 <sup>nd</sup> Year ANR Plantation @ 200 plants/ha	2021-22	50	Good	84%	186	15	1.53264	0.24758	82415.07
4	Bhubaneswar	Bhadrak WL	Bhadrak	Balijhar	2 <sup>nd</sup> Year AR Plantation @1000/1600 plants/ha	2021-22	5	Good	90%	168	16	2.09744	0.12521	83714.29
5	Bhubaneswar	Bhadrak WL	Basudevapur	Basudevapur	Mangrove Plantation@4445 plants/ha	2022-23	7	Average	71%	92	6	0.00000	1.00000	14873.87
6	Bhubaneswar	Bhadrak WL	Basudevapur	Churida	3 <sup>rd</sup> Year AR Plantation @1000/1600 plants/ha	2020-21	3	Average	89%	228	17	1.45280	0.28278	61846.82
7	Bhubaneswar	Rajnagar WL	Kujang	Balitutha	2 <sup>nd</sup> Year ANR <i>Casuarina</i> @ 2500 plants/ ha	2021-22	20	Very Good	85%	407	25	0.00000	1.00000	171236.90
8	Bhubaneswar	Rajnagar WL	Kujang	Kasaripatia	2 <sup>nd</sup> Year ANR Plantation @ 200 plants/ha	2021-22	40	Very Good	90%	440	24	0.00000	1.00000	370642.46
9	Bhubaneswar	Rajnagar WL	Kujang	Balitutha	<i>Casuarina</i> Plantation @ 2500 plants/ ha	2022-23	20	Good	90%	160	13	0.00000	1.00000	18938.92
10	Bhubaneswar	Rajnagar WL	Mahakal Pada	Hetamundia	ANR Plantation with Gap @ 200 plants/ha	2022-23	50	Average	88%	132	19	1.09230	0.44471	233257.80
11	Bhubaneswar	Rajnagar WL	Mahakal Pada	Jamboo	2 <sup>nd</sup> Year ANR Plantation @ 200 plants/ha	2021-22	30	Good	89%	377	25	0.00000	1.00000	1253711.01
12	Bhubaneswar	Rajnagar WL	Mahakal Pada	Jagisharkuda PRF	Mangrove Plantation@ 4445 plants/ ha	2022-23	100	Average	95%	126	20	1.33119	0.32275	9465497.61
13	Bhubaneswar	Rajnagar WL	Mahakal Pada	Hetamundia PRF	<i>Casuarina</i> Plantation @ 2500 plants/ ha	2022-23	12	Very Good	95%	800	29	0.00000	1.00000	4011003.46
14	Bhubaneswar	Rajnagar WL	Kujang	Sahadabedi	<i>Casuarina</i> Plantation @ 2500 plants/ ha	2022-23	50	Good	53%	210	15	0.00000	1.00000	51414.14
15	Bhubaneswar	Chilika WL	Satapada	Rambhartia PRF	<i>Casuarina</i> Plantation @ 2500 plants/ ha	2022-23	35	Very Good	93%	276	9	0.00000	1.00000	355940.60
16	Bhubaneswar	Chilika WL	Nuapada	Khirisahi Berhampur PRF	<i>Casuarina</i> Plantation @ 2500 plants/ ha	2022-23	10	Very Good	95%	298	11	0.00000	1.00000	159690.54
17	Bhubaneswar	Chilika WL	Nuapada	Jamuna Section	<i>Casuarina</i> Plantation @ 2500 plants/ ha	2022-23	5	Excellent	97%	369	11	0.00000	1.00000	70782.62
18	Bhubaneswar	Chilika WL	Rambha	Pitisa PRF	ANR Plantation with Gap @ 200 plants/ha	2022-23	100	Good	86%	271	11	1.49563	0.24216	144035.19
19	Bhubaneswar	Chilika WL	Rambha	Nandighar DPF	ANR Plantation with Gap @ 200 plants/ha	2022-23	50	Good	80%	238	13	1.96307	0.20433	95257.68
20	Bhubaneswar	Chilika WL	Rambha	Talakhola PRF	2 <sup>nd</sup> Year AR Bald Hill Plantation @1600 plants/ha	2021-22	10	Good	84%	365	11	1.81795	0.11861	133731.12
21	Bhubaneswar	Chilika WL	Rambha	Sanaghati PRF	2 <sup>nd</sup> Year ANR Plantation @ 200 plants/ha	2021-22	50	Good	73%	291	11	1.76281	0.12051	63639.63
22	Bhubaneswar	Chilika WL	Rambha	Jhinkaria DPF	3 <sup>rd</sup> Year AR Plantation @1600 plants/ha	2020-21	10	Very Good	70%	407	20	1.48718	0.32716	391632.74
23	Bhubaneswar	Chilika WL	Rambha	Talakhola PRF	3 <sup>rd</sup> Year ANR Plantation @ 200 plants/ha	2020-21	100	Good	69%	362	19	1.81315	0.05765	385277.48
24	Bhubaneswar	Chilika WL	Rambha	Jhinkaria DPF	4 <sup>th</sup> Year ANR Plantation @ 200 plants/ha	2019-20	50	Very Good	72%	411	20	2.10665	0.17082	293968.55
25	Bhubaneswar	Puri Wildlife	Astarang	Astarang	AR Plantation @ 1600 plants/ha	2022-23	8	Good	92%	180	9	1.05223	0.43029	33734.67
26	Bhubaneswar	Puri Wildlife	Gop	Kusabhadra River Belt	2 <sup>nd</sup> Year AR Plantation @1600 plants/ha	2021-22	10	Poor	93%	145	7	1.52789	0.23478	24697.51
27	Bhubaneswar	Puri Wildlife	Astarang	Tovagalara Prf	ANR Fodder and Fruits Species @ 500 plants/ha	2022-23	16	Average	92%	109	7	2.24498	0.35949	7592.21
28	Bhubaneswar	Puri Wildlife	Balukhanda	Beledal	ANR Plantation with Gap @ 200 plants/ha	2022-23	80	Average	91%	145	8	0.68941	0.50373	20415.65
29	Bhubaneswar	Puri Wildlife	Balukhanda	Balukhanda Rf C/3,4,5	AR plantation @1000 plant /ha	2022-23	100	Good	90%	159	8	0.66473	0.64141	171509.67
30	Bhubaneswar	Puri Wildlife	Balukhanda	Balukhanda@ 6,7,8	AR plantation @1000 plant /ha	2022-23	150	Good	94%	161	8	1.04189	0.23044	336124.78
31	Bhubaneswar	Puri Wildlife	Konark	Vanpur	AR Plantation @ 1600 plants/ha	2022-23	5	Poor	86%	91	5	1.22036	0.31738	3425.31

Sample Site wise Survival %, Health of the Plant, Diversity index & Carbon Analysis												Diversity		Total CO <sub>2</sub> Weight (kg)
Sl. No.	Circle	Division	Range	Site visited	Model of plantation activity (Creation / Maintenance)	Year of creation	Area Treated / covered (ha.)	Status of work at the time of field visit	Survivable Percentage	Average Height of plants (cm)	Average Colar Girth (cm)	Diversity index (H')	Concentration of dominance (Cd)	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
32	Bhubaneswar	Puri Wildlife	Konark	Vanpur	ANR Plantation with Gap @ 200 plants/ha	2022-23	30	Poor	88%	94	5	1.32977	0.25408	3245.17
33	Bhubaneswar	Puri Wildlife	Konark	Liakhia	ANR Plantation with Gap @ 200 plants/ha	2022-23	100	Good	84%	204	10	0.84490	0.49469	144455.20
34	Bhubaneswar	Puri Wildlife	Konark	Tikana	Casuarina Plantation @2500 plants/ ha	2022-23	10	Very Good	89%	310	13	0.00000	1.00000	237648.45
35	Bhubaneswar	Puri Wildlife	Gop	Samaraisasan	AR Plantation @ 1600 plants/ha	2022-23	5	Average	91%	125	7	1.67151	0.22425	8816.13
36	Bhubaneswar	Nayagarh	Garia	Dalkari Sahi	AR Plantation @ 1600 plants/ha	2022-23	11	Poor	58%	180	7	0.72124	0.01200	26584.72
37	Bhubaneswar	Nayagarh	Onagaon	Wariamba DPF	ANR Fodder and Fruits Species @ 500 plants/ha	2022-23	50	Good	89%	151	6	1.83275	0.22412	23543.41
38	Bhubaneswar	Nayagarh	Khandapada	Guriabari RF	3 <sup>rd</sup> Year ANR Plantation @ 200 plants/ha	2020-21	30	Good	91%	280	17	0.00000	1.00000	179542.45
39	Bhubaneswar	Nayagarh	Mahipur	Kobalanga	ANR Plantation with Gap @ 200 plants/ha	2022-23	50	Good	92%	182	7	1.82833	0.17538	15948.13
40	Bhubaneswar	Nayagarh	Nayagarh	Hatimunda- RF	2 <sup>nd</sup> Year Bald Hill Plantation @1600 plants/ha	2021-22	10	Good	86%	400	7	2.19383	0.18213	71697.29
41	Bhubaneswar	Nayagarh	Panchirida	Tanaka	ANR Plantation with Gap @ 200 plants/ha	2022-23	17.3	Good	90%	181	7	1.52789	0.23478	5166.71
42	Bhubaneswar	Nayagarh	Daspalla	Pokharigochha	ANR Plantation with Gap @ 200 plants/ha	2022-23	50	Average	84%	142	6	2.07448	0.13347	8461.37
43	Bhubaneswar	Nayagarh	Mahipur	Gumi	ANR Plantation with Gap @ 200 plants/ha	2022-23	100	Average	83%	139	6	1.91544	0.15405	16835.51
44	Bhubaneswar	Nayagarh	Odagaon	Bahadajhola RF	3 <sup>rd</sup> Year AR Plantation @1600 plants/ha	2020-21	1.42	Good	71%	154	9	1.24854	0.34028	6021.01
45	Bhubaneswar	Khordha	Khordha	Pangarsingh RF	AR Plantation @ 1600 plants/ha	2022-23	60	Good	96%	193	11	1.91457	0.18418	493744.52
46	Bhubaneswar	Khordha	Khordha	Duburi DPF	AR plantation @1000 plant/ha	2022-23	10	Good	93%	209	14	1.52789	0.23478	81451.36
47	Bhubaneswar	Khordha	Delanga	Rengal PRF	ANR Plantation with Gap @ 200 plants/ha	2022-23	20	Good	90%	96	7	0.66473	0.64141	4952.63
48	Bhubaneswar	Khordha	Balugaon	Sandhamal DPF	ANR Plantation with Gap @ 200 plants/ha	2022-23	35	Very Good	83%	367	18	1.81315	0.05765	126622.57
49	Bhubaneswar	Khordha	Balugaon	Chulijhinka DPF	ANR Plantation with Gap @ 200 plants/ha	2022-23	50	Good	90%	240	10	2.04472	0.41511	43602.47
50	Bhubaneswar	Khordha	Balugaon	Bhatapada DPF	ANR Plantation with Gap @ 200 plants/ha	2022-23	50	Good	86%	252	12	2.06947	0.15677	72802.44
51	Bhubaneswar	Chandaka WL	Chandaka	Bhuasuni	2 <sup>nd</sup> Year AR Block Plantation @1600 plant/ ha	2021-22	10.7	Good	88%	195	14	2.11492	0.16487	117823.08
52	Bhubaneswar	Chandaka WL	Chandaka	Tulasadjipur PF, Bhol	AR Other Indigenous Species @1600 plants/ha	2022-23	10.3725	Very Good	92%	132	10	1.81315	0.05765	50245.67
53	Bhubaneswar	Chandaka WL	Chandaka	Nuakua Saurabila RF	AR Other Indigenous Species @1600 plants/ha	2022-23	12.5	Very Good	95%	212	10	1.76281	0.12051	87864.77
54	Bhubaneswar	Chandaka WL	Chandaka	Near Pitagadia Watch Tower	AR Other Indigenous Species @1600 plants/ha	2022-23	9.4	Good	94%	275	16	1.86823	0.16366	237300.63
55	Bhubaneswar	Chandaka WL	Chandaka	Near Pitagadia Watch Tower	3 <sup>rd</sup> Fodder & Fruit Plantation@1600 Plants/ha	2020-21	12	Good	96%	217	15	1.91457	0.18418	194705.78



## **AFC INDIA LIMITED**

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