

**Third Party Monitoring and Evaluation
undertaken under Compensatory Afforestation
Fund Management And Planning Authority
(CAMPA) in Kerala**

**for the period
2022 - 2023**

Submitted to
Kerala Forests & Wildlife Department (CAMPA)

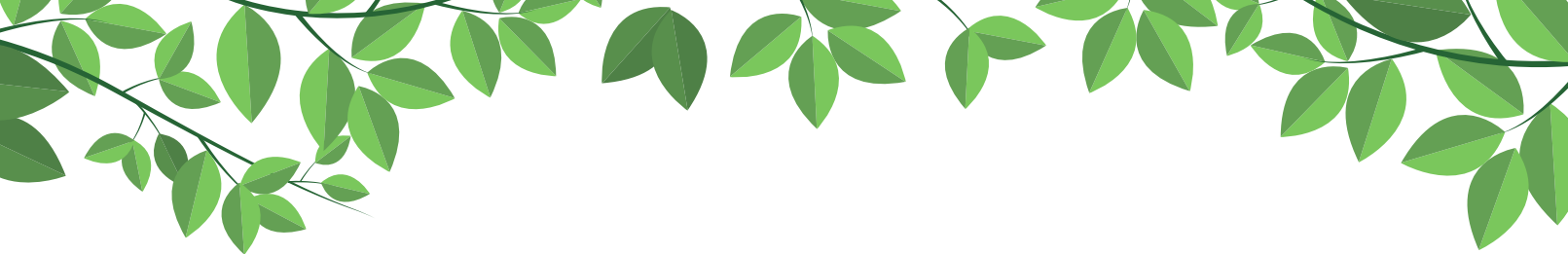


ICFRE-Institute of Forest Genetics and Tree Breeding

(Indian Council of Forestry Research and Education)

Coimbatore – 641002

May 2025



Evaluation of CAMPA, 2022-23

CAMPA Evaluation Report
Third Party Evaluation of works undertaken under
Compensatory Afforestation Fund Management
And Planning Authority (CAMPA)
in Kerala for the Year 2022-23

Submitted to
Chief Executive Officer, CAMPA
Forest Headquarters, Vazhuthacaud
Thiruvananthapuram - 14.

Submitted by
ICFRE- Institute of Forest Genetics and Tree Breeding

Period for the Report: 2022-23

Month & Year: May, 2025



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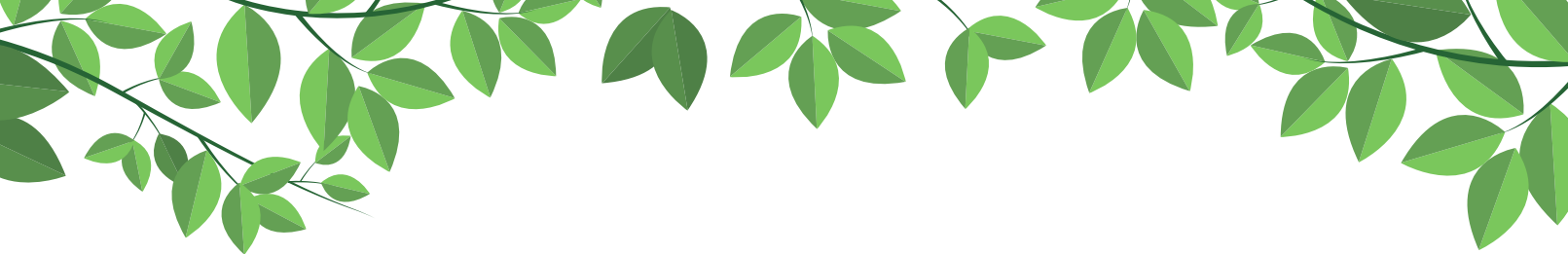
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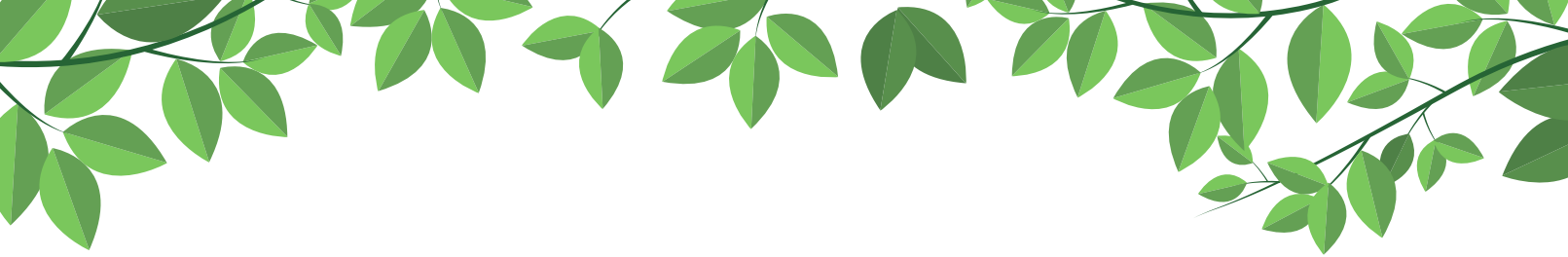
Preface



The State of Kerala established the Compensatory Afforestation Management and Planning Authority (CAMPA) Scheme in 2009 to encourage afforestation, reforestation, and restoration/regeneration activities to compensate for forest land diverted for non-forest purposes and to enhance the state's forest cover. The Kerala Forests & Wildlife Department prepared the Annual Plan of Operations (APO) for the year 2022-2023 which the MoEF & CC, Gol approved. As per the APOs, the state planned various activities, including compensatory afforestation, soil and moisture conservation, biodiversity conservation, awareness campaigns on forests, wildlife and the environment, eradication of invasive alien weeds, river bank stabilization, protection of research plots and seed production areas, creation of fire breaks and other essential maintenance activities towards forest conservation. All these activities were spread across the forest divisions of the state, including wildlife sanctuaries. The success and sustainability of these CAMPA activities, including structures established and plantations raised in terms of planning, implementation, the quantity of inputs, condition of health and survival, and outcomes, need to be evaluated and documented for monitoring purposes by an independent agency. Accordingly, ICFRE-IFGTB, Coimbatore, was awarded the monitoring of CAMPA activities undertaken. A team of ICFRE-IFGTB staff, including forest officers, scientists and technical personnel, have been involved in the work since March 2024. The sampling methodology approved by MoEF & CC was broadly followed, and a detailed survey, monitoring and evaluation exercises were conducted to represent all the forest circles and plantation models adopted in a given year. In total, 100 project sites were identified, and 251 activities of the period of one years of CAMPA activities from 2022-2023 were monitored. Overall the CAMPA activities supported the forests and contributed to enhance forest health in Kerala. I would like to acknowledge the Kerala Forests & Wildlife Department for their support and assistance in bringing out this document in a comprehensive manner.

(Dr R. Yasodha)

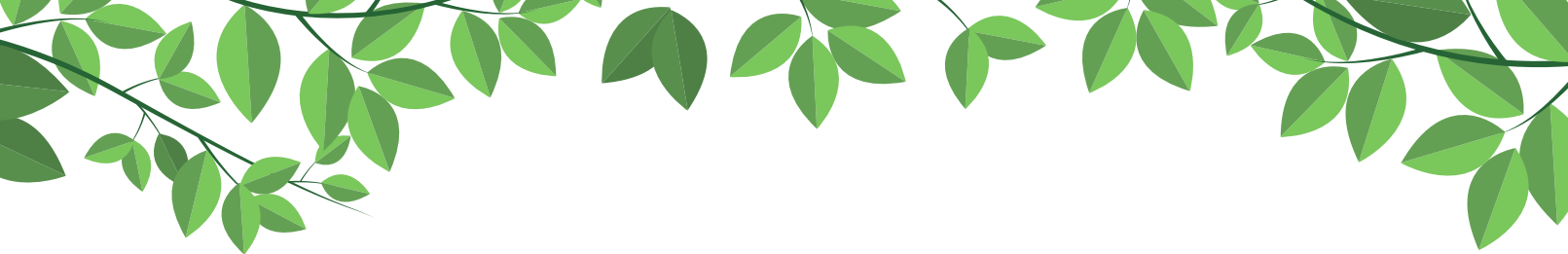




Acknowledgements

We acknowledge the Kerala Forest & Wildlife Department for identifying ICFRE-IFGTB, Coimbatore, to evaluate the CAMPA activities carried out for the period 2022 to 2023. We sincerely thank the PCCF & Head of Forest Force for facilitating this special assignment. We would like to express our gratitude to Chief Executive Officer CAMPA, Kerala, who facilitated the evaluation work and extended valuable guidance in finalising the formats for evaluation of different CAMPA activities in the state. We extend our heartfelt gratitude to the Divisional Forest Officers of all forest divisions in Kerala for their active involvement in the study, sharing their valuable insights, and apprising the team on the activities undertaken. We are especially thankful for their clarifications on various field-level aspects of project formulation and implementation, which significantly contributed to our understanding and the conclusions drawn. Our sincere thanks also go to the forest rangers for their cooperation and for making the necessary arrangements to facilitate the work of the evaluation team. We are deeply appreciative of the dedicated ground staff of the Kerala Forest and Wildlife Department, for their continuous support throughout the study. Their assistance in field visits, site coordination, and local arrangements was invaluable. We are particularly grateful to the members of the Vana Samrakshana Samitis (VSS), the villagers at large, for generously sharing their time with the evaluation team and providing crucial inputs on forest protection and management efforts. Last but not least, we sincerely thank all the evaluators for their unwavering commitment and tireless efforts in ensuring the successful completion of the evaluation.

ICFRE-IFGTB



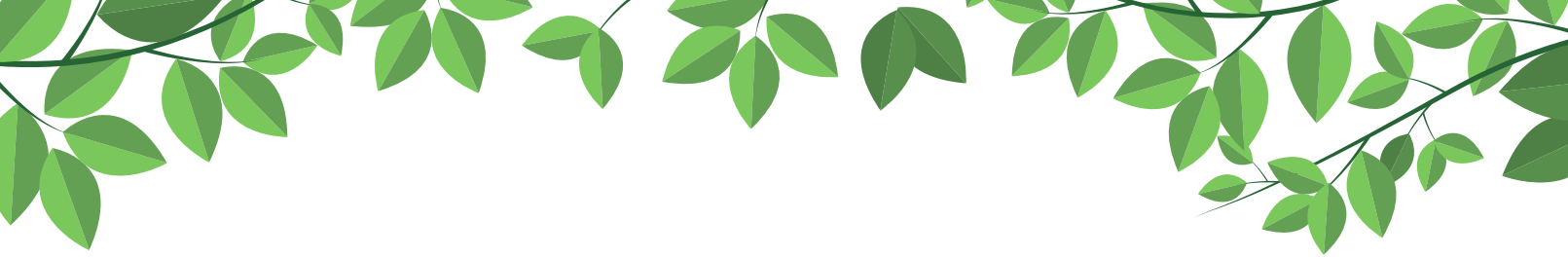
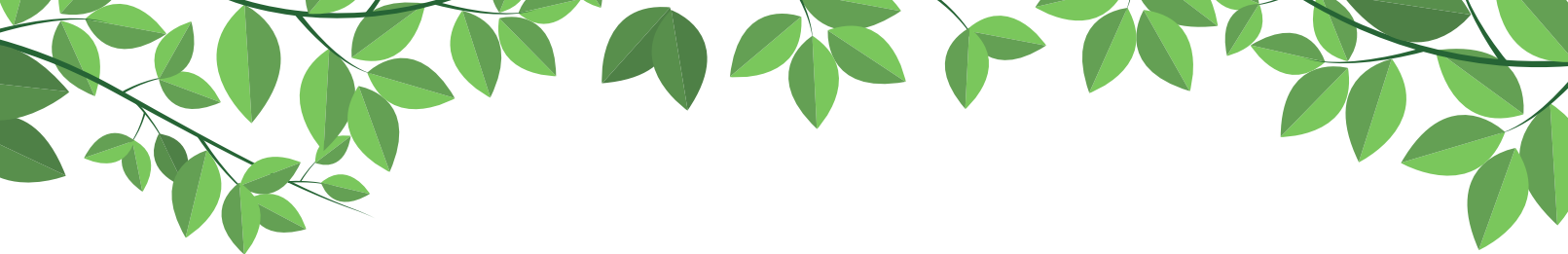
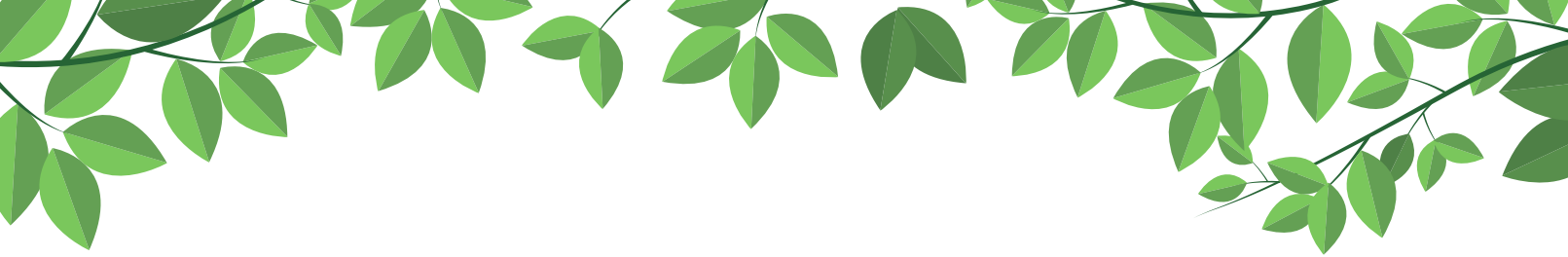


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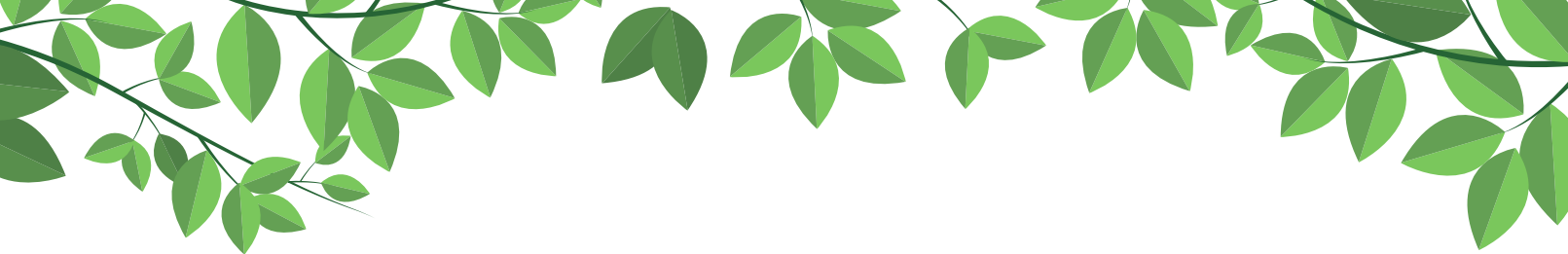
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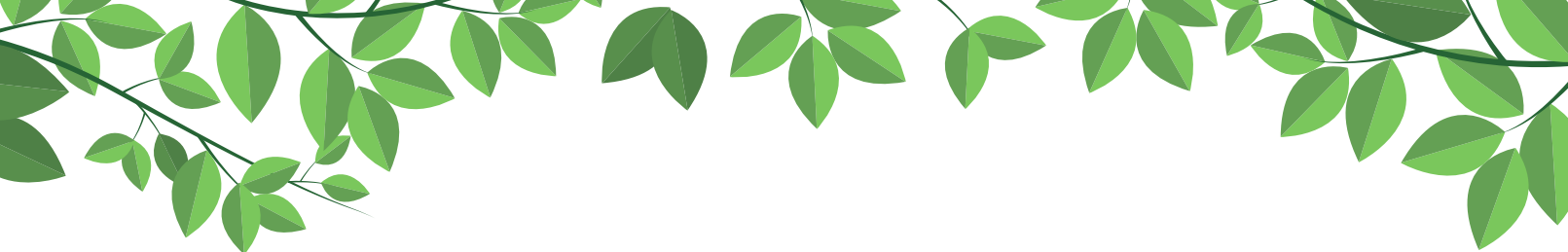
List of Abbreviations

ABP	Agasthyavanam Biological Park
ANP	Assisted natural regeneration
APO	Annual Plan of Operation
CA	Compensatory Afforestation
cm	Centimetre
CWS	Chinnar Wildlife Sanctuary
DPN	District Permanent Nursery
ENP	Eravikulam National Park
FDPT	Field Director Project Tiger
FS	Forest Station
FSI	Forest Survey of India
ha	Hectare
Km	Kilometre
m	Metre
mm	Millimetre
RRT	Rapid Response Team
SF	Social Forestry
SMC	Soil and Moisture Conservation
SNP	Shola National Park
TP	Teak plantation
VSS	Vana Samrakshana Samithi
WL	Wild Life

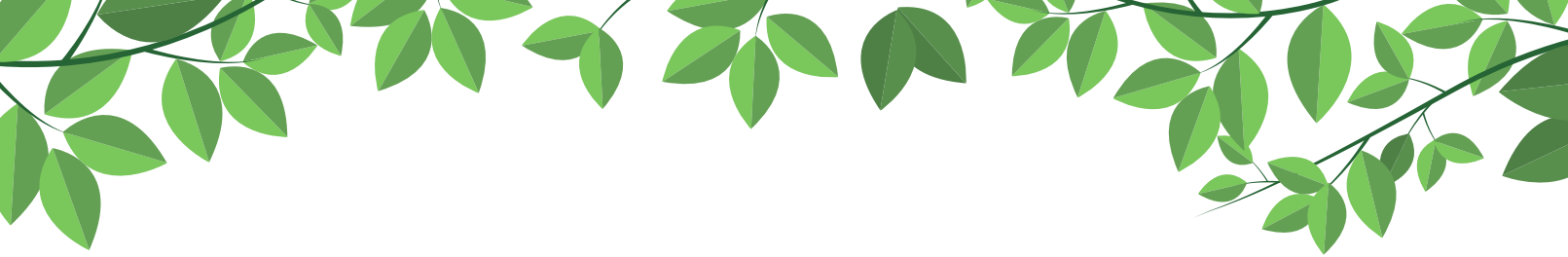


FACT SHEET

S. No.	Item	Details
1.	Scope of evaluation	Third-party monitoring and evaluation of the CAMPA activities of Kerala Forests and Wildlife Department (2022-2023)
2.	Period of work evaluation	Signing of MoU – 02 February 2024 Field works – April to August 2024 Report preparation – September 2024 to April 2025
3.	Focus	Quality of conservation and development works. Assessment of compensatory afforestation activities. Public awareness campaigns.
4.	Number of Evaluation teams	15 Evaluation Teams and one editorial team.
5.	Objective	♦ To evaluate different plantations established under CAMPA in different forest divisions of Kerala. ♦ To evaluate the civil structures (buildings and soil and water conservation structures) established under CAMPA in different forest divisions of Kerala.
6.	Area covered	♦ To suggest for improvement in quality of plantations for future. 25 territorial forest divisions. 14 social forestry divisions.
7.	Sample size	11 wildlife divisions. Plantation: 20% of the plantation was randomly selected from various divisions. Sampling intensity for evaluation of block plantations is nearly 10%. For every hectare of plantation, the evaluation was done on a 30 x 30 m plot. In the case of a linear plantation, evaluation of every 10 th tree/planted sapling of each row for 25% of its length per running km basis. Soil and Moisture Conservation (SMC) activities: 20% of SMC works evaluated in each division based on random selection from measurement book (M-book).
8.	Findings	Eradication of weeds: Density assessment and plot transects. Forest protection: 10% of all firelines evaluated in each division. ♦ The average survival rate in ecorestoration activities is 79%. In some sites, the species showed adaptation difficulties. ♦ The quality of other departmental works was mostly high (79%) ♦ Check-dams and gullies are the major SMC works taken up. ♦ Vayals (marshy grasslands – asource of fodder for herbivores) have been given priority in many divisions and are well maintained.



S. No.	Item	Details
		♦ Active involvement of the VSS in various department activities has ensured a participatory approach to the protection and conservation of forests.
		♦ Comparative analyses across years demonstrate that afforestation initiatives are successful, underscoring the department's effective conservation and reforestation efforts.



EXECUTIVE SUMMARY

The Forest (Conservation) Act (1980) was enforced to conserve and protect forest resources. The Act mandated that whenever forest land is diverted for non-forestry purposes usually the conditions relating to transfer, mutation and declaration as Reserve Forest/Protected Forest, the equivalent non-forest land for compensatory afforestation and funds for raising compensatory afforestation etc. are to be imposed. Additional conditions such as maintaining a safety zone area, fencing and regeneration etc. are prescribed for mining purposes, and catchment area treatment plans are stipulated for big and medium irrigation projects. Further, the Act provided that the non-forest land for Compensatory Afforestation (CA) was to be identified contiguous to or close to Reserved Forest or Protected Forest. The funds for CA are received from the user agencies based on the rates fixed by the State Forest Department, which are site-specific and vary according to the species, type of forest and site. The fund received for compensatory afforestation, additional compensatory afforestation etc. has to be used as per site-specific schemes submitted by the state along with the approved proposals for diversion of forest land. After receipt of the fund, State Forest Department has to accomplish the afforestation for which money is deposited in the CA Fund within a period of one year or two growing seasons.

The Compensatory Afforestation Fund Management and Planning Authority (CAMPA) Kerala has been constituted with the objective of conservation, protection, regeneration and management of existing natural forests, wildlife and their habitat and raising site specific compensatory afforestation, penal compensatory afforestation etc. As per the provisions of CAMPA guidelines, the state CAMPA has been formulating Annual Plans of Operation (APO) since 2009-10 and continued to 2022-2023.

The Government of India released Rs. 17,26,00,000 for the period 2022-2023 to Kerala to implement CAMPA Activities.

The Assignment

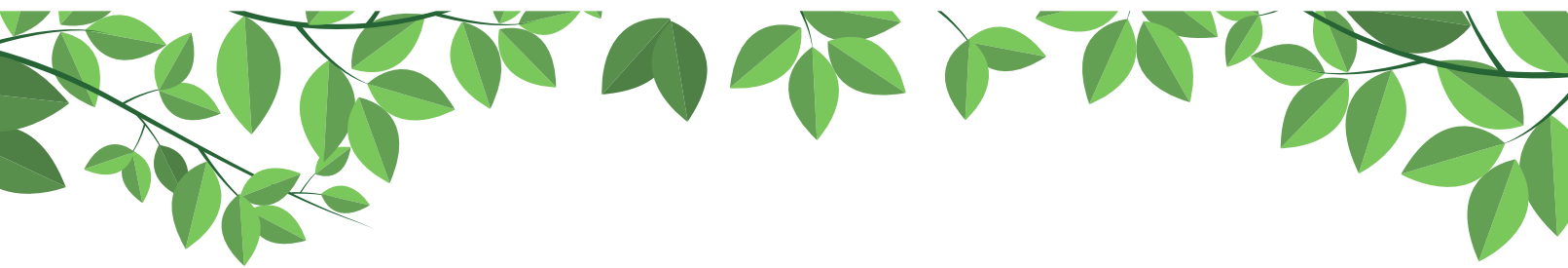
As a range of activities were taken up under CAMPA, a technical evaluation of the activities by a third party was considered essential. IFGTB-ICFRE was identified to carry out third-party monitoring of all the CAMPA interventions during 2021 to 2023 (Order No. FC5-2380/2022 dated 09.02.2024 of CEO, State CAMPA, Kerala). The broad scope of evaluation comprised all the components and sub-components of CAMPA implementation in Kerala.

Study Area

The evaluation study covered 50 forest divisions of Kerala (25 Territorial, 14 Social Forestry and 11 Wildlife Divisions) under 11 forest circles. In addition, Research Divisions and Working Plan Divisions and HQ where CAMPA funds were utilised are also covered in the study.

Study Approach and Methodology

Various CAMPA interventions were evaluated using appropriate sampling criteria, data collection approaches and, in view of diversity, nature of component and stakeholders involved.



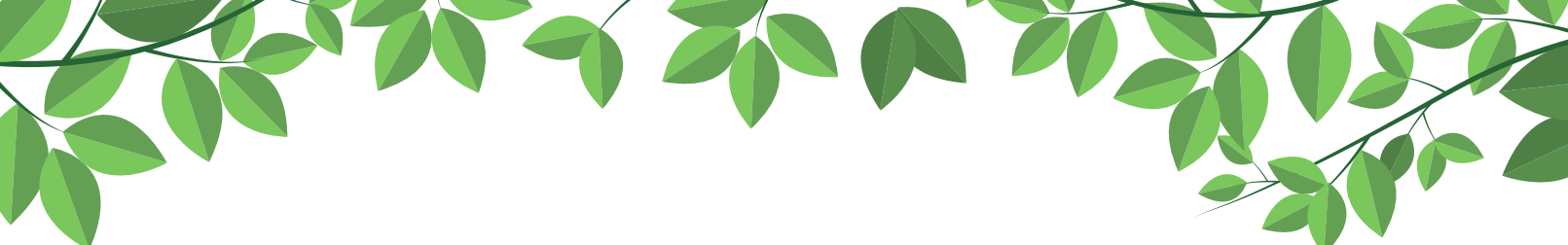
The study approach and methodology have been adopted from the evaluation formats of the MoEF&CC, Gol.

Details of Data Collection

- ◆ **Primary Data:** First-hand information was obtained using separately designed formats for different components and subcomponents.
- ◆ **Secondary Data:** Secondary data relating to various activities undertaken in CAMPA were collected from the circle, division and range offices in pre-designed formats and checklists.
- ◆ **Focused Group Discussion:** FGDs with the members of the VSS were conducted to evaluate peoples' perceptions and participation levels in implementing CAMPA activities in a given locality.
- ◆ **Consultation with Forest Officials:** Consultations were undertaken with a range of forest officers involved at various stages- planning and decision making, implementation, monitoring and evaluation. This included Divisional Forest Officers (DFOs), Forest Range Officers (FROs), Forest Beat Officers (FBOs), Foresters, Forest Guards, etc.
- ◆ **Field Observation:** Data on survival, field measurements to assess growth in different plantations, condition of physical structures in Soil and Moisture Conservation (SMC) activities and weed density in plantation sites were collected. Notes were prepared on various activities under CAMPA implementation, which provided the basis for the entire evaluation process.

Performance of CAMPA during the period 2022-2023

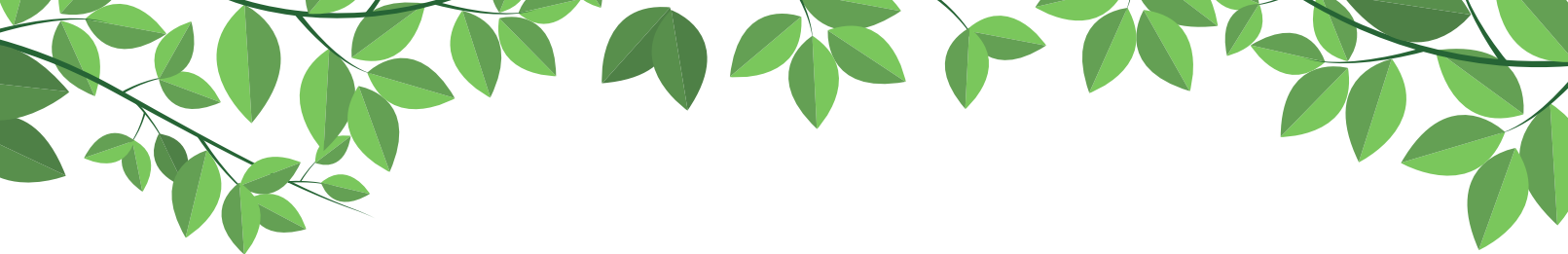
- ◆ The total funds received from the adhoc CAMPA for APO year 2022-2023 stands at Rs. 17.26 crores and the expenditure ending March 2023 was Rs. 8.24crores which is 47.57 % of the funds received. The core activities undertaken with the CAMPA funds comprise plantations, creation of SMC structures, forest protection, wildlife management and assistance to tribal VSS.
- ◆ The non-core activities comprised biodiversity conservation, capacity building, infrastructure development, forest IT, monitoring, evaluation and accounting.
- ◆ Assistance to tribal VSS, improving the infrastructure for protection and soil and moisture conservation activities were prioritised (70%). The VSS members were engaged in almost all the activities.
- ◆ Various SMC structures in CAMPA APOs included check dams, contour trenches, gully plugging etc. SMC structures undertaken by frontline forest officers under CAMPA are site-specific as per the site requirement.
- ◆ Focus on eco-restoration, planting and silvicultural operations was minimal (undertaken only in two circles) in the initial years of CAMPA implementation. Most activities were done departmentally, an economical and time-saving approach. River bank stabilisation, vegetation barrier creation and eradication of weeds were taken up in one site.

- 
- ◆ Inclusion of VSS members in patrolling, fire break creation, developing infrastructure in interior forest areas, has encouraged their active participation in conservation activities.
 - ◆ Training and capacity development programmes undertaken under CAMPA includes theme based trainings, strengthening communication and plantation skill development.
 - ◆ Under infrastructure development, efforts were taken to repair / improve dilapidated structures. The major construction activities undertaken with the help of CAMPA funds were antipoaching campsheds.

Recommendations and Suggestions

A diverse range of activities was implemented under the CAMPA Annual Plan of Operation (APO) 2022-2023, covering multiple components across various forest divisions. In most cases, the activities were found to be qualitative and productive. However, in certain instances, there is scope for additional improvements to further strengthen and enhance the effectiveness of the ongoing initiatives.

1. Species should be selected on the basis of floristic composition of the forest types and prevailing local soil condition of the afforestation / plantation site.
2. Decentralized local nurseries for production of forest type specific planting stocks may be promoted.
3. Maintenance and watch and ward may be continued for 4 to 5 years for better establishment.
4. Number of watchers should be increased proportionate to the size of the plantation site.
5. There should be provision in CAMPA APOs for the periodic maintenance of SMC structures as most SMC structures are subject to heavy wear and tear due to recurrent floods.
6. Buildings / structures constructed during this period need to be repaired and maintained. In some cases, renovation / refurbishing may also be done based on a fixed schedule.
7. It is better to avoid plantations deep inside forests, with heavy movement of wildlife, as monitoring of the plantations is difficult. Seeds to be broadcasted should match the floristic composition of the respective forest types. The frontline staff may be trained on seed handling and nursery technologies of native tree species.



Monitoring and Evaluation of CAMPA Plantations and Other Activities (2022-2023)

1. Introduction

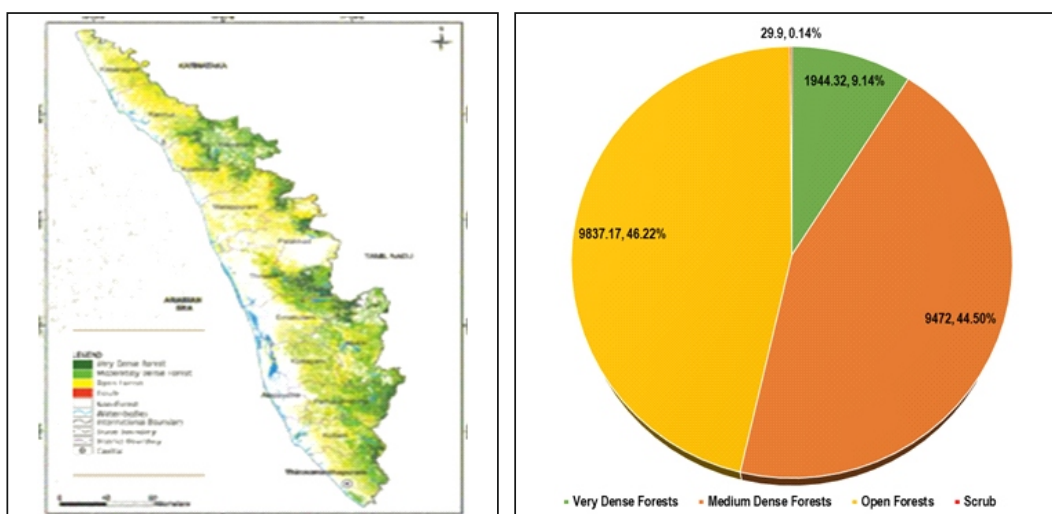
1.1 Background

Forests in India encompass a wide range of forest types and reserved areas, covering approximately 24.62% of the country's total geographical area. These forests play a vital role in supporting the livelihoods of communities residing in and around them. They serve as crucial natural carbon sinks and play a key role in regulating water regimes. Despite their ecological and socio-economic significance, forest land is often diverted for non-forestry developmental activities, leading to a substantial reduction in forest cover.

Kerala, in particular, is blessed with abundant natural resources. Its favourable tropical climate supports forests rich in biodiversity and endemic species. The Western Ghats, a recognized global biodiversity hotspot, forms the eastern boundary of the state and enhances its ecological richness. However, the rising population and evolving lifestyles are placing increasing pressure on these forest ecosystems. The foremost challenge lies in balancing developmental aspirations with the urgent need to conserve and protect Kerala's invaluable and fragile forest heritage.

1.2 Forest Cover in Kerala

The forest cover in the state based on the interpretation of the Forest Survey of India (FSI) 2021 is 21,253.49 sq km which is 54.7 % of the state's geographical area. Forest Cover in the State has increased by 109 sq km compared to the previous assessment reported in ISFR 2019. Among forest canopy density classes, the state has 1944.32 sq km area under very dense forest, 9472 sq km area under moderately dense forest and 9837.17 sq km area under open forest.



Source: ISFR, 2021

1.3 Forest Cover In Kerala From 2007 To 2021

Forest cover in the state has been increasing over the years. Forest conservation and afforestation activities are the key reasons for the improvement.

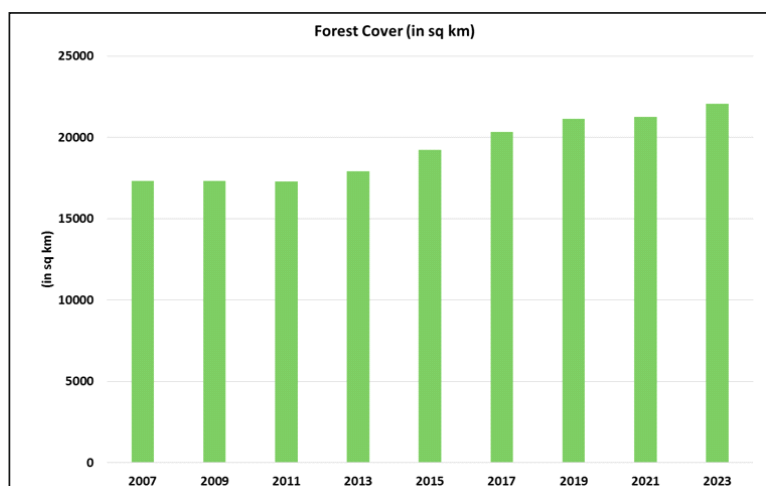


Fig. 1.1. Forest Cover change (in km²) from 2007 to 2023 in Kerala. Source: ISFR, 2023

1.4 District-wise Forest Coverage in Kerala

Table 1.1 provides the district-wise forest coverage in Kerala (Area in sq km), and the tree map at Fig 1 provides the distribution across districts.



Fig 1.2. Forest Area of Districts as % of total Geographic area

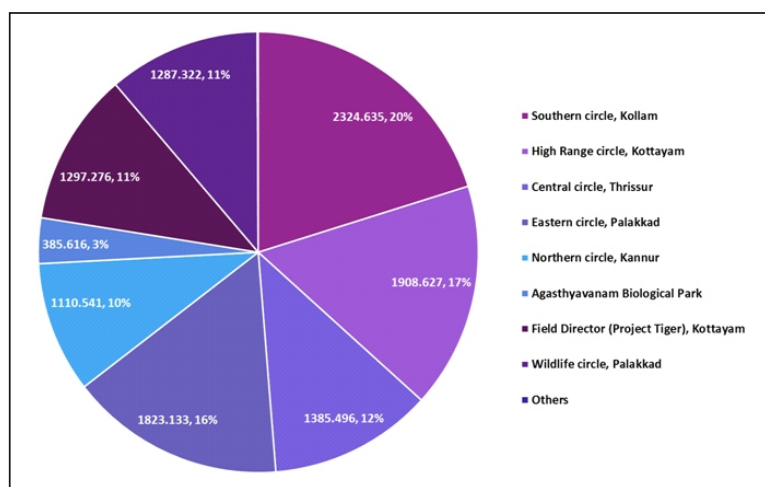


Fig 1.3. Circle wise forest area (km2) according to legal status as on 31.03.2022.

Source: Kerala Forest Statistics Report 2021-22.

District	Geo-graphical Area (GA)	VDF	MDF	OF	Total	%of GA	Scrub
Alappuzha	1415	0	27	53.54	80.54	5.69	0
Ernakulam	3063	165.52	614.4	604.56	1384.48	45.2	5.6
Idukki	4356	355.72	1783.33	1016.27	3155.32	72.44	2.51
Kannur	2961	58	489.63	1121.23	1668.86	56.36	0.18
Kasaragod	1989	1.9	288.7	692.97	983.57	49.45	0
Kollam	2483	104.4	656.88	572.5	1333.78	53.72	0
Kottayam	2206	11.31	525.73	562.01	1099.05	49.82	0
Kozhikode	2345	70.77	409.94	967.11	1447.82	61.74	0.8
Malappuram	3554	142.67	424.68	1416.32	1983.67	55.82	6.47
Palakkad	4482	402.14	637.77	1063.77	2103.68	46.94	12.71
Pathanamthitta	2652	164.92	1229.12	554.88	1948.92	73.49	0.51
Thiruvananthapuram	2189	59.12	702.42	555.5	1317.04	60.17	0.07
Thrissur	3027	218.86	477.79	469.6	1166.25	38.53	0.62
Wayanad	2130	188.99	1204.61	186.91	1580.51	74.2	0.43
Total	38852	1944.32	9472	9837.17	21253.5	54.7	29.9

Source: Kerala ENVIS, 2022

Comparing district-wise area cover in Kerala, Idukki has the largest forest cover (3155 sq km) in the state, followed by Palakkad (2104 sq km), Malappuram (1984 sq km), Pathanamthitta (1949 sq km) and Kannur (1669 sq km). In terms of percentage of forest cover concerning the total geographical area, Wayanad with 74.2 % has the highest forest cover, followed by Pathanamthitta (73.49%), Idukki (72.44%), Kozhikode (61.74%) and Thiruvananthapuram (60.17%). The table reveals an increase in forest cover by 109 sq km compared to the previous assessment (in 2019).

Nearly 60 lakh ha of forest is degraded with less than 40% canopy density. This is the target area for the afforestation programmes. Forest plantations extend over 1.56 lakh ha, teak being the major species, covering almost 50 % of the total plantation area, followed by mixed plantations and Eucalyptus. The natural forests, plantations and homestead gardens contribute to the state's green cover, and all these are required in forest management.

2. Project profile

Compensatory Afforestation Programmes in the state were initiated in 1993, and plantations were maintained until 2002-03. The Government of India notified The Compensatory Afforestation Fund Management and Planning Authority (CAMPA) in April, 2004. The State CAMPA receives funds collected from user agencies towards compensatory afforestation, additional compensatory afforestation, penal compensatory afforestation, Net Present Value (NPV) and all other amounts recovered from such agencies under the Forest (Conservation) Act, 1980. Kerala State CAMPA was constituted in November 2009.

Kerala Forests & Wildlife Department (KFD) has been receiving funds since 2009 from CAMPA, MoEF&CC, GoI for various developmental activities such as afforestation programs, soil and moisture conservation works, capacity building for staff and local communities, the establishment of civil structures, etc. in various forest divisions of Kerala. The funds are spent for compensatory afforestation, biodiversity conservation, soil and moisture conservation, etc. The Chief Executive Officer, CAMPA, Kerala, is responsible for preparing the schemes, Annual Plan of Operations (APO) for CAMPA, and getting it approved by the Executive Committee, Steering Committee and the Government of India, followed by implementation of the approved APO. After receiving the fund allotment under State CAMPA, the implementing officers, the District Forest Officers (DFOs) execute the assigned activities as per the APO. Under each major heads, there are different subheads available, which vary according to site conditions and needs.

The total expenditure of the CAMPA activities from 2022 to 2023 is Rs. 8.24 crores. The details of the Divisions, and the number of activities against different years are in Annexure-I.

3. Methodology

Physical Verification of Activities

I. Plantation - Methodology

- ◆ 10% of the plantation was randomly selected from various divisions.
- ◆ Sampling intensity for evaluation - 10% for block plantations.
- ◆ For every hectare of the plantation, the evaluation was done on a 30 x 30 m plot.
- ◆ Each plot was marked on a map of the plantation area, and GPS co-ordinates of all such (30 x 30 m) plots were collected.

- ◆ In case of linear plantation, every 10th tree/planted sapling of each row was evaluated for 25% of its length per running km basis (5 intermittent line transects – each for 5% of length per running km).
- ◆ The evaluation was done on 0.1 ha by laying a 30 x 30 m plot based on random sampling.

II. Soil and water conservation measures

- (a) The teams obtained the norms and expenditure of SMC activities taken up in the plantation site from the respective offices.
- (b) The teams assessed the quantity/ present condition/ treatment plans of the different SMC works. 20% sampling was carried out.
- (c) For civil works, 50% M&E was carried out, based on random selection from Measurement Books from various divisions.

III. Eradication of weeds

Density assessment - plot counts

- ◆ Three or more plots (quadrats) of size 10 x 10m (located randomly over the site) were marked, and the number of plants within the plots was counted.
- ◆ To get the actual number per hectare, multiplied the average number of plants in the plots by 100.

Plot transects

- ◆ Marked out 100m transects, keeping them parallel to one another (10m-50m apart). Using a 2 x 2m plot frame (using a rope) plots were placed at intervals along the transect.
- ◆ The number of plants within the plot was counted. The values were converted to density measure by averaging the number of plants in each of the plots (i.e. individuals per hectare)

IV. Forest protection

- ◆ 10% of all firelines were evaluated in each division based on random selection from Measurement Books from various divisions.

V. Qualitative Aspects

Focused group discussion (FGD): FGD was conducted for 10% of the villages in which CAMPA works were undertaken with at least 15 villagers in a commonplace within the village. The group comprised office bearers of JFMC, BPL households, and village residents.

Ranking of individual projects

The criterion below was used to evaluate the project needs since the site parameters, species and inputs provided vary from site to site.

Site suitability	High	Medium	Low
Suitable area with favourable site condition rainfall, soil, etc.	7 to 10	>3 to <7	≤ 3
Medium quality forest sites	>5	2-5	≤ 2
Poor forest sites	> 4	2-4	≤ 2

Criteria for classifying a site into suitable site, medium site and poor site

- Suitable site:** soil depth more than 61 cm, rainfall range between 1270 to 3810 mm, average prevalence of adverse biotic factors, gentle to moderate slopes.
- Medium site:** Soil depth ranges between 30.4 cm to 61 cm, rainfall ranges between 889 to 1270 mm, average prevalence of adverse biotic factors, gentle to moderate slopes.
- Poor site:** Soil depth less than 30.4 cm, rainfall less than 889 mm and excessive prevalence of mist and fog during monsoon, prevalence of adverse biotic factors and steep slopes.

This approach involves aggregating the percentage of readings falling into the three higher ratings (3-5) under the 'satisfactory' heading and the two lower ratings (1-2) under 'unsatisfactory'. The introduction of these two broad categories allowed better tracking of performance trends. The ranking table is provided below

Score	Assessment	Category
5	Highly satisfactory	Satisfactory
4	Satisfactory	
3	Moderately satisfactory	
2	Unsatisfactory	Unsatisfactory
1	Highly Unsatisfactory	

Physical verification

Each of the selected plots were visited by the monitoring team and documented the following details in the field.

- ◆ Plot location with GPS co-ordinates and area
- ◆ Plantation type and design (wherever available)
- ◆ Year of establishment
- ◆ Number of saplings planted initially (species wise)
- ◆ Height of the saplings when planted
- ◆ Number of plants surviving at the time of monitoring
- ◆ Average height of surviving plants
- ◆ Species composition and distribution
- ◆ Protection measures and maintenance
- ◆ Anthropogenic pressure, etc.

Parameters considered during M&E

- ◆ For plantations
 - a. **Qualitative** – site suitability (both climatic and edaphic factors), condition of the plantation, choice of species, etc.
 - b. **Quantitative** - Total seedling/tree height, collar girth/Girth at Breast Height (GBH), survival percentage, etc.
 - c. **Other parameters** – Management practices, biotic and abiotic factors, etc.
- ◆ For civil constructions
 - a. Verification (sketch and dimensions) based on the original documents and 'M-book'.

Deliverables and time schedule

Work plan submission	One week after signing the agreement
Field data collection	Six months
Draft report submission	Three month after Field Data Collection
Final report submission	Five months after Draft report submission
Total duration	15 Months

4. Evaluation Details of the Circles and Divisions

The details of various circles and divisions evaluated are presented below.

	Circles	Divisions
Territorial Circles and Divisions	Northern Circle, Kannur	Kannur, North Wayanad, South Wayanad, Kasaragod and Kozhikode Forest Divisions
	Eastern Circle, Palakkad	Nilambur North, Nilambur South, Mannarkkad, Palakkad and Nemmara Forest Divisions
	Central Circle, Thrissur	Thrissur, Chalakudy, Vazhachal and Malayattoor Forest Divisions
	High Range Circle, Kottayam	Kothamangalam, Mankulam, Munnar, Marayoor and Kottayam Forest Divisions
	Southern Circle, Kollam	Ranni, Konni, Punalur, Thenmala, Achenkovil and Thiruvananthapuram Forest Divisions
Wildlife Circles and Divisions	Wildlife, Palakkad	Aralam, Wayanad, Parambikulam, Peechi and Silent Valley National Park Wildlife Divisions.
	Field Director Project Tiger (FDPT), Kottayam	Munnar, Idukki, Periyar Tiger Reserve (PTR) East and Periyar Tiger West Wildlife Divisions
	Agasthyavanam Biological Park (ABP), Thiruvananthapuram	Shendurney and Thiruvananthapuram Wildlife Divisions.

	Circles	Divisions
Social Forestry Circles and Divisions	Social Forestry, Central Region, Ernakulam	Palakkad, Thrissur, Ernakulam and Idukki Social Forestry Divisions.
	Social Forestry, Northern Region, Kozhikode	Kasargode, Kannur, Wayanad, Kozhikode and Malappuram Social Forestry Divisions
	Social Forestry, Southern Region, Kollam	Alappuzha, Kottayam, Pathanamthitta, Kollam and Thiruvananthapuram Social Forestry Divisions
Research Circles and Research Divisions	Working Plan and Research	Kozhikode, Palakkad, Munnar, Punalur and Kollam Working Plan Divisions as well as Research Division, Thrissur

5. Coverage of sites by the evaluation team

The site coverage activities conducted under various categories reflect a comprehensive outreach across multiple forest circles and divisions. Under plantation-related efforts, eco-restoration sites were visited in 8 circles and 21 divisions, covering a total of 66 sites, while fire protection measures were reviewed more extensively across 9 circles, 25 divisions, and 124 sites. In terms of infrastructure and asset-related assessments, CAMPA-funded infrastructure was inspected in 8 circles and 15 divisions, encompassing 23 sites. Although there were no visits for CAMPA assets or wildlife infrastructure, significant attention was given to wildlife assets, with 38 sites visited across 8 circles and 18 divisions.

S. No.	Activities	No of circles visited	No of Divisions visited	No of Sites visited
1	Plantation			
i	Eco restoration sites	8	21	66
ii	Fire Protection	9	25	124
2	Infrastructure and Assets			
I	CAMPA (Infrastructure)	8	15	23
ii	CAMPA (Assets)	-	-	-
iii	Wildlife (Infrastructure)	-	-	-
iv	Wildlife (Assets)	8	18	38

This systematic coverage ensured a well-rounded evaluation of both ecological and infrastructural initiatives under different programme heads of CAMPA.

Northern Circle, Kannur (2022-2023)

The evaluation covered five forest divisions of the circle. They include

1. Kannur
2. North Wayanad
3. South Wayanad
4. Kasaragod
5. Kozhikode

Following activities have been undertaken in the circle. The distribution of activities is as follows:

Component	Particulars of work	Division
Compensatory Afforestation Works (Creation / Preparatory works)	a. Compensatory Afforestation Works (Maintenance).	North Wayanad
Protection of Plantations and Forests	1. Eco-restoration of monocultures a. Eco-restoration in monoculture plantations (Maintenance works)	Kannur North Wayanad South Wayanad
	2. Strengthening forest protection and anti-poaching units. a. Organizing joint patrolling and raids along inter-divisional and inter-state forest boundaries b. Interior camp shed maintenance c. Field survival kits and field equipments	Kasaragod Kozhikode
	3. Improvement of Wildlife habitat a. Removal of exotic weeds b. Bird survey and conservation c. Sea turtle conservation	
	4. Forest fire prevention and control habitat a. Engaging fire gangs through participatory forest management b. Awareness campaigns c. Firefighting equipments d. Creation of fire break	

Coverage of sites in Northern Circle, Kannur

Division	Fire	CAMPA infra-structure	CAMPA Assets	Wild Life infra-structure	Wild Life assets	Plantation Creation/ maintenance	Eco restoration Creation/ maintenance
Kannur	6	1			1		
Kasaragod	3	1					
North Wayanad	3						2
South Wayanad	20	3					3
Kozhikode	3				2		

1. Compensatory afforestation work

a. Compensatory Afforestation Works (Maintenance).

Location/Range/ Division	Geo coordinates	Area	Activity	Remarks
Kakkolamkunnu/ Periya/ North Wayanad	11.8327 77.8218	12 ha	Second year maintenance of Kakkolamkunnu Eco-restoration zone	Casualty replacement, fire protection, weeding and soil moisture conservation works have been carried out in the eco-restoration area. Some of the seedlings were browsed by wild animals. Regular annual maintenance activity may be taken up for few more years for effective restoration of the site.

As per Apo 2022-2023 under Compensatory afforestation activity, second year maintenance such as Casualty replacement, fire protection, weeding and soil moisture conservation was carried out in Kakkolamkunnu Eco-restoration zone in 12 ha in Kakkolamkunnu, Periya range, North Wayanad division. Evaluation team observed that some of the seedlings were browsed by wild animals and suggested for regular annual maintenance. The records and vouchers were verified.

2. Protection of Plantations and Forests

a. Eco-restoration in monoculture plantation

a. Eco-restoration in monoculture plantations (Maintenance works)

Location/Range/ Division	Geo coordinates	Area	Activity	Remarks
Kochumala, Kalpetta range, South Wayanad	11.6347 75.9825	10 ha	Second year maintenance of ANR plantation (10 ha)	Maintenance activities such as casualty replacement, soil moisture conservation and fire line works were carried out. Casualty replacement using native seedlings such as <i>Michelia sp</i> , <i>Phyllanthus emblica</i> , <i>Pongamia pinnata</i> , <i>Dysoxylum malabaricum</i> , <i>Gmelina arborea</i> , <i>Terminalia</i>

Location/Range/ Division	Geo coordinates	Area	Activity	Remarks
				<i>tomentosa</i> etc was undertaken in the area. It is suggested that regular maintenance activities and planting of seedlings should be continued in the area.
Koncherikunnu/ Kalpetta/ South Wayanad	11.6304 75.9777		Third year maintenance of ANR plantation at Koncherikunnu Eco-restoration zone	Maintenance activities such as casualty replacement, soil moisture conservation and fire line works were carried out. Casualty replacement using native seedlings such as <i>Elaeocarpus sp</i> , <i>Terminalia tomentosa</i> , <i>T.bellirica</i> and <i>Syzygium cumini</i> was done. It is suggested that regular maintenance activities should be continued and planting of seedlings can also be done, simultaneously.

As per APO 2022-2023 second year maintenance of Kochumala ANR plantation (10 ha) and third year maintenance of ANR plantation at Koncherikunnu Eco-restoration zone in Kalpetta range, South Wayanad were carried out. Casualty replacement using seedlings of native tree species in ANR plantation in Eco-restoration zones in both the places. Evaluation team suggested for regular maintenance and casualty replacement. Documents and files were verified.

b. Strengthening forest protection and anti-poaching units.

Location/Range/ Division	Activity	Remarks
Kannur/ North Wayanad Thamaraserry/ Kozhikode	Organizing joint patrolling and raids	Staff from Forest departments involved in the joint patrolling. The records were verified.
Ranipuram/ Kannur Interior	Camp shed maintenance	Maintained well.
Irulam/ Chedleth/ South Wayanad	Field survival kits and Field Equipment's	The Jackets required for staff working in interior camp sheds and field require during rainy and winter seasons were purchased, The records related to the purchase of jackets and the jackets available with the staff were verified.

The activities carried out during 2022-2023 were physically verified, records perused and found correct.

c. Improvement of Wildlife habitat

Location/Range/ Division	Activity	Remarks
Pathirimandam/ Mananthavadi, Makkiad FS/ North Wayanad	Removal of exotic weeds -1 ha	Removal of exotic weeds such as Lantana camara and Mikania micrantha was carried out in different parts of the Division. Exotic weeds seen near the adjacent area suggested that regular annual removal of

Location/Range/ Division	Activity	Remarks
		exotic weeds should be continued for few more years for effective eradication of weeds from the area.
Ranipuram/ Kasaragod	Bird survey and Conservation	Records verified
Irringal/ Peruvannamuzhi/ Kozhikode	Sea Turtle Conservation	Employed man power for collection and hatching of turtle eggs during the egg laying season. Verified the records.

Under the improvement of Wildlife habitat activity exotic weeds such as *Lantana camara* and *Mikania micrantha* were removed in different parts of the North Wayanad Division. Bird survey and conservation was carried out at Ranipuram in Kasaragod division and employed man power for collection and hatching of turtle eggs at Irringal in Kozhikode division.

d. Forest fire prevention and control habitat

Location/Range/ Division	Activity	Remarks
Kannur, Kasarkode.	Engaging fire gangs	Fire gangs were engaged during Jan-March every year to prevent the spread of forest fire
Vellamunda/ North Wayanad Division Vettathoor/ Chedalath range/ South Wayanad Peruvannamuzhi/ Kozhikode	Engaging fire gangs	Fire gangs were engaged during fire season especially Jan-March every year to prevent the spread of forest fire. Records were verified and found correct
Vaninagar, Kottankuzi, Bavikanam/ Kasaragod	Fire awareness campaigns	About 50 people participated in the campaigns. The records and photographs were verified.
Pathirimandam/ North Wayanad, Edathara/ Thamaraserry/ Kozhikode	Fire awareness campaigns	Fire awareness campaigns were conducted annually in all the fire vulnerable points of the Division. Relevant records related to the fire awareness campaigns were verified.
Irulam/ Chedelth Range/ South wayanad	Fire awareness campaigns	Fire awareness campaigns are conducted annually in all the fire vulnerable points of the Division. Relevant records related to the fire awareness campaigns were verified.
Pathirimandam/ North Wayanad	Purchase of firefighting equipment	The evaluation team found some of the instruments were damaged during the fire control. Verified records and vouchers and found correct.
Thaliparamba/ Kannur	Firefighting equipment	Firefighting equipments available in Thaliparamba Range was verified
Kanhangad/ Kasarkode	Firefighting equipment	The records for the purchases of the equipments and their physical presences were verified.

Location/Range/ Division	Activity	Remarks
Kannavam and Thaliparamba/ Kannur	Creation of fire break	Fire breaks were established by Kurichiar Adivasi VSS.
Ranipuram/ Kanhangad/ Kasarkode	Creation of fire break	Fire break for a distance of 21 km was made in Kasarkode division. The evaluation team opined that the fire break needs regular annual maintenance, due to natural regeneration of plants.
Valaramkunnu/ Mananthavadi/ North Wayanad	Creation of fire break	Fire break for a distance of 9km was made in North Wayanad division. The evaluation team opined that the fire break needs regular annual maintenance, due to natural regeneration of plants.

As per APO 2022-2023 under forest fire prevention and control habitat 4 different activities were undertaken in the circle. Fire gangs were engaged during fire season especially Jan-March every year to prevent the spread of forest fire in all the divisions of the circle. The evaluation team evaluated the physical existence and the quality of the fire- fighting equipments, observed some of the instruments were damaged during the fire control. The records for the purchases of the equipments and their physical presences were verified. The evaluation team opined that the fire break created at 3 circles needs regular annual maintenance, due to natural regeneration of plants.



Firefighting equipments in Thaliparamba Range



Firefighting equipments in Kasaragod Range

e. Human-animal conflict mitigation

Location/Range/ Division	Activity	Remarks
Aranamala/ Meppadi/ South Wayanad	Engaging watchers to mitigate human animal interface	Human animal interface incidences regular in the area. Records related to engaging watchers to mitigate Human animal conflict in Meppadi range was verified.

Under human-animal conflict mitigation activity watchers were engaged to mitigate human animal interface incidence which were regular in Aranamala, Meppadi range, South Wayanad. Verified the records and found correct.

f. Soil and moisture conservation works

Location/Range/ Division	Geo co-ordinates	Area	Activity	Remarks
Kaniyad/ Thamaraserry/ Kozhikode	11.4478 76.0869	1 ha	Gully plugging	The gully is present in the wet evergreen area across a stream. Since M-book details were not provided the year of work execution could not be verified.

Under this activity the gully plugging work carried out for an amount of Rs. 0.74 lakhs at Kaniyad, Thamaraserry range in Kozhikode division was not verified since M-book details were not provided.

Twelve different activities envisaged under two different components were carried out in the circle as per APO 2022-2023 with a financial achievement of Rs.103.31 lakhs.

Eastern Circle, Palakkad (2022-2023)

The evaluation covered five forest divisions of the circle. They include

1. Nilambur North
2. Nilambur South
3. Mannarkkad
4. Palakkad
5. Nemmara

Five different activities have been undertaken in the circle. The distribution of activities is as follows:

Component	Particulars of work	Division
Protection of Plantations and Forests	1. Eco-restoration of monocultures a. Eco-restoration in monocultures with in digenous species-creation/preparatory works. b. Eco-restoration in monoculture plantations	Nilambur North Nilambur South Mannarkkad Palakkad Nemmara
	2. Strengthening forest protection and anti-poaching units. a. Organising joint patrolling and raids along inter-divisionaland inter-state forest boundaries b. Interior camp shed maintenance	
	3. Improvement of Wildlife habitat a. Maintenance of vayal (Marshy grasslands which are source of fodder for herbivores). b. Removal of exotic weeds	
	4. Forest fire prevention and control habitat a. Engaging fire gangs through participatory forest management b. Awareness campaigns c. Firefighting equipments d. Creation of fire break	
	5. Soil and moisture conservation	
	6. Better Connectivity a. Maintenance of forest roads b. Maintenance of trek paths/ Patrolling routes c. Awareness program d. Nature camps for schools and colleges	

Coverage of sites in Eastern Circle, Palakkad

Division	Fire	CAMPA infra-structure	CAMPA Assets	Wild Life infra-structure	Wild Life assets	Plantation Creation/ maintenance	Eco restoration Creation/ maintenance
Nilambur North	3	1				1	12
Nilambur South	3	1			1		
Mannarkkad	3						1
Palakkad							
Nemmara	9						3

I. Protection of plantation and forests

Under this component 25,000 seedlings were raised in Central Nursery Nilambur for the purpose of various Eco restoration works (preparatory works) for Rs. 3.84 lakhs and the files and vouchers were verified and found correct.

1. Eco-restoration of Monocultures

a. Eco-restoration in monocultures with indigenous species - Creation / Preparatory Works

As per Apo 2022-2023 under Eco-restoration activities, in degraded areas of Pokkode Reserve under Edavanna Range of Nilambur North division a pond of proposed size (M-book verified) for Rs. 65,013.00/- was dug at Pokkode and at Akampadamkunnu-Vadakeperumunda for Rs. 5,28,000.00/-. The evaluation team inspected the pond and found it was maintained well with half-filled water. The vouchers were verified. The specifications of the pond were checked physically with measurement books and vouchers and verified the expenditure.

Eco-restoration activities in failed monoculture plantations activity was carried out in 1983 Pottikkal TP in Attappady Range, Mannarkkad division.



Eco-restoration activity in 1983 Pottikkal TP in Attappady Range, Mannarkkad division



Eco-restoration of encroachment evicted areas at Irulkunnu

Eco-restoration of encroachment evicted areas at Irulkunnu was carried out by planting activities and Manjapara EFL area under Kanjirapuzha FS was carried out through gully plugging in Nilambur Range. The evaluation team verified the vouchers and M-book.

Eco restoration activities at existing eucalyptus plantations such as I, II and III year maintenance, engaging watchers, fire protection, smc works etc. were carried out at Edapottipoyil in Kodumpuzha FS under Edavanna Range, 1978, 1996, 2002 r plantations at Thanuppan Chola, 2000 year plantation at Udumboyil under Vazhikadavu Range for Rs. 7.43 lakhs. Vouchers were verified and found correct.

S. No	Location/Range/ Division	Activity
1.	Myladumpara/ Nelliampathy Range/ Nemmara Division	III Year Maintenance of in 1963 TP Myladumpara by engaging watchers
2.	Thiruvazhiyad/ Nelliampathy Range/ Nemmara Division	III Year Maintenance of 1964 - Thiruvazhiyad TP
3.	Ayilamudi/ Nelliampathy Range/ Nemmara Division	III Year Maintenance of 1965 TP Ayilamudi

As per APO 2022-2023 under Eco-restoration activities, maintenance of 1963 TP in Myladumpara, 1964 TP in Thiruvazhiyad and 1965 TP in Ayilamudi in Nelliampathy Range of Nemmara Division were carried out. The evaluation team verified the vouchers and files and found correct.

2. Strengthening forest protection and Anti-poaching Units

The files and vouchers pertaining to joint patrolling and raids along the inter divisional and interstate boundaries activities at Vazhikadavu, Edavanna and Nilambur range for Rs.6.00 Lakhs and interior Camp shed maintenance at Nilambur range for Rs. 1.42 Lakhs were verified and found correct.

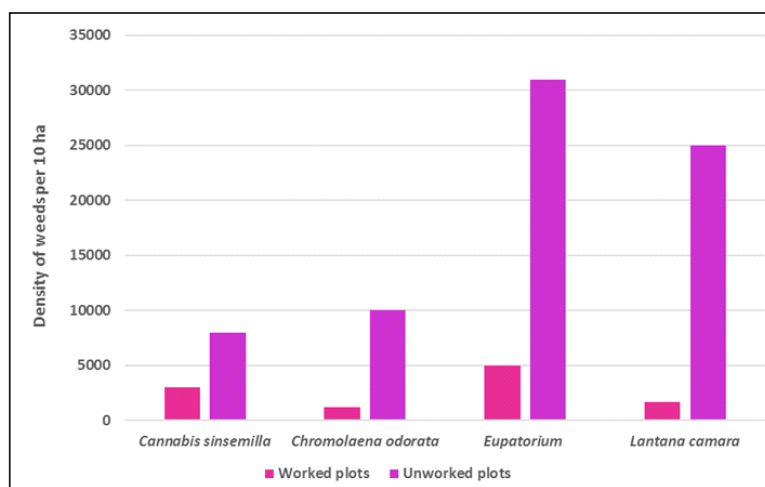
Location/Range/ Division	Activity
Nilambur, Vazhikadavu and Edavanna ranges/ Nilambur North	Joint patrolling and raids along the inter divisional and interstate boundaries activities
Gulkkalmala, Karippuzha, Odampara, Koolammala, Mancheeri, Gajamugham, Panappuzha, Poochappara / Karulai/ Nilambur South	
Alathur/ Nemmara	
Attappadi, Agali and Mannarkkad/Mannarkkad	
Pudusseri North/ Olavakode/ Palakkad	
Nilambur range/ Nilambur North	interior Camp shed maintenance
Panappuzha/ Kalikavu, Karulai/ Nilambur South	interior Camp shed maintenance



Inspection of camp shed maintenance in Nilambur range

3. Improvement of Wildlife Habitat

Location/Range/ Division	Activity
Karreei, Thalkolly, Mangandippadan/ Karulai/ Nilambur South	Maintenance of vayals
Kuppamala, Vattikkal, Ezhuthukkal, Pulimunda, Shankarnkode, Balankulam, Mundakadavu, Uchakulam, Poolakkapara/ Karulai/ Nilambur South	Removal of exotic weeds- 10 ha
Nelliyampathy/ Nemmara Division	Removal of exotic weeds in 1963 TP
Pothundy, Thalippadam area/ Nelliyampathy/ Nemmara Division	Removal of Exotic Weeds in 1963 TP Myladumpara
Pudusseiy North/ Olavakode/ Palakkad division	Removal of exotic weeds- 10 ha



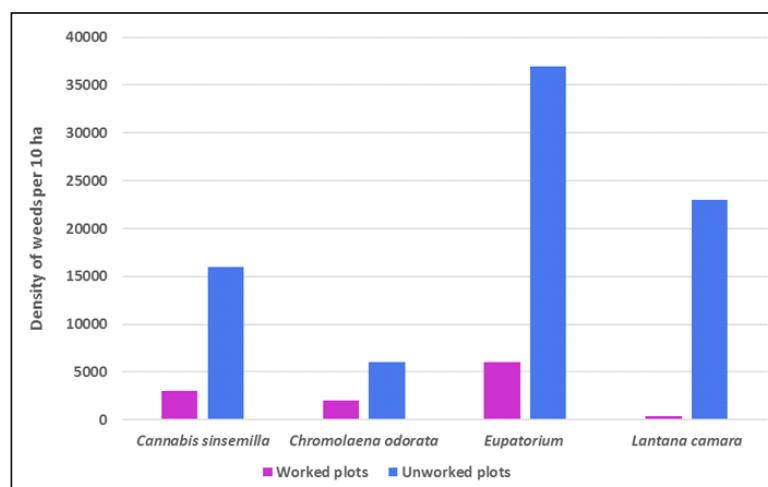
Comparison of weed infestation in weed eradicated plot areas in Nemmara division



Removal of Exotic Weeds in 1963 TP Myladumpara/ Nelliampathy/ Nemmara Division



Removal of exotic weeds in Pudussery North / Walayar/ Palakkad Division



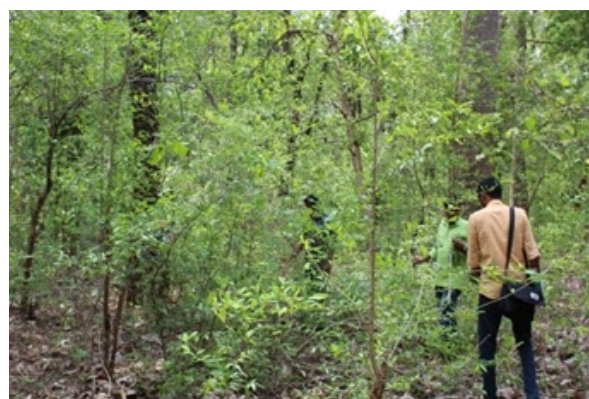
Comparison of weed infestation in weed eradicated vs unworked plot areas in Pudurssery North, Walayar, Palakkad Division



Weed eradication evaluation in Palamarakoop, Palakkad Division



Weeded area



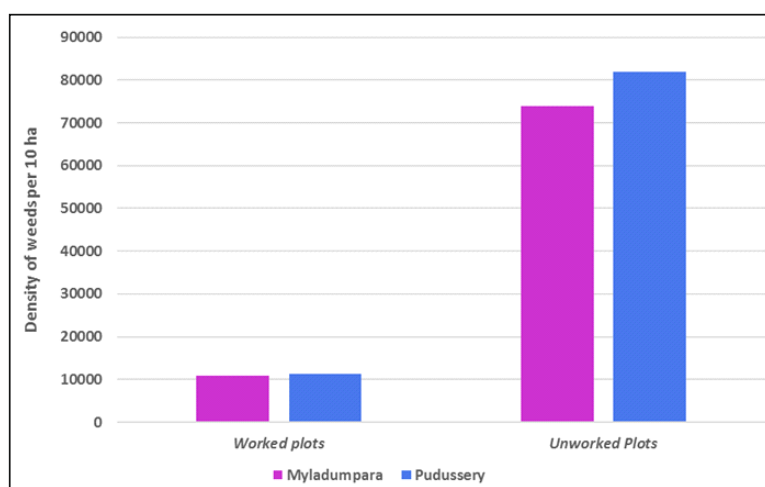
unweeded area



Weed eradication in Pudussery, Palakkad

a. Comparison of weed eradication across sites

The graph indicates the impact of management interventions (worked plots) versus natural or unmanaged conditions (unworked plots) on the density of various invasive weed species. Worked plots in both sites show significantly lower weed density (~11,000 weeds/10 ha) while unworked plots show extremely high weed densities. Species commonly occurring include *Cannabis sinsemilla*, *Chromolaena odorata*, *Eupatorium*, *Lantana camara*. *Eupatorium* shows the highest occurrence and spread in both the plots, requiring a targeted control. Consistency across sites highlights the effectiveness of interventions in reducing ecological degradation due to invasive weeds.



Comparison of weed eradication across sites in Palakkad division

b. Maintenance of vayals

Location/Range/Division	GPS Location	Activity	Dimensions
Kareerpadam / Karulai/ Nilambur South		Maintenance of vayals	20 ha
Thalkolli/ Karulai/ Nilambur South	11.2788 76.3615	Maintenance of vayals	20 ha
Mangandippadan/ Karulai/ Nilambur South	11.2788 76.3615	Maintenance of vayals	20 ha
Vattikal/Karulai/ Nilambur South	11.2806 76.3532	Maintenance of vayals	15.75 ha



Vayal at Thalkolli



Vayal at Kareerpadam



Vayal at Vattikal

4. Forest Fire preservation and control operation

Man-mazdoor were engaged as fire watchers at Nilambur, Edavanna and Vazhikadavu for Rs. 8.55 Lakhs, fire awareness program was conducted at Vazhikadavu and the sub activities such as procuring firefighting equipment (Rs. 4.14 Lakhs) and creation of Fire Break (Rs. 6.65 Lakhs) were carried out at Nilambur, Edavanna and Vazhikadavu range of Nilambur north division.

Location/Range/ Division	Activity
Nilambur, Vazhikadavu and Edavanna ranges/ Nilambur North	Man-mazdoor engaged as fire watchers
Chulannur, Manjapprachirakkunnu, Karimkayam, Chirakkode, Malayappathikunnu, Kaikatty, Vellapparakunnu/ Alathur range/ Nemmara Kaikatty, Thuthampara, Kundali, Hilltop area in NFS, Karappara/ Nelliampathy range/ Nemmara Sooryappara-Kachithode, Suriyal-Kuttimalthittu, Koochimudi-Manpar-Pannimudi-Oracapady/ Kollengode range/ Nemmara	Man-mazdoor engaged as fire watchers- 15 places
Mukkurthi / Karulai/ Nilambur South Mannarkkad/ Mannarkkad Olavakode, Walayar and Ottapalam/ Palakkad	Engaging fire gangs through participatory forest management
Vazhikadavu range/ Nilambur North	Fire awareness program
Pattakarimbu Colony, T.K.Colony, Kodikuthimala/ Kalikavu/ Nilambur South	Fire awareness program
Alathur range/ Nemmara	Fire awareness program- 2 Nos
Attappadi/ Attappadi/ Mannarkkad	Fire awareness program
Walayar and Ottapalam/ Palakkad	Fire awareness training to the front line staff
Walayar / Palakkad	Fire awareness program – 3 nos
Nilambur, Vazhikadavu and Edavanna ranges/ Nilambur North	Procuring firefighting equipment
Kalikavu, Karulai/ Nilambur South	Procuring firefighting equipment
Alathur range/ Nemmara	Procuring firefighting equipment – 3 Nos
Attappadi/ Mannarkkad	Procuring firefighting equipment
Walayar and Olavakkode /Palakkad	Procuring firefighting equipment – 3 Nos
Nilambur, Vazhikadavu and Edavanna ranges/ Nilambur North	Creation of Fire break-25 Km
Vizhumala, Manjapparachirakunnu, Vellapparakunnu, Kuthiravattomkadu, Challappotta, Pannimudi, Manpara, Elavanchery, Muruingamala / Alathur range/ Nemmara Seetharkundu – Thavalam, Oravampady –Ganesh estate, Thavalam-Palakappandy, Kuthiravattomkadu/ Kollengode range/ Nemmara	Creation of Fire break-12 places-50 Km
Vattikkal, Ezhuthukal, Mundakkadavu/ Karulai/ Nilambur South	Fire line creation- 20km
Attappady, Agali and Mannarkkad/ Mannarkkad	Creation of Fire break-25 Km



Creation of fire break at Vattikkal in Nilambur South



Creation of fire line at Mannarkkad



5. Soil Moisture Conservation

Under soil moisture conservation activity maintenance of check dams and gully plugging located at Mothirakunnu, Manalpottichola and Nellikarain Nilambur South division was carried out. The evaluation team verified the vouchers.

The physical existence of the gully plugged at Pokkode in Edavanna range of Nilambur division was inspected by the evaluation team along with M-book and found the present structure of the gully in good condition. Vouchers were also verified and found correct.

Co-ordinates: N 11.3105° E 76.2218°; Elevation:48 m				
Gully plugging ID/No.	Size (Width * Depth *Length) in mm in Measurement Book	Actual Size (Width * Depth * Length) in mm in field	% variation (+/-)	Present Condition of the structure
Upper part	0.50 x 0.80 x 5.0	0.50 x 0.80 x 5.0	Nil	The present structure is in good condition
Middle part	0.50 x 0.80 x 11.5	0.50 x 0.80 x 11.5	Nil	
The bottom part	0.50 x 0.80 x 20.0	0.50 x 0.80 x 20.0	Nil	



Inspection of the gully plugged at Pokkode, Edavanna range, Nilambur division

6. Better connectivity

Under this activity maintenance of Trek path/ Patrolling route, as awareness program Forest day program and two nature camps for school children at central nursery were conducted. The files were verified for Rs. 7.51 lakhs and found correct.

Location/Range/ Division	Activity
Nilambur, Vazhikadavu and Edavanna ranges/ Nilambur North	Maintenance of Trek path/ Patrolling route – 10 Km
Kadannakappu – Poochappara/ Karulai / Nilambur South	Maintenance of Trek path/ Patrolling route – 10 Km
Cheekode to Patta/ Alathur range/ Nemmara	Maintenance of Trekpath/ Patrolling route- 5 Km and a width of 1.5 km Outside the area cleared
Kundali- Nelliampathy/ Nelliampathy/ Nemmara	Maintenance of Trekpath/ Patrolling route- 5 Km and a width of 1.5 km Outside the area cleared
Keerippara to Anappadi and Pangode to Pambanthode colony/ Mannarkkad	Maintenance of Trekpath/ Patrolling route-13 km length (width 5m)
Nilambur North	Forest day program
Nilambur North	Nature camp for school children at central nursery
Nedumgayam/ Karulai, Kalikavu / Nilambur South	Awareness Programme/training to staff and VSS/EDC membe
Karulai, Kalikavu / Nilambur South	Conducting nature Camps to school and college students
Nemmara	Awareness Programme/auditing program
Nemmara	Awareness Programme/Orientation programme for special recruitment BFO
Thalikkakallu/ Alathur range/ Nemmara	Awareness campaign for B.Sc. students of forestry
Kollengode/ Kollengode/ Nemmara	Awareness campaign for school and college students
Attappadi/ Mannarkkad	Awareness Programme
Singappara forest station/ Agali/ Mannarkkad	Conducting nature Camps to school And college students
Palakkad	Conducting nature Camps to School and College students work was not carried out



Maintenance of trek path/ patrolling route at Keerippara to Anappadi and Pangode to Pambanthode colony/ Mannarkkad



Evaluation team Eastern Circle, Palakkad

Fifteen different activities envisaged under the component "Protection of plantations and forests" were carried out in the circle as per APO 2022-2023 with a financial achievement of 137.96 lakhs.

Central Circle, Thrissur (2022-2023)

The evaluation covered four forest divisions of the circle. They include

1. Thrissur
2. Chalakudy
3. Vazhachal
4. Malayattoor

Following activities have been undertaken in the circle. The distribution of activities is as follows:

Component	Particulars of work	Division
Protection of Plantations and Forests	1. Eco-restoration of Monocultures a. Eco-restoration in monoculture plantations (Maintenance works)	Thrissur Chalakudy Vazhachal Malayattoor
	2. Strengthening forest protection and anti-poaching units. a. Organising joint patrolling and raids along inter-divisional and inter-state forest boundaries b. Interior camp shed maintenance c. Field ration for Interior Camps. d. Field survival kits & field equipments	
	3. Improvement of Wildlife habitat a. Maintenance of vayal (marshy grasslands which are source of fodder for herbivores). b. Removal of exotic weeds c. Sea turtle conservation	
	4. Forest fire prevention and control habitat a. Engaging fire gangs through participatory forest management b. Awareness campaigns c. Firefighting equipments d. Creation of fire break	
	5. Soil and moisture conservation	
	6. Better connectivity a. Maintenance of forest roads b. Maintenance of trek paths/ Patrolling routes c. Awareness program d. Nature camps for schools and colleges	

Coverage of sites in Central Circle, Thrissur

Division	Fire	CAMPA infra-structure	CAMPA Assets	Wild Life infra-structure	Wild Life assets	Plantation Creation/ maintenance	Eco restoration Creation/ maintenance
Thrissur	2	2					1
Chalakkudy	2				1		3
Vazhachal	15	2			1		
Malayattoor	1				4		3

I. Protection of Plantations and Forests

1. Eco restoration in monoculture

a. Eco restoration in monoculture plantation maintenance work

Under this activity as per APO 2022-2023 second year and third year maintenance work was carried out in Chalakkudy division, Malayattoor, Thrissur and divisions. The evaluation team suggested for weeding and causality replacement. The vouchers were verified and found correct. M-book was not provided at Thundathil range, Malayattoor division.

Location/Range/ Division	Geo coordinates	Area	Remarks
Nayaranagadi/ Pariyaram range/ Chalakkudy division	10.3425 76.3667	9.4 ha	2 nd & 3 rd year maintenance of 2021 plantation Weeding and causality replacement needed
Kuttenchira/ Palalppallil range/ Chalakkudy division	10.4398 76.3425	14 ha	Good plant growth but damage caused by wild animals. Invasive weeds such as <i>Mikania micrantha</i> and <i>Chromolaena odorata</i> present need to be removed.
Edamalar/ Thundathil range/ Malayattoor	10.1965 76.6911	103 ha	2nd year Maintenance of 2021 Eco restoration site was carried out. Weeding and causality replacement needed. M-book was not provided
Thekkumpadam/ Pattikkad/ Thrissur	10.5475 76.3563	10 ha	1958 TP Thekkumpadam Eco restoration, well maintained with a fire line and less weeds. Causalities could not be ascertained due to gap planting with irregular spacing.

2. Strengthening forest protection and anti-poaching units

Location/Range/ Division	Activity
Chazhakkudy, Thrissur	Organizing joint patrolling and raids- no work was carried out
All ranges Malayattoor	Organizing joint patrolling and raids- no work was carried out
Vazhachal	Organizing joint patrolling and raids
Chazhakkudy, Vazhachal, Thrissur division	Interior camp shed maintenance- No work carried out

Location/Range/ Division	Activity
Chazhakkudy carried out.	Provision for field ration for interior camps-No work
Vazhachal division	Provision for field ration for interior camps
Thrissur	Provision for field ration for interior camps
Malayattoor	Provision for field ration for interior camps
Palappallil range/ Chazhakkudy division	Field survival kits and Field equipment's
Vazhachal, Thrissur	Field survival kits and Field equipment's- No work carried out.

3. Improvement of Wildlife habitat

Location/Range/ Division	Activity
Chazhakkudy	Maintenance of vayals- No work carried out
Vazhachal	Maintenance of vayals
Neelappara/ Kollathirumedu/ Vazhachal	Removal of exotic weeds
Malayattoor	Removal of exotic weeds work was not carried out
Chazhakkudy/ Vazhachal/ Thrissur	Bird survey and conservation- no work carried out
Thrissur	Sea turtle conservation

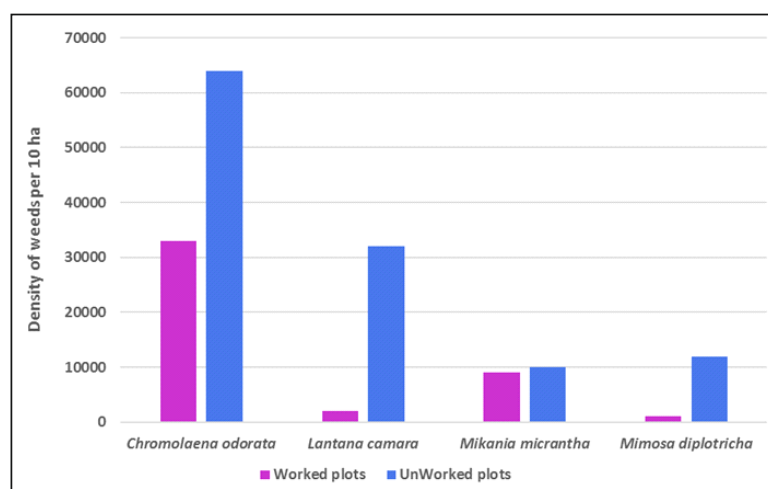
Location/Range/Division	No of turtle	No of eggs laid	No of eggs hatched	Hatching %
Puthankadappuram/ Wadakkanchery range/ Thrissur	134	13571 101/turtle	4515 34 /turtle	33.27 %
Blangad / Wadakkanchery range/ Thrissur	37	2079 56/turtle	1578 43/turtle	76.00 %
Punnayur / Wadakkanchery range/ Thrissur	59	6766 114/turtle	5461 93/turtle	80.71 %
	230	22416	11554	51.54 %

Vayals (3 ha) were maintained well at Anamukku, Kollathirumedu range, Vazhachal division. Noticed frequent visit of Indian gaur and Elephants. Sedge height was 1 M, Moderate infestation of invasive species like *Chromolaena odorata*, *Mikania micrantha* and *Melastoma malabathricum*. The evaluation team observed the vayals were maintained well. The files and vouchers were verified. M-Book was not provided. As per Apo 2022-2023 Vayal maintenance work was not carried out at Chazhakkudy division.

Under the Sea turtle conservation activity, mazdoor were engaged as turtle protection watchers in Blangad, Punnayur (VSS) and Puthankadappuram in Wadakkanchery range of Thrissur division. The evaluation team physically inspected the sea turtle conservation locations. A total of 239 turtle recorded from these areas laid around 22,416 eggs of which 11,554 (51.54 %) hatched. Files and vouchers were and verified and found correct.

a. Removal of exotic weeds

Location/Range/ Division	Geo coordinates	Area	Remarks
Neelappara/ Kollathirumedu/ Vazhachal	10.2874 76.6723	-	Exotic weeds such as <i>Chromolaena odorata</i> , <i>Lantana camara</i> and <i>Mikania micrantha</i> were noticed in the eradicated field and density was found to be 63 % less than the unworked adjacent plot. M-book details were not provided hence the year of work execution could not be verified.



Comparison of weed eradication across sites in Vazhachal

Weed Eradication					
Id/No.	Size/density of infestation in the worked plot	Size/density of infestation in the unworked plot	% change (+/-)	Remarks Present status - Intact/ Worn out/ effectiveness of work	Efficacy of fire line created in terms of number of times fire spread is prevented by the presence of fire line, if any
1	2200/ha	5900/ha	-63%	Effective	Nil

4. Forest fire prevention and control habitat

Location/Range/ Division	Activity
Areas under Nayana VSS/ Palappallil range/ Chalakudy Mattathur fire block area / Vellikkulangara range / Chalakudy	Engaging mazdoor as fire gang
All ranges under Malayattoor	Engaging mazdoor as fire gang
Vazhachal	Engaging fire gangs- No information about the activity was obtained from the division
Vazhachal	Fire awareness campaigns- No information was received about the activity from the division

Location/Range/ Division	Activity
All ranges under Malayattoor	Fire awareness campaigns
Pattikkad/ Pattikkad/ Thrissur	Fire awareness campaigns- Fire awareness training with the help of Fire and Rescue
All ranges under Malayattoor	Firefighting equipments- work was not carried out
Mannamangalam / Pattikkad/ Thrissur	Firefighting equipment to frontline staff
Vazhachal	Firefighting equipments- No information received about the activity from the division
Pariyaram, Vellikkulangara ranges/ Chalakudy	Equipment like Fire beater, Field bag, Field Knife, Rakes, Hiking shoes, Blowers were purchased and distributed to staff in all stations.
Randukai VSS, Thenittampara VSS, Kottamala to Peelarmuzhi to Mothirakkanni/ Pariyaram range/ Chalakudy	Creation of fire break – 450 man mazdoor Maintained well and required weeding.
Erumugham FS, Kodanad Range/ Malayattoor	Engaging man mazdoor for various fire protection activities
Thayyoor, Pazhavor and Puthuruthy area/ Wadakkanchery/ Thrissur	Creation of fire break
Pullamkandam, Varikulam, Pattathippara, Vattai, Vallur, Malayamukku, Vattully, Viruppakka, Manchatty, Asurankundu, Vazholippadam, Thayoor, Pazhavor and Puthuruthy/ Wadakkanchery, Pattikkad and Machad/ Thrissur	Engaging fire protection mazdoor through various VSS

Creation of fire break at Vazhachal

Location/Range/ Division	Geo coordinates	Area	Remarks
Vazhachal to Puliylappara / Vazhachal / Vazhachal	10.2874 76.6723	Length: 5 Km Width: 5 m	Well maintained.
Peringal to Karamthodu/ Vazhachal/ Vazhachal	10.3167 76.6355	Length: 5 Km Width: 5 m	Firebreak was well maintained and mild weed growth was observed
Pokalappara to Anakkayam/ Kollathirumedu/ Vazhachal	10.2880 76.6671	Length: 11 Km Width: 5 m	Firebreak was well maintained and mild weed growth was observed. M-book verified

The evaluation team physically inspected the fire breaks created at two divisions Vazhachal and Kollathirumedu in Vazhachal division along with the M-book and observed that they were maintained well.



Pokalappara to Anakkayam fire break for 11 km at Vazhachal division

Equipment like Fire beater, Field bag, Field Knife, Rakes, Hiking shoes, Blowers were purchased and distributed to staff in all stations in Wadakkanchery range, Chalakudy and Pattikkad/ Thrissur. Firebreak created in Erumugham FS, Kodanad Range, Malayattoor was well maintained but M-book were not provided. The evaluation team verified the vouchers and found correct.



Fire fighting equipments in Vellikkulangara ranges/ Chalakudy

5. Soil moisture conservation

No work has been carried out at Chalakudy, Malayattoor and Vazhachal divisions.

6. Better connectivity

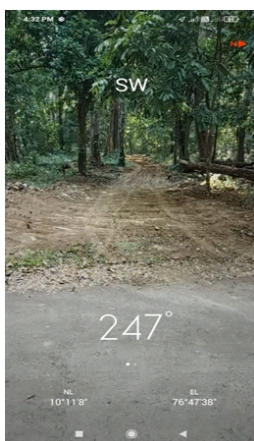
Location/Range/ Division	Activity
Parakkad/ Palappallil range/ Chalakudy	Coupe road maintenance
Vazhikadambu to Atti/ Kuttanpuzha/ Malayattoor	Maintenance of trek paths/patrolling routes- maintained well
Vazhachal/Vazhachal division	Maintenance of trek paths/patrolling routes

Location/Range/ Division	Activity
Malayattoor members	Awareness programme/training to staff and VSS/EDC
Chalakudy and Vazhachal divisions	Nature camps for colleges and school students was not conducted.

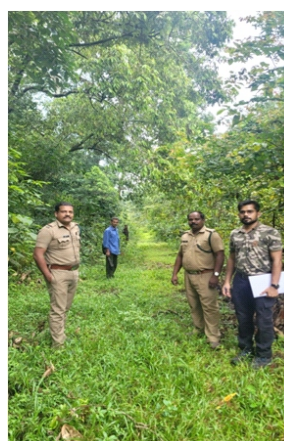
a. Coupe Road/ trek path maintenance in Parakkad

Activity	Location/Range/ Division	Geo coordinates	Size	Remarks
Maintenance of coupe road	Parakkad / Palappallil / Chalakudy	10.4290 76.3612	Length : 3.5 Km Width: 3.5 m	Maintained well
Maintenance of trek paths	Vazhikadambu to Atti/ Kuttanpuzha / Malayattoor	10.1827 76.7786	Length : 4 Km Width: 1.5 m	Maintained well
Maintenance of trek paths	Choozhimedu to Peringal dam / Vazhachal/ Vazhachal	10.3085 76.6471	Length : 3 Km Width: 2.5 m	Maintained well but M- Book was not provided
Maintenance of trek paths	Karamathodu to Nedumchal / Vazhachal/ Vazhachal	10.1994 76.3814	Length : 5 Km Width: 1.5 m	Maintained well but M- Book was not provided
Maintenance of trek paths	Ikkashed to 1972 TP / Vazhachal/ Vazhachal	10.1948 76.3826	Length : 3 Km Width: 1.5 m	Maintained well but M- Book was not provided
Maintenance of trek paths	Pachakkad to Kattilappaara / Vazhachal/ Vazhachal	10.2024 76.3815	Length : 8 Km Width: 2.5 m	Maintained well but M- Book was not provided

The evaluation team inspected the coupe Road at Parakkad, Palappallil range, Chalakudy division and trek path at Malayattoor and Vazhachal divisions reported that they were well maintained. The M-book and vouchers were verified and found correct. M-book was not provided at Vazhachal division.



Trek path at Malayattoor



Maintenance of Choozhimedu to Peringal trek path

Seventeen different activities envisaged under two different components in four divisions were carried out in the circle as per APO 2022-2023 with a financial achievement of 67.99 lakhs. It was observed that many activities envisaged in the APO were not implemented in the circle. In many instances, M-book was also not provided for verification.

High Range Circle, Kottayam (2022-2023)

The evaluation covered five forest divisions of the circle. They include

1. Kothamangalam
2. Mankulam
3. Munnar
4. Marayoor
5. Kottayam

Following activities have been undertaken in the circle. The distribution of activities is as follows:

Component	Particulars of work	Division
Compensatory Afforestation Works (Creation / Preparatory works)	a. Compensatory Afforestation Works (Creation / Preparatory works). b. Compensatory Afforestation Works (Maintenance).	Kottayam, Munnar
Protection of Plantations and Forests	1. Eco-restoration of monocultures a. Eco-restoration in monocultures with indigenous species - Creation / Preparatory Works. b. Eco-restoration in monoculture plantations (Maintenance works) 2. Strengthening forest protection and anti-poaching units. a. Organising joint patrolling and raids along inter-divisional and inter-state forest boundaries b. Interior camp shed maintenance c. Field ration for interior camps. d. Field survival kits and field equipments 3. Improvement of Wildlife habitat a. Removal of exotic weeds b. Bird survey and conservation 4. Forest fire prevention and control habitat a. Engaging fire gangs through participatory forest management b. Awareness campaigns c. Firefighting equipments d. Creation of fire break	Kothamangalam Mankulam Munnar Marayoor Kottayam

Component	Particulars of work	Division
	5. Soil and moisture conservation (Digging/ Desilting of water holes)	
	6. Better connectivity a. Maintenance of trek paths/ Patrolling routes b. Awareness program c. Nature camps for schools and colleges	

Coverage of sites in High Range Circle, Kottayam

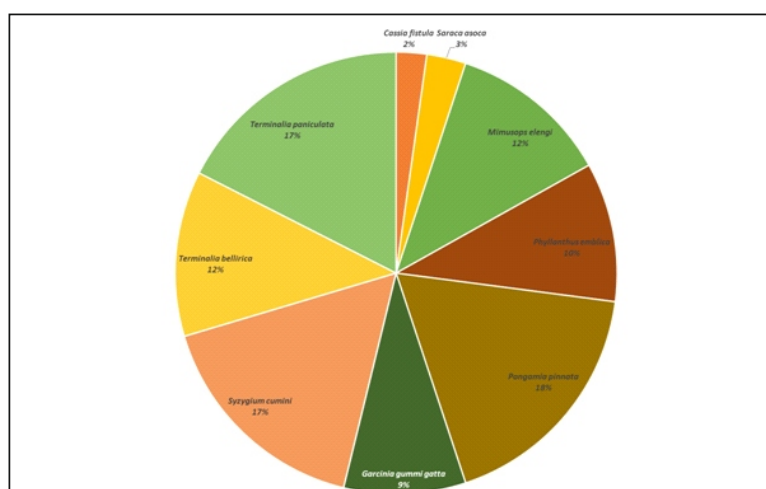
Division	Fire	CAMPA infra-structure	CAMPA Assets	Wild Life infra-structure	Wild Life assets	Plantation Creation/ maintenance	Eco restoration Creation/ maintenance
Kothamangalam	4	1			1		2
Mankulam	7						
Munnar	4	1				3	4
Marayoor	1	1			5		3
Kottayam	1	3				1	

1. Compensatory afforestation works

a. (Creation / Preparatory works)

Location/Range/ Division	Geo coordinates	Work/Area	Species	Survival %	Remarks
Pulikunnu/ Erumeli/ Kottayam	9.4968 76.8855	CA in lieu of Munnar - Bodimettu Road	-	-	Work was not carried out
ENP/ Munnar WL division		Compensatory Afforestation - Creation			Work was not carried out
Ozhuvathadaam/ Neriya Mangalam/ Munnar	10.0554 76.8491	2021 CA plantation 2 ha 5000 plants	<i>Terminalia bellirica</i> , <i>Saraca asoca</i> , <i>Terminalia arjuna</i> , <i>Phyllanthus emblica</i> , <i>Syzigium cumini</i> , <i>Pongamia pinnata</i> , <i>Garcinia gumigutta</i> , <i>Cassia fistula</i>	70	Maintenance work like, weeding, fire line creation, soil work and causality replacement work was carried out and 70% survival was recorded

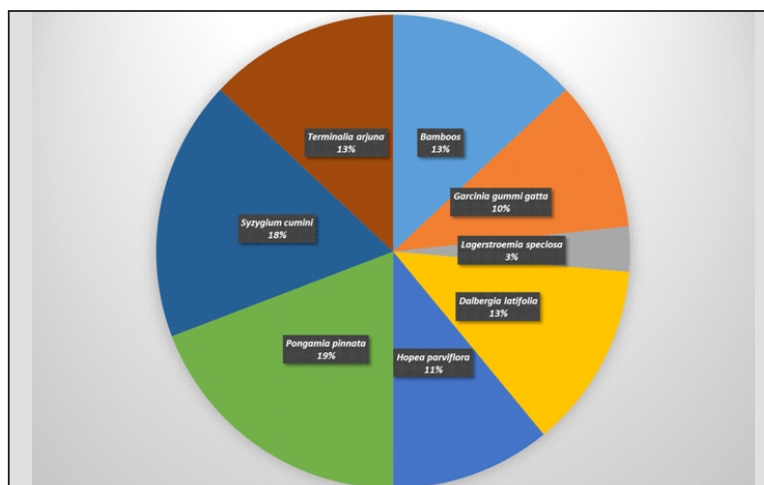
Location/Range/ Division	Geo coordinates	Work/Area	Species	Survival %	Remarks
Kottapara/Adimali/ Munnar	10.0255 76.978	52021 CA plantation at Kottapara-6 ha 6000 seedlings	<i>Dalbergia latifolia</i> , <i>Terminalia arjuna</i> <i>Syzigium cumini</i> , <i>Pongamia pinnata</i> , <i>Bambusa bambos</i> , <i>Garcinia gumigutta</i> , <i>Hopea parviflora</i> , <i>Lagerstroemia</i> <i>speciosa</i>	40	Maintenance work like, weeding, fire line creation, and causality replacement work was carried out. Low survival percentage because of heavy drought.



Species distribution in the 2021 CA plantation at Ozhuvathadaam



2021 CA plantation at Ozhuvathadaam, Munnar



Species distribution in the 2021 CA plantation at Kottapara



2021 CA plantation at Kottapara, Munnar

2. Protection of plantations and forests

1. Eco-restoration of monocultures

a. Eco-restoration in monocultures with indigenous species - Creation / Preparatory Works

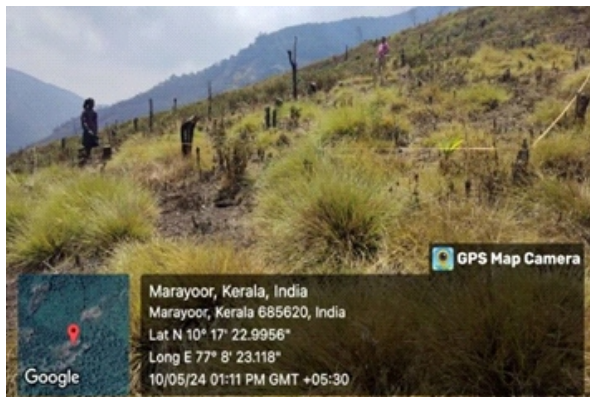
Location/Range/ Division	Geo coordinates	Area	Activity	Remarks
MarayoorBender, SNP/ Munnar WL Munnar, Thenmala / Munnar	10.2897 77.1397	-	Pothady bit III wattle Bit II	Work was not carried out

b. Eco-restoration in monoculture plantations (Maintenance works)

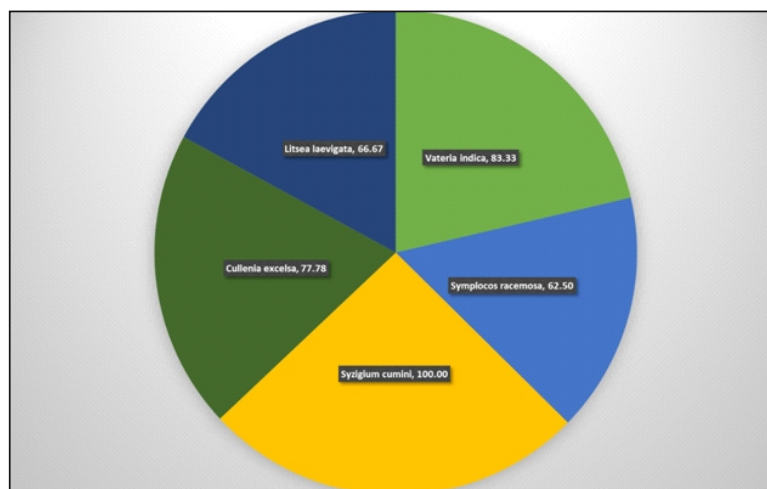
Location/Range/ Division	Geo coordinates	Area	Activity	Remarks
Tattakkad/ Kothamangalam	10°07'21.3" 76°40'43.3"		2 nd year maintenance Eco-restoration 1946 TP Tattakkad	Soil working, planting seedlings (gap planting) at 1946 TP after selection felling, through Chelamala VSS. The evaluation team inspected the field, verified M-book, records and vouchers.
Marayoor	10.1225 76.6786	30ha	2 nd year and 3 rd year maintenance of 1984 and 1986 Pothady and Chinna Pothady	Black wattle plantation eradicated at Pothady
Idalimotta/ Devikulam/ Munnar	10.1754 77.15115	15 ha	3 rd year maintenance of 1991 Wattle Plantation Bit I	Maintenance work like, weeding, fire line creation, soil work and causality replacement work was carried out and 70% survival was recorded
Putukkudi/ Devikulam/ Munnar	10.1344 77.177	42 ha	3 rd year maintenance of 1991 Putukkudi	Wattle weed removal work carried out.



Eco-restoration-Maintenance 1946 TP Tattakkad



Black wattle plantation eradicated at Pothady, Marayoor



Species survival (%) at the 1991 Wattle Plantation Bit I, Idalimotta/ Devikulam/ Munnar



Wattle weed removal at Putukkudi/ Devikulam/ Munnar

3. Strengthening forest protection and anti-poaching units

Location/Range/ Division	Activity	Remarks
Erumeli, Nagarampara/ Kottayam, Mankulam/ Anakkulam, Marayoor and Kanthalloor Range	Organizing joint patrolling and raids	Vouchers verified
Kumuly/ Kottayam Munnar WL	Organizing joint patrolling and raids	Work was not carried out
All ranges/ Munnar	Organizing joint patrolling and raids	Conducted Ganja raids in various Shola. Vouchers verified
Pothenchenni/ Mullaringad/ Kothamangaam, Valadupara/ Ayyappancoil/ Kottayam	Interior Camp shed maintenance	Work was not carried out
Uluppuni/ Erumely/ Kottayam	Interior Camp shed maintenance	Purchase of hardwood cots, aluminium curtain bracket and curtain materials and construction of temporary fire campsheds. Vouchers verified
Anchuveedu/ Kanthalloor/ Marayoor, Therthamalai/ Kanthalloor/ Marayoor	Interior Camp shed maintenance	Verified vouchers
Iddalimotta/ Devikulam/ Munnar	Interior Camp shed maintenance	Furniture purchased were verified for their physical existence. Verified vouchers.
Mankulam/Anakkulam	Provision for field ration for interior camps	Verified vouchers



Fire camp shed at Uluppuni, Erumely range, Kottayam



Campshed maintenance at Kanthalloor Range, Marayoor

4. Improvement of Wildlife habitat

Location/Range/Division	Geo coordinates	Area	Activity	Remarks
Kothamangalam	10.1307 76.6768	-	Bird survey and Conservation	Vouchers verified
SNP/ENP/CWS/Munnar WL			Bird survey and Conservation	Vouchers verified
Munnar/ Munnar	10.0989 76.2019		Bird survey and Conservation	Work not executed
Urumbikkara/ Erumely Range/ Kottayam		10 ha	Removal of exotic weeds - teak plantation	Vouchers verified
Kainagiri, Nashthrakuthu/ Mankulam/ Anakkulam	-	9 ha	Removal of exotic weeds	Vouchers verified
Nachivayal, Pothady/Marayoor	10.2558 77.1571	5 ha 30ha	Removal of exotic weeds	Vouchers verified
SNP/ENP/CWS/Munnar WL		48ha	Removal of exotic weeds	Vouchers verified
Meeshapuli mala/ Devikulam/ Munnar	10.0989 77.2019		Removal of exotic weeds	Work not executed



Removal of exotic weeds at Urumbikkara, Erumely Range, Kottayam



Black wattle eradication at Marayoor



Wattle removal at Munnar WL



5. Forest fire prevention and control habitat

Location/Range/ Division	Activity	Remarks
Thattekkadu, Kothamangalam Kaithappara, Makkuvally, Mannukkad, Manayathadam, Valiyamavu/ Thodupuzha/ Kothamangalam Thommankuthu, Valpara/ Kaliyar/ Kothamangalam	Engaging fire gangs through participatory forest management	M-book and Vouchers verified
Kombukuthy/Erumely Range Vazhathoppu/ Nagarampara Kakathode/ Ayyappankoil/ Kottayam Nachivayal/Marayoor, Munnar WL All Range/ munnar	Engaging fire gangs through participatory forest management	Verified vouchers
Kumuly, Erumely, Nagarampara, Ayyappankoil/ Kottayam SNP/ENP/CWS/ Munnar WL division	Awareness campaigns	Work was not carried out
Mankulam/Anakkulam	Awareness campaigns	Awareness camps conducted for various groups like forest staff, public, school students and VSS members at various occasions.
Choorakettan, Kurathikudy, Kodakallu area of Adimali range/ Munnar	Awareness campaigns	Verified vouchers
Kumuly, Erumely, , Ayyappankoil/ Kottayam, All ranges/ Munnar	Firefighting equipments	Work was not carried out
Nagarampara/ Kottayam	Firefighting equipments	Purchase of PVC handle, Plastic padutha, Torch, Knife, Tiffin box, Steel bottle, Bucket and Water bottle were physically inspected for their availability and verified vouchers.
Mankulam/Anakkulam	Firefighting equipments	Physical existence of firefighting equipments weed uprooter, rocket stove, flash light for elephant driving was verified.
Nachivayal/ Kanthalloor Range/ Marayoor	Firefighting equipments	Purchased walkie talkie. Verified vouchers
Kanthalloor/ Marayoor	Creation of fire break- 23.55 km	Work was not carried out



Fire watchers engaged at Thattekkadu, Kothamangalam



Firefighting equipments at Kothamangalam



Firefighting equipments at Nagarampara, Kottayam



Fire awareness campaign at Adimali range/ Munnar

Fireline Id/No.	Size (Width * Length) in Measurement Book	Actual Size (Width * Length) in field	% variation (+/-)	Efficacy of fire line created in terms of number of times fire spread is prevented by the presence of fire line, if any
1996 TP Thattekkadu/ Kothamangalam	W 5.2 m * L 4 Km	W 5.2 m * L 4Km	0%	Nil
Thattathikudi/ Kottayam	W 5.2 m * L 2.5 Km	W 5.2 m * L 2.5 Km	0%	Nil
Mankualam/Anakkulam	W 5.2 m * L 1.00 Km	W 5.2 m * L 1.00 Km	0%	Nil
Karayoor SR I / Kanthalloor/ Marayoor	W- 5.2 m L- 1 Km	W- 5.2 m L- 1 Km	Nil	Nil
Karayoor SR II/Kanthalloor/ Marayoor	W- 5.2 m L- 1 Km	W- 5.2 m L- 1 Km	Nil	Nil
Vananthura SR I/ Kanthalloor/ Marayoor	W- 5.2 m L- 1.5 Km	W- 5.2 m L- 1.5 Km	Nil	Nil
Vananthura SR II / Kanthalloor/ Marayoor	W- 5.2 m L- 1.5 Km	W- 5.2 m L- 1.5 Km	Nil	Nil
Theerthamala/ Kanthalloor/ Marayoor	W- 5.2 m L- 1.75 Km	W- 5.2 m L- 1.75 Km	Nil	Nil
Kodakkadu(m)/ Kanthalloor/ Marayoor	W- 5.2 m L- 16.80 km	W- 5.2 m L- 16.80 km	Nil	Nil
SNP/ENP/CWS/ Munnar WL	W 5.2 m L 900 m	W 5.2 m L 900 m	0%	Nil

Fireline Id/No.	Size (Width * Length) in Measurement Book	Actual Size (Width * Length) in field	% variation (+/-)	Efficacy of fire line created in terms of number of times fire spread is prevented by the presence of fire line, if any
Kurathikudy/ Munnar	W- 5.2 m L- 2 Km	W- 5.2 m L- 2 Km	0%	Nil
Thattekkannan/ Munnar	W- 5.2 m L- 1 Km	W- 5.2 m L- 1 Km	0%	Nil
Kottappara/ Munnar	W- 5.2 m L- 2 Km	W- 5.2 m L- 2 Km	0%	Nil
Alampara- Swamipara/ Munnar	W- 5.2 m L- 2 Km	W- 5.2 m L- 2 Km	0%	Nil
Pettimudi- Thalamalai/ Munnar	W- 5.2 m L- 3 Km	W- 5.2 m L- 3 Km	0%	Nil
Kallippara- Paliyakutty/ Munnar	W- 5.2 m L- 1 Km	W- 5.2 m L- 1 Km	0%	Nil
Ambalappara- Thalayorapankud/ Munnar	W- 5.2 m L- 2 Km	W- 5.2 m L- 2 Km	0%	Nil
Chempakapara- Kurakkada/ Munnar	W- 5.2 m L- 2 Km	W- 5.2 m L- 2 Km	0%	Nil
Americankunnu/ Munnar	W- 5.2 m L- 1 Km	W- 5.2 m L- 1 Km	0%	Nil
Choorakettan-Mezhukumchal/ Munnar	W- 5.2 m L- 2 Km	W- 5.2 m L- 2 Km	0%	Nil



Fire line at in 1996 TP Thattekkadu, Kothamangalam



Fire break created in Marayoor



6. Soil and moisture conservation (Digging/Desilting of water holes)

Gully plugging work was carried out at Vananthura (N 10° 15' 49.81" E 77° 12' 10.03"), Marayoor division. The structure was good. The dimensions were measured and verified vouchers.



Gully at Marayoor

Gully plugging ID/No.	Size (Width * Depth * Length) in mm in Measurement Book	Actual Size (Width * Depth * Length) in mm in field	% variation (+/-)	Remarks
10.1776 77.2505	6.0 x 1.0 x 1.0	6.0 x 1.0 x 1.0	0	The structure was good

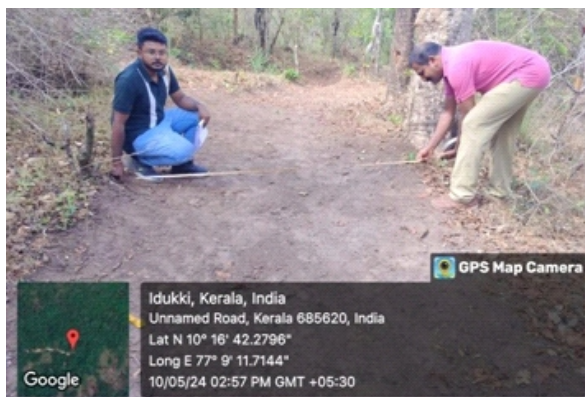


Evaluation of gully plugging at Munnar WL division

7. Better connectivity

Location/Range/ Division	Activity	Remarks
Avarukutty, Munnar, Adimali/ Munnar	Maintenance of trek paths/ Patrolling routes	Work was not carried out
Kaliyar, Mullaringad/ Kothamangalam Erumeli, Ayyappancoil/ Kottayam Mankulam/Anakkulam Marayoor, Kanthalloor/ Marayoor	Awareness program	Conducted awareness programme to Staffs and VSS members daily waged mazdoors and local people, Vouchers verified
Nagarampara, Kumily/Kottayam	Awareness Program	Programme was not conducted
Thommankuthu/ Kothamangalam Urumbikara/ Erumeli/ Kottayam Mankulam/Anakkulam/ Mankulam SNP/ENP/CWS/ Munnar WL	Nature camps for schools and colleges	Vouchers verified
Marayoor, Kanthalloor/ Marayoor	Nature camps for schools and colleges	Work was not carried out

Trek path Id/No.	Size (Width * Length) in Measurement Book	Actual Size (Width * Length) in field	% variation (+/-)	Efficacy of fire line created in terms of number of times fire spread is prevented by the presence of fire line, if any
Marayoor forest station	W- 1.5 m L- 25000 m	W- 1.5 m L- 25000 m	0%	Efficient
Kanthalloor KSR-II	W-1.5 m L-6250 m	W-1.5 m L-6250 m	0%	Efficient
Kanthalloor KSR-II	W-1.5 m L-6250 m	W-1.5 m L-6250 m	0%	Efficient
SNP/ Munnar division	W- 1.6 m	W- 1.6 m	0%	Efficient



Inspecting trek path at Marayoor Trek path at Munnar WL division



Nature awareness camp to School students at Thommankuthu, Kothamangalam



Awareness camp at Mankulam

Eighteen different activities envisaged under two different components were carried out in the five divisions of the circle as per APO 2022-2023 with a financial achievement of 142.14 lakhs.

Southern Circle, Kollam (2022-2023)

The evaluation covered six forest divisions of the circle. They include

1. Ranni
2. Konni
3. Punalur
4. Thenmala
5. Achenkovil
6. Thiruvananthapuram

Following activities have been undertaken in the circle. The distribution of activities is as follows:

Component	Particulars of work	Division
Compensatory Afforestation Works	a. Compensatory afforestation works (Maintenance)	
Protection of Plantations and Forests	1. Eco-restoration of monocultures a. Eco-restoration in monocultures with indigenous species - Creation / Preparatory Works. b. Eco-restoration in monoculture plantations (Maintenance works) 2. Strengthening forest protection and anti-poaching units. a. Organising joint patrolling and raids along inter-divisionaland inter-state forest boundaries b. Interior camp shed maintenance c. Field ration for interior camps. 3. Improvement of Wildlife habitat a. Maintenance of vayal (Marshy grasslands which are source of fodder for herbivores). b. Removal of exotic weeds c. Bird survey and conservation 4. Forest fire prevention and control habitat a. Engaging Fire Gangs through participatory forest management b. Awareness campaigns c. Firefighting equipments d. Creation of fire break 5. Soil and moisture conservation (Digging/ Desilting of Water Holes) 6. Better connectivity a. Maintenance of trek paths/ Patrolling routes b. Awareness program	Ranni, Konni, Punalur, Thenmala, Achenkovil Thiruvananthapuram

Coverage of sites in Southern Circle, Kollam

Division	Fire	CAMPA infra-structure	CAMPA Assets	Wild Life infra-structure	Wild Life assets	Plantation Creation/ maintenance	Eco restoration Creation/ maintenance
Ranni	3		Nil	Nil	3	2	
Konni					2		
Punalur						2	3
Thenmala		1			2		2
Achenkovil	1				2		

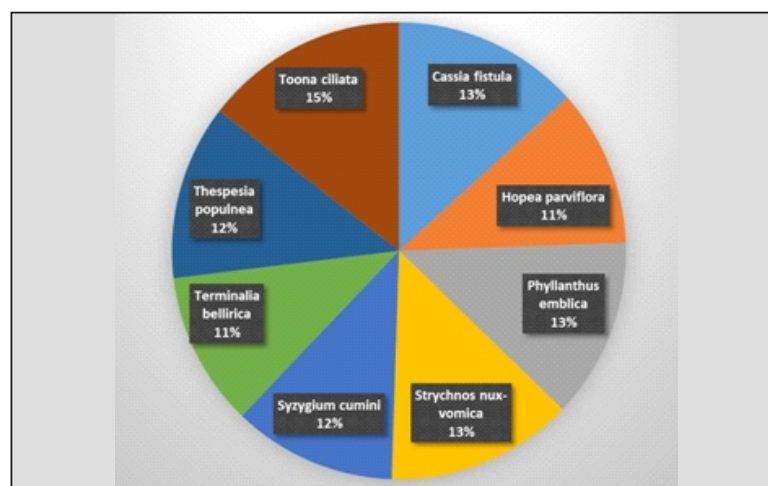
I. Compensatory afforestation works

a. Compensatory afforestation works (Maintenance)

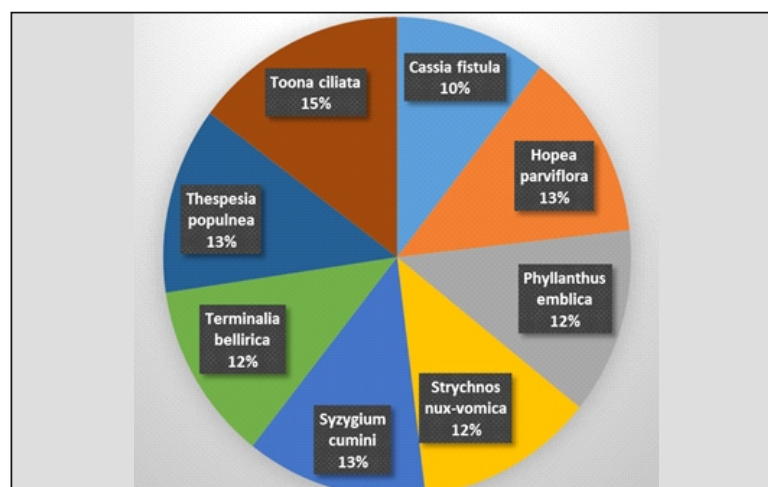
Location/Range/ Division	Geo coordinates	Work/Area	Species	Survival %	Remarks
Kulatharapacha/ Pathanapuram/ Punalur	9.0748 76.9858	Gap filling 3 rd year maintenance of 2018, CA Plantation 28.32 ha. Raised 12463 seedlings	<i>Hopea ponga</i> (Kambagam), <i>Persea macrantha</i> , (Uravu), <i>Pongamia pinnata</i> (Ungu, Pungam), <i>Dalbergia latifolia</i> (Rosewood)	80.79	Maintained well. First Weeding was done after 3 months of planting. 19.2% casualty will be replaced in next year of maintenance. Stem Borer in Pungam Pungam leaf gall Pungam leaf spot were noticed.
Chudalakkunnu/ Pathanapuram/ Punalur	9.0683 76.972	Gap filling 3 rd year maintenance of 2019 CA Plantation. 4702 seedlings in 10.20 ha.	<i>Xylocarpus</i> (Kadamaram), <i>Terminalia bellirica</i> (Thani), <i>Hopea ponga</i> , <i>Dalbergia latifolia</i> , <i>Albizia odoratissima</i> (Pulivaka, Kannivaka), <i>Artocarpus heterophyllus</i> (Jack fruit)	84.21	Maintained well. Leaf rust disease noted in Terminalia.
Vakkalar/ Vadasserikkara/ Ranni	9.2343 77.0265	2 nd maintenance of 2021 CA plantation 9000 plants in 30 ha.	<i>Hopea parviflora</i> , <i>Strychnos nux-vomica</i> , <i>Thespesia populnea</i> , <i>Terminalia bellirica</i> , <i>Phyllanthus emblica</i> , <i>Syzygium cumini</i> , <i>Toonaciliata</i> , <i>Cassia fistula</i>	81.61	Maintained well.

Location/Range/ Division	Geo coordinates	Work/Area	Species	Survival %	Remarks
Vakkalar/ Vadasserikkara/ Ranni	9.2352 77.0283	2 nd maintenance of 2021 CA plantation 3000 plants in 10 ha	<i>Hopea parviflora</i> , <i>Strychnos nux- vomica</i> , <i>Thespesia populnea</i> , <i>Terminalia bellirica</i> , <i>Phyllanthus emblica</i> , <i>Syzygium cumini</i> , <i>Toonaciliata</i> , <i>Cassia fistula</i>	83.17	Maintained well.

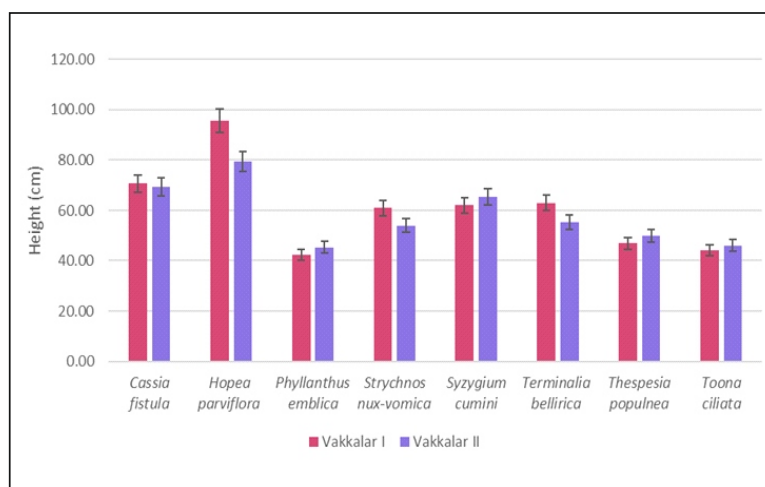
As per APO under the component Compensatory Afforestation Works 2nd and 3rd year maintenance of CA plantations work was carried out in Punalur and Ranni divisions. The plantations were maintained well with high survival rate. The files, records and vouchers pertaining to the works were verified and found correct.



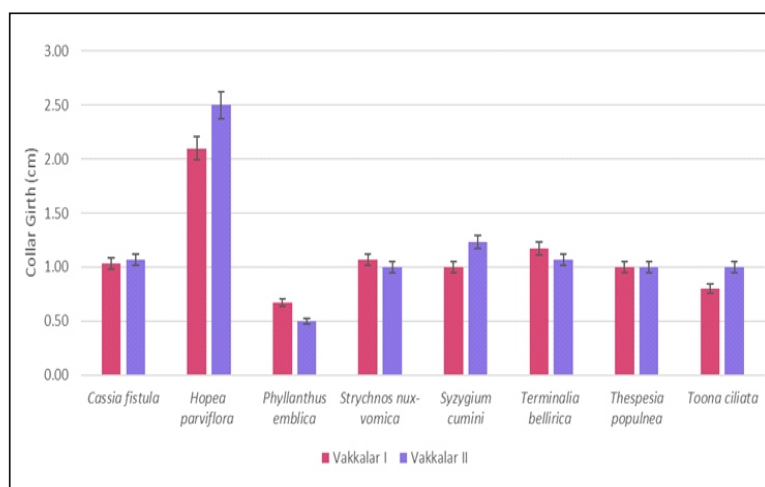
Species composition of the ecorestoration efforts in Vakkalar I, Ranni Division



Species composition of the ecorestoration efforts in Vakkalar II, Ranni Division



Average height (cm) of the species across locations in the ecorestoration efforts in Vakkalar, Ranni Division (Bar indicates std error)



Average collar girth (cm) of the species across locations in the ecorestoration efforts in Vakkalar, Ranni Division (Bar indicates std error)

As per APO 2022-2023 the Compensatory Afforestation Works (Creation / Preparatory works) carried out in Punalur and Ranni divisions were evaluated by the evaluation team. The records and vouchers were verified.

II. Protection of plantations and forests

1. Eco-restoration of monocultures

a. Eco-restoration in monocultures with indigenous species-Creation/Preparatory Works

Location/Range/ Division	Activity	Remarks
Nedungalloorpacha/ Thenmala Range/ Thenmala	Eco Restoration of 1999 Eucalyptus plantation	Work was not carried out
Peringgamala of Palode Range/ Thiruvananthapuram	2011 <i>Acacia mangium</i> Plantation Kolachal bit II	Work was not carried out

As per APO 2022-2023 the proposed activity Eco-restoration in monocultures with indigenous species-Creation/Preparatory Works was not carried out in Thenmala and Thiruvananthapuram divisions.

b. Eco-restoration in monoculture plantations (Maintenance works)

Location/Range/ Division	Activity	Remarks
Sankily Section/ Kulathupuzha Range/ Thiruvananthapuram	1964 TP Chozhiyacode (3 rd Year maintenance)	The maintenance cost of Rs. 3.33 lakh spent in 2021-2022 was showed as expenditure in 2022-2023.
Sankily section/ Kulathupuzha Range/ Thiruvananthapuram	2009 TP Sankily (2 nd Year maintenance)	The work was evaluated. Second-year maintenance like weeding and pruning were done.
Mylamoodu section of Kulathupuzha Range/ Thiruvananthapuram	2006 TP Beedikkunnu (2 nd year maintenance)	The work was evaluated. Second-year maintenance like weeding and pruning were done.
Kulathupuzha Range/ Thiruvananthapuram	Eco restoration of 2007 Acacia plantation Rockwood	This work was not included in the APO 2022-2023. However, according to the Annual Plan of Activity, the work was carried out, involving the removal of Acacia species from the fields and the completion of soil and moisture conservation (SMC) work.



Eco-restoration of 2007 Acacia plantation Rockwood in Kulathupuzha Range/ Thiruvananthapuram

2. Strengthening forest protection and anti-poaching units

Location/Range/ Division	Activity	Remarks
Kallar, Kanayar ranges/ Achenkovil	Organizing joint patrolling and raids	Work not carried out
Kulathupuzha, Onthupacha, Kocharippa, Edappana / Anchal /Punalur	Organizing joint patrolling and raids	Conducting interior area perambulation and Gunja eradication raid was carried out. Vouchers verified.
Punalur, Mampazhathara, Kazhaturutti, Thenmala, Kalamkunnu /Anchal /Punalur	Organizing joint patrolling and raids	Conducting interior area perambulation and Gunja eradication raid was carried out. Vouchers verified.
Ezhamkulam, Kulathupuzha, Canalbelt, Thekkumala, Kunnumanal /Anchal /Punalur	Organizing joint patrolling and raids	Conducting interior area perambulation and Gunja eradication raid was carried out. Vouchers verified.
Ayiranalloor, Vilakkupara, Moolakayam, Kunnumanal / Anchal /Punalur	Organizing joint patrolling and raids	Conducting interior area perambulation and Gunja eradication raid was carried out. Vouchers verified.
Ayiranalloor, Vilakkupara, Moolakayam, Kunnumanal / Anchal /Punalur	Organizing joint patrolling and raids	Conducting interior area perambulation and Gunja eradication raid (second raid) was carried out. Vouchers verified.
Vadasserikkara, Ranni, Goodrical ranges/ Ranni	Organizing joint patrolling and raids	Vouchers verified
Kallar range/ Achenkovil	Provision for field ration for interior camps	Not in APO 2022-2023 but work was carried out for an amount of Rs.0.44 lakhs.
Thenmala Range/ Thenmala	Provision for field ration for interior camps	Not in APO 2022-2023 but work was carried out for an amount of Rs.0.495 lakhs.

As per APO 2022-2023 the proposed sub activity organizing joint patrolling and raids under the activity strengthening forest protection and anti-poaching units was not carried out at Kanayar and Kallar Ranges, Achenkovil division. Instead of procurement of firefighting equipments, the amount was diverted towards solar installation work at Priya Estate in the Achenkovil Range.



Solar installation work at Priya Estate, Achenkovil Range

3. Improvement of Wildlife habitat

Under this activity maintenance of vayals and removal of exotic weeds were carried out effectively in North Wayanad and South Wayanad divisions and maintenance of vayals in North Wayanad division.

Location/Range/ Division	Activity	Remarks
Palkulam/ Punalur	Bird survey and conservation	Planting fruit-bearing trees and removal of invasive weeds was carried out
MethapAmbanar FS/ Punalur	Bird survey and conservation	Work was not carried out
Konni	Removal of exotic weeds	Work was not carried out
Chempanazhikam, Peruvazhikkala, Randammile area, Mottalummode / Thenmala	Removal of exotic weeds	Records and vouchers were verified



Removal of exotic weeds evaluation by the team at Thenmala division

As per APO 2022-2023 under this activity the records were verified and found correct.

a. Maintenance of vayals – Inchapally (Paravally) Punalur

Wildlife Habitat Improvement of Grassland					
Id/No.	Size (Width * Length) in M-Book	Actual Size (Width * Length) in field	% variation (+/-)	Quality of work – Good / Average / Poor	Remarks - Presence or indirect signs
1	10 m x 150 m (0.15 ha)	10 x 140 m	7	Good	Noticed Sambar deer pellet Buffalo dung Elephant dung

Pasture development			
Plot No.	GPS coordinates	Species	No. of plants planted
1.	9.0329 76.9823	<i>Boutelouadactyloides</i> (Buffalo grass) <i>Carexpendula</i> (Sedge Grass) <i>Panicumvirgatum</i> (Panicum Grass)	Grass Species Grass Species Grass Species

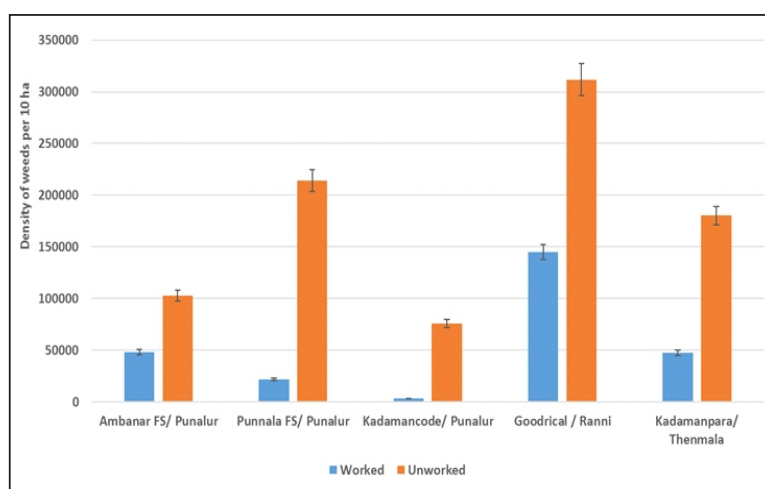
b. Maintenance of Vayal - Manthadam – Kumbazhakadavu/Punalur

Wildlife Habitat Improvement of Grassland					
Id/No.	Size (Width * Length) in M-Book	Actual Size (Width * Length) in field	% variation (+/-)	Quality of work – Good / Average / Poor	Remarks - Presence or indirect signs
1	10 m x 150 m (0.15 Ha)	10 m x 150 m	Nil	Good	Sambar deer pellet Buffalo dung

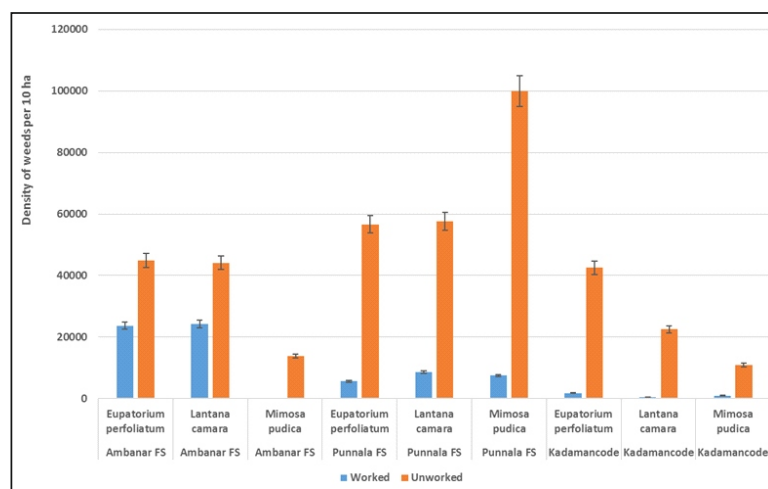
Pasture development			
Plot No.	GPS coordinates	Species	No. of plants planted
1.	9.0305 76.0006	<i>Brachiariadecumbens</i> <i>Cenchrusciliaris</i> (Buffel grass) <i>Melinisminutiflora</i> (Molasses)	Grass Species Grass Species Grass Species

c. Eradication of weeds

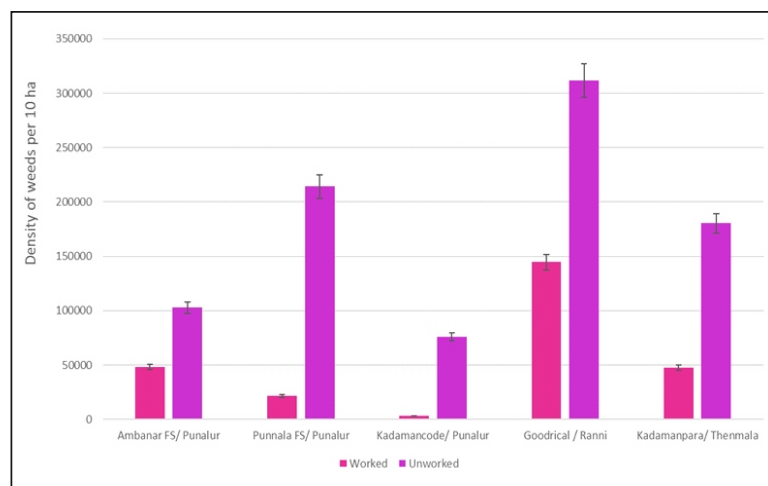
The Southern Circle, Kollam, undertook focused weed eradication efforts in selected forest stations and eco-restoration zones, targeting three major invasive species: *Eupatorium perfoliatum*, *Lantana camara*, and *Mimosa pudica*.



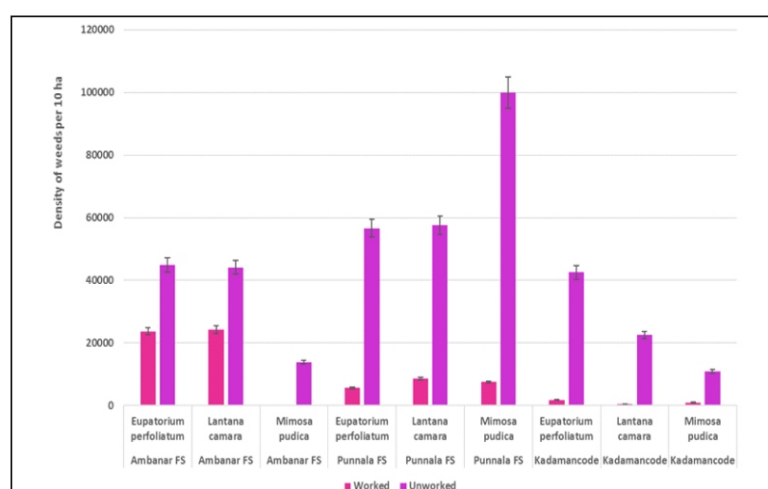
Exotic weed eradication efforts in Southern Circle, Kollam (Bar indicates std error)



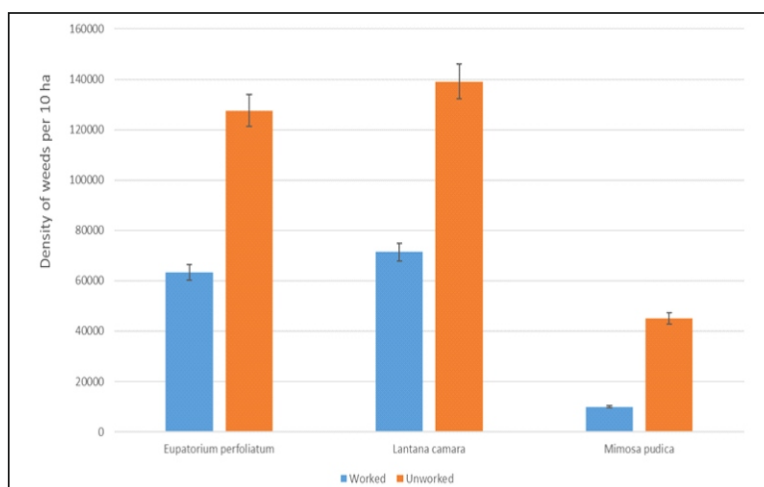
Removal of Exotic Weeds in Punalur at Ambanar FS, Punnala FS and Kadamancode Eco Restoration Zone (Bar indicated std error)



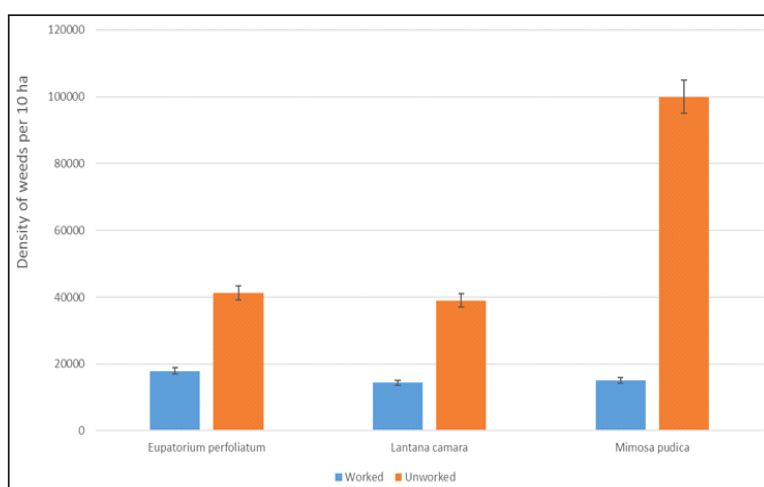
Comparison of eradication of weeds across divisions (Bar indicates std error)



Comparison of eradication of weeds across divisions (Bar indicates std error)



Removal of Exotic Weeds in Goodrical Range (Bar indicates std error)



Removal of Exotic Weeds in Kadamanpara (Bar indicates std error)

In Punalur division, a significant reduction in weed density was observed in worked areas across all forest stations. At Ambanar FS, the density of Eupatorium and Lantana dropped from 45,000 in unworked zones to 25,000 in worked areas. Mimosa was nearly eliminated. In Punnala FS, Mimosa pudica showed the highest infestation in unworked areas (1,05,000 per 10 ha), reduced to less than 10,000 in worked zones. Kadamancode recorded consistently low densities in worked zones, with Eupatorium and Lantana reduced to negligible levels, confirming effective control.

In Goodrical, Weed density in unworked area was above 3,10,000 per 10 ha, the highest across all observed sites. In contrast, the worked plots showed a reduced density of ~145,000, indicating substantial, though not complete, success in control measures.

At Kadamanpara weed density in worked areas was consistently lower. *Mimosa pudica* remained the most resilient, with densities dropping from ~100,000 to ~15,000 per 10 ha. Other species like *Eupatorium* and *Lantana* showed marked improvement after intervention.

The comparative analysis of worked and unworked areas clearly demonstrates the effectiveness of weed eradication programs implemented in the Southern Circle. The greatest success was

observed in Punjala and Kadamancode zones, where intensive removal efforts significantly suppressed invasive growth. However, areas in Ranni still show extremely high weed presence, emphasizing the need for expanded operations.

4. Forest fire prevention and control habitat

Location/Range/ Division	Activity	Remarks
Kanayar, Achenkovil/ Achenkovil	Engaging fire gangs	Records and vouchers were verified.
Kulathupuzha, Paruthippally/ Thiruvananthapuram	Engaging fire gangs	Records and vouchers were verified
Koorampara / Achenkovil Range	Engaging fire gangs for the protection 2019 TP Koorampara	Records and vouchers were verified.
Savacotta/ Achenkovil Range	Engaging fire mazdoor for the protection 2019 TP Savacotta of Achenkovil Range	Records and vouchers were verified.
Kumbhartty/ Achenkovil range	Engaging fire mazdoor for the protection of EFL area in Priya estate in Kumbhartty forest station Achenkovil range	Records and vouchers were verified.
Rajampara, Karikulam/ ranni range/ Ranni Manikandankala, Thekkummala and Kumbalathamom/ Vadasserikkara range/ Ranni Goodrical range/ Ranni	Engaging fire gangs	Records and vouchers were verified.
Kadamanpara, Thenmala, Edamon, Kalluvarambu Section/Thenmala	Engaging fire gangs	Work was not carried out
Pulikkayam to Chittar road Pulikkayam to Pathiyanthodu road Manjappara to Vattavalavu road/ Kanayar/ Achenkovil	Creation of fire break	Cleared jungle growth on both sides of the road 3.2 X 6KM. Physical activities, measurements, M-Book, and bills have been verified and found to be correct
Ranni range/ Ranni	Fire awareness campaigns to the school students- 3 No	Vouchers were verified
Aryankavu/ Thenmala	Fire awareness campaigns	Work was not carried out
Palode/ Thiruvananthapuram	Fire awareness campaigns	Work was carried out and verified the vouchers.
Pathanapuram Range/ Punalur	Firefighting equipment Physically verified the existence of the equipments.	Records and files were verified.

Location/Range/ Division	Activity	Remarks
Anchal Range/ Punalur	Firefighting equipment	Camera trap, sleeping bag, boot, shoulder bag, water bottle, chain saw, water tank, water can,tent, MS 250 Chain saw with 18 guide bars, STIHL Chain Saw MD 250 (3 No) procured were verified along with the records and vouchers.
Ranni range/Ranni	Firefighting equipment	Purchased innovative firefighting equipment for fire protection in the Ranni Range Rs. 1.5 lakhs
Vadasserikara Range/ Ranni	Firefighting equipment- Bag, knife, torch, battery, fire beater, bill hook	Verified vouchers for Rs. 1.71 lakhs
Palode/ Thiruvananthapuram	Firefighting equipment	The work was evaluated, 1 chainsaw, 10 bill books, 10-liter water bottles (10nos), 10 face shields, 10 small hand rack 10 large hand rack, hand gloves, and pickaxes. All the purchased materials were physically verified and found to be correct



Creation of fire break at Konni

a. Creation of firebreak at Ranni Division

S. No.	Range	Particulars of Works	Expenditure in Rs.
1.	Ranni Range	Control burning works at Mulamkootam (15 ha.) Vilakkupara (20 Ha.) and Poovelikunnu (15 ha) in Goodrical Range under Kochukoickal FS	1,31,000.00
2.		Creation of fire break to a width of 5.2m in Plappally to Kulanjithodu area under Kannamala Forest Station in Ranni	1,17,000.00
3.		Creation of fire break to a width of 5.2m in the Kannanumannu Bit 2 area under Rajampara Forest Station in Ranni	29,500.00
4.		Creation of fire break to a width of 5.2m in the Valanplavu to Vettuvapara area under Rajampara Forest Station in Ranni	97,380.00
5.		Creation of fire break to a width of 5.2m in the Chelikkuzhy to Kulanjithodu area under Rajampara Forest Station in Ranni	56,480.00
6.		Creation of fire break to a width of 5.2m in the Allunkal to Moonukallu area under Rajampara Forest Station in Ranni	58,428.00
7.		Creation of fire break to a width of 5.2m in the Kulanjithodu to Plappally area under Rajampara Forest Station in Ranni	1,16,856.00
8.		Creation of fire break to a width of 5.2m in the Kulanjithodu to Chelikkuzhy area under Kannamala Forest Station in Ranni	58,428.00
9.		Creation of fire break to a width of 5.2m in the 1967 Thulapally area under Kannamala Forest Station in Ranni	29,214.00
10.		Creation of fire break to a width of 5.2m in the Pancharamannu area under Kannamala Forest Station in Ranni	29,214.00
11.		Creation of fire break to a width of 5.2m in the Arppumpara to Panamkudantha area under Kannamala Forest Station in Ranni	58,428.00
12.		Creation of fire break to a width of 5.2m in the Nellimala area under Kannamala Forest Station in Ranni	48,690.00
13.		Clearing fire break to a width of 5.2m in the 2011 WGDP ShakunthalaValavu area under Kannamala Forest Station in Ranni	77,904.00
14.		Control burning at Valupara to Mlabara under Kochukoical Fs1	9,387.00

S. No.	Range	Particulars of Works	Expenditure in Rs.
15.	Vadasserikkara Range	Clearing boundary line for a width of 5.2 m x 3 km as a fire break in Thekkumala – Edathara under Thannithodu forest station	43,827.00
16.	Goodrical Range	Clearing heavy jungle growth without felling trees to the width of 2.50 m on either side of the road (5 Ha)	84,705.00
17.		Clearing heavy jungle growth without felling trees to the width of 2.50 m on either side of the road (19 Ha)	1,60,949.00
18.		Creation of fire line in 2017 Adichipuzha Acacia plantation area under Karikulam forest station and Clearing boundary line for a width of 5.2 m	68,166.00
19.		Creation of fire line in 2017 Adichipuzha Misc hardwood plantation area under Karikulam forest station and Clearing boundary line for a width of 5.2 m	39,000.00
20.		Control burning works in the Kattadi area	39,000.00

5. Soil andmoisture conservation (Digging/Desilting of water holes)

As per APO 2022-2023 gully plugging proposed to be carried out at Alinjamon and Chittar for Rs. 1.20 Lakhs was not carried out. Desilting of Check dam work carried out at Achenkovil for Rs. 1.79 lakhs (0.47332, 0.51969, 0.79764) was not included in the APO 2022-2023 but mentioned in the Annual Progress Report 2022-2023. The bills and M-books for this work were not received, hence not verified. Gully plugging at Ponmudi Section at Palode range and Maylamoodu section, Kulathupuzha range were carried out.

Gully plugging ID/No.	Size (Width * Depth * Length) in Measurement Book (m)	Actual Size (Width * Depth * Length) in field (m)	% variation (+/-)	Present Condition of the structure
Kurangadi/ Mannarappara/ Konni	Length: 4.00 Width :2.02 Height :0.96	Length: 4.00 Width : 2.02 Height : 0.96	Nil	Good
Vakkalar/ Vadasserikkara / Ranni	1102.65 m ³	1102.65 m ³	Nil	Good
Vakkalar Top/ Vadasserikkara / Ranni	1102.65 m ³	1102.65 m ³	Nil	Good
Adukuzhy/ Vadasserikkara/ Ranni	1.5 X 1.5 X 7.0 m	1.5 X 1.5 X 7.0 m	Nil	Good

Gully plugging at Uppukuzy Edamon, Thenmala Range N 08°45'17.4 E 077°04'13.8				
Gully plugging ID/No.	Size (Width * Depth * Length) in M - Book (m)	Actual Size (Width * Depth * Length) in field (m)	% variation (+/-)	Present Condition of the structure
1	Length: 4.00 Width :2.02 Height :0.96	Length: 4.00 Width : 2.02 Height : 0.96	Nil	Good
2	Length: 4.09 Width :2.08 Height :0.93	Length: 4.09 Width : 2.08 Height : 0.93	Nil	Good
3	Length: 3.55 Width :2.01 Height :0.93	Length: 3.55 Width : 2.01 Height : 0.93	Nil	Good
4	Length: 4.78 Width :2.18 Height :1.06	Length: 4.78 Width : 2.18 Height : 1.06	Nil	Good
5	Length: 3.71 Width :2.13 Height :1.00	Length: 3.71 Width : 2.13 Height : 1.00	Nil	Good
6	Length: 4.73 Width :2.05 Height :0.99	Length: 4.73 Width : 2.05 Height : 0.99	Nil	Good
7	Length: 4.15 Width :2.12 Height :1.09	Length: 4.15 Width : 2.12 Height : 1.09	Nil	Good
8	Length: 4.9 Width :2.10 Height :1.05	Length: 4.9 Width : 2.10 Height : 1.05	Nil	Good
9	Length: 4.38 Width :2.00 Height :1.03	Length: 4.38 Width : 2.00 Height : 1.03	Nil	Good
10	Length: 3.76 Width :2.15 Height :1.13	Length: 3.76 Width : 2.15 Height : 1.13	Nil	Good
11	Length: 5.3 Width :2.05 Height :.88	Length: 5.3 Width : 2.05 Height : .88	Nil	Good
12	Length: 6.6 Width :2.15 Height :0.99	Length: 6.6 Width : 2.15 Height : 0.99	Nil	Good
13	Length: 4.63 Width :2.14 Height :1.06	Length: 4.63 Width : 2.14 Height : 1.06	Nil	Good

Gully plugging at Uppukuzy Edamon, Thenmala Range N 08°45'17.4 E 077°04'13.8				
Gully plugging ID/No.	Size (Width * Depth * Length) in M - Book (m)	Actual Size (Width * Depth * Length) in field (m)	% variation (+/-)	Present Condition of the structure
14	Length: 6.61 Width :2.06 Height :1.00	Length: 6.61 Width : 2.06 Height : 1.00	Nil	Good
15	Length: 6.5 Width :2.06 Height :1.05	Length: 6.5 Width : 2.06 Height : 1.05	Nil	Good
16	Length: 6.3 Width :2.05 Height :1.03	Length: 6.3 Width : 2.05 Height : 1.03	Nil	Good
17	Length: 11.00 Width :2.09 Height :0.79	Length: 11.00 Width : 2.09 Height : 0.79	Nil	Good
18	Length: 15.03 Width :2.00 Height :0.76	Length: 15.03 Width : 2.00 Height : 0.76	Nil	Good



Desilting of Check dam at Achenkovil



Evaluating the structure of gully at Mannarappara, Konni

6. Better connectivity

Location/Range/ Division	Activity	Remarks
Nedumkulam to Chittar/ Chittar to Meemuthy to Nellippara/ Achenkovil	Maintenance of trek paths and patrolling routes	Work was carried out. Vouchers were verified
Mankayam to Varayadumotta in Peringammala Section, Palode Range/ Brimoor - Peringammala Section, Kulathupuzha Range/ Thiruvananthapuram	Maintenance of trek paths and patrolling routes	Work carried out. Vouchers were verified
Vadamon/Anchal/ Punalur	Awareness program	Cycle rally and nature awareness camp for the students of Vadamon U.P.S.
Neeramakulam, Peruvally, Elimullumplackal, Kavamuthippara, Vellamthetty	Maintenance of trek paths and patrolling routes	Work was not carried out
Achenkovil, Goodrical/ Ranni	Awareness program	
Vadasserikara Nanattumedu / Ranni	Maintenance of trek paths and patrolling routes	
Priya estate Kulirkadu, Rajacoupe-Kurissumala / Aryankavu/ Thenmala	Maintenance of trek paths and patrolling routes	
Vazhapperiyar to Parai Estate/ Kannayar Achenkovil/ Kattikuzhy to Kuthiraketty/ Achenkovil	Maintenance of trek paths and patrolling routes	

Benefits to the Anchal range villagers due to the implementation of the CAMPA project

1. Distributing gas cylinders to residents.
2. Supplying rations to VSS members.
3. Providing medical supplies and organizing medical camps.
4. Hiring local individuals for plantation operations and creating fire lines.

7. Work Evaluated but not included in APO

1. Erecting temporary fire watch tower

All the activities were proposed in Goodrical Range during 2021-22 but were executed during 2022-23.

S. No.	Particulars of Works	Expenditure in Rs.
1.	Erecting temporary fire watch tower at Valupara in Fire season under Kochukoickal FS (10 m ²)	10,731.00
2.	Erecting a temporary fire watch tower at Vilakkupara in Fire season under Kochukoickal FS (10 m ²)	10,731.00
3.	Erecting temporary fire watch tower at Pannimoola in Fire season under Kochukoickal FS (10 m ²)	10,624.00
4.	Erecting a temporary fire watch tower at Vellachimala in Fire season under Plappally FS (10 m ²)	10,731.00
5.	Erecting temporary fire watch tower at Mlampara in Fire season under Kochukoickal FS (10 m ²)	10,731.00
6.	Erecting temporary fire watch tower at Kochandymala in Fire season under Kochukoickal FS (10 m ²)	10,731.00
7.	Erecting a temporary fire watch tower at Mulamkootam in Fire season under Kochukoickal FS (10 m ²)	10,731.00

2. Desilting check dam

S. No.	Range	Particulars of Works	Expenditure in Rs.
1.	Ranni Range	Desilting check dam at Vakkalar in Thekkutodu FS	48342.00
2.	Vadasserikkara Range	Desilting check dam at Vakkalar in Gurunatamannu FS	107681.00

3. Human-animal conflict mitigation

Location/Range/ Division	Activity	Remarks
Naduvathumoozhy, Konni, Mannarappara/ konni	Engaging watchers to mitigate human animal interface	The work was not included in the APO 2022-2023, but according to the Annual Plan of Progress, it was carried out and evaluated.
Shenkotta, Kottavasal, Muthalathodu/ Achenkovil	Engaging watchers to mitigate human animal interface	Work carried out in 3 places for Rs. 1.448 was not included in the APO 2022-2023.

An amount of Rs. 50,817 was paid as compensation for crop damage in Ranni Range.

Eighteen different activities envisaged under two different components were carried out in the six divisions of the circle as per APO 2022-2023 with a financial achievement of Rs. 99.34 lakhs. This circle has meticulously carried out maintenance activities in ecorestoration plots, SMC structures and three activities not listed under the APO were also carried out which has been verified

Wildlife Circle, Palakkad (2022-2023)

The evaluation covered four divisions of the circle. They include

1. Aralam
2. Wayanad
3. Parambikulam
4. Peechi
5. Silent Valley

Following activities have been undertaken in the circle. The distribution of activities is as follows:

Component	Particulars of work	Division
Protection of Plantations and Forests	1. Strengthening forest protection and anti-poaching units. a. Interior camp shed maintenance	Aralam Wayanad Parambikulam Peechi Silent Valley
	2. Improvement of Wildlife habitat a. Maintenance of vayal (marshy grasslands which are source of fodder for herbivores). b. Removal of exotic weeds c. Bird survey and conservation d. Sea turtle conservation	
	3. Forest fire prevention and control habitat a. Engaging fire gangs through participatory forest management b. Awareness campaigns c. Firefighting equipments d. Creation of fire break	
	4. Better connectivity a. Maintenance of trek path	

Coverage of sites in Eastern circle, Palakkad

Division	Fire	CAMPA infra-structure	CAMPA Assets	Wild Life infra-structure	Wild Life assets	Plantation Creation/ maintenance	Eco restoration Creation/ maintenance
Aralam	19	1			2		2
Wayanad							
Parambikulam							
Peechi							
Silent Valley National Park Wildlife							

1. Strengthening forest protection and anti-poaching units

The cost of renovation of various Anti-poaching camp sheds carried out under Olakara forest Peechi-Valani Wildlife Sanctuary during FY-2021-22 and the bills were settled during FY-2022-23. The bills and records are verified and found to be in good condition.

2. Forest fire prevention and control habitat

Location/Range/ Division	Activity	Area	Remarks
Tholpetty range/ Wayanad	Engaging fire gangs	1 no	Fire gangs engaged for fire protection works from 14th stone to 22nd stone in Dasanghatta section utilizing adequate available equipments with good cooperation. Following SOP procedures.
Padavayal/ Bhavani/ Silent Valley	Fire awareness campaign	1 no	The evaluation team interacted with the members. The bills and records were verified and found to be accurate.
Padavayal/ Bhavani/ Silent Valley	Fire awareness campaign	1 no	
Tholpetty/ Wayanad WL	Fire awareness campaign	1 no	
Kurichiat/ Wayanad WL	Purchase of firefighting equipment	-	Physical existence of the firefighting equipments like Fire beater, blower, Chain Saw, Water Cans and Billhook Machete and records and vouchers were verified.
Muthanga range/ Wayanad	Purchase of firefighting equipment	-	Physical existence of the firefighting equipments was verified. The evaluation team interacted with the

Location/Range/ Division	Activity	Area	Remarks
			members. The bills and records were verified and found to be accurate.
Aralam/ Aralam WL/ Aralam WL	Creation of fire break/ Fire protection work	55 th area waterhole to Pottichappara in Aralam sec	Good and maintained well. The bills and records were verified and found to be accurate.
Aralam/ Aralam WL/ Aralam WL	Creation of fire break/ Fire protection work	Interstate boundary from Meenmutty waterfall to Kanhhippara	Well protected, only one fire occurrence that was controlled in 2023
Aralam/ Aralam WL/ Aralam WL	Creation of fire break/ Fire protection work	1978 Teak Plantation in Aralam section in Aralam WL range	Fire lines were found to be good and maintained well. The bills and records were verified and found to be accurate.
Aralam/ Aralam WL/ Aralam WL	Creation of fire break/ Fire protection work	1979 Teak Plantation in Aralam section in Aralam WL range	Fire lines were found to be good and maintained well. The bills and records were verified and found to be accurate.
Sulthan Bathery Range/ Wayanad	Creation of fire break/ Fire protection work - 8 ha	Molahalla Thalukolli, Kalankandy Thekkumpata and Muthanga Arakunji	Fire lines were found to be good and maintained well. The bills and records were verified and found to be accurate.

Fire line Id/ No.	Geo coordinates	Size (Width * Length) in M-Book	Actual Size (Width * Length) in field	Location	% variation (+/-)	Remarks
1	11.9692 75.8212	5.2 m * 1.9 Km	5.6m	55 th area waterhole to Pottichappara, Aralam	+7.69 %	Good and maintained well. The bills and records were verified and found to be accurate.
2	11.9727 75.8231	5.2 m * 1.9 Km	6.1m	55 th area waterhole to Pottichappara/ Aralam	+17.31 %	
3	11.9728 75.8253	5.2 m * 1.9 Km	5.0m	55 th area waterhole to Pottichappara/ Aralam	-3.85 %	

Fire line Id/ No.	Geo coordinates	Size (Width * Length) in M-Book	Actual Size (Width * Length) in field	Location	% variation (+/-)	Remarks
4	11.9461 75.8816	10.4 m * 1.8 Km	10.4 m * 1.8 Km	Interstate boundary from Meenmutty waterfall to Kanhippara/ Aralam	0	Maintained movement registers well with the cooperation of villagers in forest protection following SOP procedure.
5	11.9462 75.8811	3.6 m * 1.8 Km	4.3 m		+0.7	
7	11.9630 75.8153	5.2m* 2.1 Km	6.3 m	1978 Teak Plantation in Aralam section in Aralam WL range	+21.15	Fire lines were found to be good and maintained well. The bills and records were verified and found to be accurate.
8	11.9651 75.8159	5.2m* 2.1 Km	6.5 m		+25	
9	11.9658 75.8170	5.2m* 2.1 Km	5.8 m		+11.54	
10	11.9672 75.8177	1.2m* 2Km	5.6m	1979 Teak Plantation in Aralam section in Aralam WL range	+7.69	
11	11.9673 75.8169	1.2m* 2 Km	5.4m		+3.84	
12	11.9673 75.8183	5.2 m* 2 Km	5.6m		+7.69	
13	11.1135 76.5166	12 m	10.4 m	Sisppara to Anginda interstate boundary under SVNP Range, Silent Valley	-13.33	The tribal farmers feel it is safe for their crops though there were no fire incidents. It is done every year for the prevention of fire. Grazing is restricted beyond the fire line
14	11.1138 76.5161	12 m	13.0 m		+8.33	
15	11.1145 76.5152	12 m	12.6 m		+5	
16	10.5667 76.3889	5.2m * 5 Km	6.2m	Perumthumba, Payattupara in PVWS, Peechi	+19.23	Maintained well and found to be fire protective. The bills and records were verified and found correct.
17	10.5655 76.3890	5.2m * 5Km	5.5m		+5.77	
18	10.5654 76.3894	5.2m * 5Km	5.6m		+7.69	
19	10.5667	5.2m * 6.5 Km	5.5m	Perumthumba Kallipara in PVWS, Peechi	+ 5.77	
20	10.5496	5.2m * 6.5 Km	6.0m		+ 15.38	
21	10.5657	5.2m * 6.5 Km	5.5m		+ 5.77	

The fire lines created at Meenmutty waterfall to Kanhippara were evaluated and found to be good. The dimensions of the evaluated work are at a width of 10.4 meters, scraping 3.6 meters on both side and burning a central belt of 3.2 meters. The bills and records were verified and found to be accurate. The evaluation team interacted with the fire gang members Shri. Sunil Kumar, Shri. Biju KB, Shri. Laxman and Shri. Srijith. The fire lines were maintained well in Aralam Division. Grazing is restricted beyond the fire line. It is recommended that more firefighting, safety equipments, and other provisions may be considered for fire gang watchers.



Fire line protection at Kottiyoor, Aralam Division



Fire line protection at Silent Valley division

Fire awareness program was conducted to field staff and VSS/EDC members in Padavayal village in Bhavani range at Silent Valley division. The evaluation team interacted with the field staff and members. They observed that

- ◆ The members were satisfied with the activities such as creating basic amenities, transportation path etc., carried out for their development under CAMPA fund.
- ◆ The members felt that the fire line works help to protect the agriculture lands and the forest fringe villages.
- ◆ The EDC members requested the following facilities for the village
 1. Electric fences for their agricultural lands.
 2. Networking towers for communication.

The members were satisfied with the activities like Nature education camp on “Save Mannarkkad” conducted at Padavayal village in Bhavani range of Silent Valley division.



Fire awareness campaign at Padavayal village, Bhavani range, Silent Valley



Fire Awareness campaign at Tholpatty, Wayanad WL



Firefighting equipments at Kidanganad and Muthanga, Wayanad WL

a. Maintenance of trek path

Location/Range/Division	Geo coordinates	Area	Remarks
Mukkada to Pottamakkanam / Aralam WL	11.9101 75.8778	2.6 m	Appeared to be frequently used and well-maintained. The marking stumps were also seen along the trek path. M-book details, bills were verified and found to be accurate.
	11.9103 75.8800	2.6 m	
	11.9082 75.8853	2.6 m	

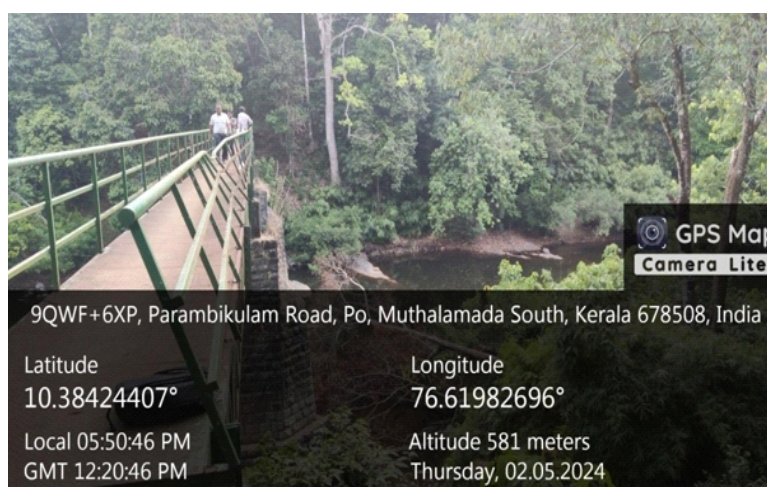
As per APO 2022-2023 under the activity better connectivity, the trek paths were maintained well and used frequently. The evaluation team verified the M-book and found to be accurate.



Maintenance of trek path in Aralam division

Spill over work

Construction of steel foot bridge across Karappara River at Muthuvarachal under Orukomban Range, Parambikulam division, measuring 1.4 meter in width, 56.5 meter in length, and 1.0 meter in height was maintained well and in usable condition. The work was completed under CAMPA during 2018-19 and part payment of Rs. 13.55 lakhs was made in the financial year 2022-2023.



Steel Foot Bridge across Karappara River at Muthuvarachal, Parambikulam division

The payment for the work – procurement of 500 L water tanks and accessories for water supply to staff quarters in Muthalamada, Surgam range, Parambikulam division. was made in the FY 2022-2023. The evaluation team inspected the physical existence and verified the records and vouchers.

Ten different activities mostly focusing on forest protection activities were taken up with a financial achievement of Rs. 82.23 lakhs. This circle has also completed spill over activities from the earlier APOs, which has been verified.

Field Director Project Tiger, Kottayam (2022-2023)

The evaluation covered four forest divisions of the circle. They include

1. Munnar WL
2. Idukki WL
3. Periyar Tiger Reserve East
4. Periyar Tiger Reserve West

Following activities have been undertaken in the circle. The distribution of activities is as follows:

Component	Particulars of work	Division
Protection of Plantations and Forests	1. Eco-restoration of Monocultures a. Eco-restoration in monoculture plantations (Maintenance works)	Idukki WL Periyar Tiger Reserve (PTR) East, Periyar Tiger Reserve (PTR) West
	2. Strengthening forest protection and anti-poaching units. a. Organizing joint patrolling and raids along inter-divisional and inter-state forest boundaries b. Interior camp shed maintenance	
	3. Improvement of Wildlife habitat a. Maintenance of Vayal (Marshy grasslands which are source of fodder for herbivores).	
	4. Forest fire prevention and control habitat a. Engaging fire gangs through participatory forest management b. Creation of fire break c. Awareness campaigns	
	5. Soil and moisture conservation (Digging/ Desilting of Water Holes)	
	6. Better connectivity a. Maintenance of Trek paths/ Patrolling Routes	

Coverage of sites in Field Director Project Tiger, Kottayam

Division	Fire	CAMPA infra-structure	CAMPA Assets	Wild Life infra-structure	Wild Life assets	Plantation Creation/ maintenance	Eco restoration Creation/ maintenance
Munnar	3	1			1	1	1
Idukki					2		
PTR East	3						2
PTR West					5		6

I. Protection of plantations and forests

1. Eco-restoration of monocultures

a. Eco-restoration in monoculture plantations (Creation works)

Location/Range/ Division	Geo coordinates	Area	Activity	Remarks
Uppupara/ Azhutha/ PTR East	9.2924 77.7578	2.5 ha	Eucalyptus plantation Average height: 35m to 40m Average girth: 110cm to 115cm	Eucalyptus trees were subjected to girdling. 2000 trees dried. Vouchers and files were verified.
Pachakanam/ Pamba/PTR East	9.2450 77.8888	7 ha	Eucalyptus plantation Average height: 25m to 30m Average girth: 40cm to 50cm	Eucalyptus trees were subjected to girdling. 2230 trees dried. Vouchers and files were verified.
Mavuthu/ Thekkadi/ PTR East	9.3601 77.1241	50 ha	1980 Eucalyptus plantation Average height: 25m to 30m Average girth: 40cm to 50cm	Eucalyptus trees were subjected to girdling. 1530 trees dried. Vouchers and files were verified.

As per APO 2022-2023 the Eco restoration of monoculture activity was carried out in eucalyptus plantations in PTR East division. The evaluation team inspected the plantations and verified the measurements, work progress, records and vouchers.



Evaluation team inspecting the eco restoration work at PTR East division

2. Strengthening forest protection and anti-poaching units

Location/Range/ Division	Activity	Remarks
Vallakadavu/ PTR East	Interior Camp shed maintenance	The evaluation team inspected the camp shed and verified files and vouchers and found correct.

Under the activity camp shed maintenance, camp shed was renovated/upgraded with the following measurements.

- Outer shed with aluminium sheet roofing of 14m length, 2.25m width and 14m length, 6m width on two sides of the shed
- Interior room extension for 6.1m length, 3m width.
- False ceiling for 8.15m length, 4.05m width.
- Restroom of size 4m length, 2.5 width newly constructed inside the camp shed.



Inspection of camp shed at Vallakadavu/ PTR East

The evaluation team physical verified the dimensions of the camp shed along with records and vouchers and found correct.

3. Improvement of Wildlife habitat

Location/Range/ Division	Geo coordinates	Activity	Remarks
Vallakadavu/ PTR East	9.3242 77.834	Maintenance of Vayal	Maintained well by removing unnecessary weeds leaving the grass for grazing animals. 3 water holes present inside the same area were also inspected and found in good condition and used by animals.



Well maintained vayal leaving the grass for grazing animals at Vallakadavu / PTR East

a. Maintenance of vayal of Idukki Wildlife Sanctuary

Id/No.	Size (Width * Length) in M-Book	Actual Size (Width * Length) in field	% variation (+/-)	Area	Efficacy of fire line created in terms of number of times fire spread is prevented by the presence of fire line, if any
Pettikkadu, Pulinganam (2 bits), Chempanmallu, Kottakalla, Vellakamaly Kizhukanam	7.0 ha 4.0 ha	7.0 ha 4.0 ha Extra 4 ha	Nil Nil	Total 15 ha	Good



Vayal in Idukki used as fodder for wild animals especially for deer and elephants

Maintenance of vayal was done only in Idukki area not in TBS and maintained very well. These vayals were used as fodder for wild animals especially for deer and elephants. The vayals were maintained well with frequent removal of weeds and proper monitoring. The M-book entries and the respective bills were also verified.

4. Forest fire prevention and control habitat

Location/Range/ Division	Activity	Remarks
Mangala to Kokhara/ PTR East Karadikavala to Kokhara/ PTR East Karadikavala to Poovarasu/ PTR East Karadikavala to Medhagaram/ PTR East Brandippara to Kinthirikkapalam/ PTR East	Creation of fire break- 7 km Creation of fire break- 7 km Creation of fire break-3.5 km Creation of fire break-3.5 km Creation of fire break-4.5 km length	Weeding and clearing including removal of dried trees and branches. Records and vouchers verified
Mangala to Mavadi/ PTR East	Creation of fire break- 6 km length	Weeding and clearing including removal of dried trees and branches. Records and vouchers verified. Due to creation of fire break five fire incidences were prevented.

a. Creation of fire break in PTR West Division

Location	Size (Width * Length) in M-book	Actual Size (Width * Length) in field	% variation (+/-)	Efficacy of fire line created in terms of number of times fire spread is prevented by the presence of fire line, if any
Vallakadavu to 2nd mile / Azhutha / PTR West	5.2 m x 4 km	5.2 m x 4 km	Nil	No fire incidents reported during the period.
Sathram and Uppupara/ Azhutha / PTR West	5.2 m x 5.8 km	5.2 m x 5.8 km	Nil	
Uppupara to 4 th mile / Azhutha/ PTR West	5.2 m x 9.9 km	5.2 m x 9.9 km	Nil	

b. Fire awareness campaigns

Location	Activity	Remarks
Valathoppu/ Idukki	One Day Fire Awareness class for Forest Staffs and Public on Date: 16.01.2023 No of Participants-29	The awareness campaigns were very useful to both officials and the participants in implementing the policies. These campaigns play a vital role in fire management plan and also in avoiding man-animal conflicts.
Thettakadu/ Idukki	One Day Fire Awareness class for Forest Staffs and Public on 05.01.2023 No of Participants-88	
Valathoppu/ IdukkiA	wareness campaign on Legal issues for Forest Staffs on 27.01.2023 No of Participants-45	
Kuttapuzha/ Thettakadu/ Idukki	Awareness campaign on Legal issues for Forest Staffs on 26.01.2023 No of Participants-94	

The following modules are covered under the awareness campaigns. The participants are the forest officials and employees of Idukki section.

- ◆ Forest laws
- ◆ Kerala forest Acts
- ◆ Legal measures to be taken
- ◆ WL Protection Act
- ◆ Other legal issues.

c. Engaging fire protection mazdoors/ Fire gangs through participatory forest management

Fire gangs were engaged at Varamani Block II, Idukki with proper maintenance of movement register and villagers are very cooperative. The occurrence of fire was informed then and there to forest officials and the rescue was done. All the alerts were responded and the incidents well solved. All the mentioned incidents in FSI were solved with regular monitoring.

The evaluation team observed that fire protection was done by using traditional methods. Fire protection is organized in Idukki division very well. They all also got the cooperation from the staff as well the general public. Monitoring of fire occurrences were done frequently.

The unspent amount of 2.5 lakhs was transferred for doing the work mentioned in the item no 50 of APO for the FY 2022-23. The Gully plugging work as mentioned in item 50 of the APO 2022-23 was not done because the amount was utilized for providing wages. Prior permission was sought from the WLW, Idukki and on receipt of the permission the wages were provided. All the entries in the M-book were verified.

d. **Soil moisture conservation**

Pond Desiltation					
Location	Size (Width * Depth *Length) in M-Book (in m)	Actual Size (Width * Depth * Length) in field (in m)	% variation (+/-)	Type of vegetative materials used	Present Condition of the structure
Uppupara Section/ Azhutha/ PTR West	25 x 1 x 35	25 x 1 x 35	Nil	NA	Structure is in good condition.
Uppupara Section/ Azhutha/ PTR West	27 x 1 x 15	27 x 1 x 15	Nil	NA	Structure is in good condition.
4 th mile APC/ Pamba/ PTR West	12 x 1 x 10	12 x 1 x 10	Nil	NA	Structure is in good condition.

As per APO 2022-2023 pond Desiltation work was carried out at Azhutha and Pamba ranges in PTR West. The evaluation team observed that the ponds were maintained well and in good condition. The pond with water was used by animals especially by elephants.

Gully plugging at Sathram Section /Azhutha/ PTR West N 09°28'31.74" E 77°05.31.02"				
Gully plugging ID/No.	Size (Width * Depth *Length) in M-Book (in m)	Actual Size (Width * Depth * Length) in field	% variation (+/-)	Present Condition of the structure
1	5 x 2 x 1	5 x 2 x 1	Nil	The structure constructed was partially damaged due to water flow during rainy season.
2	5 x 2 x 1	5 x 2 x 1	Nil	
3	5.5 x 2 x 1	5.5 x 2 x 1	Nil	
4	5.5 x 2 x 1	5.5 x 2 x 1	Nil	
5	5 x 2 x 1	5 x 2 x 1	Nil	
6	5 x 2 x 1	5 x 2 x 1	Nil	

Gully plugging at Uppupara Section/ Azhutha/ PTR West N 09°29'03.25" ; E 77°06.54.72"				
Gully plugging ID/No.	Size (Width * Depth *Length) in M-Book (in m)	Actual Size (Width * Depth * Length) in field	% variation (+/-)	Present Condition of the structure
1	7.5 x 2.35 x 1.10	7.5 x 2.35 x 1.10	Nil	The structure constructed is in good condition and useful for storage of water.
2	7.5 x 2.35 x 1.10	7.5 x 2.35 x 1.10	Nil	
3	7.5 x 2.35 x 1.10	7.5 x 2.35 x 1.10	Nil	
4	7.5 x 2.35 x 1.10	7.5 x 2.35 x 1.10	Nil	
5	7.5 x 2.35 x 1.10	7.5 x 2.35 x 1.10	Nil	
6	7.5 x 2.35 x 1.10	7.5 x 2.35 x 1.10	Nil	
7	7.5 x 2.35 x 1.10	7.5 x 2.35 x 1.10	Nil	

Three water holes present in Thekkady range, PTR East division were inspected by the evaluation team and found in good condition with water. Observed that the animals were using the ponds. Vouchers were verified and found correct.



Gully plugging at Kadichally area, Kizhukanam Section of Idukki Wildlife Sanctuary

Gully plugging ID/No.	Size (Width * Depth * Length) in M-Book (in m)	Actual Size (Width * Depth * Length) in field	% variation (+/-)	Present Condition of the structure
1	2.3*1.3*7.9	2.3*1.3*7.9	0%	Good and Intact
2	3.38*1.29*8.21	3.38*1.29*8.21	0%	Good and Intact
3	2.8*1.20*7.56	2.8*1.20*7.56	0%	Good and Intact
4	3.3*1.37*4.57	3.3*1.37*4.57	0%	Good and Intact
5	3.28*1.29*8.066	3.28*1.29*8.066	0%	Good and Intact

The gullies were physically verified and found that the sketch and dimension mentioned in the measurement (M) book was found to be same. Gullies were found to be intact and good. Bills and records were maintained well. The amount allotted for the said work was Rs.3.00 Lakhs. Only Rs 1.80 lakhs has been spent for the respective work. An amount of Rs 20,000/- was allotted and spent for conducting nature camps and the remaining amount was spent for providing wages. Proper permission has been obtained from WLW.



Measuring gully at Kizhukanam Section of Idukki Wildlife Sanctuary

f. Better connectivity

Location/Range/ Division	Activity	GPS coordinates	Remarks
Vamanakulam to Kunnar/ Pamba/ PTR West	Maintenance of trek paths/patrolling routes	N09028'35.67" E77006.59.76"	Weeding and removal of dead branches for 6.0 km. Vouchers were verified.

Trek path from Vamanakulam to Kunnar/ Pamba/ PTR West				
Location/ Range/ Division	Size (Width * Length) in M-Book	Actual Size (Width * Length) in field	% variation (+/-)	Efficacy of trek path
Vamanakulam to Kunnar/ Pamba/ PTR West	6 Km x 3 m	6 Km x 3 m	Nil	Trek path was continuously used by the staff of Forest department for various purposes.
Karadikavala to Panankala/ PTR East	5 Km x 3 m	2 Km x 3 m	Nil	Maintained well.
Kokkara to Manjapara/ PTR East	5 Km x 3 m	2 Km x 3 m	Nil	

Under this activity, maintenance of trek path was executed well. Physical activities, measurements, and the documents and vouchers pertaining to these activities were verified and found correct.

a. Nature camps for schools and colleges

Location	Activity	Remarks
Kuttapuzha/ Thettakadu/ Idukki	Awareness campaign for the students of Malabar College of Engineering and Technology during 27.05.2022 to 29.05.2022 No of Participants-47	Records and vouchers verified.
Kuttapuzha/ Thettakadu/ Idukki	Awareness campaign for the students of CHMHSS Elayavoor during 28.12.2022 to 30.12.2022 No of Participants-48	
Kuttapuzha/ Thettakadu/ Idukki	Awareness campaign for the BFO Trainers, SFTI Arippe during 08.11.2022 to 09.11.2022 No of Participants-47	
Kuttapuzha/ Thettakadu/ Idukki	Awareness campaign for the students of SMHSS Murickassery during 02.01.2023 to 04.01.2023 No of Participants-45	

As per APO 2022-2023 awareness camps were conducted to the students of various school and BFO trainers. One extra camp in addition to the proposed work has been conducted. The evaluation team verified the files and vouchers and found correct.

Nine different activities were taken up in four divisions with a financial achievement of Rs. 104.19 lakhs.

Agasthyavanam Biological Park Circle, Thiruvananthapuram (2022-2023)

The evaluation covered both Shendurney and Thiruvananthapuram Wildlife divisions. Ten different activities have been undertaken in the circle. The distribution of activities as follows:

Component	Particulars of work	Division
Protection of Plantations and Forests	1. Strengthening forest protection and anti-poaching units. a. Organising joint patrolling and raids along inter-divisional and inter-state forest boundaries	Shendurney and Thiruvananthapuram
	2. Improvement of Wildlife habitat a. Removal of exotic weeds	
	3. Forest fire prevention and control habitat a. Engaging fire gangs through participatory forest management b. Firefighting equipments c. Creation of fire break	
	4. Human-animal conflict mitigation a. Engaging watchers to mitigate human animal conflict	
	5. Soil and moisture conservation	
	6. Better Connectivity a. Maintenance of forest roads b. Maintenance of trek paths/ Patrolling routes c. Nature camps for schools and colleges	

Coverage of sites in Agasthyavanam Biological Park Circle, Thiruvananthapuram

Division	Fire	CAMPA infra-structure	CAMPA Assets	Wild Life infra-structure	Wild Life assets	Plantation Creation/ maintenance	Eco restoration Creation/ maintenance
Shendurney	2	3			1		
Thiruvananthapuram Wildlife							

1. Strengthening forest protection and anti-poaching units.

a. Organising Joint Patrolling and Raids along inter-divisional and inter-state forest boundaries

Location/Range/ Division	Activity	Remarks
Kalluvarambu/ Thenmala/ Shendurney	Organizing joint patrolling and raids	Carried out in 3 ranges. Provisions and groceries were procured. Vouchers verified and found correct

As per Apo 2022-2023 organising Joint Patrolling and Raids was carried out in Shendurney division in three ranges. The files and vouchers verified were found correct.

2. Improvement of Wildlife habitat

Location/Range/ Division	Activity	Remarks
Kalamkunnu / Thenmala / Shendurney WL	Removal of exotic weeds	Carried out in 3 ha. Physically verified by field inspection.

- ◆ Removal of *Lantana camara* and *Chromolaena odorata*, *Mikania micrantha* and other non-palatable grasses.
- ◆ It was found that treatment was very effective and hardly few lantana, Eupatorium and Mikania were observed.
- ◆ This treatment is very much effective to protect the area which is the main food source for wild elephants and buffaloes.
- ◆ In forthcoming year the same kind of treatment may be implemented in other areas which will help in protecting the forests and improve the wildlife habitats.
- ◆ It was noticed that *Wrightia tinctoria*, *Calycopteris floribunda* and *Clidemia hirsuta* were recorded common in the treated areas.

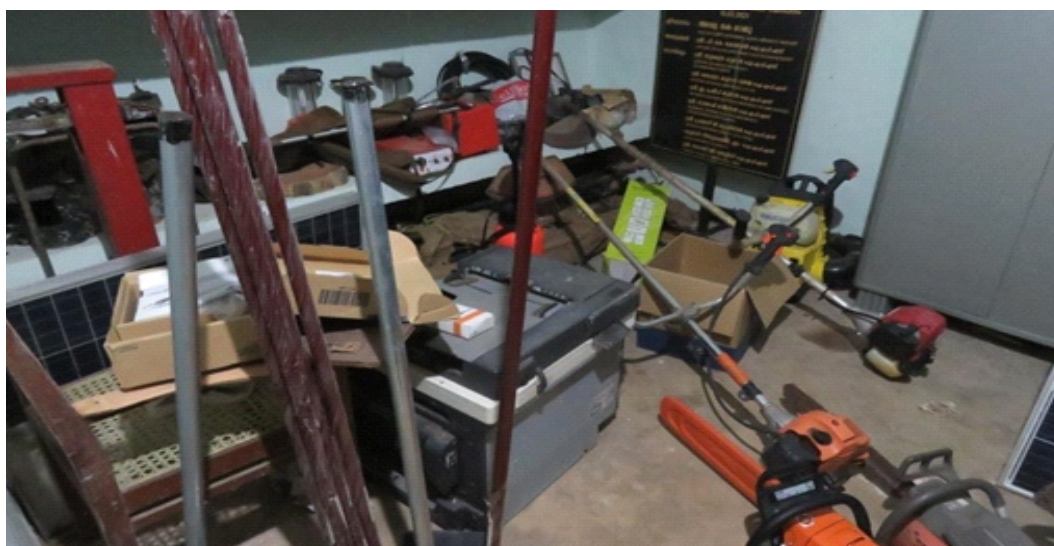


Removal of exotic weeds at Kalamkunnu, Shendurney WL

3. Forest fire prevention and control habitat

Location/Range/ Division	Activity	Remarks
Kalamkunnu / Thenmala / Shendurney WL	Purchase of firefighting equipment	Physically verified the equipments and vouchers and found correct
Thenmala /Shendurney WL	Creation of fire break	Creation of Fire break, for the distance of 2.0 km with 1.5 m width. M-book not provided
Ettappadappu/ Thenmala/ Shendurney	Engaging Fire Gangs	Files, Vouchers were verified and found correct. M-book not provided

Firefighting equipments were purchased for both Shendurney and Thiruvananthapuram WL Divisions and distributed to different forest ranges. The evaluation team verified the estimate submitted for procuring equipments to Kallukunnu Range with list of equipments and estimates and found correct.



Firefighting equipments



Fire break at Kalamkunnu, Shendurney WL Division

4. Human animal conflict mitigation

Location/Range/ Division	Geo coordinates	Activity	Remarks
Ettappadappu/ Thenmala/ Shendurney	80.9530 77.0855to 80.9136 77.0318	Engaging watchers to mitigate human animal conflict	Files, Vouchers were verified and found correct. M-book not provided.

This activity was carried out in Ettappadappu located at Thenmala division of Shendurney division. Files, Vouchers were verified and found correct. M-book not provided.

5. Soil and moisture conservation

Gully plugging ID/No.	Size (Width * Depth *Length) in M-Book	Actual Size (Width * Depth * Length) in field	% variation (+/-)	Present Condition of the structure
Kunddhirkkachal at Kalamkunnu/ Thenmala		7m x 4m x 3m	NA	Good. M-Book not provided. Physically verified.

The gully at Kunddhirkkachal at Kalamkunnu,Thenmala was physically verified by the evaluation team. Documents and structures were verified physically. The dimensions were measured and confirmed with the vouchers/records.

6. Better connectivity

Location/Range/ Division	Geo coordinates	Area	Activity	Remarks
Mannanthar to Pallivasal/ Thenmala/ Shendurney	80.9530 77.0854 to 80.9136 77.03188	Length : 7.0 Km Width 2.5m	Maintenance of forest road	Files, Vouchers were verified and found correct. M-book not provided.
Kalamkunnu, Ettappadappu/ Thenmala/ Shendurney	80.8935 77.1326	Length: 3.5 km Width 1.5 m	Preparation of trek paths and maintenance	Files, Vouchers were verified and found correct. M-book not provided.
Karalakadu/ Peppara/ Thiruvananthapuram	80.8935 77..210	Length: 3.5 km Width 1.5 m.	Preparation and maintenance of trek paths	Files, Vouchers were verified and found correct. M-book not provided.
Kattilappara/ Thenmala/ Shendurney	-		Conducting Nature Camps to School and College children	Files, Vouchers were verified and found correct. M-book not provided.

As per APO 2022-2023 under the activity better connectivity the sub activities such as maintenance of forest roads, preparation of trek paths and maintenance and nature camps for college students carried out were verified through files and vouchers and found correct.



Maintenance of Mannanthar to Pallivasal forest road in Thenmala



Maintenance of trek path at Kalamkundu



Conducting Nature Camps to College children at Kattilappara



Nature Camps to School and College children organized at Peppara

Nine different activities were taken up in four divisions with a financial achievement of 16 lakhs. However, the M-book was not provided in cases where the SMC activities had to be verified.

Social Forestry Central Region, Ernakulam (2022-23)

The evaluation covered five divisions of the circle. They include

1. Palakkad
2. Thrissur
3. Ernakulam
4. Idukki
5. NSC Kalady

Following activities have been undertaken in the circle. The distribution of activities is as follows:

Component	Particulars of work	Division
Protection of Plantations and Forests	1. Improvement of wildlife habitat	Palakkad, Ernakulam
	a. Bird survey and conservation	
	b. Sea turtle conservation	
	2. Forest fire prevention and control habitat	
	a. Awareness campaigns	
	3. Better connectivity	
	a. Nature camps for schools and colleges	

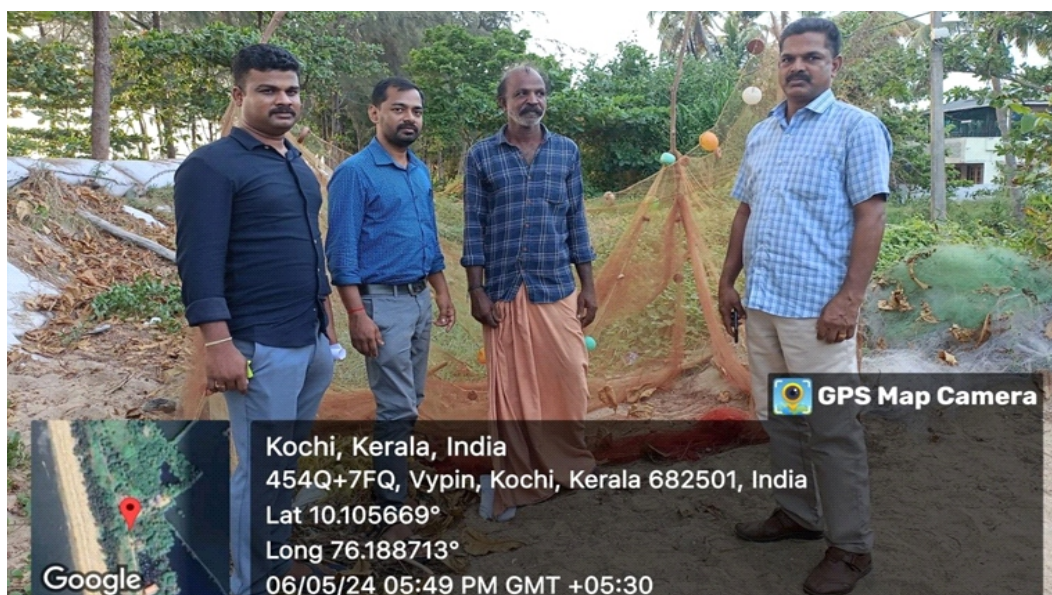
1. Improvement of Wildlife habitat

Location/Range/ Division	Activity	Remarks
Ernakulam SF range/ Ernakulam division	Bird survey and conservation	Conducting Bird Survey (Bird census) awareness programmed for college students of Al-Ameen College Edathara. Beneficiaries: 100 College students, Vouchers were verified
NSC Kalady, SF Palakkad division	Bird survey and conservation	Engaging local communities and students in both fire prevention education and bird conservation efforts
Vypin beach/ Ernakulam SF range/ Ernakulam division	Sea turtle conservation	Engaging man mazdoor for the protection and maintenance of turtle hatchery from November 2022 to February 2023.

2. Forest fire prevention and control operations

a. Fire awareness campaigns

Location / Range / Division/GPS	Activity	Remark
Ernakulam SF range/ Ernakulam div.	Conducting fire awareness camp for students at St.Xavier college, Aluva.	Beneficiaries: 90 students, Vouchers were verified



Temporary Sea turtle egg hatching unit at Vypin beach, Ernakulam Range

Location / Range / Division/GPS	Activity	Remark
Ernakulam SF range/ Ernakulam div.	Conducting fire awareness camp for Govt. Law College students, Ernakulam	Beneficiaries: 44 students, Vouchers were verified
Ernakulam SF range/ Ernakulam div.	Conducting fire awareness camp for students at SRV School, Ernakulam.	Beneficiaries: 75 students, Vouchers were verified
Ernakulam SF range / Ernakulam div.	Conducting fire awareness camp (Kadariyan Programme) for School students, Kaprikad, Ernakulam.	Beneficiaries: 27 students Vouchers were verified
NSC Kalady, SF Palakkad	Conducting fire awareness camp	Engaging local communities. Vouchers verified

3. Better connectivity

Location / Range / Division/GPS	Activity	Remark
Vadakara/Ernakulam SF range/ Ernakulam div.	Conducting nature camps for the students of St. Johns HSS Vadakara	Beneficiaries: 75 school students, Vouchers were verified
Ernakulam SF range/ Ernakulam div.	Conducting nature camps for the students of CUSAT college students	Beneficiaries: 60 college students, Vouchers were verified

Location / Range / Division/GPS	Activity	Remark
Ernakulam SF range/ Ernakulam div.	Conducting nature camps for the students of Govt. HSS school students, Elankunnappuzha.	Beneficiaries: 60 school students, Vouchers were verified
Ernakulam SF range/ Ernakulam div.	Conducting bird watching for the school students	Beneficiaries: 60 school students, Vouchers were verified

As per APO 2022-2023 conducted fire awareness camps at various locations including St. Xavier College Aluva, Govt. Law College Ernakulam, CUSAT, Perumbavoor, and SRV School Ernakulam, benefiting numerous students and involving purchasing of cloth banners for these events. The evaluation team conducted measurements and inspections of nature camp and awareness program sites to ensure effective implementation and resource utilization. Overall, the Social Forestry Division in Ernakulam has made significant strides in various conservation projects, contributing to the preservation of the local ecosystem and community engagement, implementing all four activities listed in the APO.

Social Forestry Northern Region, Kozhikode (2022-23)

The evaluation covered five divisions of the circle. They include

1. Kasaragod
2. Kannur
3. Wayanad
4. Kozhikode
5. Malappuram

Following activities have been undertaken in the circle. The distribution of activities is as follows:

Component	Particulars of work	Division
Protection of Plantations and Forests	1. Improvement of Wildlife habitat ◆ Bird survey and conservation ◆ Sea turtle conservation	Kannur Kasaragod Wayanad Malappuram Kozhikode
	2. Forest fire prevention and control habitat a. Awareness campaign	
	3. Better connectivity a. Awareness programme b. Nature camps for schools and colleges	
	4. Infrastructure development in tribal colony and setting up District Permanent Nurseries	SF Wayanad
	Part - B - Activities under "Not more than 40%" of the Interest fund category ◆ Computer equipments	SF Kozhikode

1. Improvement of Wildlife habitat

Location/Range/ Division	Activity	Remarks
Chal Beach/SF range/ Kannur	Preservation of Sea Turtle eggs and construction of temporary Hatchery Hut.	Along with STAR NGO,the locals helped to protect sea turtle eggs up to hatching. Records and vouchers were verified.
Thaikadapuram/ Hosdurg SF range/ Kasaragod	Maintenance of turtle hatchery for the month of November 2022 to February 2023	Records and vouchers were verified.
Pathumuri, Velliyamkode/ Malppuram SF range/ Malppuram	Protection of sea turtle eggs in December 2022.	Records and vouchers were verified.
Pathumuri, Velliyamkode/ Malppuram SF range/ Malppuram	Protection of sea turtle eggs during January 2023	Records and vouchers were verified.
Pathumuri, Velliyamkode/ Malppuram SF range/ Malppuram	Protection of sea turtle eggs at during December 2022- January 2023	Records and vouchers were verified.
Pathumuri, Velliyamkode/ Malppuram SF range/ Malppuram	Protection of sea turtle eggs during February 2023	Records and vouchers were verified.
Pathumuri, Velliyamkode/ Malppuram SF range/ Malppuram	Protection of sea turtle eggs during January- February 2023	Records and vouchers were verified.
Kannur port beach/ Kannur SF/Kannur	Conducting Pelagic Bird Survey- Forests officials of Kannur SF, Nature Photographers group and STAR NGO participated in Pelagic Bird Survey.	Records and vouchers were verified.
Madaaipaara/Kannur SF/ Kannur	Conducting Bird Awareness class at Madaaipaara for students at Sir Syed Technical Institute during 26.12.2022.	Records and vouchers were verified.
Paizthal Mala /Kannur SF/ Kannur	Conducting Bird watching at Paizthal Mala for students during 04.03.2023 to 05.03.2023	Records and vouchers were verified.
Iriyanni Forest area/ Kasaragod SF range/ Kasaragod	Conducting bird survey at Iriyanni Forest area	Records and vouchers were verified.
Kottooli/SF range Kozhikode/ Kozhikode	Conducted two days Water Bird Survey at Sarovaram Bio Park, Kottooli, under SF, Kozhikode 14.01.2023 and 15.01.2023.	Records and vouchers were verified.

As per APO 2022-2023 under the activity Improvement of Wildlife Habitat, Sea Turtle Conservation was carried out at Chal Beach, Kannur Division. During the annual nesting season, man mazdoor were engaged to preserve sea turtle eggs. The efforts of STAR NGO were instrumental in this conservation work. They constructed and maintained hatchery units where the eggs were safeguarded, marking a noteworthy achievement in sea turtle conservation. And regarding Pelagic Bird Survey at Kannur division, a comprehensive survey of pelagic birds was conducted in the deep sea near the harbour. This project was supported by a collaboration between Nature Photographers Group, STAR NGO, forest officials, and other stakeholders. Various species of sea birds were photographed and documented, providing valuable data for further study and conservation efforts.

- ♦ The evaluation team had discussions with NGOs and locals at Thaikadappuram, Kasaragod division regarding the challenges faced during sea turtle conservation efforts. They requested and suggested for permanent structures like Hatchery unit and egg preserving area in the upcoming financial years will make the sea turtle conservation efforts valuable.



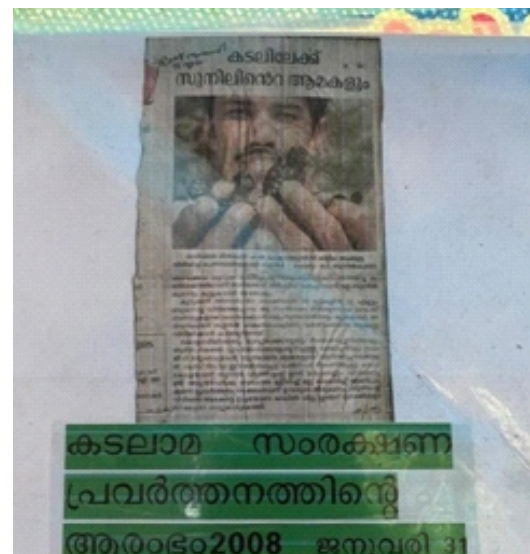
Sea Turtle Conservation facilities and Hatchery unit developed by STAR NGO at Chal Beach, Ayikode, Kannur



Displays on Sea turtle conservation, STAR NGO, Kannur



Olive Ridley Turtle has its place in Chal Beach Information Board about nesting along Malabar Coast and as vulnerable species by IUCN Red list (Tourism Dept.) and Facilities developed for hatching area in support with STAR NGO, Kannur



Displays of various press release and news by local media on Sea Turtle Conservation, Kannur



Discussion with the NGO Peoples and locals of Thaikadappuram about the issues facing during Sea turtle conservation and temporary hut structure used as hatchery unit, Kasargode

2. Forest fire prevention and control operations

Location/Range/ Division	Activity	Remarks
Malakkallu/Hosdurg SF range/ Kasaragod div.	Conducting fire awareness camp for 78 students of St. Mary's UP School Malakkallu on 10.12.2022	Vouchers verified
MalothKasaba/Hosdurg SF range/ Kasaragod div.	Conducting fire awareness camp and rally for 101 participants at G.H.S.S Maloth Kasaba on 31.12.2022	Vouchers verified
Koyilandi/SF range Kozhikode/ Kozhikode Div	Fire awareness camp 10.01.2023 and 11.01.2023	Vouchers verified
Sulthan Bathery/SF Wayanad/ Wayanad Division	Fire awareness campaign	Vouchers verified

3. Better connectivity

Location/Range/ Division	Activity	Remarks
Taliparamba/Kannur SF/ Kannur Division	Awareness class for 206 students at Sir Syed College on 21.03.23.	Records and vouchers were verified
Manathavady/Thalassery SF/ Kannur Division	Conducting ecological programme as part of International Day of Forests 2023 celebration at Nedumpoyil, Manathavady, Churamroad during 15.03.2023 to 16.03.2023.	Records and vouchers were verified
Pothamkandam/SF range Kannur/ Kannur Division	Wildlife awareness camp for 53 Govt. UP school students on 03.03.2023.	Records and vouchers were verified
Kurumathur/SF range Kannur/ Kannur Division	Snake awareness camp for 43 NSS Camp students at Govt. HSS, Kurumathur on 28.12.2023.	Records and vouchers were verified
Kannur/SF range Kannur/ Kannur Division	Conducting awareness programme under SF Range, Kannur on 28.03.2023.	Records and vouchers were verified
Kannavam/SF range Kannur/ Kannur Division	Nature awareness camp for student police cadets of Chelora GHSS, Kannavam on 01.12.2022.	Records and vouchers were verified
Kannavam/SF range Kannur/ Kannur Division	One day Nature awareness camp for student police cadets of Chuzhali Govt. HSS, Kannavam on 22.11.2022.	Records and vouchers were verified
Kannavam/SF range Kannur/ Kannur Division	One day Nature awareness camp for student police cadets of Kadambur HSS, Kannavam on 28.11.2022.	Records and vouchers were verified

Location/Range/ Division	Activity	Remarks
Kannavam/SF range Kannur/ Kannur Division	One Day Nature awareness camp for student police cadets of Kadannapalli Govt HSS, Kannavam on 22.11.2022.	Records and vouchers were verified
Peruva/SF range Kannur/ Kannur Division	One Day Nature awareness camp for student police cadets at Peruva on 10.12.2022.	Records and vouchers were verified
Peruva/SF range Kannur/ Kannur Division	One Day Nature awareness camp for student police cadets at Peruva on 11.12.2022.	Records and vouchers were verified
Aralam WLS /SF range Kannur/ Kannur Division	Nature awareness camp at Aralam WLS during 09.09.2022 to 12.09.2022.	Records and vouchers were verified
Sheni/Kasaragod SF range/ Kasaragod div.	Nature camps for 40 students of Sri. Sharadampa H.S.S Sheni on 10.11.2022	Records and vouchers were verified
Thirikaripur/Hosdurg SF range/ Kasaragod Division	Nature camps for 40 students of V.P.P.M.K.P.S Thirikaripur on 05.11.2022	Records and vouchers were verified
Kasaragod/Kasaragod SF range/ Kasaragod Division	Nature camps for 40 NSS students of Kasargode Govt. College on 29.10.2022	Records and vouchers were verified
Pulamanthole/ Nilambur/ Nilambur SF range/ Malappuram Division	Nature awareness camp for 40 students of GHSS on 01.01.2023	Records and vouchers were verified
Pulloor/ Nilambur/ Nilambur SF range/ Malappuram Division	Nature awareness camp for 45 students of GUPS on 02.12.2022	Records and vouchers were verified
Malappuram/ Malappuram SF range/ Malappuram Division	Nature awareness camp for 35 college students of Govt. College on 03.12.2022	Records and vouchers were verified
Pandikkad/ Nilambur/ Nilambur SF range/ Malappuram Division	Nature awareness camp for 40 students of GHSS on 04.02.2023	Records and vouchers were verified
Chenamangalloor, Mukkam/ Nilambur/ Nilambur SF range/ Malappuram Division	Nature awareness camp for 40 students of HSS	Records and vouchers were verified
Wandoor/ Nilambur/ Nilambur SF range/ Malappuram Division	Nature awareness camp for 30 members of nature camp, Ambedkar Arts and science college	Records and vouchers were verified
Nedumkayam/ Nilambur/ Nilambur SF range/ Malappuram division	Nature awareness camp Kadarivu, Staff, EDC and VSS members on 26.01.2023	Records and vouchers were verified

As per APO under better connectivity, the activity Nature Camps and Awareness Programs at Kannur division, the division has organized nature camps for school and college students, fire awareness programs for the general public, and other awareness camps. These initiatives are commendable for their role in educating and engaging the community about environmental conservation.

District Permanent Nursery (DPN) Works: Several infrastructure developments at DPN Chuzhali, Wayanad Division were executed, including the construction of a Shade Net House, Generator room, Labour Resting Room, Heaping Area, Seed Drying Yard, Pump House, Water Tank, and Chopping Room and GST payments for these constructions were made in the 2022-23 financial year, covering previous fiscal year obligations. Measurements and inspections were conducted to verify the completion and quality of construction works, including the Shade Net House, utility structures, and other facilities at DPN Chuzhali. The records and vouchers were verified.

Ten different activities were taken up in five divisions with a financial achievement of Rs. 22.67 lakhs.

Social Forestry Northern Region, Kollam (2022-23)

The evaluation covered five divisions of the circle. They include

1. Alappuzha
2. Kottayam
3. Pathanamthitta (PTA)
4. Kollam
5. Thiruvananthapuram

Following activities have been undertaken in the circle. The distribution of activities is as follows:

Component	Particulars of work	Division
Protection of Plantations and Forests	1. Improvement of Wildlife habitat a. Bird survey and conservation b. Sea turtle conservation	Alappuzha Kottayam Pathanamthitta (PTA) Kollam Thiruvananthapuram
	2. Better connectivity a. Nature camps for schools and colleges b. Awareness program	
	3. Infrastructure development in tribal colony and Setting up District Permanent Nurseries	Alappuzha, Thiruvananthapuram

1. Improvement of Wildlife habitat

Location/Range/ Division	Activity	Remarks
Pavumba Wetland, Shakthikulanga harbour/ Polachira Wetland/Umayanallor Wetland/ Kollam SF range/ Kollam	Water bird survey in various wetlands on 07.02.2023 - 63 participants.	Records and vouchers were verified.

Location/Range/ Division	Activity	Remarks
Thanni/Kollam SF range/ Kollam	Awareness class on Olive Ridley turtle conservation on 22.01.23 for 121 green roots Nature Conservation forum	Records and vouchers were verified.
Pozhikara, Paravoor/ Kollam SF range/ Kollam	Awareness class on Olive Ridley turtle conservation on 20.03.23 for 55 green roots Nature Conservation forum	Records and vouchers were verified
Chillikal and Pozhikkara, at Paravoor/Kollam SF range/ Kollam.	Protection and maintenance of turtle hatchery for the month of January and February 2023	Records and vouchers were verified
SF range Pathanamthitta/ Pathanamthitta	Asian water bird survey at various wetlands in Pathanamthitta	Records and vouchers were verified.
Aluvamkudy/SF Range Pathanamthitta/ Pathanamthitta	Butterfly survey by Subject experts and Kottayam Nature Society, Wildlife Photographers and Students	Records and vouchers were verified.



Visit to the Thanni Beach, Paravur, Kollam and Thamarakulam for the Sea Turtle conservation efforts made by forest officials

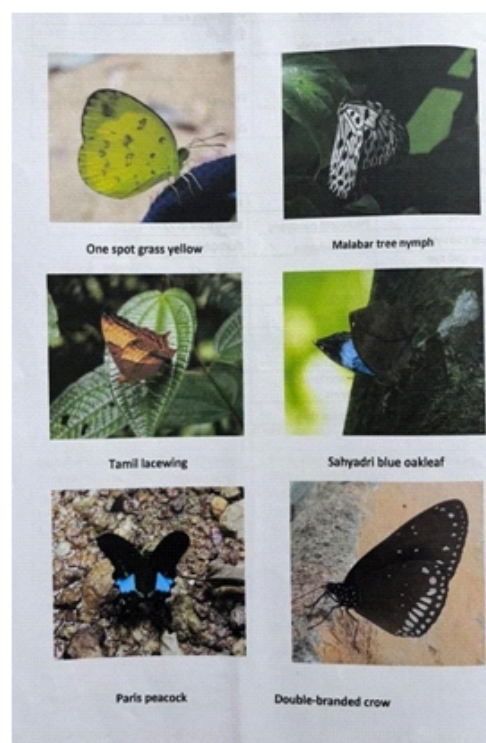
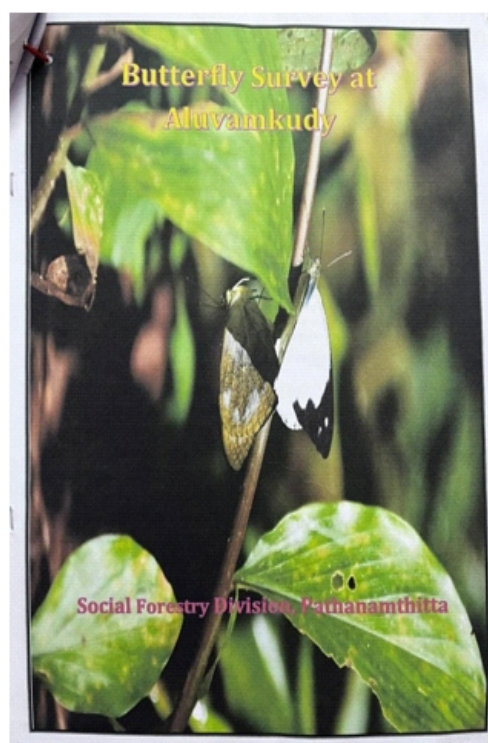


Photo Gallery of Bird Survey conducted at Aluvamkudy under SF, Pathanamthitta 55 butterfly species were identified and documented

2. Better connectivity

Location / Range / Division/GPS	Activity	Remark
Aryad/Alappuzha/ Alappuzha SF range/ Alappuzha	Nature awareness camp and forestry club inauguration for 50 St. Michel's College students on 25.01.2023	Vouchers were verified. Visit to Sethurani eco- tourism area and class on Man animal conflict
Cheriyadan/ Chengannur SF range/ Alappuzha	Nature awareness camp at Konni Eco-tourism centre for 50 students and teachers of DB HSS, on 1.1.2023	Visit to medicinal plantation garden, Museum, Gallery, Elephant cage and class on wildlife and nature. Vouchers were verified
Chemmanadu/ Alappuzha SF range/ Alappuzha	Nature awareness camp for 47 students of ECEK Union HSS School, on 25.11.2022	Study class on importance of forest conservation. Vouchers were verified
Veliyanadu/ Alappuzha/ Alappuzha SF range/ Alappuzha	Nature awareness class for 60 NSS HSS Ramangary on 13.01.2023	Awareness class on Environment and Human being. Vouchers verified
Cheriyadan/Chengannur SF range/ Alappuzha	Anti-drug awareness camp for 40 students of DB HSS, on 29.10.2022	Vouchers verified

Location / Range / Division/GPS	Activity	Remark
Alappuzha SF range/ Alappuzha	Study tour to Konni Eco-tourism centre for the field and office staffs of SF Division	Visit to medicinal plantation garden, Museum, Gallery, Elephant cage and class on wildlife and nature. Vouchers verified
Alappuzha SF range/ Alappuzha	Celebration of International Forest Day 2023, Nature study class and distribution of drinking pot for birds.	Study class on importance of forest conservation. Vouchers verified.
Ponkunam/SF range Kottayam/ Kottayam	Nature camp for 37 NCC students of Marthoma Seminary HS School, on 26.11.22.	Vouchers verified
Ponkunam/SF range Kottayam/ Kottayam	Nature camp for 40 NCC students of St. Thomas HSS School	Vouchers verified
Ponkunam/SF range Kottayam/ Kottayam	Nature camp under the theme Forest Protection, Climate Change and Wildlife Protection for 44 Red Cross students of St. Joseph HSS School, Mundakaayam on 13.01.23.	Vouchers verified
SF range Kottayam/ Kottayam	Nature camp for 40 NSS students of Assumption College, Chenganassery on 25.01.23.	Vouchers verified
Ponkunam/SF range Kottayam/ Kottayam	Nature camp/ Nature Trek for 40 School students of Elivalikkara St. Mary's Convent School, Kanagapalam on 03.03.23.	Vouchers verified
Ponkunam/SF range Kottayam/ Kottayam	Nature camp/ Nature Trek for 40 School students of Muslim Girls HSS School, Erattupetta on 25.02.23 under the theme Nursery Rising, Nature Protection, Wildlife Protection.	Vouchers verified
Ponkunam/SF range Kottayam/ Kottayam	Awareness and Training class for 52 VSS/EDC Officials/Staffs on "Man-Animal Conflict" and Snake Catching Training on 21.02.23.	Vouchers verified
Ponkunam/SF range Kottayam/ Kottayam	Awareness class for 52 SB College Students, Chenganassery at Ponkunnam Forest Information centre on 18.03.2023 under the theme Activity of SF, Development and forest protection and consequences.	Vouchers verified

Location / Range / Division/GPS	Activity	Remark
Ponkunam/SF range Kottayam/ Kottayam	Awareness class for 36 NSS students of Managalam Polytechnic College at Ponkunnam Forest Information centre on 20.03.2023 under the theme Forest Fire Awareness and Importance of Forest	Vouchers verified
Ponkunam/SF range Kottayam/ Kottayam	Awareness class for students of Model Polytechnic College, Mattukkara on 17.03.2023 and Nature Trek to Forest area under the theme Man-Animal Conflict	Vouchers verified
BRC School Ranni/SF range Ranni/ Pathanamthitta	Nature study class for 40 BRC school students.	Vouchers verified
KPPMUP School/SF range Pathanamthitta/ Pathanamthitta	Nature study class for 30 school students on 16.03.23	Vouchers verified
Mar Gregorius College, Parumala/SF range Pathanamthitta/ Pathanamthitta	Nature study class for 45 college students on 22.11.22	Vouchers verified
Mar Gregorius College, Parumala/SF range Pathanamthitta/ Pathanamthitta	Inauguration of Forestry Club on 08.10.22 -Number of students participated was 90	Vouchers verified
Attingal/ Attingal SF range/ Thiruvananthapuram	Awareness program	Vouchers verified



Photo gallery of awareness camp conducted under SF Kollam



Nature study camp for Ranni BRC and nature awareness camp for MAR Gregorius College, Valanjavattam



Inauguration of Forestry Club at Parimala Mar Gregorius College by Forest Officials

4. Infrastructure development in tribal colony and setting up District Permanent Nurseries

The evaluation team inspected the dimensions of the construction of Semi-permanent eco-friendly office structure in District Permanent Nursery at Purakkad Alappuzha SF range/ Alappuzha division.

Activity	GPS Location	M-book dimensions (m)	Dimensions (m)
Semi-permanent eco-friendly office structure	9.3530 76.3711	L-7.22 B-6.86	L-7.22 B-6.86
Semi-permanent eco-friendly labour room	9.3529 76.3711	L-10 B-6	L-10 B-6
Semi-permanent eco-friendly storage room	9.3529 76.3710	L-8.8 B-6	L-8.8 B-6

Various construction projects were undertaken, including a semi-permanent eco-friendly office structure, labour room, storage room, and water storage facilities. These projects involved extensive site preparation, including cleaning, soil filling, aggregate earthworks, and installation of utilities. Financial targets and achievements varied across projects, with funds allocated and utilized for each specific construction task. The evaluation team inspected the physical condition of the structure. Records and vouchers were verified and found correct.



Semi-permanent eco-friendly Office room for District Permanent Nursery at Purakkad



Rain shelter in District Permanent Nursery at Purakkad, Alappuzha

District Permanent Nursery (DPN) works at Poojapura, Thiruvananthapuram division.

Continued development at DPN Poojapura, including weeding, purchase of root trainers, and installation of an iron stand for seedling production. These activities were essential for maintaining and improving the nursery's operational capacity. Conducted various improvement works at the District Permanent Nursery (DPN) in Poojapura, including the construction of a temporary green shed and the purchase of necessary equipment. The focus was on enhancing the nursery's infrastructure for better seedling production. Payment for the work carried out in 2021-2022 was made in 2022-2023.



Inspected the root trainers purchased for raising seedlings and Poles purchased at DPN, Poojapura, Thiruvananthapuram



Works of Iron rods replaced in Green Shade House and More than 86 species with QR Code at DPN, Poojapura, Thiruvananthapuram

Recommendations

The CAMPA activities implemented in Kerala during 2022–2023 reflect a well-structured and diverse approach to forest conservation and management. Core initiatives such as plantations, soil and moisture conservation, and forest protection were effectively executed with substantial involvement of local communities through VSS. The focus on infrastructure development, training, and biodiversity conservation added further depth to the programme.

Based on the technical evaluation of CAMPA interventions in Kerala for the period 2022–2023, the following recommendations and suggestions are proposed to improve planning, implementation, monitoring, and sustainability of activities under the CAMPA.

1. Plantation and Eco-restoration Activities

For successful and sustainable afforestation under CAMPA, it is essential to adopt a site-specific approach beginning with the careful selection of native species that align with the local floristic composition and edaphic conditions. This ensures ecological compatibility, enhances survival rates, and promotes long-term ecosystem stability. To support this, establishing decentralized, forest-type-specific nurseries is crucial for the timely and localized supply of quality planting stock. Furthermore, post-plantation care must be prioritized by extending maintenance and watch-and-ward activities for at least 4–5 years, especially in vulnerable areas. Strengthening human resources by deploying adequate numbers of plantation watchers proportional to the afforested area will further improve protection and monitoring outcomes.

2. Soil and Moisture Conservation (SMC) Structures

To enhance the longevity and effectiveness of soil and moisture conservation (SMC) structures under CAMPA, it is vital to incorporate specific provisions in the Annual Plan of Operations (APOs) for their routine maintenance and timely repair. This is particularly important in flood-prone areas, where such structures are prone to recurrent damage due to heavy runoff and erosion. Additionally, the design and layout of SMC interventions like check dams, contour trenches, and gully plugs should be tailored to site-specific conditions, drawing on micro-watershed planning and local hydrological assessments. This approach will ensure optimal performance, structural stability, and sustained ecological benefits.

3. Infrastructure and Asset Management

It is important to establish a structured maintenance protocol. This should include a fixed schedule for periodic inspection and upkeep of buildings, campsheds, and other structures. Inclusion of the creation of a minor repair fund to address small-scale refurbishments in a timely manner would prove helpful. Paralelly, a comprehensive asset mapping and monitoring by digitally documenting all CAMPA-funded infrastructure and wildlife management installations and annual checks will help track the condition of these assets, facilitate timely interventions, and ensure sustained utility of the investments made.

4. Wildlife and Forest Protection

Plantations should be avoided in ecologically sensitive and wildlife-dense zones to reduce human-wildlife conflict and monitoring difficulties. Instead, involving VSS members and local communities in fire line creation, patrolling, and biodiversity protection fosters community

ownership, enhances conservation efforts, and ensures effective monitoring through local participation and traditional ecological knowledge.

5. Capacity Building and Training

Hands-on training should be regularly organized for frontline staff and VSS members in key areas such as seed collection, seed storage, nursery techniques, planting operations, and weed management to improve technical skills and on-ground efficiency. Additionally, specialized training in wildlife habitat management, fire control, and human-wildlife conflict mitigation should be provided, particularly for forest guards and VSS members operating in sensitive areas. These targeted skill development initiatives will not only strengthen implementation but also empower local communities and forest personnel to contribute actively to forest and wildlife conservation.

6. Community Involvement and Livelihood Support

Strengthening VSS engagement through participation in planning, implementation, and monitoring fosters ownership and accountability. Introducing incentive-based programs and integrating livelihood-linked plantations like NTFPs and medicinal plants can enhance biodiversity conservation while simultaneously supporting the economic well-being of local communities. To ensure transparency and community trust, institutionalize a grievance redressal and feedback mechanism involving VSS members, local communities, and forest officials, thereby enhancing responsiveness, accountability, and participatory forest management.

7. Monitoring

Promoting the use of digital tools such as remote sensing, mobile applications, and GPS/GIS technology can significantly enhance real-time monitoring of plantation survival, SMC structures, and infrastructure conditions. Additionally, encouraging division-wise documentation of best practices, success stories, and challenges will support adaptive management and improve the overall effectiveness of CAMPA implementation.

Areas requiring attention include delayed fund utilization, limited post-plantation maintenance, and inadequate staffing for large plantation areas. Eco-restoration activities were minimal, and some plantations were located in wildlife-sensitive zones. Regular maintenance of infrastructure and SMC structures, along with broader community involvement and digital monitoring, require further strengthening for sustained impact.

Conclusion

The CAMPA interventions carried out in Kerala during 2022–2023 demonstrate a commendable commitment to forest conservation, ecosystem restoration, and community empowerment. The wide range of activities—from afforestation and soil conservation to infrastructure development and wildlife protection—were executed with notable efficiency and dedication. Active participation of VSS members, use of site-specific planning, and the emphasis on capacity building reflect a strong foundation for sustainable forest management. These efforts have not only contributed to ecological resilience but also enhanced community livelihoods and ownership. Overall, the interventions were productive, ecologically relevant, and aligned with CAMPA objectives, demonstrating a positive impact on forest ecosystems and community participation in forest resource management.