

Third Party Monitoring and Evaluation of CAMPA Plantations and Other Activities

**for the period
2020-2021**

Submitted to
Kerala Forests & Wildlife Department (CAMPA)



ICFRE - INSTITUTE OF FOREST GENETICS AND TREE BREEDING
(Indian Council of Forestry Research and Education)
Coimbatore – 641002



December 2022



Third Party Monitoring and Evaluation of CAMPA Plantations and Other Activities

**for the period
2020-2021**

Submitted to
Kerala Forests & Wildlife Department (CAMPA)



ICFRE-Institute of Forest Genetics and Tree Breeding

(Indian Council of Forestry Research and Education)

Coimbatore – 641002

December 2022





डॉ. सि. कुञ्जिकण्णन
निदेशक
Dr. C. Kunhikannan
Director

वन आनुवंशिकी एवं वृक्ष प्रजनन संस्थान
ICFRE-INSTITUTE OF FOREST GENETICS AND TREE BREEDING
भारतीय वानिकी अनुसंधान एवं शिक्षा परिषद्
Indian Council of Forestry Research & Education
पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय, भारत सरकार
Ministry of Environment, Forest & Climate Change
Government of India
P.B. No. 1061, R.S. Puram, HPO., Coimbatore - 641 002
Tamil Nadu, India

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 2020-2021, which the MoEFCC, GoI approved. As per the APO, 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 stabilisation, 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 and evaluation 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 2022. The sampling methodology approved by MoEFCC 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, over 140 project sites were identified, and about 200 activities during 2020-2021 were monitored and evaluated. Overall the CAMPA activities supported the forests and contributed to enhancing 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.


(C. Kunhikannan)





Acknowledgements

We acknowledge the Kerala Forests & Wildlife Department for identifying ICFRE - IFGTB, Coimbatore, to evaluate the CAMPA activities carried out during 2020-21. We sincerely thank the PCCF & Head of Forest Force for facilitating this special assignment. We would like to express our gratitude to Shri. Rajesh Ravindran IFS, APCCF & 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 would like to express our sincere thanks to all the Divisional Forest Officers, Range Forest Officers, Frontline Field Staff and VSS members for their assistance in providing the assessment teams with the essential logistics and information during the on-site evaluation.

ICFRE - IFGTB





Table of Contents

Preface	iii
Acknowledgements	v
Fact Sheet	ix
Executive Summary	xi
Introduction	1
Project Profile	3
Methodology	3
Details of the Circles and Divisions evaluated	6
Northern Circle, Kannur	7
Eastern Circle, Palakkad	16
Central Circle, Thrissur	27
High Range Circle, Kottayam	48
Southern Circle, Kollam	57
Field Director Project Tiger (FDPT), Kottayam	76
Agasthyavanam Biological Park (ABP) Circle, Thiruvananthapuram	81
Wildlife Circle, Palakkad	83
Social Forestry, Central Circle, Eranakulam	87
Social Forestry, Southern Circle, Kollam	87
Social Forestry, Northern Circle, Kozhikode	88
Working Plan and Research	89
Recommendations and Suggestions	107
ANNEXURES	109





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 (2020-2021)
2.	Period of evaluation work	Signing of MoU – March 2022 Field works – April to June 2022 Report preparation – July to December 2022
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.	Objectives	<ul style="list-style-type: none"> To evaluate different plantations established under CAMPA in different forest divisions of Kerala. To evaluate the civil structures (buildings and soil & water conservation structures) established under CAMPA in different forest divisions of Kerala. To suggest for improvement in quality of plantations for future.
6.	Area covered	25 territorial forest divisions, 14 social forestry divisions and 11 wildlife divisions.
7.	Sample size	<p>Plantation: 20% plantation randomly selected from various divisions. Sampling intensity for evaluation is nearly 10% for block plantations. For every hectare of plantation, the evaluation to be done on a 30 x 30 m plot. In the case of a linear plantation, evaluation of every 10th tree/planted sapling of each row for 25% of its length per running km basis.</p> <p>Soil and Moisture Conservation (SMC) activities: 20% of SMC works evaluated in each division based on random selection from measurement book (M-book).</p> <p>Eradication of weeds: Density assessment and plot transects.</p> <p>Forest protection: 10% of all firelines evaluated in each division.</p>
8.	Findings	<ul style="list-style-type: none"> The average survival rate in ecorestoration activities is 65-70%. Damage by wild animals is high in some divisions. The activities mostly involved maintenance. The quality of other departmental works was mostly high (80%). Check-dams and gullies are the major SMC works taken up. The APO focussed more on the maintenance of existing eco-restoration works and SMC structures.



S. No.	Item	Details
		<ul style="list-style-type: none">• The involvement of the Vana Samrakshana Samidi in various department activities has ensured a participatory approach to the protection and conservation of forests.
		<ul style="list-style-type: none">• The APO focussed on maintenance of various genetic assets, the first since implementation of CAMPA in 2009, mainly the experimental plots, permanent preservation plots and demo trials which is a welcome move towards the conservation of the FGRs.



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.

The Government of India approved and released **Rs. 1578.90 lakhs** for the period 2020-21 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. ICFRE-IFGTB was identified to carry out third-party monitoring of all the CAMPA interventions since 2009-10 (File No. FC5-1433/2021 dated 28.01.2022). 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 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 MoEFCC, 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.
- **Focussed Group Discussion (FGD):** 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), Section Forest Officers, Forest Beat Officers (FBOs), etc.
- **Field Observation:** Data on survival, field measurements to assess growth in different plantations, condition of physical structures in 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 2020-2021

- The total funds received from the Ad hoc CAMPA during 2020-21 stands at Rs. 15.79 crores and the expenditure ending March 2021 was 10.88 crores which is 68.93 % 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.
- Major components addressed were protection of plantations and forests, and protection of research plots and Seed Production Areas (75%). This period also focussed on activities such as improving connectivity and fire protection (20%), followed by soil and moisture conservation activities and assistance to tribal VSS. The VSS members were engaged in almost all the activities.
- Maximum activities were carried out in Southern Circle Kollam, followed by Central Circle, Thrissur and High Range Circle, Kottayam.
- 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.
- Maintenance works for eco-restoration were taken up. Most activities were done departmentally, an economical and time-saving approach.
- River stabilisation was taken up by nine sites, an improvement over the earlier APOs.



- Conservation of fauna was also prioritised in this period, with the social forestry wings focussing on bird and sea turtle conservation.
- Under infrastructure development, efforts were taken to repair / improve dilapidated structures. Connectivity was also improved through the creation of trek paths, maintenance of forest roads and construction of bridges.
- Inclusion of VSS members in patrolling, fire break creation, developing infrastructure in interior forest areas, has encouraged their active participation in conservation activities.
- During this period, permanent nurseries set up in the earlier APOs provided seedlings for various planting activities.
- Training and capacity development programmes focussed on imparting training sessions and awareness among general public.

Recommendations & Suggestions

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. De-centralized 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 needs 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. Instead, manual seeding may be done by adopting seed ball technology. Seeds to be broadcast should match the floristic composition of the respective forest types.
8. 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 (2020-2021)

1. Introduction

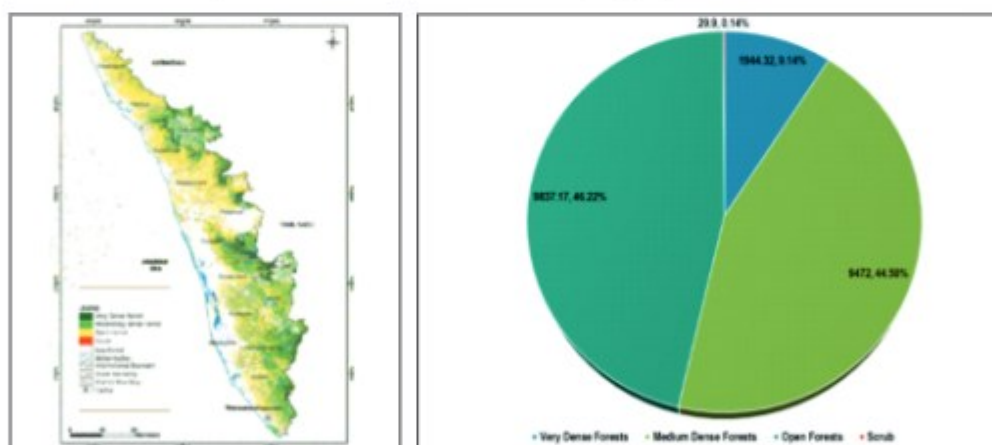
1.1 Background

Forests in India comprise diverse forest types and reserved areas accounting for about 24.62 % of the country's geographical area. Forest provides livelihood support to the people living in and adjoining forests. Forests are the most significant natural carbon sinks and regulate water regimes. Given that the forest sector provides goods and services to humankind, forest land is diverted for developmental activities for non-forestry purposes, consequently leading to considerable shrinkage of forest cover.

Kerala is endowed with rich natural resources. The conducive tropical climate favours forests with rich biodiversity and endemism. The Western Ghats, one of the Biodiversity hotspots, runs all along the eastern boundary of Kerala. Unfortunately, the increasing population and changing lifestyles exert tremendous pressure on forests. The greatest challenge today is to accommodate developmental needs by minimising the destruction of its pristine forests.

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.



Source: ISFR, 2021

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.

1.3 Forest Cover in Kerala From 2015 to 2019

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

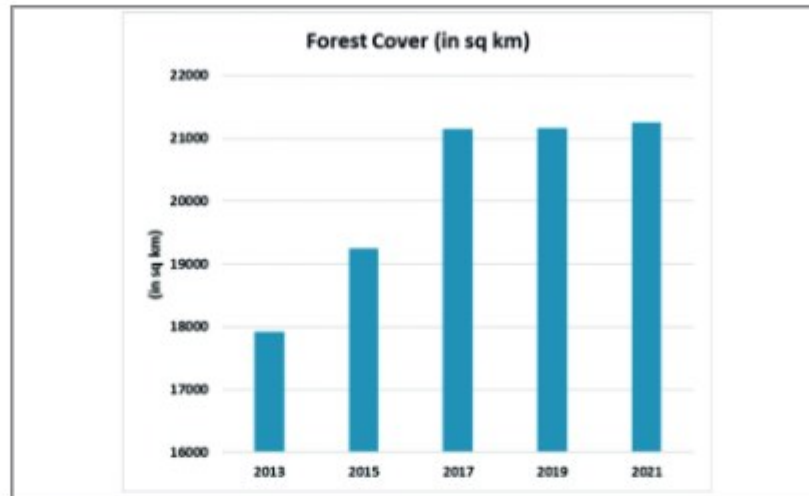


Figure 1.1 Forest Cover in Kerala from 2013 to 2021

1.4 District-wise Forest Coverage in Kerala

The tree map at Fig 1.2 provides the distribution across districts.

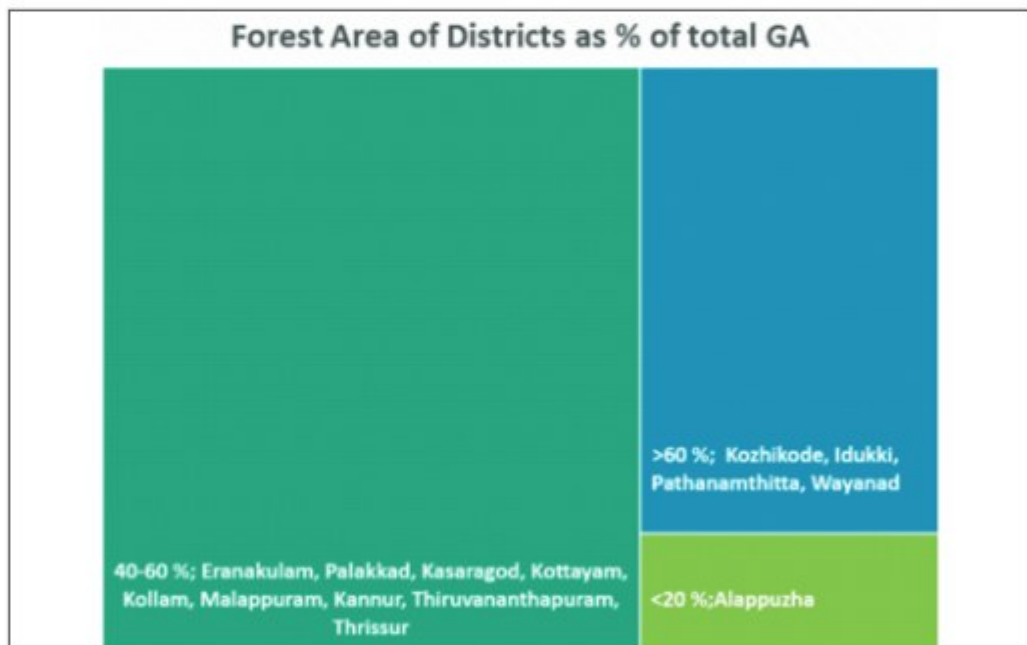


Figure 1.2 Distribution of forest cover in districts of Kerala

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%). Data reveals an increase in forest cover by 109 sq km in 2021 compared to 2019 (Kerala ENVIS, 2022).

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, MoEFCC, 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 outlay of the CAMPA activities during 2020-21 is Rs. **15.78** crores. The details of the Divisions, and the number of activities against different years are in Annexure-III.

3. Methodology

Physical verification of activities

I. Plantation - methodology

- 10% plantation 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.
- © 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 (10-50m 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

Focussed group discussion (FGD): FGD was conducted for 10% of the villages in which CAMPA works were undertaken with at least 15 villagers in a common place 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

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

This approach involved 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 the following details documented 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/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	Two - three months
Draft report submission	One month after field data collection
Final report submission	Two months after draft report submission
Total Duration	6 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 and Kozhikode Forest Divisions
	Eastern Circle, Palakkad	Nilambur North, Nilambur South, Mannarkkad, Palakkad and Nemmara Forest Divisions
	Central Circle, Thrissur	Thrissur, Chalakkudy, Vazhachal and Malayattoor Forest Divisions
	High Range Circle, Kottayam	Kothamangalam, Mankulam, Munnar, Marayoor and Kottayam Forest Divisions
	Southern Circle, Kollam	Ranni, Konni, Punalur, Thenmala, Achankovil 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, Kottayam	Munnar, Idukki, Periyar Tiger Reserve East and Periyar Tiger West Wildlife Divisions.
	Agasthyavanam Biological Park, Thiruvananthapuram	Shendurney and Thiruvananthapuram Wildlife Divisions.
Social Forestry Circles and Divisions.	Social Forestry, Kozhikode	Kasargode, Kannur, Wayanad, Kozhikode and Malappuram Social Forestry Divisions.
	Social Forestry, Ernakulam	Palakkad, Thrissur, Ernakulam and Idukki Social Forestry Divisions.
	Social Forestry, Kollam	Alappuzha, Kottayam, Pathanamthitta, Kollam and Thiruvananthapuram Social Forestry Divisions.
Research Circles & Research Divisions	Working Plan & Research	Kozhikode, Palakkad, Munnar, Punalur and Kollam Working Plan Divisions as well as Research Division, Thrissur Research Division



Northern Circle, Kannur (2020-21)

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

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

Fifteen different activities were envisaged in the circle under six components. The distribution of activities is as follows:

Component	Particulars of work
Better connectivity	Maintenance of trek path/patrolling route
Capacity Building	Awareness Program/ training to staff and VSS/EDC members
	Conducting nature camps to school and college children
Forest Fire Prevention and control operation	Engaging fire gang through participatory forest management
	Fire awareness campaign
	Fire fighting equipment
Human Animal Conflict Mitigation	Engaging watchers to mitigate human-animal interface
	Protective gears for wildlife conflict mitigation staff
Improvement of Wildlife Habitat	Bird survey and conservation
	Eradication of exotic weeds
	Maintenance of Vayal
Protection of plantations and forests	Field survival kits and field equipment
	Interior campshed maintenance
	Organising joint patrolling and raids along inter-divisional and interstate boundaries
	Provision of field ration for interior camps

I. Protection of plantations and forests

a. Field survival kits and field Equipment

Location / Range / Division	Items procured	Quantity	Remarks
Irulam and Pulpally FS / Chedleth Range/ S. Wayanad	Camera traps	1	In good condition, verified the records and found correct.
Meppady Range/ S. Wayanad	Body protector jacket, lathi etc	8	All are in good condition, verified the records and found correct
Idiyamvayal/ Kalpetta section/ S. Wayanad	Essential articles for camping station	15	All are in good condition, verified the records and found correct



Location / Range / Division	Items procured	Quantity	Remarks
Mandamala campshed/ Kalpetta section/ Kalpetta range/ S. Wayanad	Sanitary & other kitchen articles	20	All are in good condition, verified the records and found correct
Kalpetta Range/ S. Wayanad	Equipment for RRT and protective staff	1	All are in good condition, verified the records and found correct

The equipment purchased were evaluated for physical existence and quality. They were checked by verifying the vouchers. The equipment are in good condition and used regularly.



Field Equipment (Power driller) and Safety Equipment

b. Interior campshed maintenance

Location	GPS Coordinates	Type of activity	Remarks
Thollayiram campshed under Mundakkai FS /S. Wayanad	N11°49'45.45" E76°14'21.27"	Erection of sheet roof and painting works	The structure is in good condition, verified the records and found correct
Karinkanny campshed Padijnarethara /S. Wayanad	N11°66'88.43" E76°94'00.51"	Installing pumpset and facilitating drinking water	The structure is in good condition, verified the records and found correct
Vellaramkunnu APC, Vellamunda forest Section	N11°14'02.84" E76°13'66.46"	Mini solar home lights	The lights are functioning well, verified the records and found correct
Thavalapara APC, Vellamunda forest Section	N11°14'02.84" E76°13'66.46"	Mini solar home lights	The lights are functioning well, verified the records and found correct
Perinjerimala APC, Makkiyad Forest Section	N11°14'02.84" E76°13'66.46"	Mini solar home lights	The lights are functioning well, verified the records and found correct



The works were evaluated for physical existence and quality. The inspection team verified the records and the vouchers for erection of roof, pumpset installation and for the procurement of mini solar lights for campsheds and found correct.

c. Organising joint patrolling and raids along inter-divisional and interstate boundaries

Location / Range / Division	Type of activity	Remarks
Kanhangad Range/Kasaragode Division	Joint patrolling & combing operations	Bills and vouchers verified and found correct.
Kanhangad Range/Kasaragode Division	Interstate /division joint patrolling combing operations	Bills and vouchers verified and found correct.
Kasaragode Range/Kasaragode Division	Interstate /division joint patrolling combing operations	Bills and vouchers verified and found correct.
Kanhangad Range/Kasaragode Division	Division joint patrolling combing operations	Bills and vouchers verified and found correct.
Inter divisional and inter state boundaries Pulpally FS/S. Wayanad	Organising joint patrolling and raids	Bills and vouchers verified and found correct.
Irulam forest station FS/S. Wayanad	Organising joint patrolling and raids	Bills and vouchers verified and found correct.
Interdivision areas Kalpetta Range/S. Wayanad	Organising joint patrolling and raids	Bills and vouchers verified and found correct.
Varayal F.S, Peria range/ N. Wayanad	Special joint patrolling	Bills and vouchers verified and found correct.
Inter division border of Begur range /N. Wayanad	Joint Patrolling and raid in interstate divisions	Bills and vouchers verified and found correct.
Thrissileri & Begur FS/ N. Wayanad	Joint patrolling and raid	Bills and vouchers verified and found correct.

The activities were verified through inspection of records and found correct.

d. Provision of field ration for interior camps

Location	Type of activity	Remarks
APC Choothupara/ Kozhikode	Providing field ration to staffs and watchers	The records and vouchers were verified and found correct
APC Athikode/ Kozhikode	Providing field ration to staffs and watchers	The records and vouchers were verified and found correct
APC Sankaranpuzha/ Kozhikode	Providing field ration to staffs and watchers	The records and vouchers were verified and found correct
Poozhithode block of Peruvannamuzhi/ Kozhikode	Providing field ration to staffs and watchers	The records and vouchers were verified and found correct
Vayalada-Kottakunnu block of Peruvannamuzhi/ Kozhikode	Providing field ration to staffs and watchers	The records and vouchers were verified and found correct



The records and vouchers were verified and found correct.

II. Improvement of wildlife habitat

a. Bird survey and conservation

Location	Type of activity	Remarks
Kanhangad Range/ Kasaragode	Conducting bird survey	The files and vouchers were verified and found correct.
Ranipuram Eco-tourism area/ Kasaragode	Complete assessment of bird diversity	The files and vouchers were verified and found correct.
Ranipuram/ Kasaragode	Complete assessment of bird diversity	The files and vouchers were verified and found correct.
Ranipuram/ Kasaragode	Complete assessment of bird diversity	The files and vouchers were verified and found correct.
Begur range/N. Wayanad	Bird census	The files and vouchers were verified and found correct.
North Wayanad	Books on bird survey	The files and vouchers were verified and found correct.
North Wayanad	Bird bath	The files and vouchers were verified and found correct.

The files and vouchers were verified and found correct.

b. Eradication of exotic weeds

Eradication of exotic weeds undertaken in Wayanad Division was verified based on the records. The exotic weeds such as lantana, Eupatorium etc. were removed.

Location	GPS Locations	Area/ number	Type of activity
Kuruva Island area / Pulpally FS /S.Wayanad	N11°82'68.8" E76°09'54.7"	10 ha	Removal of exotic weeds, Lantana, Eupatorium etc
Pambra - Moonanakuzhy area Irulam FS /S. Wayanad	N11°73'37.46" E76°19'86.19'	5 ha	Removal of exotic weeds, Lantana, Eupatorium etc
Maramala area Irulam FS / S. Wayanad	N11°76'14.04" E76°20'03.99"	5 ha	Removal of exotic weeds, Lantana, Eupatorium etc
Pakkom- Chekady road area Pakkom Kuruva VSS Pulpally FS /S. Wayanad	N11°80'77.29" E76°10'09.64"	4.5 ha	Clearing protection path either side of the coupe road
Irulam and Pulpally FS Chedleth Range /S. Wayanad	N11°75'09.28" E76°22'04.40"	1 ha	Removal of exotic weeds, Lantana, Eupatorium etc

Evaluation of weed eradication in South Wayanad





c. Maintenance of vayal

Location / Range / Division	GPS Coordinates	Remarks
Kottapady, Thirunelli Forest Section, Begur Range / N. Wayanad	N11°54'39.3" E75°59'53.4"	The vayals are maintained well.
Chiravattom Hariland, Varayal FS /N. Wayanad	N11°84'86.5" E75°82'36.2"	The vayals are maintained well.

The files and vouchers were verified and found correct.

III. Forest fire prevention and control operation

a. Engaging fire gang through participatory forest management

Location / Range / Division	Activity
Settukunnu area in Kalpetta section/S. Wayanad	Engaging fire gang
Valaramkunnu area in Kalpetta section/S. Wayanad	Engaging fire gang
Arukamthode area in Kalpetta section/S. Wayanad	Engaging fire gang
Aranamala in Mundakkai FS Meppady Range/S. Wayanad	Engaging fire mazdoors
Cholamala Mundakkai FS Meppady Range/S. Wayanad	Fire gang
Kelamangalam area in Pulpally FS Chedleth Range/S. Wayanad	Fire gang
Chekady area in Pulpally FS Chedleth Range/S. Wayanad	Fire gang
Anapanthy area in Irulam FS Chedleth Range/S. Wayanad	Fire gang
Irulam area in Irulam FS Chedleth Range/S. Wayanad	Fire gang
Moonanakuzhy area in Irulam FS Chedleth Range/S. Wayanad	Fire gang
Vattapady area in Irulam FS Chedleth Range/S. Wayanad	Fire gang
Padiri area in Pulpally FS/S. Wayanad	Fire gang
Vettathoor area in Pulpally FS Chedleth Range/S. Wayanad	Fire gang
Kanhangad Range/ Kasaragode	Engaging fire gang watchers
Maruthom Section / Kasaragode	Engaging fire gang watchers
Panathady Section, Kanhangad Range/ Kasaragode	Engaging fire gang watchers
Bandaduka section, Kasaragode Range/ Kasaragode	Engaging fire gang watchers
Bheemanady Section, Kanhangad Range/ Kasaragode	Engaging fire gang watchers
Panathady Section, Kanhangad Range/ Kasaragode	Engaging fire gang watchers
Karadukka Section, Kasaragode Range/ Kasaragode	Engaging fire gang watchers
Karadukka Section/ Kasaragode	Engaging fire gang watchers
Panathadi Section/ Kasaragode	Engaging fire gang watchers
Vayalada area of Kakkayam FS/Kozhikode	Engaging man mazdoor for fire protection works
Karingad fire block of Vilangad section of Kuttiady /Kozhikode	Engaging man mazdoor for fire protection works
Panom to Panniyeri fireblock of Vilangad section of Kuttiady / Kozhikode	Engaging man mazdoor for fire protection works



Location / Range / Division	Activity
Choorani fireblock of Pashukkadavu section of Kuttiady / Kozhikode	Engaging man mazdoor for fire protection works
Pakramthalam fireblock of Pashukkadavu section of Kuttiady / Kozhikode	Engaging man mazdoor for fire protection works
Poothampara fireblock of Pashukkadavu section of Kuttiady / Kozhikode	Engaging man mazdoor for fire protection works
Kandivathukkal fireblock of Pashukkadavu section of Kuttiady / Kozhikode	Engaging man mazdoor for fire protection works

Fire protection works undertaken in Wayanad, Kasaragode and Kozhikode Divisions were verified based on the records.

b. Fire awareness campaign

Location	Type of activity	Remarks
Mundakkai FS Meppady Range	Conducting fire awareness classes for staff and Public	Records were verified
Kalpetta Range /S. Wayanad	Conducting training class in connection with incident response systems, fire suppression & personal safety	Records were verified
Makkiyad Forest Section, Manathavady range	Fire Awareness Programe- Training fire & rescue staffs	Records were verified

c. Fire fighting equipment

Location / Range / Division	Items procured	Numbers
Irulam and Pulpally FS Chedleth / S. Wayanad	Providing bag, water bottle and items related to fire protection	42
Vythri, Mundakkai FS and Baderi section / S. Wayanad	Fire fighting equipment	1
Kalpetta range /S. Wayanad	Back pack and blower for extinguishing forest fire	1

The activities were verified through inspection of records and found correct.

IV. Human animal conflict mitigation

a. Engaging watchers to mitigate human animal interface

Location / Range / Division	Activity
Chundale area/ Kalpetta section/ Kalpetta Range/ S. Wayanad	Engaging watchers for protection and perambulation
Karinkanny area Padinjharathara section/ S. Wayanad	Engaging protection and elephant scaring watchers
Kurichiyarmala area/ Kalpetta section/ S. Wayanad	Engaging protection and elephant scaring watchers



Location / Range / Division	Activity
Sugandhagiri Kalpetta section /S. Wayanad	Engaging protection and elephant-scaring watchers
Banasuramala VF & EFL area Padinjharathara section /S. Wayanad	Engaging daily wage watcher cum driver for upkeep of dept boat
Mandamala area Kalpetta section /S. Wayanad	Engaging protection and elephant-scaring watchers
Udiramchery area /Sugandhagiri section / S. Wayanad	Engaging protection and elephant-scaring watchers
Koodaloor area Irulam FS /S. Wayanad	Mazdoor for protection and perambulation
Madapallikunnu area Pulpally FS /S. Wayanad	Mazdoor for protection and perambulation
Karapuzha area Muttill Section /S. Wayanad	Mazdoor for protection and perambulation
S. Wayanad	Mazdoor for capturing snake and other animals transport them to the rescue centre and relocation
Pakkom area Pulpally FS /S. Wayanad	Man mazdoor for assisting section staff to drive away wild elephants
Parathode and Koncherikunnu Areas Sugandhagiri section /S. Wayanad	Man mazdoor for assisting section staff to drive away wild elephants
Kolavally- Parudeesa Kavala- Seethamount area Pulpally FS /S. Wayanad	Man mazdoor for assisting section staff to scare tigers
Chunda, Ammara Kalpetta section /S. Wayanad	Man mazdoor for assisting section staff to drive away wild elephants
Kochumala, Kunnumpuram in Sugandhagiri section /S. Wayanad	Man mazdoor for assisting section staff to drive away wild elephants
Punchavayal- Panamaram area Chedleth Range / S. Wayanad	Man mazdoor for assisting section staff to drive away wild elephants infiltrating into human settlement
Kunnembetta, Vythiri FS /S. Wayanad	Funeral expences towards loss of life by wild elephant attack
Vythiri FS /S. Wayanad	Man mazdoor for assisting section staff to drive away wild elephants infiltrating into human settlement
Kasaragode	Man mazdoor for assisting section staff to drive away wild elephants
Kasaragode	Man mazdoor for assisting section staff to drive away wild elephants
Kasaragode	Man mazdoor for assisting section staff to drive away wild elephants
Kasaragode	Man mazdoor for assisting section staff to drive away wild elephants
Karadukka section / Kasaragode	Man mazdoor for assisting section staff to drive away wild elephants



Location / Range / Division	Activity
Karadukka section / Kasaragode	Man mazdoor for assisting section staff to drive away wild elephants
Karadukka section / Kasaragode	Man mazdoor for assisting section staff to drive away wild elephants
Pasukkadavu section of Kuttiady	Man mazdoor for assisting section staff to drive away wild elephants
Edathara section of Thamarassery	Man mazdoor for assisting section staff to drive away wild elephants
Peruvannamuzhi station area	Man mazdoor for assisting section staff to drive away wild elephants

The activities were verified through inspection of records and found correct.

b. Protective gears for wildlife conflict mitigation staff

Location / Range / Division	Activity
Kalpetta Range/S. Wayanad	Purchasing postmortem kit
Kalpetta section under Kalpetta Range/S. Wayanad	Purchasing snake and animal rescue articles
Padionjharethara section under Kalpetta Range/ S. Wayanad	Purchasing snake and animal rescue articles
Sugandhagiri section under Kalpetta Range/ S. Wayanad	Purchasing snake and animal rescue articles
Chedleth Range/S. Wayanad	Protective gears for wildlife conflict mitigation staff
Meppady Range/S. Wayanad	Crackers for driving away elephants
Meppady Range/S. Wayanad	Search lights
Pulpally FS Chedleth Range/S. Wayanad	Head lights
Irulam FS Chedleth Range/S. Wayanad	Head lights
Meppady Range/S. Wayanad	Construction of temporary machans in interior forest areas
Thamarassery	Medical equipment to veterinary surgeon's office.
Thamarassery	Supply of computer to animal rescue centre and veterinary office
Thamarassery	Purchasing of computer UPS and extension box for the use in veterinary office

The activities were verified through inspection of records and found correct.

V. Better connectivity

a. Maintenance of trek path/patrolling route



Location	GPS Co-ordinates	Type of activity	Dimension (km)	Observation of the evaluation team
Chullikkad to Alliyangal gate area area of Pulpally FS Chedleth /S. Wayanad	N11°40'54.27" E75°56'12.44"	Making new trek path	5	Bills and vouchers were found correct
Punchirimattam to Mallika through Aranamala VSS/ Meppady Range / S. Wayanad	N11°41'20.22" E75°55'57.75"	Clearing protection path	2.5	Bills and vouchers were found correct
Meppady Range / S. Wayanad	N11°41'31.3" E75°55'18.7"	Clearing protection path from Kadassery to Parappanpara through Palachuram VSS	3	Bills and vouchers were found correct
Vilangadi- Vettathoor area Pulpally FS / S. Wayanad	N11°37'42.6" E75°59'21.2"	Maintenance of trek path	2	Bills and vouchers were found correct
Chandroth Anapanthy area Pulpally FS / S. Wayanad	N11°37'20.4" E75°58'40.8"	Maintenance of trek path	2	Bills and vouchers were found correct

The activities were verified through inspection of records and found correct.

VI. Capacity building

a. Awareness program/ training to staff and VSS/EDC members

Location	Type of activity
Idiyamvayal camping station at Kalpetta section and Thariyode section HQ in Sugandhagiri section / S. Wayanad	Installation of awareness board
Valaramkunnu Thndiyode Bappanam area in Padinjharethara section kalpetta /S. Wayanad	Installation of awareness sign board
Udiramcheri, Chekuthanpalam Parathode area Sugandhagirri section Kalpetta /S. Wayanad	Installation of awareness sign board
Irulam Pambra Vattapadi Pokalamalam area in Irulam FS / S. Wayanad	Maintenance of existing sign board

The activities were verified through inspection of records and found correct.

b. Conducting nature camps to school and college children

Location	Type of activity
Kottanchery / Kasaragode	Conducting nature camp to school children
Patla / Kasaragode	Conducting nature camps for GHSS Patla School students

The activities were verified through inspection of records and found correct.



Fifteen activities were taken up during 2020-21 in the circle. The circle implemented all the activities listed in the APO. No spillovers were observed.

Overall, an amount of Rs. 67.57 lakhs was allotted to the circle during the period of which 95.14 percent financial achievement was observed.

Eastern Circle, Palakkad (2020-2021)

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

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

Fifteen different activities have been undertaken under eight different components in the circle. The distribution of activities is as follows:

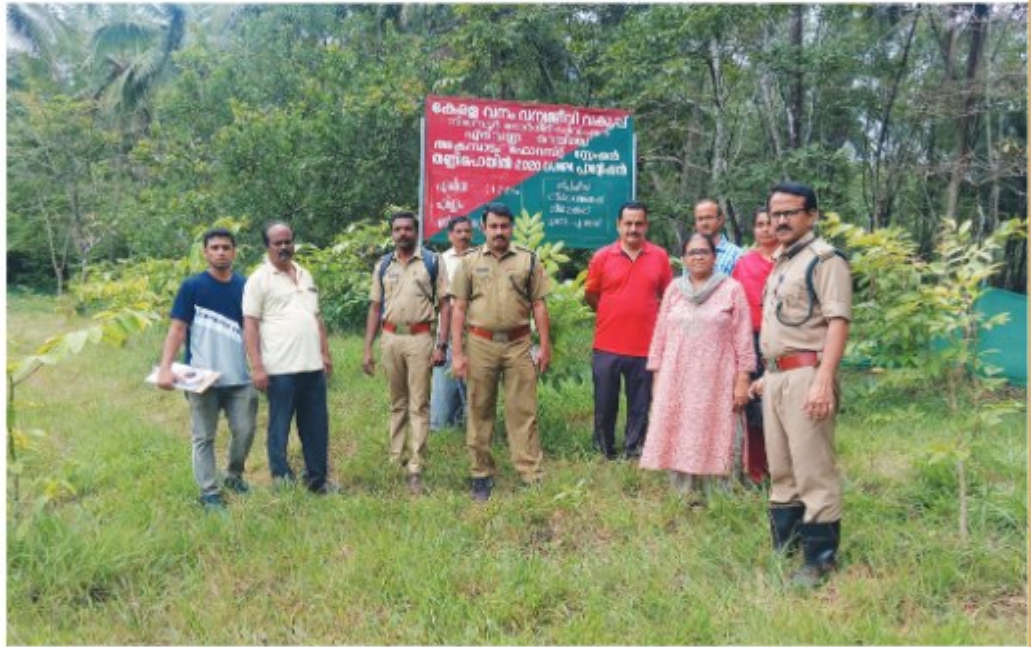
Component	Particulars of work
Better connectivity	Maintenance of trek path/patrolling route
Capacity Building	Awareness program/ training to staff and VSS/EDC members
	Conducting nature camps to school and college children
Compensatory Afforestation Funds	Compensatory Afforestation Works (Creation - Preparatory works)
Catchment Area Treatment Plan Fund Part	River Bank Stabilization
Forest Fire Prevention and control operation	Engaging fire gang through participatory forest management
	Fire awareness campaign
	Fire fighting equipment
Human Animal Conflict Mitigation	Engaging watchers to mitigate human animal interface
	Equipment/ ration for Rapid Response Teams (RRTs)
Improvement of Wildlife Habitat	Eradication of exotic weeds
Protection of plantations and forests	Eco-restoration activities in monoculture plantations by planting indigenous/misc. species/preparatory works
	Field survival kits and field equipment
	Interior campshed maintenance
	Organising joint patrolling and raids along inter-divisional and interstate boundaries

I. Protection of plantations and forests

a. Eco restoration activities in monoculture plantations



Location/ Range/ Divisions	Area (ha)/ Planting	Species	Survival (%)	Remarks
Thannipoyil / Edavanna range/ Nilambur north	1.712	<i>Gmelina arborea</i> , <i>Lagerstroemia lanceolata</i> , <i>Terminalia arjuna</i> , <i>Pongamia pinnata</i>	90	Gap plantation was under taken. Casualty replacement was done. Verified vouchers and found correct.



Evaluation team at Thannipoyil, Edavanna Range, Nilambur North



Plantation details at Thannipoyil, Edavanna Range, Nilambur North



Species survival in the eco-restoration plot in Edavanna

b. Construction and maintenance of campshed

Location/ range/ Division	GPS Location	Dimensions (m)	Remarks
Edavani campshed/ Pudur/ Attappadi/ Mannarkkad	N11°10'25.829" E76°33'55.075"	12.5x6.5x2.5	Repairs and purchase of consumables etc. was undertaken in the temporary sheds in Attappady and Agali ranges. Vouchers were verified and found correct.
Ayyappan thodu campshed/ Walayar	N10°52'47.3" E76°48'09.0"	4.7x6.2x5.0	Repairs and purchase of consumables etc. was undertaken. Vouchers were verified and found correct.
Panapuzha camp shed/ Karulai /Nilambur south	N11°4'19" E76°4'26.0"	-	Works like window replacement; toilet renovation, door replacement; purchase of utensils were carried out. Vouchers were verified and found correct. Items wherever possible were physically verified.
Vattikkal camp shed/ Karulai/Nilambur south	N11°17'44.2" E76°21'36.4"	-	Purchase of utensils; repair work repair of windows and doors were undertaken. Vouchers were verified and found correct.

The camp sheds are maintained well and used by front line staff. The evaluation team checked for the physical correctness. Verified the records and vouchers and found correct.



Campshed at Ayyappanthodu, Walayar

c. Interior campshed ration

Location	Type of activity	Remarks
Attapadi, Agali and Mannarkkad ranges	Providing field ration to staffs and watchers	The records and vouchers were verified and found correct
Olavakkode, Ottapalam range/palakkad	Providing field ration to staffs and watchers	The records and vouchers were verified and found correct

d. Field survival kits and field equipment

Location / Range / Division	Items procured	Numbers	Present Status
Palakkad Division	Mahindra Arjun-Novo 605 D I Tractor	1	The tractor is in good condition

Kits were also procured in the Olavakkode and Walayar ranges. The vouchers were verified and found correct.



Mahindra Arjun-Novo 605 D I Tractor in Palakkad Division used for field work



e. Organising joint patrolling and raids along inter-divisional and interstate boundaries

Range/Division	Activity
Pudur, Murugala, Kulladpanjakad in Attapadi / Mannarkkad	Joint patrolling and raids
Olavakkode range/Palakkad	Joint ratrolling and raids
Edavanna range, Nilambur north	Joint patrolling and raids
Karulai range, Nedungayam, Padukka forest station, Nilambur South	Joint patrolling and raids

The activities were verified through inspection of records and found correct.

II. Improvement of wildlife habitat

Eradication of exotic weeds : Weed eradication was taken up in Edavana Range, Nilambur North Division.

Plot No.	GPS coordinates of the worked plot	Species	Weed density (%)
1	N11°18' 8.24" E76°23' 59.54"	<i>Lantana camara</i>	10
		<i>Eupatorium sp.</i>	4
		<i>Chromolaena odorata</i>	15
		<i>Glycosmis pentaphylla</i>	10
2	N11°18' 18.32" E76°23' 61.17"	<i>Lantana camara</i>	5
		<i>Eupatorium sp.</i>	2
		<i>Chromolaena odorata</i>	20
		<i>Glycosmis pentaphylla</i>	8
3	N11°18' 19.51" E76°23' 64.82"	<i>Lantana camara</i>	5
		<i>Eupatorium sp.</i>	4
		<i>Chromolaena odorata</i>	10
		<i>Glycosmis pentaphylla</i>	15
4	N11°18' 20.51" E76°23' 66.47"	<i>Lantana camara</i>	8
		<i>Eupatorium sp.</i>	1
		<i>Chromolaena odorata</i>	10
		<i>Glycosmis pentaphylla</i>	5
5	N11°18' 21.56" E76°23' 68.73"	<i>Lantana camara</i>	12
		<i>Eupatorium sp.</i>	2
		<i>Chromolaena odorata</i>	15
		<i>Glycosmis pentaphylla</i>	8

The exotic weeds such as *Lantana camara*, *Eupatorium sp.*, *Chromolaena odorata* and *Glycosmis pentaphylla* were eradicated effectively. The records and vouchers were verified and found correct.

III. Compensatory afforestation funds

Maintenance was undertaken in some eco restoration zones in the division. Minor soil and mositruue conservation activities, protection, watch and ward were also undertaken.



Location/range/division	GPS coordinates	Remarks
Ecorestoration zone, Elival, Olavakkode, Palakkad	N10°51'54.28" E76°38'14.532"	The teak plantation is dominated by <i>Grewia tilifolia</i> , <i>Albizia lebbek</i> , <i>Xylia xylocarpa</i> , <i>Terminalia paniculata</i> , <i>Delonix regia</i> , <i>Lagerstroemia speciosa</i> . Gullies (20.324 m ³) were physically verified and found in good condition.
Ecorestoration zone, Olavakkode, Palakkad	N10°53'2.01" E76°38'33.83	The gullies were physically verified and found in good condition. The Teak plantation is dominated by <i>Grewia tilifolia</i> , <i>Albizia lebbek</i> , <i>Xylia xylocarpa</i> , <i>Terminalia paniculata</i> , <i>Delonix regia</i> , <i>Lagerstroemia speciosa</i> . Gullies (27.628 m ³) were physically verified and found in good condition.
Thanuppan Chola/ Vazhikkadavu/Nilambur north	N11°24'51.6" E76°22'41.7"	Species like <i>Terminalia arjuna</i> , Puvam, Pali, Pullani, Irul, <i>Melia dubia</i> , Bamboo, Reeds were planted. 30% eucalyptus and 10% grass land. 3 gullies of dimensions 4.1x2.5x1.7 m, 9x1.5x2.5 m, 9.5x2.5x1.5m were constructed.
Thanuppan Chola/ Vazhikkadavu/Nilambur north /1996 TP	N11°24'58.4" E76°22'40.9"	Species like <i>Terminalia arjuna</i> , Puvam, Pali, Pullani, Irul, <i>Melia dubia</i> , Bamboo, Reeds were planted. 2 gullies of dimensions 5.4x1.5x2.5m and 4.9x1.7x2.5m were constructed.
2002 Thottappala/ Vazhikkadavu/Nilambur north Eucalyptus eco restoration zone	N11°21'33.2" E76°20'2.2"	Species like Mahogany, Marudu planted in the zone in an area of 3.08 ha.
Udumboyil / Vazhikkadavu / Nilambur north/ Eucalyptus eco – restoration zone	N11°23'15.55" E76°16'56.54"	The Eucalyptus plantation has been planted with indigenous species and was maintained during this period.
Manchalkkode Eucalyptus plantation eco - resoration	N11°25'44.92" E76°19'26.29"	Species like Mahogany, Marudu planted in the zone in an area of 3.08 ha. Protection watchers were engaged for maintenance. Vouchers were checked and found correct.
Nedumgayam eco restoration zone / Karulai / Nilambur south	N11°17'15.88" E76°20'50.10"	An area of 28 ha was maintained, Fire line work & engaging watchers. Most of the trees dried due to water logging which were removed. Vouchers were checked and found correct. SMC works like gully plugging (266.59m ³) was carried out.
Vattikkal ecorestoration zone Karulai / Nilambur south	N11°19'59.3" E76°19'15.1"	Species such as <i>Terminalia paniculata</i> , <i>Terminalia arjuna</i> , <i>Xylia xylocarpa</i> etc. were planted in an area of 28 ha, Fireline, weeding works were carried out by engaging watchers. Vouchers were checked and found correct.



Inspection of gullies at Eco-restoration zone, Olavakkode

IV. Catchment area treatment plan fund part

a. River bank stabilization/ protection

Location/range/ Divisions	GPS Coordinates	Species	Survival (%)	Remarks
Chemmannor to Mukkali / Attapadi range/ Mannarkkad	N11° 02' 26.9" E76° 42' 46.6"	Bamboo, <i>Pongamia pinnata</i> , <i>Terminalia arjuna</i> , <i>Terminalia bellirica</i>	90	Watchers were deployed for the work.



Bamboos established in river bank stabilisation efforts



V. Better connectivity

a. Maintenance of trek path

Location/range/division	GPS Location	Year of Construction	Dimensions (m)	Remarks
Attapadi range (Coupe road From Pottikkal plantation To Mukali)	N11° 4' 17.18" E76° 33' 4.88"	2020-2021	8km ; Width 3.5m	The works were evaluated for the physical existence and for the quality.
Irulkunnu trek path/ Kanjirapuzha forest station/Nilambur north	N11°25'0.72" E76°13'28.01"	2020-2021	5km; 3.8m extends upto Mulukuparathodu	The works were evaluated for the physical existence and for the quality.
Choovalatti to Manakadavu in Nedungayam forest station, Karulai range/ Nilambur south	N11°18'33.6" E76°27'03.8"	2020-2021	21km; 1.5m width	The works were evaluated for the physical existence and for the quality.



Coupe road in Attapadi

Observations of the evaluation team

Type of Assets/ Division / Range	Type of current use/ Observations	Impact	Score (Low, ≤ 3 , Medium >3 to <7 , High 7 to 10)	Assessment on the quality of the asset - Low, Medium or High
Trek path/Attapadi range (Coupe road from Pottikkal plantation To Mukali)	The trek path is maintained well.	The path is useful for the frontline staff.	7	High



Type of Assets/ Division / Range	Type of current use/ Observations	Impact	Score (Low, ≤ 3, Medium >3 to<7, High 7 to 10	Assessment on the quality of the asset - Low, Medium or High
Irulkunnu trek path/ Kanjirapuzha forest station/Nilambur north	The trek path is maintained well.	The path is useful for the frontline staff.	7	High
Trek path/Choovalatti to Manakadavu in Nedungayam forest station , Karulai range/ Nilambur south	The trek path is maintained well.	The path is useful for the frontline staff.	7	High

The trek path is maintained well and useful for the frontline staff. The works were evaluated for the physical existence and for the quality.

VI. Forest fire prevention and control operation

a. Engaging fire gang through a participatory forest management

Location/ Range/ Division	Remarks
Attapadi, Agali and Mannarkkad ranges	Engaging man mazdoors for fire protection work at fire-prone areas.
Kollengode, Nelliampathy, Alathur ranges	Engaging man mazdoors for fire protection work at fire-prone areas.
Olavakkode and Walayar range	Engaging man mazdoors for fire protection work at fire-prone areas.
Kariamuriam, Kampadam etc/ Edavanna range/ Nilambur north	Engaging man mazdoors for fire protection work at fire-prone areas.
Pattakkarimbu, Kallamoola, Vettathur, Amarambalam, Saivilla etc./ Nilambur south	Engaging man mazdoors for fire protection work at fire-prone areas.

The activities were verified through inspection of records and found correct.

b. Fire awareness campaign

Location/range/division	Work
Attapadi, Agali & Mannarkkad ranges	Organizing fire awareness programmes in forest station.
Nilambur North	Organizing fire awareness programmes in forest station

The activity was verified through verifying records and vouchers and found correct.

c. Fire fighting Equipment



Location / Range / Division	Items	Remarks
Attapadi, Agali and Mannarkkad ranges/Mannarkkad	Fire extinguishers, safety jackets, water spraying pumps and PPE	The items are in good condition.
Olavakkode and Walayar range/ Palakkad		
Kollengode, Nelliampathy, Alathur ranges/Nemmara		
Karulai range, Nilambur south		

The activities were verified through inspection of records and found correct.

VII. Capacity building

a. Awareness program/training to staff and VSS/EDC members.

Location/ Range/division Range	Activity
Nilambur North	Conducting awareness program and training to staff and VSS
Karulai range, Nilambur south	Conducting awareness program and training to staff and VSS

The activities were verified through inspection of records and found correct

b. Conducting nature camps to school and college children

Location/ Range/division Range	Activity
Nilambur North	Conducting Nature Camps to School and College children
Olavakkode & Walayar range	Conducting Nature Camps to School and College children

The activity was verified through inspection of records and found correct

VIII. Human animal conflict mitigation

a. Engaging watchers to mitigate human animal interface

Range	Activity
Attapadi, Agali and Mannarkkad ranges	Engaging mazdoor for driving away wild elephants from human habitation.
Olavakkode and Walayar range	Engaging mazdoor for driving away wild elephants from human habitation.
Nilambur north: different areas of Edavanna range	Engaging mazdoor for driving away wild elephants from human habitation.
Different forest stations (Karulai range, Nedungayam, Padukka) of Nilambur South	Engaging mazdoor for driving away wild elephants from human habitation.
Kollengode, Nelliampathy, Alathur ranges/ Nemmara	Engaging mazdoor for driving away wild elephants from human habitation.



The activity was verified through inspection of records and found correct.

a. Equipment/ration for Rapid Response Team: Field ration was provided to the RRTs of

1. Attapadi, Agali/ Mannarkkad ranges
2. Olavakkode, Ottapalam range/ Palakkad
3. Edavanna range/ Nilambur North
4. Karulai range, Nedungayam, Padukka forest station/Nilambur south
5. Kollengode, Nelliampathy, Alathur ranges/Nemmara

The vouchers, bills and records was verified and found correct

In addition, activities related to Soil and Moisture Conservation (gully plugging) were also undertaken.

A. Gully plugging

Location/ range/ Division	GPS coordinates	Dimensions (m)	Remarks
Mayiladumparitha, Thiruvazhiyad section of Nelliampathy range/ Nemmara	N11° 09' 56.06" E76° 37' 26.41"	307 m ³	The gullies were physically verified and found in good condition.
Thiruvazhiyad section of Nelliampathy range/ Nemmara	N10°32'24.16" E76°33'47.27" N10°32'24.06" E76°33'47.46" N10°32'23.44" E76°33'47.94"	6.3 X 3.0 X 1.2 6.0 X 2.5 X 1.5 5.0 X, 2.0 X 1.5	The gullies were physically verified and found in good condition.
Thiruvazhiyad section of Nelliampathy range/ Nemmara	N10°33'13.54" E76°33'21.23" N10°33'11.88" E76°33'22.52" N10°33'11.67" E76°33'22.89"	3.9 X 3.1 X 1.5 3.2 X 2.8 X 1.5 5.5 X 4.0 X 1.2	The gullies were physically verified and found in good condition.

Gully Plugging in Nemmara





Observations of the evaluation team

Type of Assets/ Division / Range / Place	Type of current use/Observations	Impact	Score (Low, ≤ 3, Medium >3 to <7, High 7 to 10	Assessment on the quality of the asset - Low, Medium or High
Gully plugging/ Division/ 1963 EP Mayiladumparitha, Thiruvazhiyad section of Nelliampathy range/Nemmara	The gullies were constructed in 2020-21 is in good condition.	Water retention is good	7	High
Gully plugging/ 1964 TP Mayiladumparitha, Thiruvazhiyad section of Nelliampathy range/Nemmara	The gullies were constructed in 2020-21 is in good condition.	Water retention is good	7	High
Gully plugging/ 1965 TP Mayiladumparitha, Thiruvazhiyad section of Nelliampathy range/Nemmara	The gullies were constructed in 2020-21 is in good condition.	Water retention is good	7	High

Fifteen different activities have been undertaken under eight different components in five divisions of the circle. The circle implemented all the activities listed in the APO. No spillovers from past APOs were observed. Additional activities were also undertaken.

Overall, an amount of Rs. 173.17 lakhs was allotted to the circle during the period which was fully utilised for the different activities.

Central Circle, Thrissur (2020-21)

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

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

Nineteen different activities were undertaken under nine components in the circle. The distribution of activities is as follows.

Component	Particulars of work
Better connectivity	Maintenance of trek path/patrolling route
	Maintenance of forest roads
Capacity Building	Awareness program/ training to staff and VSS/EDC members
	Conducting nature camps to school and college children



Component	Particulars of work
Compensatory Afforestation Funds	Compensatory Afforestation Works (Maintenance)
Catchment Area Treatment Plan Fund Part	River Bank Stabilization
Forest Fire Prevention and control operation	Engaging Fire Gang through participatory forest management
	Fire Awareness Campaign
	Fire Fighting Equipment
Human Animal Conflict Mitigation	Engaging watchers to mitigate human animal interface
Improvement of Wildlife Habitat	Bird survey and conservation
	Eradication of Exotic Weeds
	Sea Turtle Conservation
Protection of plantations and forests	Eco-restoration activities in monoculture plantations by planting indigenous/misc. species/preparatory works
	Field survival kits and field Equipment
	Interior Campshed maintenance
	Organising Joint Patrolling and Raids along inter-divisional and interstate boundaries
	Provision of field ration for interior camps
Forest and Wildlife Protection	Soil and Moisture Conservation, Gully Plugging etc.

I. Protection of plantations and forests

a. Eco-restoration activities in monoculture plantations by planting indigenous/misc. species/preparatory works

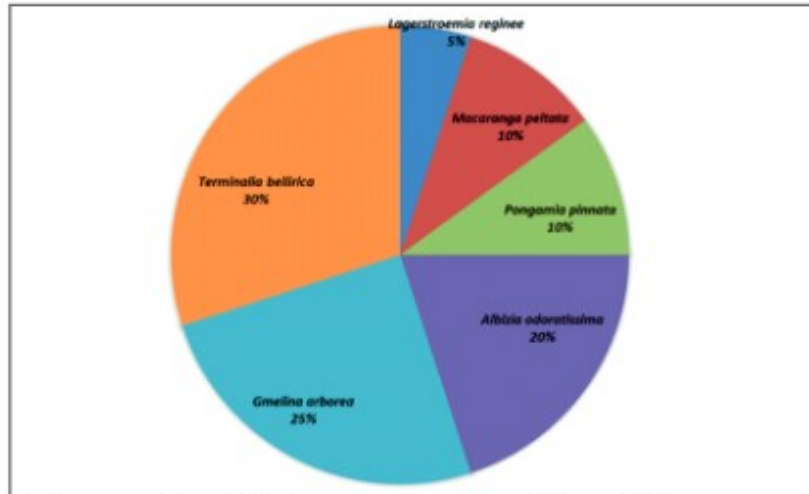
Location/ range/ division	Geo coordinates	Area (ha)/ Planting	Species	Survival (%)	Remarks
Thekkumpadam eco restoration in Pattikad Range- Thrissur Division. 1958 TP	N10° 32' 48.6" E76° 21' 14.3"	10.0 / Gap planting	<i>Terminalia bellirica</i> , <i>Gmelina arborea</i> , <i>Lagerstroemia reginee</i> , <i>Albizia odoratissima</i> , <i>Macaranga peltata</i> <i>Pongamia pinnata</i>	80	Plantation is in good condition. First weeding was carried out after 3 months of planting noticed stem borer in <i>Gmelina</i> , leaf gall and leaf spot diseases in <i>pungam</i> .
Panjanamkuththu eco restoration zone- Vazhachal Division. 1995 TP	N10.31009 E76.57600	5 Ha / Gap planting	<i>Syzygium cumini</i> , <i>Lagerstroemia speciosa</i> , <i>Pongamia pinnata</i> , <i>Phyllanthus emblica</i> , <i>Terminalia arjuna</i> , <i>Madhuca longifolia</i> ,	85	Planted seedlings browsed by Sambar deer and Wild boar. Consequent weeding was carried out in first and second year. Leaf hoppers infestation was



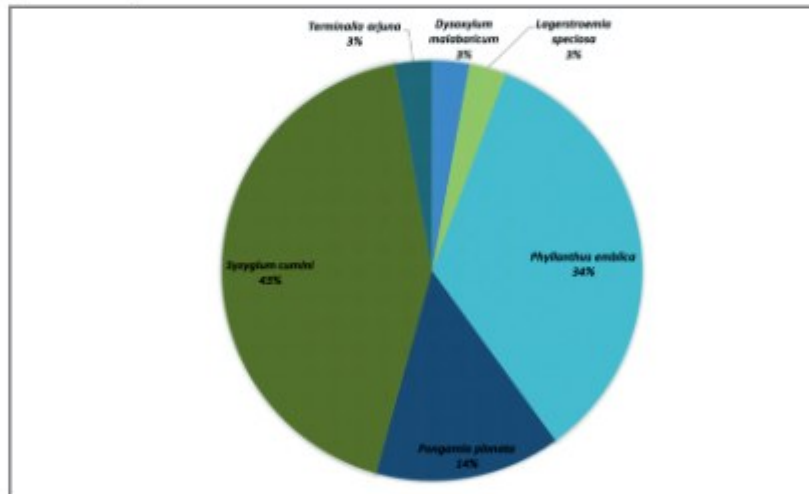
Location/ range/ division	Geo coordinates	Area (ha)/ Planting	Species	Survival (%)	Remarks
			<i>Dysoxylum malabaricum</i>		noticed in <i>Syzygium</i> , <i>Terminalia</i> and larval damage in <i>Syzygium cumini</i> . Plant protection Measures is nil and plantation journal is maintained well.
Kuttanchira eco restoration zone - Chalakkudy. 2011 TP	N10° 26' 32" E76° 20' 36"	14 Ha / Gap planting 2000 plants	<i>Phyllanthus emblica</i> , Bamboo, <i>Swietenia mahagoni</i> , <i>Pongamia pinnata</i> , <i>Bombax ceiba</i> , <i>Syzygium cumini</i> , <i>Morinda pubescens</i> , <i>Garcinia gummi-gutta</i> , <i>Madhuca longifolia</i> , <i>Cinnamomum verum</i> , <i>Aporosa lindleyana</i> , <i>Persea macrantha</i> , <i>Cassia fistula</i> , <i>Holoptelea integrifolia</i> , <i>Terminalia elliptica</i> , <i>Acacia tripesia</i> , <i>Alstonia scholaris</i> , <i>Coryphaum braculifera</i> , <i>Colocasia esculenta</i> , <i>Terminalia bellirica</i> , <i>Terminalia arjuna</i> , <i>Macaranga peltata</i>	81	Regularly damage of plants by elephants and deers. Leaf scorching was noticed in Pungam and leaf spot, leaf and shoot blight disease in <i>Gmelina</i> . Plantation journal is maintained well
Karikkadavu (Pariyaram Range) eco restoration zone planting -Chalakkudy. 2012 TP		10 Ha / Gap planting	<i>Terminalia bellirica</i> , <i>Phyllanthus emblica</i> , <i>Bambusa bambos</i> , <i>Swietenia macrophylla</i> , <i>Albizia odoratissima</i> , <i>Gmelina arborea</i>	89	Leaf gall infestation and marginal leaf scorching were noticed in Pungam, of Pungam and leaf hopper damage in <i>Phyllanthus</i> . Plantation journal maintained well



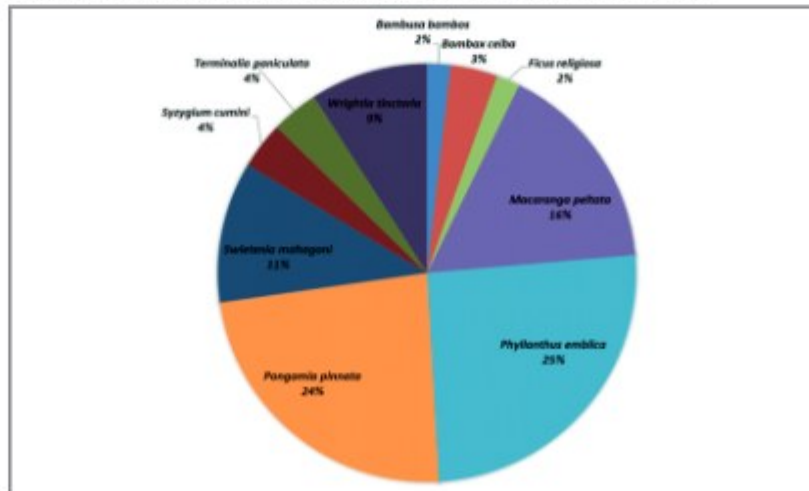
Eco-restoration activity by planting indigenous/micelloneous species was carried out in Vazhachal, Chalakkudy and Thrissur divisions followed by regular weeding. But plants were damaged due to trampling by elephants and browsing by deer and diseases. The activity was verified through inspecting vouchers and records by the inspection team and found correct. Plantation journals are maintained well and updated.



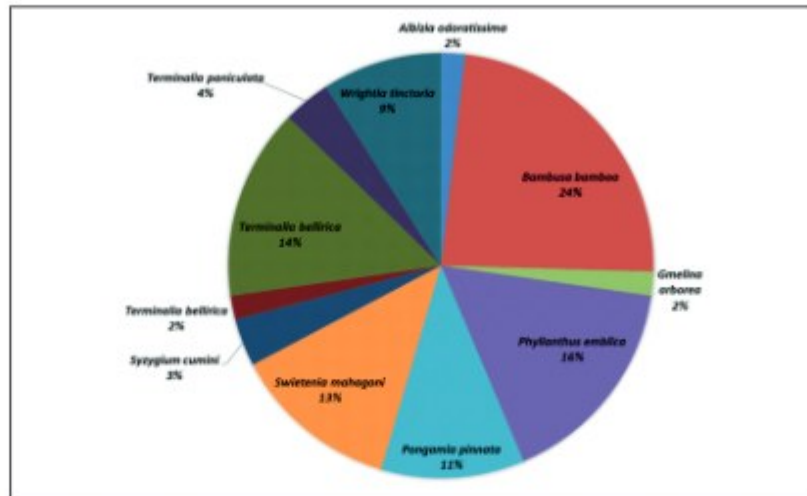
Species composition of the Eco-restoration efforts in Thrissur Division



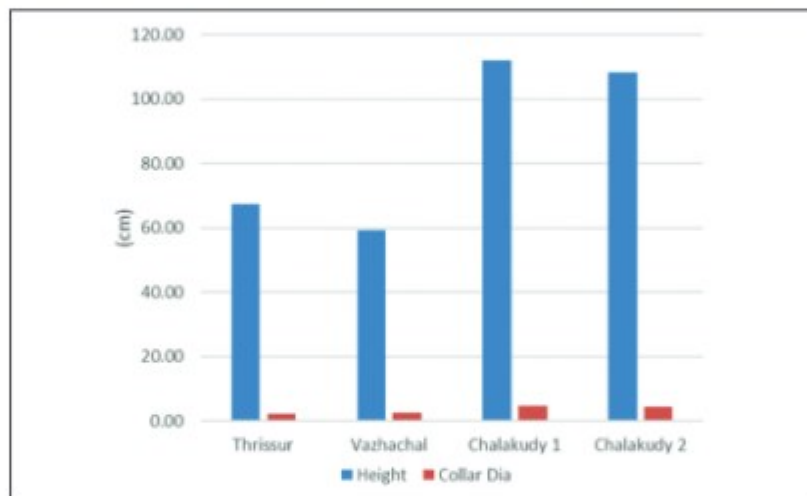
Species composition of the ecorestoration efforts in Vazhachal Division



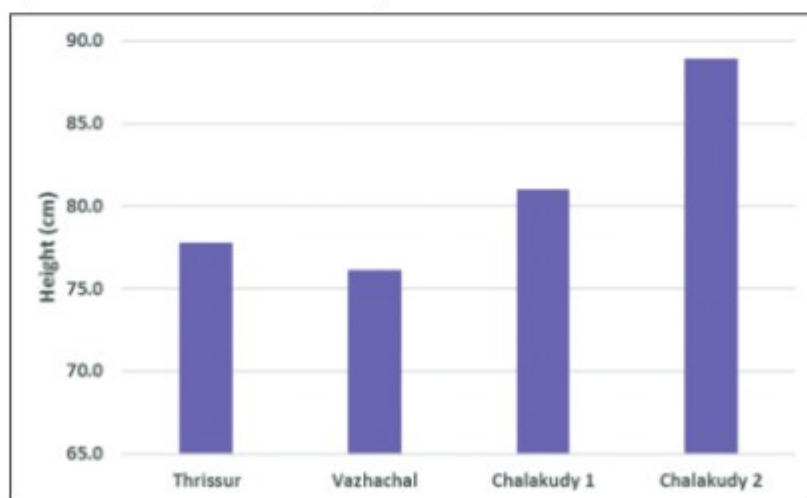
Species composition of the ecorestoration efforts in Pariyaram range of Chalakkudy Division



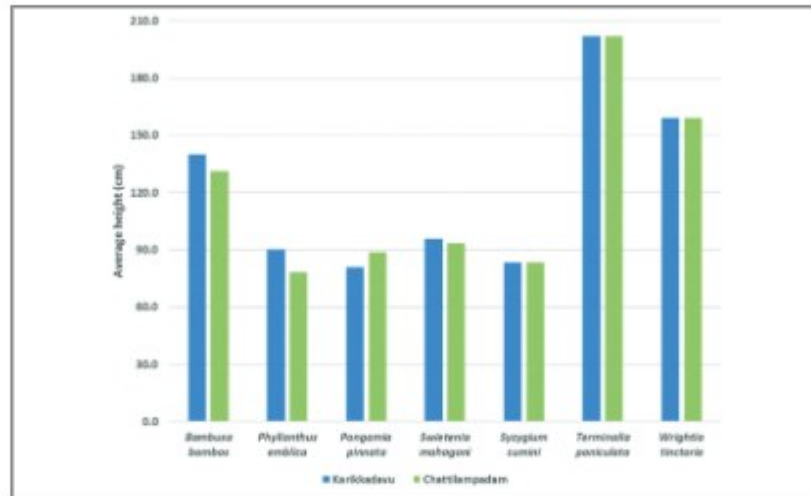
Species composition of the ecorestoration efforts in Chattilampadam of Chalakudy Division



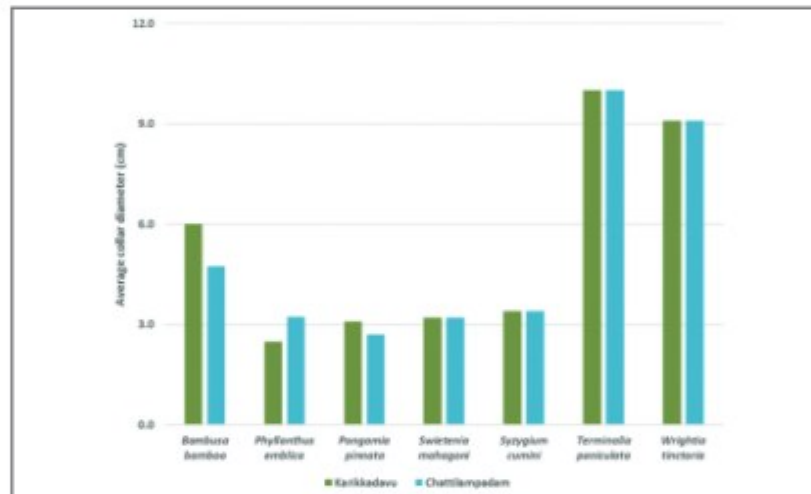
Average height and collar diameter (cm) of the species across divisions in the ecorestoration efforts



Average Height (cm) of the common species, *Pongamia pinnata*, across sites



Across site comparison of growth performance in terms of height (cm) of common species in Chalakudy Division



Across site comparison of growth performance in terms of collar diameter (cm) of common species in Chalakudy Division



Assessment of survival at Kuttanchira Ecorestoration plot



b. Raising nursery

Location/range/ division	Species produced	Numbers	Remarks
Vaniyampara FS in Patttikad Range Thrissur Division	<i>Terminalia bellirica</i> , <i>Gmelina arborea</i> , <i>Lagerstroemia areginee</i> , <i>Albizia odoratissima</i> , <i>Macaranga peltata</i> , <i>Pongamia pinnata</i>	7000	The plants were raised and planted in the field
Athirappilly Range Vazhachal Division	<i>Syzygium cumini</i> , <i>Lagerstroemia speciosa</i> , <i>Pongamia pinnata</i> , <i>Phyllanthus emblica</i> , <i>Terminalia arjuna</i> , <i>Madhuca longifolia</i> , <i>Dysoxylum malabaricum</i> , <i>Albizia odoratissima</i> , <i>Macaranga peltata</i>	14000	Seedlings raised at Athirappilly Station for planting at 1997 TP. A temporary nursery was established for raising the seedlings for the River bank stabilization works in the Vazhachal range.
Charpa Range Vazhachal Division	<i>Syzygium cumini</i> , <i>Lagerstroemia speciosa</i> , <i>Pongamia pinnata</i> , <i>Phyllanthus emblica</i> , <i>Terminalia arjuna</i> , <i>Madhuca longifolia</i> , <i>Dysoxylum malabaricum</i>	6500	Seedlings for planting at 1994 Panjanamkuthu TP in Kannamkuzhi FS.
Vazhachal Range Vazhachal Division	<i>Madhuca longifolia</i> , <i>Psidium guajava</i> , <i>Pongamia pinnata</i> , <i>Syzygium cumini</i> , <i>Lagerstroemia speciosa</i> , <i>Pongamia pinnata</i> , <i>Phyllanthus emblica</i> , <i>Garcinia cambogia</i> , <i>Bambusa vulgaris</i> , <i>Azadiracta indica</i>	8000	Seedlings for planting at Poringal river bank areas in Vazhachal Range. The plants were raised and planted in the field

Physically verified the records/vouchers and found correct

c. Construction & maintenance of campshed

GPS Location	Dimensions	Location/ Division/ Range	Remarks
N10° 17' 01.40" E 76° 37' 44.30"	15 x 8 m	Pachilavalam/ Kollathirumedu range/ Vazhachal division	Purchase of furniture for Pachilavalam camp shed
N10° 15' 25.56" E76° 38' 35.70"	700 sq ft	Repra/ Kollathirumedu/ Vazhachal division	Purchase of furniture for Repra camp shed



GPS Location	Dimensions	Location/ Division/ Range	Remarks
N10° 35'21.9" E76.63096	800 sq ft	Karamthodu/Vazhachal/ Vazhachal division	Construction of kitchen for Karamthodu camp shed and the structure is good.
N10°17'.014" E076° 37' 44.3"	15 x 8m	Pachilavalam/ Kollathirumedu/ Vazhachal division	Purchase and installation of solar Inverter Unit in Pachilavalam campshed
N10° 11' 46.1" E076° 50' 48 1.5"	8.80 x 8.20m	Thundathil Range / Malayattoor	Purchase of portable generator and GPS for command control room.

Activities and expenditures are verified through office records.

Observations of the evaluation team

Type of Assets/ Division / Range	Type of current use/ Observations	Impact	Score (Low, ≤ 3, Medium >3 to<7, High 7 to 10	Assessment on the quality of the asset - Low, Medium or High
Purchase of furniture/ Pachilavalam/ Kollathirumedu range/ Vazhachal division	The assets are maintained well.	Useful for the frontline staff.	7	High
Purchase of furniture/ Repra/ Kollathirumedu/ Vazhachal division	The assets are maintained well.	Useful for the frontline staff.	8	High
Construction of kitchen/ Karamthodu/ Vazhachal/ Vazhachal division	The assets are maintained well.	Useful for the frontline staff.	9	High
Purchase & installation of solar Inverter Unit/ Pachilavalam/ Kollathirumedu/ Vazhachal division	The assets are maintained well.	Useful for the frontline staff.	8	High
Purchase of portable generator and GPS/ Thundathil Range / Malayattoor	The assets are maintained well.	Useful for the frontline staff.	9	High



The equipment and furniture purchased for various camp sheds were evaluated for physical existence and quality. They were checked by verifying the vouchers. The equipment/ furniture are in good condition and used regularly by frontline staff.

d. Organising Joint Patrolling and Raids along inter-divisional and interstate boundaries

Range/Division	Activity
Machad / Thrissur	Joint patrolling and raids in Akkamala FS
Pattikad/ Thrissur	Joint patrolling and raids in Pattikad Range
Wadakkanchery / Thrissur	Joint patrolling and raids in Mayanur FS
Pattikad/ Thrissur	Joint patrolling and raids in Vaniyampara FS
Pattikad/ Thrissur Joint	Patrolling and raids in Vazhani FS
Athirappilly / Vazhachal	Combing and halting in interior forest area of Athirappilly FS
Charpa / Vazhachal	Combing and halting in interior forest area of Charpa Range
Charpa / Vazhachal	Special combing by Vazhachal Division staff and watchers through Charpa Range
Kollathirumedu / Vazhachal	Combing and halting interior forest areas of Kollathirumedu FS
Vellikulangara / Chalakkudy	Organizing joint patrolling and conducting combing operations in the Vellikulangara range
Palappilly / Chalakkudy	Items for joint patrolling and raids
Palappilly / Chalakkudy	Inter division joint patrolling and raids
Malayattoor Division	
Thundathil / Malayattoor	Organizing camping and combing operations in Edamalayar FS
Thundathil / Malayattoor	Organizing camping and combing operations in Vadattupara FS
Thundathil / Malayattoor	Organizing camping and combing operations in Bhoothathankettu FS
Thundathil / Malayattoor	Organizing camping and combing operations in Karimpani FS

The records were perused and found correct.

e. Interior Campshed & Ration: Provision of field Ration for interior camps was undertaken in Thrissur, Vazhachal, Chalakkudy and Malayattoor divisions.

Site (Range/ Division)	Particulars (Field Ration)
Pattikad Range	Providing field ration to fire gang, watchers of Pattikad Range
Pattikad Range	Providing field ration to fire gang, watchers of Vaniyampara FS
Pattikad Range	Providing field ration to fire gang, watchers of Puthor, Chakkapara, and Marotichal block of Mannamangalam station
Pattikad Range	Providing field ration to watchers of Chirakode, Varikulam, Pullamkadam of Ponganamkadu FS
Palappilly Range	Providing field ration to watchers of Palappilly Range
Machad Range	Providing field ration during fire season in Machad Range
Machad Range	Providing field ration to fire gangs of Machad Range



Site (Range/ Division)	Particulars (Field Ration)
Machad Range	Providing field ration to fire gang, watchers of Elanad Forest Station of Machad Range
Machad Range	Providing field ration to fire gang, watchers of Akamala Forest Station
Wadakancherry Range	Field ration to Wadakancherry range forest watchers
Poongode FS	Providing field ration to watchers of Poongode forest station
Mayanur FS	Providing field ration to fire gang, watchers of Mayanur forest station
Erumapatty FS	Providing field ration to fire gang, watchers of Erumapatty forest station
Wadakancherry Range	Providing field ration to watchers of Fire gang watchers in Wadakancherry range
Sholayar Range	Field ration for combing and halting interior forest area of Sholayar Range
Sholayar Range	Field ration for perambulation and interior area camping in the areas of Mukkumpuzha FS
Vazhachal Range	Field ration for perambulation and interior area camping in the areas of Vazhachal FS
Kollathirumedu	Field ration for camping and halting in interior forest areas of Kollathirumedu FS
Pariyaram Range	Field ration for interior camping
Pariyaram Range	Field ration for interior camping in Chaipankuzhy FS
Pariyaram Range	Field ration for interior camping in Pariyaram Range
Vellikulangara	Provision of field ration and utensils for interior patrolling and camping stations
Kuttampuzha Range	Providing camping ration for personals involved in combing and perambulation in remote areas (including both Anakkulam/Pooyamkutty F.S.) under Kuttampuzha Range

Vouchers verified and found correct. The supply and items were verified through inspection of records and found correct.

f. Equipment-Field Survival Kits and field equipment

Location / Range / Division	Items procured	Numbers	Present Status
Pariyaram Range	Field survival kits	1	Good
Palapilly Range	Field survival kits	15	Good
Sholayar	Shoes & other items for trekking and camping	10 10	Good
Malakkappara	Shoes & other items for trekking and camping	10	Good
Athirappilly	Safety kit for field staff	2	Good
Charpa	Chainsaw	2	Good
Charpa	Safety kit for field staff	1	Good
Vazhachal	Safety kit for field staff	1	Good
Kollathirumedu	Safety kit for field staff	1	Good



Location / Range / Division	Items procured	Numbers	Present Status
Vellikulangara	Life safety tools for snake handling with regards to the snake rescue operation	4	Good
Vellikulangara	Field survival equipment	1	Good
Pariyaram	Field survival kits	1	Good
Pariyaram	Field survival kits	1	Good
Palapilly	Field survival kits	1	Good

II. Compensatory Afforestation Funds

a. Compensatory Afforestation Works (Maintenance)

Location/ Division	Latitude & Longitude (GPS Coordinates)	Activities carried out	Species planted	Status (Well maintained/ Not maintained)
Chattilampadam Miscellaneous plantation – Chalakkudy Division	N10°22'07.9" E76°20'11.8"	3 rd -year maintenance of Chattilampadam miscellaneous plantation	<i>Terminalia elliptica</i> , <i>Artocarpus lakoocha</i> , <i>Artocarpus heterophyllus</i> , <i>Pongamia pinnata</i> , <i>Terminalia paniculata</i> , <i>Azadirachta indica</i> , <i>Artocarpus hirsutus</i> , <i>Wrightia tinctoria</i> , <i>Ailanthus excelsa</i> , <i>Dalbergia latifolia</i>	Well maintained

The activity carried out was physically verified, records perused and found correct.



Verification of maintenance activities in Chattilampadam, Chalakkudy



III. Catchment Area Treatment Plan Fund Part

a. River Bank Stabilization

Location/ Division	GPS location	Dimension	Species	Survival (%)	Remarks
Poringal River Bank/Vazhachal Division	N10.307062 E 76.611579	18 km length (8000 seedlings)	<i>Madhuca longifolia</i> , <i>Psidium guajava</i> , <i>Pongamia pinnata</i> , <i>Syzygium cumini</i> , <i>Lagerstroemia speciosa</i> , <i>Pongamia pinnata</i> , <i>Phyllanthus emblica</i> , <i>Garcinia cambogia</i> , <i>Bambusa vulgaris</i> , <i>Azadiracta indica</i>	90	800 bamboo seedlings planted for casualty replacement. FYM and biofertilizer were applied during planting.

The activity carried out was physically verified, records perused and found correct.

IV. Better connectivity

a. Maintenance of trek Path / new trek path / patrolling route

Creation of new trek paths and maintenance of trek paths in Sholayar and Vazhachal ranges in Vazhachal Division and Pariyaram and Vellikuangara ranges in Chalakkudy Division and maintenance of coupe road in Vazhachal and Chalakkudy Divisions. The activities were verified through inspection of records by the team and found correct

A. Creating New Trek Path

Location/Range/division	Dimension
Parakadavu/ Palapilly/ Thrissur	20 km (1.5m width and 15cm depth)
Parakkadavu/Pariyaram/Chalakkudy	23 km (50m width, 15cm depth)

B. Maintenance of trek path / patrolling route

Range/Division	Location	Activity
Sholayar / Vazhachal	Kummatty-Mechappilly, Mechappilly Chooralvalichappara	Construction of new trek path in all blocks in Sholayar Range
Vazhachal/ Vazhachal	Mukkumpuzha	Renovation of trek path under Mukkumpuzha FS
Pariyaram/ Chalakkudy	Kottamala-Valara	Maintenance of trekpath from Kottamala-Valara VSS
Pariyaram/ Chalakkudy	Konnakuzhy FS	Engaging man mazdoors for maintenance of trek paths in Konnakuzhy FS area
Pariyaram/ Chalakkudy	Thenittampara	Maintenance of trek path through Thenittampara VSS
Pariyaram/ Chalakkudy	Kottamala-Valara	Maintenace of trek path through Kottamala-Valara VSS
Pariyaram/ Chalakkudy	Nirappel-Tholmelppara	Maintenance of trek path in Nirappel-Tholmelppara through Pillappara VSS



Range/Division	Location	Activity
Vellikulangara/ Chalakkudy	Maithanam- Pathukulangara	Maintenance of trek path from Maithanam to Pathukulangara, Punnakuzhy to Mukkanamkuththu and Boardkunnu-Padinjakkapara (50 m width, 15 cm depth, 23 km length)

C. Maintenance of Forest Coupe Roads

Range/ Division	Activity
Athirapally/ Vazhachal	Maintenance of various roads in Athirapally FS
Charpa / Vazhachal	Maintenance of Badappara-Kammatty coupe road (4 Km)
Sholayar/ Vazhachal	Maintenance of Anamadankuththu coupe road (4 Km)
Vellikulangara/Chalakkudy	Maintenance of coupe road in Areswaram to Mattathur
Vellikulangara/Chalakkudy	Maintenance of coupe road from Pathukulangara to Thaloopadam to Chokkana and boundary

V. Capacity Building

a. Awareness program/ training to staff and VSS/EDC members

As part of assistance to the tribal VSS, the VSS members of Pokkalappara Kadar colony were involved in various activities. The Vazhachal Division assisted the tribal Vana Samrakshana Samidi in the form of employment through engaging Vana Samrakshana Samidi members in river bank stabilization, planting, weeding, creating trenches between reserve forests and villages and fire line creation. The activities were verified through inspection of vouchers by the monitoring team and found correct.



Evaluation team with VSS members of Pokkalappara Kadarcolony and Department staff



b. Conducting nature camps to school and college children

Vazhachal Forest division has conducted one nature camp for school students in Charpa range during 2020-2021. The details were verified through records.

VI. Forest and Wildlife Protection

a. Soil and Moisture Conservation, Gully Plugging etc.

A. Pond desiltation at Vazhachal Division

Location/ Range/Division	GPS Details	Dimensions (m)	Remarks
Chandanthodu/ Sholayar/ Vazhachal Sholayar Range	N10°30' 40.9" E76° 77' 43.9"	20 x 20 x 1.50	De-silting of pond
Thumbikaippara/ Sholayar/ Vazhachal Range	N10°16' 24.09" E76°42' 32.10"	20 x 20 x 1.50	De-silting of pond
Mechapally/ Sholayar/ Vazhachal Range	N10°16' 36.20" E76° 43' 05.84"	20 x 20 x 1.50	De-silting of pond
Pathaddipallam/ Sholayar/ Vazhachal Range	N10°17'19.75" E76°48' 54.79"	20 x 20 x 1.50	De-silting of pond
Kummatty/ Sholayar/ Vazhachal Range	N10°30' 21.8" E76° 70' 22.01"	20 x 20 x 1.50	De-silting of pond
Kalakkallu/ Kollathirumedu/ Vazhachal	N10° 16' 16.00" E076° 39' 30.13"	20 x 20x 1.5	De-silting of pond
Parakkulam/ Kollathirumedu/ Vazhachal	N10° 17' 34.0" E076° 39' 12.60"	25 x20x1.50m	De-silting of pond
Vachumaram/ Kollathirumedu/ Vazhachal	N10° 16' 590" E076° 40' 27.8"	20 x 20	De-silting of pond
Vachumaram-Karadippara/ Kollathirumedu/ Vazhachal	N10° 16' 59.0" E076° 40' 27.8"	20 x 20 x 1.50	Digging a Pond for drinking water facility for wild animals
Idinjapallam/ Vazhachal/ Vazhachal Range	N10°17'41.18" E076°37'20.19"	12 x 15	De-silting of pond
Ikkashed/ Vazhachal/ Vazhachal	N10°20'11.74" E076°38'10.18"	19 x 11.5	De-silting of pond
Medicinal pocket/ Vazhachal/ Vazhachal	N10°18'24.15" E076°36'14.29"	15 x 14.5	De-silting of pond
Lakshmikulam/ Vazhachal/ Vazhachal	N10°21'21.54" E076°36'54.45"	26 x 26	De-silting of pond
Karadippara/ Vazhachal/ Vazhachal	N10°17'31.20" E076°36'31.52"	18 x 14.5 z	De-silting of pond



In five different locations in Sholayar range, three locations at Kollathirumedu range and five locations at Vazhachal range of Vazhachal division desilting of pond was done and digging a pond was carried out at Vachumaram-Karadippara in Kollathirumedu range Vazhachal division to augment the drinking water facility to wild animals. These activities were verified physically and dimensions were measured and confirmed with the vouchers/records.

B. Gully plugging at Malayattoor Division

Location	GPS/ Location	Dimensions (m)	Remarks
Mattungalothodu Karimpani F.S./ Malayattoor (1973 TP)	N10° 11 .122' E076° 40.281	5.80 x 2.47 x 0.94	Gully structure is physically damaged due to flood
Pampinkuzhy/ Malayattoor (1973 TP)	N10° 11.143' E076° 40.158	7.45 x 2.78 x 1.02	Gully structure is physically damaged due to flood
Chekuthammukk / Malayattoor (1973 TP)	N10° 11.160' E076° 40.169	0.98 x 5.60 x 2.65	Gully structure is physically damaged due to flood
Marypara /Malayattoor (1973 TP)	N10° 11.196' E076° 40.205	1.13 x 6.93 x 2.52	Gully structure is physically damaged due to flood
Ottakallu / Malayattoor (1978 TP) Edamalayar F.S.	N10°10'27.4" E076°40'56.1"	0.98 x 6.10 x 2.30	Gully structure is physically damaged

Gullies at 5 locations in Malayattoor division were inspected physically by the evaluation team and observed that most gullies were damaged due to flood (Verified through M. Book). These activities were verified physically and dimensions were measured and confirmed with the vouchers/records.

C. Gully -Vegetative Barrier at Thrissur

Location	GPS Reading	Dimensions (l x b x h m)	Type of vegetative materials used	Remarks
Kuranchery, Thrissur	N10°44'57.758" E76°9'44.106"	5 x 5 x 5	<i>Bambusa bambos</i>	Bamboo planted in flood affected areas is in good condition.

* Work was not executed in Kolenchery instead the work is executed in the Kuranchery location. The activity carried out in Kuranchery, Thrissur division was verified through vouchers/records and found correct.

D. Construction of Chappath bridge at Malayattoor Division

Chappath/Bridge and dry-stone pitching for water-logged area					
Location	Size (l x b x h) in M. Book (M)	Actual Size (l x b x h) in field	% variation (+/-)	vegetative materials used	Present Condition of the structure
Pannipara to Ponginchuvadu in Edamalayar FS, Malayattoor division	47.20 x 1.10 x 3.00 m	Damaged	Physically damaged	Nil	Damaged during 2021 flood



Chappath constructed at Pannipara to Ponginchuvadu area in Edamalayar FS, Malayattoor division was damaged due to flood. Vouchers/records and found correct.

VII. Improvement of Wildlife Habitat

a. Bird survey and conservation

Range/Division	Activity
Wadakancherry / Thrissur	International Forest day celebration under Vazholippadam – Vallangipara Vana Samarakshana Samithi, Mayanur FS
Pattikkad / Thrissur	Forest day awareness programme under Vallur-Marottichal Vana Samrakshana Samithy Mannamangalam Forest Station
Wadakancherry / Thrissur	Forest day – quiz programme and awareness class, Thayyur-Pazhavur- Patturuthysamithi
Wadakancherry / Thrissur	Forest day quiz programme and awareness programme in Bhalghadu fighter’s area under Puttankadapuram, Punnayur, Mandalankunnu Turtle VSS
Wadakancherry / Thrissur	World forest day celebration at Poongode FS through Kadanchira VSS
Wadakancherry / Thrissur	World forest day celebration for Thejes Engineering College students, Poongode FS

The records and vouchers were perused and found correct.

b. Eradication of exotic weeds-Vazhachal Division

Location/range/division	Activity (Weeding)
Neelappara/ Kollathirumedu/ Vazhachal Division	Eradication of exotic weeds (Mikania and Eupatorium)
Anamukku Dumping Depot/ Kollathirumedu/ Vazhachal Division	Eradication of exotic weeds (Mikania and Eupatorium) in in Kollathirumedu Range
Vackolippara/ Kollathirumedu/ Vazhachal Division	Eradication of exotic weeds (Mikania and Eupatorium) in in the Kollathirumedu Range
Thoduthoni- Mechappilly/ Sholayar/ Vazhachal Division	Eradication of exotic weeds (Mikania and Eupatorium)

Eradication of exotic weeds undertaken in Kollathirumedu and Sholayar ranges of Vazhachal Division was verified based on the records. The exotic weeds such as Mikania and Eupatorium were eradicated.

c. Sea turtle conservation

Range	Activity
Wadakancherry / Thrissur	Engaging mazdoor for the turtle protection works at Blanghadu fighter’s area under Blanghadu fighters turtle Protection SamithyErumapatty forest station
Wadakancherry / Thrissur	Purchasing of essential equipment for protection watchers, Punnayur Turtle Protection Samithy
Wadakancherry / Thrissur	Purchase essential equipment for watchers at Blanghadu Turtle VSS



Range	Activity
Wadakanchery / Thrissur	Purchase essential equipment for watchers at Puthankadappuram Turtle VSS
Wadakanchery / Thrissur	Purchase essential equipment for watchers at Punneyur Mannalamkundu Turtle VSS

The records and vouchers were perused and found correct.

VIII. Forest Fire Prevention and control operation

a. Engaging fire gang through participatory forest management

Location/ Range/ Division	Remarks
Enkakkad-Vazhani /Machad/ Thrissur	Engaging man mazdoors for fire protection work at fire-prone areas.
Elanad forest station Machad/ Thrissur	Fire protection activities
Pattikad FS Pattikad / Thrissur	Engaging mazdoor for fire protection works through Poovanchira VSS
Porasserikundu Wadakkanchery / Thrissur	Engaging mazdoors for fire protection at 2018 CA plantation (maintenance)
Poongode FS Wadakkanchery/ Thrissur	Fire protection activities
Thayyur-Pazhavor Wadakkanchery/ Thrissur	Engaging mazdoors for fire protection through Erumapatty VSS and Puthuruthi VSS
Mayanur FS Wadakkanchery/ Thrissur	Engaging Vazhalipadam VSS as mazdoors for fire protection
Erumapatty FS Wadakkanchery/ Thrissur	Fire protection
Kunnamkuzhi Charpa/ Vazhachal	Engaging fire protection watcher in Forest Station Area
Pokalappa/ Vazhachal/ Vazhachal	Engaging fire gang
Odangayam Vazhachal/ Vazhachal	Engaging fire gang at Mukkumpuzha FS
Sholayar / Vazhachal	Engaging fire protection watchers
Kollathirumedu / Vazhachal	Engaging watcher
Malakkappara/ Sholayar/ / Vazhachal	Engaging mazdoor for driving away wild elephants from human habitation in Malakkappara FS
Sholayar/ Vazhachal	Engaging watcher in Sholayar FS
Chungal and Muttathukulangara, Vellikulangara, Chalakkudy	Engaging fire gang
Nagathanpara, Chandanakundu, Mechira and Kanakamala/ Vellikulangara/ Chalakkudy	Engaging fire gang
Anapantham and Punnakuzhy Vellikulangara/ Chalakkudy	Engaging fire gang in block
Vellikulangara/ Chalakkudy	Engaging daily waged mazdoors as fire gang in emergencies
Pariyaram/ Chalakkudy	Engaging mazdoor for fire prevention and protection activities under PFM
Pariyaram/ Chalakkudy	Engaging fire gang in Pandaranpara fire
Pariyaram/ Chalakkudy	Engaging NMR watchers for fire prevention (3 members)
Palappily Pariyaram / Chalakkudy	Engaging fire gangs in various areas



The activities were verified through inspection of records and found correct.

b. Fire awareness campaign

A. Fire awareness programme - Thrissur

Location/range/division	Work
Pattikad FS / Pattiikad/ Thrissur	Organizing fire awareness programmes in forest station.
Pattikad FS/ Pattikad / Thrissur	Organizing fire awareness programmes in forest station
Poongode / Pattikad / Thrissur	Organizing fire awareness programmes in forest station
Ponganamkad/ Pattikad / Thrissur	Fire awareness programme at forest station
Wadakancherry / Thrissur	Organizing fire awareness programme in Poongode FS
Machad/ Thrissur	Fire awareness/publicity in Machad Range
Mayanur/ Wadakancherry/ Thrissur	Organizing fire awareness at Mayanur FS

B. Fire awareness and publicity Thrissur Division

Location/range/division	Work
Location/ Range/division	Particulars of work
Machad FS/ Machad/ Thrissur	1. Fire awareness banner, notice, poster
Mayanur FS/ Wadakanchery/ Thrissur	2. Mike set and lighting
Poongode FS/ Wadakanchery/ Thrissur	
Poongode FS/ Pattikad/ Thrissur	
Pattikad FS/ Pattikad/ Thrissur	

C. Fire awareness programme–Vazhachal Division

Location/ Range/ division Range	Work
Charpa/ Vazhachal	Fire awareness banner through Vazhachal VSS in Charpa Range
Charpa / Vazhachal	Fire awareness banner through Athirapally VSS in Charpa Range
Kollathirumedu/ Vazhachal	Preparing fire awareness cloth banner through Vachumaram VSS in Kollathirumedu Range
Charpa / Vazhachal	Conducting fire awareness programme at Vazhachal in Charpa Range
Charpa / Vazhachal	Conducting II nd phase fire awareness class for Kannamkuzhi FS staff & watchers in Charpa Range
Charpa / Vazhachal	Conducting training on fire management and firefighting techniques for Vazhachal Division Staff at Vazhachal Dormitory through Charpa Range
Sholayar / Vazhachal	Providing food for the meeting conducted on forest fire prevention and awareness class at Malakkappara FS in Sholayar Range through Malakkappara AVSS
Charpa / Vazhachal	Writing name board at Charpa Range Office and Kannamkuzhi FS in Charpa Range
Alhirappilly Range	Conducting fire awareness class for staff and watchers at alhirappilly Range
Vazhachal / Vazhachal	Conducting fire awareness programme in Vazhachal Forest Station in Vazhachal Range



D. Fire Awareness Campaign – Chalakkudy/ Malayattoor

Range/Division	Work
Pariyaram/ Chalakkudy	Conducting fire awareness and preparedness training for field staff
Palappily/ Chalakkudy	Fire training class for fire gang in Palappilly range
Vellikulangara/ Chalakkudy	Fire awareness, publicity for VSS members, field staff
Pariyaram/ Chalakkudy	Conducting fire awareness and preparedness training for field staff
Palappily/ Chalakkudy	Fire training class for fire gang in Palappilly Range
Thundathil/ Malayattoor	Conducting mock fire drill in Thundathil Range

The fire awareness campaign activity was conducted in all divisions successfully. Verified the records and found correct.

E. Creation of Fire Line/ Fire break - Vazhachal Division

Range	Activity	Distance
Kollathirumedu/ Vazhachal	Firebreak works Sidhan Pocket to Vachumaram through Vachumaram VSS	8 km
Vazhachal/ Vazhachal	Firebreak works from Puliylappara to Choozhimedu through Piliyilappara VSS	5 km
Charpa/Vazhachal	Firebreak works from Madhuvarachal to Kundoormedu through Piliyilappara VSS	11 km
Athirappilly/ Vazhachal	Firebreak works around 1994, 1995, 1996 TP through Ezhattumugham VSS in Ezhattumugham FS in Athirappilly	7.5 km
Athirappilly / Vazhachal	Firebreak works from Kuliramthodu to porkkunnuppara through Erumathadam VSS in Ezhattumugham FS in Athirappilly Range	3.5 km
Athirappilly / Vazhachal	Firebreak works from Porkkunnuppara to Thumboormuzhi through Ezhattumugham VSS in Ezhattumugham FS in Athirappilly	5.5 km
Sholayar / Vazhachal	Firebreak works from Thottappura to Pathadippalam area through Malakkappara AVSS in Sholayar	8 km

F. Fire break works in Athirapally Range- Vazhachal Forest Division

Fireline					
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
1	500 m x 5 km	300m x 5 km	200m	Fire line length not measured	Moderately effective (Fast-growing weeds and grasses easily grown after a month of fire line creation)

Verified the records and found correct.



G. Engaging fire Mazdoors through participatory forest management- Malayattoor Division

Range/division	Work
Kuttampuzha/ Malayattoor	Engaging fire mazdoors in Kuttampuzha Range
Kuttampuzha/Malayattoor	Engaging fire mazdoors in Pooyamkuttu FS
Thundathil/Malayattoor	Engaging one-man mazdor for Assisting Vadattupara FS

Verified the records and found correct.

H. Fire fighting equipment

Location / Range / Division	Items procured	Nos	Present Status
Thrissur Division			
Machad Range	Pulluveeshi, racker, beater, tarpaulin sheet	1	Good
Wadakanchery Range	Fire rake with hand, Bill hook	2	Good
Wadakanchery Range	Petrol, engine oil, repair and service	1	Good
Wadakanchery Range	Fire rack, bell hook,	1	Good
Pattikad Range	Fire rack, bell hook, manvetti/ spade, torch, turbulence set, water can	1	Good
Pattikad Range	Fire rack, bell hook, manvetti/ spade, torch, turbulence set, water Can	1	Good
Wadakanchery Range	Fire rack, bell hook, manvetti/ spade, torch, turbulence set	1	Good
Pattikad Range	Fire Rack, bell hook, manvetti/ spade, torch, turbulence set, water Can	1	Good
Thrissur division	Fire rack, bell hook, manvetti/ spade, torch, turbulence set and backbags	1	Good
Vazhachal Division			
Charpa Range	Steel chainsaw	2	Good
Athirappilly	Brush cutter, fire rack	2	Good
Kollathirumedu	Brush cutter, fire rack	2	Good
Sholayar Range	Brush cutter, fire rack	2	Good
Charpa Range	Brush cutter, fire rack	2	Good
Chalakkudy Division			
Pariyaram	Brush cutter, fire rack	3	Good
Pariyaram	Brush cutter, fire rack, fire blower	2	Good
Pariyaram	Fire blower	2	Good
Malayattoor Division			
Thundathil	Fire rack, bell hook, manvetti/ spade, torch, turbulence set	6 set	Good



Location / Range / Division	Items procured	Nos	Present Status
Thundathil	Pulluveeshi, racker, beater, tarpaulin sheet	6 set	Good
Thundathil	Fire rack, bell hook, manvetti/ spade	6 set	Good
Thundathil	Fire rack, bell hook, manvetti/ spade, torch, turbulence set	6 set	Good
Thundathil	Brush cutter in thundathil range	2	Good
Thundathil	Chainsaw	2	Good
Thundathil	Repairing and maintenance of chainsaw and brush cutter	1	Good
Kodanad	Fire rack, bell hook, manvetti/ spade, torch, turbulence set	10 set	Good

The equipment purchased for Thrissur, Vazhachal, Chalakkudy and Malayattoor divisions were evaluated for physical existence and quality. They were checked by verifying the vouchers. The equipment are in good condition and used regularly.

IX. Human animal conflict mitigation

a. Engaging watchers to mitigate human-animal interface – Vazhachal Division

Range	Work
Sholayar / Vazhachal	Engaging mazdoor for driving away wild elephants from human habitation in Malakkapara FS
Thundathil / Malayattoor	Engaging four-man mazdors as wild elephant depredation squad in Thundathil Range
Kodanad / Malayattoor	Engaging tribal watchers at human-animal conflict areas of Pooyamkutty forest station

Verified the records and found correct.

X. Discrepancies observed (As per the datasheet provided by the CEO, CAMPA)

Division/Location	Activity	Remarks
Thrissur	Third Year maintenance of CA Plantation at Porasserikunnu in Wadakkanchery Range	Only fire protection works could be executed
Vazhachal	Third Year maintenance of misc.plantation at the Poringal Dam site area in Vazhachal Range	Only the river bank stabilization activity was completed.
Malayattoor	Raising and planting seedlings of bamboo, reeds, and miscellaneous species for river bank stabilization	Work was not executed



Division/Location	Activity	Remarks
Vazhachal	Preparatory works for planting bamboo, reeds, and indigenous seedlings	Work was not executed
Malayattoor	1983 Acacia Mekkapala 7 bits eco restoration zone (Felling of leftover Acacia, uprooting of regeneration at regular intervals, planting, weeding SMC works, and fire protection)	Felling of leftover Acacia is not complete.
Malayattoor	1996 evergreen plantation (TP) eco-restoration zone (SMC Works, removal of weeds, augmentation planting, fire protection, etc)	Work was not executed
Malayattoor	1997 Mulamkuzhi (TP) eco-restoration zone (SMC works, removal of weeds, augmentation planting, fire protection, etc)	Delay in allotment of funds. Hence shifted to 2021-22
Malayattoor	1978 TP Idamalayar Valley eco-restoration zone (SMC Works, removal of weeds, augmentation planting, fire protection, etc)	Delay in allotment of funds. Hence shifted to 2021-22
Malayattoor	1973 TP Chekuthanmukku eco-restoration zone (SMC Works, removal of weeds, augmentation planting, fire protection, etc)	Delay in allotment of funds. Hence shifted to 2021-22
Vazhachal – Athirapally Range	Soil and Moisture Conservation Vazhachal Division - 1997 TP Athirapally eco-restoration zone (SMC works, removal of weeds, augmentation planting, fire protection, etc).	A temporary nursery was established for raising the seedlings for the River bank stabilization works in the Vazhachal range.
Thrissur	Eradication of exotic weeds	Work was not executed
Malayattoor	Eradication of exotic weeds	Work was not executed
Thrissur – Kolenchery, Panamkutty	Soil and Moisture Conservation Thrissur, Division - bamboo Planting in flood-affected areas and their adjoining areas.	The work is executed in Kuranchery.

Nineteen different activities were undertaken under nine components in four divisions of the circle. The circle implemented all the activities listed in the APO. No spillovers from past APOs were observed. Funds were also utilised for improving forest stations at Wadakkanchery and Pattikad in Thrissur Division. Overall, an amount of Rs. 255.58 lakhs was allotted to the circle during the period of which 63.39 percent financial achievement was observed. Many of the activities were shifted to 2021-22 due to a delay in release of the funds.

High Range Circle, Kottayam (2020 - 2021)

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

1. Kothamangalam
2. Kottayam
3. Mankulam



4. Marayoor
5. Munnar

Sixteen different activities were undertaken seven different components in the circle. The distribution of activities is as follows:

Component	Particulars of work
Better connectivity	Maintenance of trek path/patrolling route
	Maintenance of forest roads
Capacity Building	Awareness program/ training to staff and VSS/EDC members
	Conducting nature camps to school and college children
Catchment Area Treatment Plan Fund Part	River bank stabilization
Compensatory Afforestation Funds	Compensatory Afforestation Works (Creation - Preparatory works)
Forest Fire Prevention and control operation	Creation of fire-break
	Engaging fire gang through participatory forest management
	Fire awareness campaign
	Fire fighting equipment
Human Animal Conflict Mitigation	Engaging watchers to mitigate human animal interface
	Equipment/ ration for Rapid Response Teams (RRTs)
Protection of plantations and forests	Eco-restoration activities in monoculture plantations by planting indigenous/misc. species/preparatory works
	Field survival kits and field equipment
	Interior campshed maintenance
	Organising joint patrolling and raids along inter-divisional and interstate boundaries
	Provision of field ration for interior camps

I. Better connectivity

a. Maintenance of trek path/patrolling route

Location/Range/Division	Geo coordinates	Remarks
Mattumantha to Oonjanpara/ Marayoor/ Marayoor	N10°16' 51.20" W077°09' 09.53"	Trek path/patrolling route is well maintained
Kalpanimala to Nellipetti/ Marayoor/ Marayoor	N10° 16' 50.24" E077° 08' 56.40"	Trek path/patrolling route is well maintained
Ettivalam Kombu to Kuthirippan Para/ Marayoor/ Marayoor	N10°16' 45.78" E077° 09' 07.38"	Trek path/patrolling route is well maintained
Kalappara to Chelamala and Kootickal/ Kothamangalam/ Kothamangalam	N10.12618° E76.68375°	Cleared 1.5m outside the area.



Under the component better connectivity, the activity maintaining trek path patrolling route is well executed in Marayoor and Kothamangalam. The evaluation team perused the records and vouchers and found correct.



Improvement of trek path from Kalappara to Chelamala and Kootickal

b. Maintenance of forest roads

Location/Range/Division	Geo coordinates	Distance	Remarks
Kalpanimala/ Marayoor/ Marayoor	N10 ^o 16' 46.59" E077 ^o 9' 08.23"	45m	Laying concrete road
Vannamthura Forest Station/ Kanthalloor / Marayoor	N10 ^o 15' 54.90" E077 ^o 11' 55.57"	100m	Laying concrete road
Nellipatty to Pothady/ Marayoor/ Marayoor	N10 ^o 17' 02.12" E077 ^o 08' 43.35"	1.5 km	Laying concrete road

Under the activity maintenance of forest roads concrete roads were laid in three locations in Marayoor and Kanthalloor ranges in Marayoor division. The evaluation team inspected the activity for its physical existence and records and vouchers and found correct.

II. Capacity Building

a. Awareness Program/ training to staff and VSS/EDC members

Location/Range/Division	Type of activity
Nellipatty VSS at Marayoor Range, Marayoor Division	Engaged tribal VSS for sowing grass seeds for ecorestoration activity.
Viripara VSS, Mankulam Range/ Mankulam Division	Conducted fire awareness classes

The activities were verified through inspection of records and found correct.



b. Conducting nature camps to school and college children

Conducted nature camps to college students at Ayyappancoil & Erumely range. The evaluation team also interacted with the participants. The activities were verified through inspection of records and found correct.

III. Compensatory Afforestation Funds

a. River Bank Stabilization

Location/ range/ division	Geo coordinates	Area/ Plants	Species	Remarks
Devikulam Range / Munnar Division,	N10 ⁰ 04' 21.69" E077 ⁰ 06' 01.26"	10,000 seedling	Shola species	Seedlings of Shola species were planted in 2021-22 as part of eco-restoration.
Devikulam Range / Munnar Division	N10 ⁰ 04' 20.84" E077 ⁰ 06' 02.13"	8 mother Beds	Shola Grass	Mother bed for raising seedlings of Shola grass for planting as part of eco restoration.
Idalimotta, Munnar/ Munnar	N10 ⁰ 10' 32.57" E077 ⁰ 09' 04.28"	11,200	<i>Berberis tinctoria</i> and indigenous grass	Ecorestoration trial plot

IV. Forest Fire Prevention and control operation

a. Creation of Fire Line/ Fire break

Location/ Range/ Division	Activity
KDHP Village/ Devikulam/ Munnar Division	Firebreak works Sidhan Pocket to Vachumaram through Vachumaram VSS for a distance of 5 Km X 5.2 m wide
Veloor (Various Places)/ Thodupuzha/ Kothamangalam	Creation of fire break at various locations in veloor station
Kulamavu (Various Places)/ Thodupuzha/ Kothamangalam	Creation of fire break at various locations in veloor station
Kothamangalam (Various Places)/ Kothamangalam/ Kothamangalam	Creation of fire break at various locations in veloor station
Kothamangalam (Various Places)/ Mullaringadu/ Kothamangalam	Creation of fire break at various locations in veloor station
Avolichal-Koovappara(Various Places)/ Kothamangalam/ Kothamangalam	Creation of fire break at various locations in veloor station

This activity was executed in various places in Thodupuzha, Mullaringadu and Kothamangalam ranges of Kothamangalam division effectively. The activities were verified through inspection of records and found correct.



Creation of fire break at both sides of Avolichal-Koovappara

b. Engaging fire gang through participatory forest management

Location/Range/Division	Type of activity
Kozhiyila/ Anakkulam / Mankulam through Kuzhiyilakudy VSS	Engaging fire gang
Pampadumpara / Anakkulam / Mankulam	Engaging fire gang
Neduvakkadu/ Kaliyar/ Kothamangalam	Engaging man-mazdoor as fire watchers
Neduvakkadu/ Kaliyar/ Kothamangalam	Engaging man-mazdoor as fire watchers
Paschima, Elivalikkara, Karimbinthodu, Plackathadam, Ponthenpuzha, Koyikkakavu-Pakkanam, Kalaketty and mangapett-504 colony/ Ayyappancoil and Erumely range	Engaging fire gang

The activities were verified through inspection of records and found correct.

c. Fire Fighting Equipment



Location / Range / Division	Items procured	Numbers	Present Status
Mankulam Division, Mankulam Range	Water sprayer	1	Working in good condition
Mankulam Division, Mankulam Range	Fire extinguisher	1	Working in good condition

The equipment procured for forest prevention and control operation are physically verified by the evaluation team for its existence and working condition and found working in good condition. Vouchers and records were verified and found correct.

V. Human animal conflict mitigation

a. Engaging watchers to mitigate human animal interface

Range/ Division	Activity
Erumely (RRT) range	Engaging watchers. Verified the vouchers and found correct.

The activity is verified through inspection of records and found correct.

b. Equipment/ration for rapid response teams (RRT)

Range/ Division	Activity
Kumily range	Purchased brush cutter, pick axe, tarpaulin etc.

The activity was verified through inspection of records and found correct

VI. Protection of plantations and forests

a. Eco-restoration activities in monoculture plantations by planting indigenous/misc. species/preparatory works

Location/ range/ division	Geo coordinates	Area/ Plants	Species	Remarks
(SMC Works, removal of weeds, augmentation planting, fire protection etc)				
Mankulam Range/ Mankulam Division,	N10 ⁰ 05' 17.35" E077 ⁰ 57' 26.34"	147.04 m ³		Under ecorestoration as SMC works gully was made through VSS for water storage.
Manjappetty, Nachivayal Sandal Reserve / Marayoor/ Marayoor	N10 ⁰ 15' 43.74" E077 ⁰ 09' 28.49"	15	<i>Lantana camara</i>	Eradication of <i>Lantana camara</i> as SMC work
1947 TP Thattekkadu eco-restoration zone Kothamangalam/ Kothamangalam	N10 ⁰ 13'705" E76 ⁰ 67'186"	53.73 m ³		Under ecorestoration as SMC works gully was made to store water at quarter level.
1948 TP Thattekkadu eco-restoration zone/ Kothamangalam/ Kothamangalam	N10 ⁰ 07'361" E76 ⁰ 41'133"	0.75m ³		Under ecorestoration as SMC works gully was made to store water at quarter level.



Location/ range/ division	Geo coordinates	Area/ Plants	Species	Remarks
1987 Acacia Kulamavu eco-restoration zone (felling of leftover acacia, up-rooting of regeneration at regular intervals, planting, weeding SMC works and fire protection)	N09°47.893" E76°53.669"	13.7 ha	Measured biometric characteristics of 1837 acacia trees.	Felling was shifted to 21-22 due to paucity of funds.
1992 acacia bit I Paremavu eco-restoration zone (SMC works, removal of weeds, augmentation planting, fire protection etc)	N09°47.893" E76°53.669"		Measured biometric characteristics of acacia trees.	Felling was shifted to 21-22 due to paucity of funds.

Under ecorestoration as SMC works the activities viz., gullies, erection of brushwood temporary checkdam, eradication of exotic weeds were executed. The activities were physically verified by the evaluation team. Verified the records and vouchers and found correct.



Construction of check dam at Kalaketty Parathode



Acacia plantation to be felled at Kolamavu

b. Field survival kits and field equipment

Location / Range / Division	Items procured	Present Status
Erumely range	LPG Stove, Aluminum Utensils, Pressure Cooker, GPS, Gasoline Chainsaw, Brush Cutter etc.,	Working in good condition
Nagarampara and Ayyappancoil range	First Aid Kit, Billhook, Torch, Trekking Shoe/ Gumboot, Fire Beater, Water Sprayer, Tarpolin etc.,	Working in good condition

c. Interior Campshed maintenance

GPS coordinates	Location/Range/Division	Activity/ Remarks
N10° 16' 48.24" E077° 09' 11.36"	Mattumantha, Marayoor/ Marayoor	It is in good condition and maintained well.
N10° 15' 36.98" E077° 09' 26.74"	Manjappetty/ Marayoor/ Marayoor	It is in good condition and maintained well.
N10.00077° E76.79721	Kottappara Neduvakkad forest station / Kaliyar/ Kothamangalam	Construction of wireless repeater station cum campshed. It is in good condition and maintained well.



Construction of wireless repeater station cum Campshedat Kottappara in Neduvakkad Forest Station



Observations of the Evaluation Team

Type of Assets/ Division / Range	Type of current use/ Observations	Impact	Score (Low, ≤ 3, Medium >3 to <7, High 7 to 10	Assessment on the quality of the asset - Low, Medium or High
Campshed at Mattumantha, Marayoor Division, Marayoor Range	The shed is maintained well.	The shed is useful for the frontline staff.	9	High
Campshed at Manjappetty, Marayoor Division, Marayoor Range	The shed is maintained well.	The shed is useful for the frontline staff.	9	High

The campsheds were maintained well and they are useful to the frontline staff. The works were evaluated for physical existence and quality. The inspection team verified the records and the vouchers and found correct.

d. Organising joint patrolling and raids along inter-divisional and interstate boundaries

Range/ Division	Activity
Kaliyar/ Kothamangalam	Man-mazdoor engaged for interior patrolling and joint patrolling
Kaliyar/ Kothamangalam	Man-mazdoor engaged for interior patrolling and joint patrolling
Nagarampara range	Special camping Equipment viz. shoes, steel plates, 25 i can etc.
Erumely range	Providing materials for organizing joint patrolling
Ayyappancoil range	Procured vegetables, ration items etc during interior patrolling and joint patrolling

The inspection team verified the records and the vouchers and found correct.

e. Provision of field ration for interior camps

Range/ Division	Activity
Thatteckad, Perumannoor & Menthandu Blocks/ Kothamangalam/ Kothamangalam	Providing of field ration to staff and mazdoor watchers for the protection of forest from fire
Nagarampara and Erumely range	Providing of field ration to staff and mazdoor watchers for the protection of forest from fire
Mankulam Range, Mankulam Division	Providing of field ration to staff and mazdoor watchers for the protection of forest from fire

Vouchers and records were verified and found correct.

An additional activity of vista line clearance on either side of Koorikkulam-Kalappara road was undertaken in Kothamangalam and Punnekad-Thatteckad road.



Location/Range/Division	Distance	Remarks
Koorikkulam-Kalappara road/ Kothamangalam/ Kothamangalam	1 km 5m on both side of the road	Vista line clearance on either side of the road
Punnekad-Thattekad road	1 km 5m on both side of the road	Vista line clearance on either side of the road engaging Chelamala VSS members.

Sixteen different activities were undertaken under seven different components in the circle during 2020-21. The circle implemented all the activities listed in the APO. Two new activities were also observed and evaluated. Overall, an amount of Rs. 247 lakhs was allotted to the circle during the period of which 92.72 percent financial achievement was observed.

Southern Circle, Kollam (2020 - 2021)

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

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

Sixteen different activities were envisaged in the circle under eight components. The distribution of activities is as follows:

Component	Particulars of work
Better connectivity	Maintenance of trek path/patrolling route
	Maintenance of forest roads
Capacity Building	Awareness program/ training to staff and VSS/EDC members
	Conducting nature camps to school and college children
Catchment Area Treatment Plan Fund Part	River Bank Stabilization
Compensatory Afforestation Funds	Compensatory Afforestation Works (Creation - Preparatory works)
	Compensatory Afforestation Works (Maintenance)
Forest Fire Prevention and control operation	Creation of fire-break
	Engaging Fire Gang through participatory forest management
Human Animal Conflict Mitigation	Engaging watchers to mitigate human animal interface
Improvement of Wildlife Habitat	Bird survey and conservation
	Eradication of exotic weeds
Protection of Plantations and Forests	Eco-restoration activities in monoculture plantations by planting indigenous/misc. species/preparatory works
	Interior Campshed maintenance
	Organising Joint Patrolling and Raids along inter-divisional and interstate boundaries
	Provision of field ration for interior camps



I. Better Connectivity

a. Maintenance of trek path/patrolling route

The trek paths/patrolling routes were well maintained in the four divisions, namely Ranni, Konni, Punalur and Achankovil of this circle. The vouchers and records were verified and found correct.

b. Maintenance of Forest Roads

Location	GPS Location	Remarks
Edapalayam, Thenmala Forest Division	N08°58'06.0" E77°06'57.2"	Coupe roads at Edapalayam, Thenmala Forest Range road is being used for fire gang, plantation maintenance and antipoaching, forest protection activities.
		The coupe road is good and maintained well.
		CB hydraulic excavator was used to make the coupe road with the help of the VSS members.
		Records and bills are maintained well.
99 Bhagam, Thenmala Forest Division	N08°58'07.4" E77°06'51.4"	Coupe roads at 99 Bhagam, Thenmala Forest range road is being used for fire gang, antipoaching, plantation maintenance and protection activities. The coupe is still good and maintained well.
		Some parts of the coupe is damaged due to flood.
		JCB hydraulic excavator was used to make the coupe road with the help of the VSS members.
Kuliyarkadu Road, Thenmala Forest Division	N09°00'54.6" E77°07'00.4"	Coupe roads at Kuliyarkadu road, Thenmala Forest range road is being used for fire gang, antipoaching, plantation and protection activities.
		The coupe is still good and maintained well.
		JCB hydraulic excavator was used to make the coupe road with the help of the VSS members.
		Records and bills are maintained well.
Eerattumukku to Moonnumukku, Tekkumala section, Kulathupuzha forest range	N08°47'48.65" E77°11'18.02"	Coupe road from Eerattumukku-Moonnumukku, Tekkumala section, Kulathupuzha forest range connected with Pandimukku, Tamil Nadu.
		This coupe road is being used for fire gang and antipoaching, protection activities.
		JCB hydraulic excavator was used to make the coupe road with the help of the VSS members.
		The coupe is still good and maintained well.
		The length of the coupe road is 17 km with 4 m width. Records and bills are maintained well.



Location	GPS Location	Remarks
Moonnumukku to Panthadikkalam, Tekkumala section, Kulathupuzha forest range	N08°47'27.71" E77°12'31.61"	Coupe road from Moonnumukku-Panthadikkalam, Thekkumala section, Kulathupuzha Forest Range to Tamil Nadu.
		This coupe road is being used for fire gang and antipoaching, protection activities.
		JCB hydraulic excavator was used to make the coupe road with the help of the VSS members.
		The coupe is still good and maintained well.
		The length of the coupe road is 17 km with 4 m width.
		Records and bills are maintained well.
		The last portion of the road is damaged due to heavy rainfall.

The forest roads were well maintained in all divisions of this circle as these roads are also used as a part of the public transportation. The vouchers and records were verified and found correct.



Current status of the coupe road at Edapalayam, Thenmala Forest Division



Current status of the coupe road at 99 Bhagam, Thenmala Forest Division



Current status of the coupe road at 99 Bhagam, Thenmala Forest Division



Current status of the Kuliarkadu road, Thenmala Forest Division



Current status of the Achankovil-Konni forest road, Konni Forest Division



II. Capacity Building

a. Awareness program/ training to staff and VSS/EDC members

Location	Type of activity
Vadasserikkara	Installed a turmeric pulveriser through Pampini Vana Samrakshana Samathi and automatic pouch-making machine at Vadasserikkara range to assist the VSS. Forty families of the VSS are involved in the activities. The unit has a tie up with government market and departmental stores for marketing. Currently they are packing hair oil also. The tribals are also involved in honey collection, bag making, eco tourism, etc.
Angamozhy	A VSS was created for the Moozhiya tribes during 2020 and are involved in selling turmeric through Vanika Van Dhan.

The unit was inspected, and expenditure verified through vouchers and records by the evaluation team and found correct.

b. Conducting Nature Camps to School and College children

Location/Division	Type of activity
Rani, Konni, Punalur and Achankovil	Conducted 4-5 nature camps to school and college children

The activity was verified through vouchers and records by the evaluation team and found correct.

III. Catchment Area Treatment Plan Fund Part

a. River Bank Stabilization

Location/ Division	GPS location	Species	Survival (%)	Remarks
Tribal colony, Karibinthottam, Aryankavu, Thenmala	N08°58'56.6" E77°09'15.4" MSL-269 m	<i>Bambusa bambos</i>	80	Under CAMPA funding removed sand and flood debris for free flow of river water Effective, low cost method was adopted to protect river banks from the damage due to flash flood.
Mylamood Section, Kulathupuzha, TVPM	N08°53'45.6" E77°03'27.8"	11000 seedlings of <i>Bambusa bambos</i> , reed and other indigenous species	90	The seedlings are sourced from Central Nursery, Kulathupuzha. Plantation journal, records and bills are maintained well.
Beedikannu, Mylamood Section, Kulathupuzha	N08°51'29.81" E77°25'07.6"	4000 Nos. of naked seedlings of reeds and bamboo	85	The plants attain an average height of 85 cm. Plantation was done with forest officials without any additional labour.



This activity was effectively implemented by adopting a low-cost method to protect the river bank from damage from flash floods. The plantation journal, records and bills are maintained well.



Current status of the stabilized river bank at Tribal colony, Karibinthottam, Aryankavu, Thenmala Forest Division



Current status of River Bank Stabilization activity from Rockwood kadavu to Anavattachira, at Mylamood Section, Kulathupuzha



Current status of River Bank Stabilization activity from Rockwood kadavu to Anavattachira at Mylamood section, Kulathupuzha

IV. Compensatory Afforestation Funds

a. Compensatory Afforestation Works (Creation - Preparatory works)

Location/ Range/ Division	(GPS Coordinates)	Species planted	Area	Survival (%)	Remarks
Kadiyar/ Nuduvattamozhy/ Konni Division	N09°10'37.427" E76°55'32.483"	3000 bamboo seedlings	-	90	Casualty due to elephant grazing. The natural regeneration of <i>Gmelina arborea</i> , <i>Macaranga peltata</i> and <i>Macaranga indica</i> and the weeds such as <i>Eupatorium</i> , <i>Glycosmis pentaphylla</i> , <i>Mikania</i> and <i>Lantana</i> were noticed.
Vakkalar Vadasserikkara/ Ranni Division	N09.3307319 E76.8208531	3000 bamboo seedlings Miscellaneous species 9000 seedlings	10Ha 30 ha	85 85	The area is very dense with very few regions showing an open canopy for gap planting. The seedlings have attained a height of 20-50 cm. Weed eradication was not undertaken as the dense canopy does not favour weed growth. However, recently, spread of <i>Kurinji (Strobilanthes sp.)</i> is observed.



Location/ Range/ Division	(GPS Coordinates)	Species planted	Area	Survival (%)	Remarks
					Natural regeneration of <i>Hopea parviflora</i> , <i>Dysoxylum malabaricum</i> , <i>Terminalia bellirica</i> , <i>Aporosa lindleyana</i> , <i>Syzygium cumini</i> , <i>Lagerstroemia speciosa</i> and <i>Schleichera oleosawas</i> observed. <i>Dysoxylum malabaricum</i> and <i>Schleichera oleosahave</i> established well.

The activity has been implemented with a lot of effort as the team encountered wild animals at the time of planting. Plantation journals, records and bills are maintained well. The records and vouchers were verified and found correct.



Compensatory Afforestation at Vakkalar, Vadasserikkara in Ranni Division

a. Compensatory Afforestation Works (Maintenance)

In this circle in different eco restorations zones under the divisions, maintenance SMC Works, removal of weeds, augmentation planting, fire protection, selective removal of alien exotic weeds, gap planting and construction of staggered trenches for soil water conservation etc. were carried out under compensatory afforestation works. Verified vouchers and records and found correct.

V. Forest Fire Prevention and control operation

a. Creation of fire-break



Location/range/division	Distance (km)	Activity
Achankovil, Kallar, Kanayar Ranges	2 km	Fine break work was carried out
Padayanipara (Maniyara), Theruvappara Kotta	1.35 km long and 5.20 m wide	Fine break work was carried out with yearly maintenance.
Vakkalar	3.2 km long and 5.2 m wide	Fire line was laid at Vakkalar
Mundomoozhy/ Ranni	2 km	Fire lines were made

Verified vouchers and records and found correct.

b. Engagin fire gang through participatory forest management

Location/range/division	Activity
Kallar, Achankovil and Kanayar ranges	Majdoors were engaged for fire control measures and protection against fire, grazing by engaging protection watcher.
Ranni, Vadasserikkara, Goodrickal Ranges	Majdoors were engaged for fire control measures at Karikulam and erecting solar power fencing in Kurumpanmoozhy area under Kanamala during 2020-2021.
	NMR watchers were engaged for control burning at Ariyanjala Mannu, Kurumbam Mozhi at Kannamala during 2020-2021.
	Solar fencing was laid for 5KM and 2 KM to manage wild animals, elephants etc.
Pathanapuram and Anchal Ranges-Punalur	Fire protection solar fencing were made at Verukuzhy, Pathanapuram Punalur.
	Protection against fire, grazing by engaging protection watcher, fire protection through fire break at Verukuzhy, Pathanapuram Punalur
Konni, Naduvathumoozhy and Mannarappara Ranges	Majdoors were engaged for fire control measures and protection against fire, grazing by engaging protection watcher.

Verified vouchers and records and found correct.

VI. Improvement of Wildlife Habitat

a. Eradication of exotic weeds

Location/range/division	Activity (Weeding)
Goodrickal, Vadasserikkara and Ranni Ranges	Weed eradication was not done, maintenance free since dense natural forest.
	Highly dense population of the only weed, Kurinji (<i>Strobilanthes</i> sp.) was found in the area.
Mannarappara, Konni and Naduvathumoozhy Ranges	Carried out removal of <i>Lantana</i> , <i>Eupatorium</i> and Mechil grass. <i>Lantana</i> -low occurrence
	Mechil grass-heavy spread prevents natural regeneration. <i>Eupatorium</i> – heavy growth in spite of repeated removal.



The activity carried out was verified through records and vouchers and found correct.

VII. Protection of plantations and forests

a. Eco-restoration activities in monoculture plantations by planting indigenous/misc. species/preparatory works

In this circle in different eco restorations zones under the divisions, maintenance SMC Works, removal of weeds, augmentation planting, fire protection etc were carried out.

Location/ Range/ Division	Species planted	Area (ha)	Survival (%)	Remarks
Aruvikkara Eco-restoration Zone/ Achankovil 2010 TP	Miscellaneous species	10 ha	85	Exotic weeds observed are <i>lantana</i> , <i>Eupatorium</i> , <i>Helictres isora</i> , <i>Mikania</i> , <i>Riccinus</i> , <i>channa</i> . Though weed eradication was done the field is heavily infested with weeds.
Mundomoozhi Eco-restoration Zone/ Konni 2008 TP	3000 plants of <i>Xanthophyllum flavescens</i> , <i>Elippa</i> , <i>Aporosa lindleyana</i> , <i>Calophyllum inophyllum</i> , <i>Actinodaphne malabarica</i> , <i>Persea macarantha</i> , <i>Artocarpus hirsutus</i> , <i>Lagerstroemia speciosa</i> , <i>Grewia tiliifolia</i> , <i>Cassia fistula</i> , <i>Tamarindus indica</i> , <i>Dalbergia latifolia</i> , <i>Strychnos nux-vomica</i> , <i>Tectona grandis</i> , <i>Careya arborea</i> , <i>Pongamia pinnata</i> , <i>Homonoia riparia</i> , <i>Syzygium cumini</i> and <i>Terminalia paniculata</i> .	15	85	Seedling growth was good and reached a height of 1 to 1.5 m. Natural trees found were <i>Dalbergia latifolia</i> , <i>Aporosa cardiosperma</i> , <i>Actinodaphne bourdillonii</i> , <i>Macaranga paniculata</i> , <i>Terminalia paniculata</i> , <i>Tectona grandis</i> , <i>bamboo</i> , <i>Artocarpus hirsutus</i> , <i>Cassia fistula</i> and <i>Xylia xylocarpa</i> . The weeds such as <i>Chromolaena odorata</i> , <i>Asparagus racemosus</i> , <i>Curcuma angustifolia</i> , <i>Mikania micrantha</i> and <i>Ziziphus rugosa</i> and <i>Acacia caesia</i> . <i>Cycas</i> was available in plenty in Konni division.
Adichanpara Eco-restoration Zone / Konni. 2009 TP	4000 saplings of 7 species <i>Terminalia elliptica</i> , <i>Terminalia paniculata</i> , <i>Xylia xylocarpa</i> , <i>Lagestromia lanceolata</i> , <i>Terminalia bellirica</i> , <i>Dalbergia latifolia</i>	12.86	80	Natural regeneration found were <i>Terminalia paniculata</i> , <i>Grewia tiliifolia</i> , <i>Xylia xylocarpa</i> , <i>Macaranga indica</i> , <i>Cassia fistula</i> , <i>Terminalia elliptica</i> , <i>Macaranga paniculata</i> and <i>Gluta travancorica</i> . The weeds such as <i>Helictres isora</i> , <i>Lantana</i> and <i>Cycas</i> are available plenty in Konni division.
Kadamancode Eco-restoration Zone/ Anchaal range, Punalur. 1961 TP	Miscellaneous species	-	85	Activities carried out are selective removal of exotic alien weeds, gap planting and construction of staggered trenches for soil water

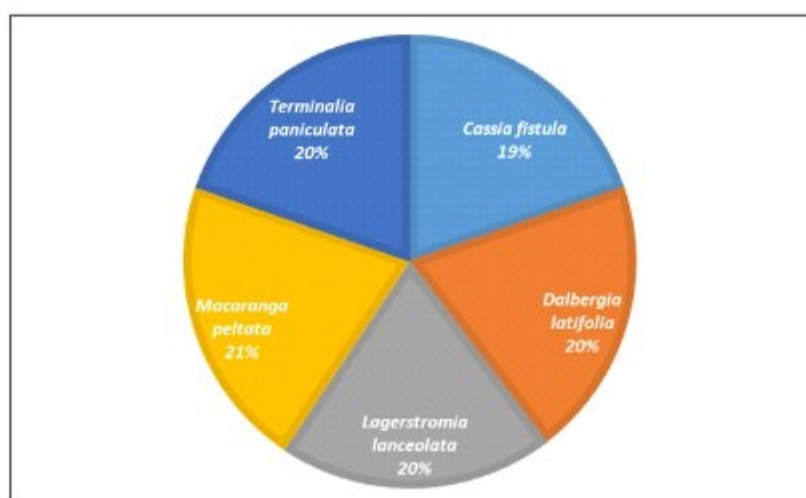


Location/ Range/ Division	Species planted	Area (ha)	Survival (%)	Remarks
				conservation and to hold seeds of forest tree species for further natural regeneration, protection against fire, grazing by engaging protection watcher, fire protection through fire break.
Iruthode Eco-restoration Zone / Pathanapuram Range Punalur. 1956 TP	Miscellaneous species predominantly of evergreen nature.	5	80	<p>The factors of degradation were frequent due to forest fire, grazing, soil erosion and presence of exotic species.</p> <p>The existing trees in various plots includes <i>Olea dioica</i>, <i>Terminalia paniculata</i>, <i>Aporosa cardiosperma</i>, <i>Buchanania lanzan</i>, <i>Xylia xylocarpa</i>, <i>Tabernaemontana alternifolia</i>, <i>Macaranga peltata</i> and <i>Ailanthus triphysa</i>. The natural saplings includes <i>Calamus pseudotenuis</i>, <i>Artocarpus hirsutus</i>, <i>Aporosa cardiosperma</i>, <i>Xylia xylocarpa</i>, <i>Olea dioica</i>, <i>Cinnamomum malabattrum</i> and <i>Tabernaemontana alternifolia</i>.</p> <p>Natural regeneration happened in the plantation with new different species namely <i>Hopea ponga</i>, <i>Garcinia indica</i>, <i>Artocarpus hirsutus</i>, <i>Wrightia</i>, <i>Careya arborea</i>, <i>Xylia</i>, <i>Terminalia paniculata</i>, <i>Macaranga peltata</i>, <i>Vitex</i>, <i>Schleichera oleosa</i>, <i>Holarrhena antidysenterica</i>, <i>Trema orientalis</i>, <i>Aporosa lindleyana</i>, <i>Actinodaphne</i>.</p> <p>Activities which was carried out were selective removal of exotic weeds, gap planting and construction of trenches for soil water conservation and to hold seeds of forest tree species for further natural regeneration.</p>
Verukuzhy Eco-restoration Zone Pathanapuram Range Punalur. 1957 TP	1000 nos of evergreen species like <i>Terminalia bellirica</i> (400), <i>Hopea parviflora</i> (250), <i>Xylia xylocarpa</i> (150), <i>Schleichera oleosa</i> (100)	10		<p>1957 poorly stocked teak plantation with less than 50 trees per ha. The seedlings attained an average height of 30 cm which helps to improve canopy cover.</p> <p>Activities which were carried out</p>

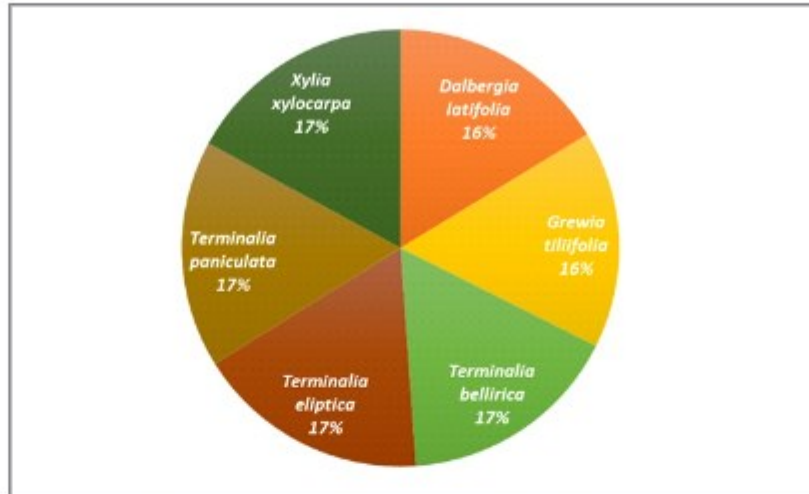


Location/ Range/ Division	Species planted	Area	Survival (%)	Remarks
	and <i>Artocarpus hirsutus</i> (100).			<p>were selective removal of alien exotic weeds, gap planting and construction of staggered trenches for soil water conservation and to hold seeds of forest tree species for further natural regeneration, protection against fire, grazing by engaging protection watcher, fire protection through fire break.</p> <p>The present condition</p> <p>Due to proper protection activities forest fire got reduced, increase in soil retention and also increase in water discharge in nearby streams. Exotic alien was not noticed which was the success of maintenance of the plantation. Natural regeneration was very good. Among the natural regeneration bamboos, <i>Dalbergia</i> and <i>Phyllanthus emblica</i> were observed more. Heavy spread of Michel grass prevents natural regeneration and also noticed heavy growth of <i>Eupatorium</i> in spite of heavy removal and low occurrence of <i>Lantana</i>.</p>

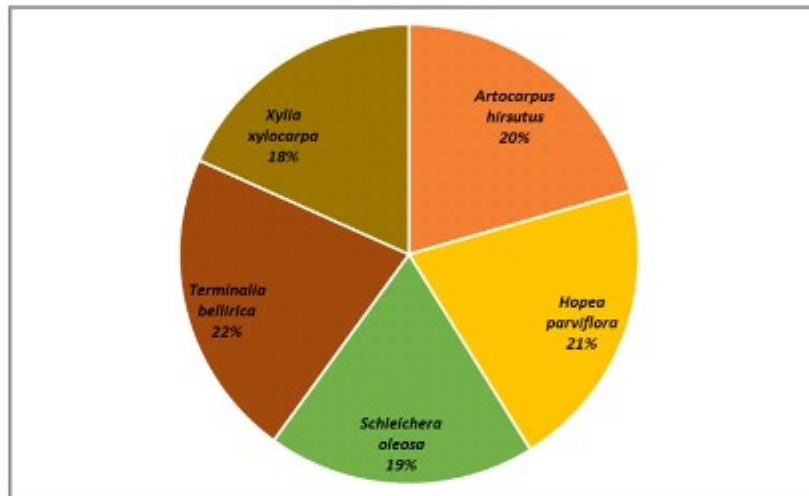
The plantations were maintained well. Due to proper protection activities, forest fire occurrence has reduced, increase in soil retention and also an increase in water discharge in nearby streams. Verified the vouchers and records and found correct.



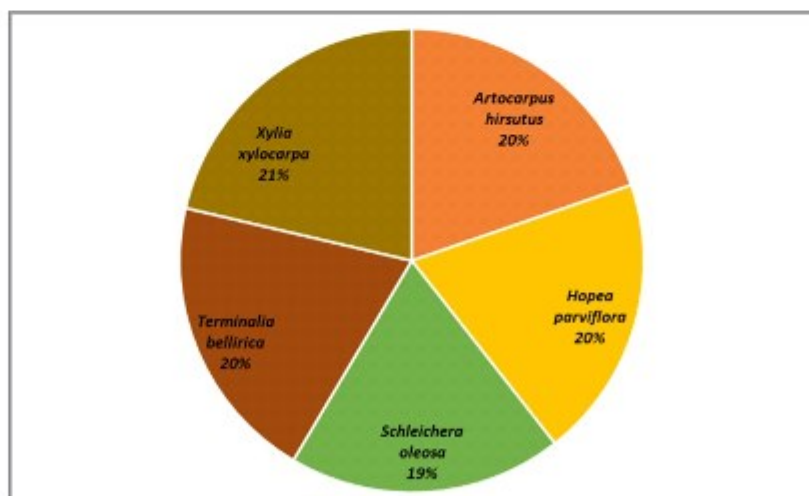
Species composition of the ecorestoration efforts in Aruvikkara, Achankovil Division



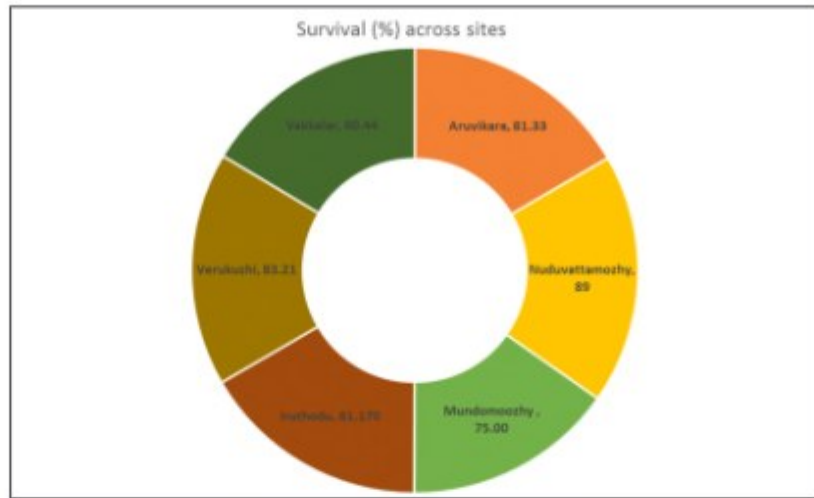
Species composition of the ecorestoration efforts in Nuduvattamozhy, Konni Division



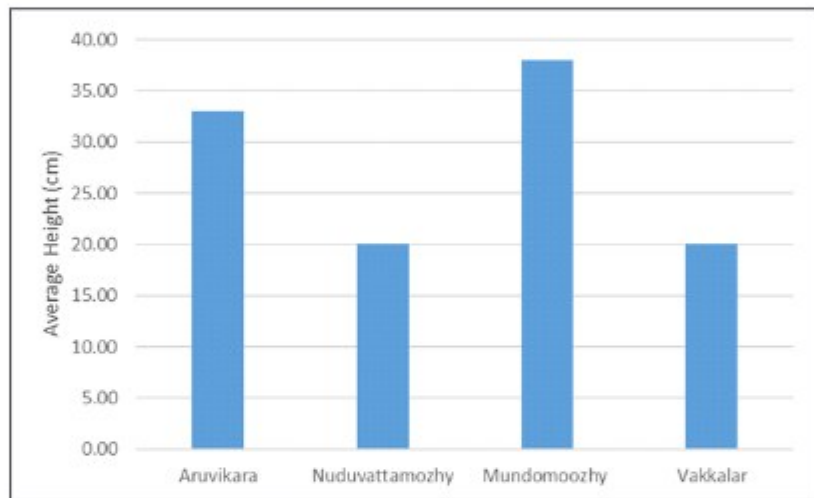
Species composition of the ecorestoration efforts in Verukuzhi, Punalur Division



Species composition of the ecorestoration efforts in Vakkalar, Ranni Division



Survival per cent of the planted areas across sites in Southern Circle



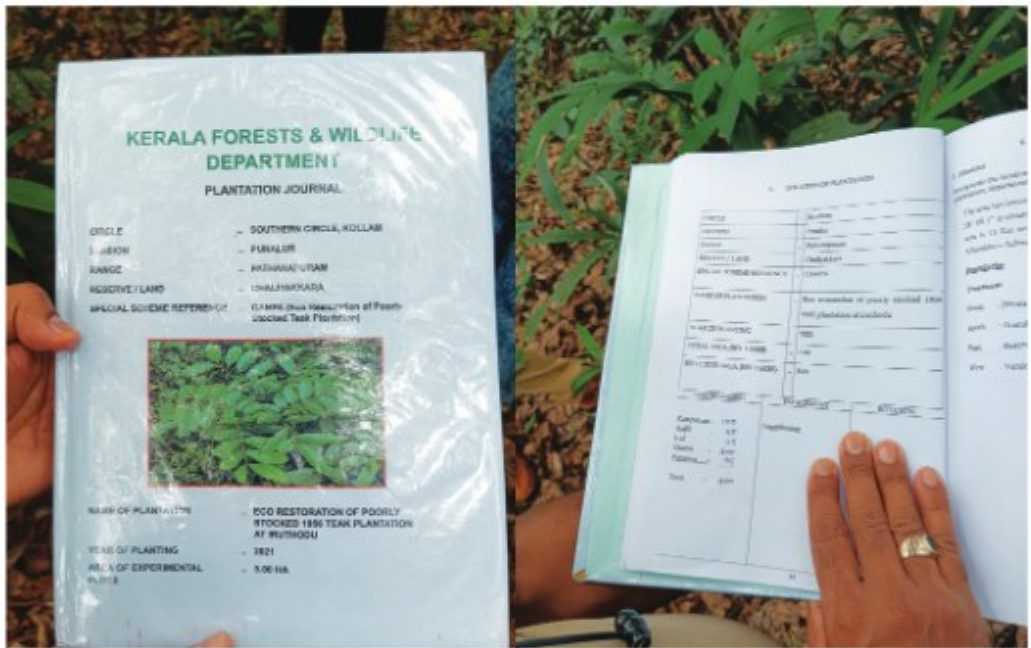
Average height (cm) of *Dalbergia latifolia* across sites



Eco-restoration plantation in Iruthodu, Punalur Division



Recording of survival in Iruthodu, Punalur Division



Well maintained plantation journal of the site

b. Interior campshed maintenance

Range/ Division	Geo coordinates	Size	Activity
Kodumudi/Ranni	N09°3'22.854" E76°88'73.66"	10 x 10 feet with the elephant fencing of size 50 feet x 3 x3 m on all sides.	Maintenance of campshed.



Range/ Division	Geo coordinates	Size	Activity
Aariyankavu, Thenmala Forest Division	N08°56'44.0" E77°09'00.9"	22 x 18.6 m	The doors are made using galvanized iron sheet and the length and width is 7 feet and 3 feet respectively. Four windows are made using galvanized iron sheet and the length and width is 4.8 feet and 3 feet respectively. Rest room facility has been created near the camp shed. Trench has been made around the camp shed to restrict elephants entry.

The activity carried out was physically verified, records perused and found correct.



Current status of the campshed at Aariyankavu



Current status of the campshed at Aariyankavu



c. Organising Joint Patrolling and Raids along inter-divisional and interstate boundaries

Range/ Division	Activity
Kallar, Kanayar ranges, Achankovil	Organised joint patrolling and raids along inter-divisional and interstate boundaries
Goodrikkal, Vadasserikkara and Ranni Ranges, Ranni	Organised joint patrolling and raids along inter-divisional and interstate boundaries
Pathanapuram and Anchal Ranges, Punalur	Organised joint patrolling and raids along inter-divisional and interstate boundaries
Mannarappara and Naduvathumoozhy Ranges, Konni	Organised joint patrolling and raids along inter-divisional and interstate boundaries

The activity carried out was verified through records and vouchers and found correct.

d. Provision of field ration for interior camps

Range/ Division	Activity
Kallar, Kanayar ranges, Achankovil	Providing of field ration for interior camps
Goodrikkal, Vadasserikkara and Ranni Ranges, Ranni	Providing of field ration for interior camps
Pathanapuram and Anchal Ranges, Punalur	Providing of field ration for interior camps

The activity carried out was verified through records and vouchers and found correct.

VIII. Infrastructure Development

a Providing basic infrastructure to tribal settlements

Divisions	Activity
Punalur	● Recruited as fire watchers and Beat Forest officers
	● Solar light, solar fencing, gas connection, ration etc.
	● Books, pencils, pens to students supplied by VSS Public Service Commission coaching center.
	● Vegetables & rice during COVID & festivals.
	● Rubber sheet machine
	● WiFi provide to tribes.
Konni	● CAMPA employment
	● Café shop, furniture, vehicle, stone, shop structure (9 people).
	● Ration, 50 gas connections
	● Books provided and educational material for students.
	● Tailoring unit.
	● Hand made products for eco-shop.
	● Tourism café promotion



Divisions	Activity
Achankovil	<ul style="list-style-type: none"> • Solar lighting facility.
	<ul style="list-style-type: none"> • Under VSS 33 families with 78 members were facilitated with honey collection, processing and marketing. • 11 tribes were employed as watchers and fire watchers and CAMPA employment.



Meeting with VSS members and forest officials at Kariminthottam Tribal VSS Office, Peringamala panchayat, Kulathupuzha Forest range



Eco friendly bamboo cases were used instead of plastic bags for the nursery activities at Mylamood Section, Kulathupuzha



In addition to the sixteen different activities in the circle under eight components, infrastructure development to provide assistance to tribal VSS was also undertaken. The circle implemented all the activities listed in the APO. Overall, an amount of Rs. 279.14 lakhs was allotted to the circle during the period of which 67.77 percent financial achievement was observed. Many of the activities were shifted to 2021-22 due to a delay in release of the funds.

Field Director Project Tiger (FDPT), Kottayam (2020-21)

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

1. Periyar East Division
2. Periyar West Division
3. Idukki WL
4. Munnar WL

One activity was undertaken in the circle.

Component	Particulars of work
Protection of plantations and forests	Eco-restoration activities in monoculture plantations by planting indigenous/misc. species/preparatory works

I. Protection of plantations and forests

a. Eco-restoration activities in monoculture plantations by planting indigenous/misc. species/preparatory works

As an eco-restoration activities in monoculture plantation of eucalypts, fire protection activity was executed through laying fire lines to protect the plantation and engaged man mazdoor for the work.

Location/ Range/ Division	Geo coordinates	Area (ha)	Remarks
1966 Vallakkadavu Eucalyptus Eco-restoration Zone/ Vallakkadavu Range (Planting, fire protection, weeding, engaging man mazdoor, SMC works etc.)	N09°31'40.807" E77° 6' 40.25"	0.75 6 km x 4 m	Fire protection activity was executed through a fire line. Man mazdoors were engaged for clearing ground level vegetation palatable grasses and weeds etc. No fire incidence was recorded.
1989 Circular road Eco-restoration Zone/ Vallakkadavu (Planting, fire protection, weeding, engaging man mazdoor, SMC works etc.)	N09°30' 23.64" E77° 7' 12.32"	0.75	Fire protection activity was executed through a fire line. Man mazdoors were engaged for clearing ground level vegetation palatable grasses and weeds etc. No fire incidence was recorded.
1989 Circular road Eco-restoration Zone/ Vallakkadavu (Planting,	N09° 30' 17.94" E77° 8' 14.97"	0.75	Fire protection activity was executed through a fire line. Man mazdoors were engaged for clearing ground level



Location/ Range/ Division	Geo coordinates	Area (ha)	Remarks
fire protection, weeding, engaging man mazdoor, SMC works etc.)			vegetation palatable grasses and weeds etc. No fire incidence was recorded.
1990 Dam site Eco-restoration Zone/ Vallakkadavu (Planting, fire protection, weeding, engaging man mazdoor, SMC works etc.)	N09°31'57.30" E77°08'52.62"	0.75	Fire protection activity was executed through a fire line. Man mazdoors were engaged for clearing ground level vegetation palatable grasses and weeds etc. No fire incidence was recorded.
1962 Uppupara Eco-restoration Zone/ Azhutha (Planting, fire protection, weeding, engaging man mazdoor, SMC works etc.)	N09° 29'53.105" E77° 5' 3.264"	0.75	Fire protection activity was executed through a fire line. Man mazdoors were engaged for clearing ground level vegetation palatable grasses and weeds etc. No fire incidence was recorded.
1964 Seethakulam Eco-restoration Zone/ Azhutha (Planting, fire protection, weeding, engaging man mazdoor, smc works etc.)	N09° 24' 53.88" E77° 8' 21.7"	0.75	Fire protection activity was executed through a fire line. Man mazdoors were engaged for clearing ground level vegetation palatable grasses and weeds etc. No fire incidence was recorded.
1980 Maniyadipalam Eco-restoration Zone/ Pamba (Planting, fire protection, weeding, engaging man mazdoor, smc works etc.)	N09° 29' 39.92" E77° 7' 16.76"	0.75	Fire protection activity was executed through a fire line. Man mazdoors were engaged for clearing ground level vegetation palatable grasses and weeds etc. No fire incidence was recorded.
1963 Vamanakulam Eco-restoration Zone/ Pamba (Planting, fire protection, weeding, engaging man mazdoor, smc works etc.)	N09° 29' 6.68" E77° 7' 54.6"	0.75	Fire protection activity was executed through a fire line. Man mazdoors were engaged for clearing ground level vegetation palatable grasses and weeds etc. No fire incidence was recorded.
1963 Towerline Eco-restoration Zone/ Pamba (Planting, fire protection, weeding, engaging man mazdoor, smc works etc.)	N09° 29'53.105" E77° 5' 3.264"	0.75	Fire protection activity was executed through a fire line. Man mazdoors were engaged for clearing ground level vegetation palatable grasses and weeds etc. No fire incidence was recorded.

Verified the record and vouchers and found correct.



Vallakkadavu Eucalyptus Eco-restoration Zone

On verification of records, it was observed that some more activities were taken up with the available CAMPA funds which are detailed below.

b. Interior campshed and ration

Sites	GPS Location	Dimensions	Remarks
Vagavanam	N09°44'31.87" E76°59'09.06"	10 x 16 ft, 10ft x 12 ft, Toilet renovated (5ft x 6ft), Top roof steel work (25ft x 20ft)	The structure is in good condition. Top roof steel work maintained very well.



The works were evaluated for the physical existence and for the quality. The specifications of both camp sheds were checked by verifying the old vouchers and the estimates.

Observations of the evaluation team

Type of Assets/ Division / Range	Type of current use/ Observations	Impact	Score (Low, < 3, Medium >3 to<7, High 7 to 10	Assessment on the quality of the asset - Low, Medium or High
Camp shed (Vagavanam) / Idukki WL/ Idukki WLS	Maintenance like steel roof work over the existing campshed has been undertaken.	It is regularly used by the frontline staff.	7	High

II. Better Connectivity

a. Maintenance of trek path/patrolling route

Geo coordinates	Location/Range/ Division	Size	Remarks
N09°31'57.30" E77°08'52.62"	Dam site campshed to Kanamudiyoram/ Vallakkadavu/ Iddukki	6 km x 4 m	Only way to connect tribal hamlet to the dam site. Maintained well.
N09° 29'53.105" E77° 5' 3.264"	Uppupara to Setha kulam	6 km x 5.0 m	Maintained well.
N09° 24' 53.88" E77° 8' 21.7"	Mullakanam to Sethakulam	5.5 km x 3 m	Maintained well.
N09°28'34.44" E77°05'57.92"	Jolymala/ Pampa/ Iddukki	13 Ha	4049 eucalypts trees were cleared in Trek path of 13 Ha

Verified the record and vouchers and found correct.

b. Construction of bridge

Geo coordinates	Location/Range/ Division	Size	Remarks
N09°34'07.50" E77°14'29.70"	Kalyanappara/ Thekkady / Iddukki	18 x 6 x 6 m	This bridge mainly connected through Karadikkavala to Mavady, Methakanam, Mullathodu campshed. Wild animals pass through the bridge and during the rainy season it is useful for patrolling.



Bridge at Kalyanappara, Thekkady Range in Iddukki to improve connectivity

III. Forest Fire Prevention and control operation

a. Creation of fire-break

Geo coordinates	Location/Range/ Division	Size	Remarks
N09°28'34.42" E77°05'.44.65"	Uppupara to Sethakulam/ Azhutha/Iddukki	5km X 5 m 4 mile	Last 5 year no fire incidence was recorded.
N09°28'24.16" E77°05'.38.46"	Mullakanam to Sethakulam/ Azhutha/Iddukki	6km X 5 m	Last 5 year no fire incidence was recorded.
N09°24'24.77" E77°08'.45.21"	Kochupampaa/ Pampa/ Iddukki	3.5km X 5 m	Last 5 year no fire incidence was recorded.



Though only one activity was envisaged in the Circle, four new activities were taken up, which was verified by the team both physically wherever possible and through records and vouchers. The funds allocated to the circle were utilised fully.



Fireline creation in Thekkady Range

Agasthyavanam Biological Park (ABP) Circle (2020-21)

The evaluation covered both Shendurney and Thiruvananthapuram Wildlife Divisions of the circle. Four different activities were undertaken in the circle.

The evaluation covered both Shendurney and Thiruvananthapuram Wildlife Divisions of the circle. Four different activities were undertaken in the circle.

Component	Particulars of work
Better connectivity	Maintenance of trek path/patrolling route
Capacity Building	Awareness program/ training to staff and VSS/ EDC members
Forest Fire Prevention and control operation	Engaging fire gang through participatory forest management fire fighting equipment
Improvement of Wildlife Habitat	Bird survey and conservation
Protection of Plantations and Porests	Field survival kits and field equipment
	Organising joint patrolling and raids along inter-divisional and interstate boundaries
	Provision of field ration for interior camps

I. Better connectivity

a. Maintenance of trek path/patrolling route

Geo Coordinates	Location/ Range/ Division	Distance	Remarks
E08° 49' 49.6.1" N77° 13' 09.6	Pandimotta/ Shendurune/ Shendurune Wildlife	Pandimotta to Umayar (11 Km)	Trek path is well maintained. Maintenance of patrolling route. Verified the records and found correct.



Geo Coordinates	Location/ Range/ Division	Distance	Remarks
N08° 49' 49.6.1" E77° 13' 09.6"	Ettakkana/ Shenduruney/ Shenduruney Wildlife	Ettakkana to Vilakkumaram (6 Km)	Trek path is well maintained. Maintenance of patrolling route. Verified the records and found correct.



Trek path maintained at Pandimotta in Shenduruney Range

II. Capacity Building

a. Awareness Program/ training to staff and VSS/EDC members

Location/ Division	Type of Activity
ABP Range /Thiruvanthapuram Wildlife	Tribals were engaged as fire watchers, in eco tourism related activities, maintaining trek path and patrolling routes etc. 2 awareness programs were organized for staff and VSS/EDC members.
Thenmala/ Shenduruney Wildlife	Tribals were engaged as fire watchers, in eco tourism related activities, maintaining trek path and patrolling routes etc. awareness programs were organized for staff and VSS/EDC members.

Verified the records and vouchers and found correct



III. Forest Fire Prevention and control operation

- a. Engaging Fire Gang through participatory forest management:** Man mazdoors were engaged for fire protection work at fire-prone areas in both divisions.

Though eight activities were listed under five components, the team could evaluate only three of them. The funds allocated to the circle were utilised fully.

Wildlife Circle, Palakkad (2020 - 2021)

The evaluation covered four divisions of the circle. They include

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

Eight different activities were undertaken under three different components in the circle. The distribution of activities is as follows:

Component	Particulars of work
Forest Fire Prevention and control operation	Creation of fire-break
	Engaging fire Gang through participatory forest management
	Fire Fighting Equipment
Human-Animal Conflict Mitigation	Engaging watchers to mitigate human animal interface
	Protective Gears for wildlife conflict mitigation staff
Protection of Plantations and Forests	Eco-restoration activities in monoculture plantations
	Field survival kits and field Equipment
	Provision of field ration for interior camps

I. Forest Fire Prevention and control operation

a. Creation of fire-break

Location	Year	Distance	Remarks
Muthanga, Tholpetti, Kurinchiyath, Sulthan Bathery Ranges/ Wildlife Division, Wayanad	2020-2021	20 Km	Fire break was made in various ranges of Wayanad division.

The activity was verified through inspection of vouchers by the monitoring team and found correct.

b. Engaging Fire Gang through participatory forest management

Location	Year	Remarks
MuthangaTholpetti, Kurinchiyath, Sulthan Bathery Ranges/ Wildlife Division, Wayanad	2020-2021	Engaging fire protection watcher for fire protection work at fire-prone areas.



- Creation of fire-break: Monthly meetings with tribals were carried out for their welfare activities
- Engaging Fire Gang through participatory forest management: Providing lunch, medical facility and job opportunities were provided.
- The activity was verified through inspection of vouchers by the monitoring team and found correct.

c. Fire fighting equipment

Location	Remarks
MuthangaTholpetti, Kurinchiyath, Sulthan Bathery Ranges/ Wildlife Division, Wayanad	Fire fighting equipment procured are in good condition.

The equipment purchased for Thrissur, Vazhachal, Chalakkudy and Malayattoor divisions were evaluated for physical existence and quality. They were checked by verifying the vouchers. The equipment are in good condition and used regularly.

II. Human Animal Conflict Mitigation

a. Engaging watchers to mitigate human animal interface

Location	Remarks
Muthanga, Tholpetti, Kurinchiyath, Sulthan Bathery Ranges/ Wildlife Division, Wayanad	Engaged watchers to mitigate human animal interface

The activity was verified through inspection of vouchers by the monitoring team and found correct.

b. Protective Gears for wildlife conflict mitigation staff

Location	Remarks
Muthanga, Tholpetti, Kurinchiyath, Sulthan Bathery Ranges/ Wildlife Division, Wayanad	Verified the records.

The activity was verified through inspection of vouchers by the monitoring team and found correct.

III. Protection of plantations and forests

a. Eco-restoration activities in monoculture plantations

Location/ range/ division	Geo coordinates	Area (ha)/ Planting	Species	Remarks
1963 TP Tholpetty Eco-restoration Zone	N11° 56'36.096" E76° 3' 58.86"	0.75	<i>Senna spectabilis</i> killing of senna trees, uprooting of senna seedlings,	Under this activity weed eradication work, killing and uprooting of senna trees through engaging mazdoors were carried out.



Location/ range/ division	Geo coordinates	Area (ha)/ Planting	Species	Remarks
1964 TP Tholpetty Eco-restoration Zone	N11° 56'53.988" E76° 4'30.036"	0.75	Senna spectabilis killing of senna trees, uprooting of ' senna seedlings,	Under this activity weed eradication work, killing and uprooting of senna trees through engaging mazdoors were carried out.
Check dam/ Parambikulam/ Karimala range.	N10° 38'39.18" E76° 70'22.86"	13x0.5x3		As a part of the SMC works, a check dam was constructed. Verified records and vouchers.
Checkdam/Silent vally/Bhavani range /Keeripara	N11° 3'5.491" E76° 30'52.121"	5.5x1.2x0.5		As a part of the SMC works, a check dam was constructed. Verified records and vouchers.
Pond desiltation/ Silent valley/ Bhavani range	N11° 0.5'54.15" E76° 54'10.55"	15x10x8		Pond desiltation was carried out. Verified records and vouchers.

Only maintenance activities were carried out. The activities were verified through inspection of vouchers and records by the team and found correct.

b. Interior Campshed & Ration

Sites	GPS Location	Year of Construction	Dimensions (m)	Remarks
1.	N10°27'12.121" E76°29'35.26"	2020-21 (one room with roof)	3.8x2.1x2	The shed has one room with GI sheet roof was maintained well.
2.	N10°25'53.4" E76°30'19.02"	2020-21 (only kitchen)	5.2x3	A kitchen was constructed in the shed and maintained well.

The works were evaluated for the physical existence and the specifications was checked by verifying the old vouchers and the estimates.

Observations of the Evaluation Team

Type of Assets/ Division / Range	Type of current use/ Observations	Impact	Score (Low, < 3, Medium >3 to <7, High 7 to 10	Assessment on the quality of the asset - Low, Medium or High
Campshed/Peechi /Chimony, Anaporu	The shed has one room with GI sheet roof, It is well maintained.	It is regularly used by the frontline staff.	7	High
Campshed/Peechi/Chimony, Payampara.	A kitchen was constructed in the shed and maintained well	It is regularly used by the frontline staff.	7	High



c. Field survival kits and field Equipment

Location	Year	Remarks
Muthanga, Tholpetti, Kurinchiyath, Sulthan Batherly Ranges/ Wildlife Division, Wayanad	2020-2021	Verified the field Equipment and vouchers and found correct,

The inspection team verified the physical existence of the field equipment and records and vouchers and found correct.



Field Equipment

In this circle eight different activities were undertaken under three different components. The circle implemented all the activities listed in the APO. In addition, the following activities were also observed.

d. Construction & Maintenance of Camp Shed : There is a new Animal hospice centre & palliative care unit constructed.

GPS Location	Dimensions (m)	Remarks	Score (Low, ≤ 3 , Medium >3 to <7 , High 7 to 10)	Assessment on the quality of the asset - Low, Medium or High
N11°42'48.91" E76°16'2.58"	17.2x13.3x30	An animal hospice centre & palliative care unit has been constructed in Kuriachiat range, Wayanad Division. The centre is maintained very well caters to animal health issues.	8	High
N11°4'59.27" E76°21'41.332"	11.5x3.7	A parking structure has been constructed in the shed with steel sheet at Uppukulam, Silent valley. It is useful for the frontline staff.	8	High



e. Construction of Solar Fencing

Location	Year	Remarks
Anakuzhy to Thannichadu, Peechi range	2020-21	The solar fencing was physically verified. Records were verified and found correct.
Podhuchodu to Thankatchipura, Peechi range.	2020-21	The solar fencing was physically verified. Records were verified and found correct.

f. Elephant Proof Trench

Location	Year	Remarks
Mannamangalam section, Peechi	2020-21	The trenches were physically verified.

An amount of Rs. 83.90 lakhs was allotted to the circle which was fully utilised.

Social Forestry, Central Circle, Eranakulam (2020-21)

I. Capacity Building

- a. Awareness Program/ training to staff and VSS/EDC members: Implemented and conducted various awareness programmes related to fire protection, bird survey and World Forestry day.

II. Catchment Area Treatment Plan

- a. **River Bank Stabilisation:** As part of CAT plan, vetiver was planted along the banks of Kaniyampuzha at Kaprikkad and Arattukadavu with support from the VSS of the two villages. The records were verified and found correct. Mangrove seedlings were produced at Thrissur and Chalakudy divisions, while Kattappana range produced bamboo seedlings for riverside planting. The records were verified and found correct.

III. Forest Fire Prevention and Control Operation

- a. Engaging fire gangs through a participatory approach: Fire watchers were engaged in Kaprikkad and Abhayaranyam as part of fire control and prevention activities. The records were verified and found correct.

IV. Improvement of Wildlife Habitat

- a. **Bird survey and conservation:** The social forestry range at Chalakkudy conducted bird survey at Thommana-Muriyad kole wetland while a pelagic bird survey was taken up at Thrissur range. The records were verified and found correct. Overall, an amount of Rs. 11.10 lakhs was allotted to the circle during the period, with 90 per cent expenditure.

Social Forestry, Southern Circle, Kollam (2020-21)

I. Capacity Building

- a. Awareness Program/ training to staff and VSS/EDC members: Awareness programmes were conducted in Alappuzha during this period. The records were verified and found correct.



II. Improvement of Wildlife Habitat

- a. **Bird survey and conservation:** This activity was taken up at Kollam. The records were verified and found correct.
- b. **Sea Turtle Conservation:** This was taken up as an additional activity in Kollam and Alappuzha divisions. The records were verified and found correct.

Overall, an amount of Rs. 1.40 lakhs was allotted to the circle during the period, which was fully utilised.

Social Forestry, Northern Circle, Kozhikode (2020-21)

I. Improvement of Wildlife Habitat

- a. **Sea Turtle conservation :** During 2020-2021, the SF division undertook sea turtle conservation programme utilizing CAMPA fund in five different fishing harbours namely Beypore, Vellayil, Puthiyappa, Koyilandy and Chembola of Kozhikode district. Torches were distributed to watchers for night observations, and sea turtle sticker were fixed on all the fishing boats to create awareness among fishermen. Each harbour was provided one display board with turtle conservation posters. An activity worth mentioning is that a 75 years old injured turtle was treated (leg amputation) by the department and allowed to recoup at Marine Turtle Interpretation Centre at Kolavi Palam.

Location/District	Activities carried out
Fishing Harbour, Beypore	Fixed display board to create awareness to conserve the sea turtle.
	Distributed torch to the watchers
Fishing Harbour, Vellayil	Fixed display board to create awareness to conserve the sea turtle
	Distributed torch to the watchers
	Distributed turtle conservation logo sticker for all the fishing boats
Fishing Harbour, Puthiyappa	Fixed display board to create awareness to conserve the sea turtle, distributed torch to the watchers
	Distributed turtle conservation logo sticker for all the fishing boats
Fishing Harbour, Koyilandy	Fixed display board to create awareness to conserve the sea turtle
	Distributed torch to the watchers
	Distributed turtle conservation logo sticker for all the fishing boats,
Marine Turtle Interpretation Centre	Rehabilitation support to the injured turtle for 4 months
Fishing Harbour, Chembola	Fixed display board to create awareness to conserve the sea turtle
	Distributed torch to the watchers
	Distributed turtle conservation logo sticker for all the fishing boats



II. Compensatory Funds

- a. **Setting up Permanent Nursery:** During 2020-2021, civil works were taken up in the permanent nursery in Mathottam forest office under the CAMPA fund. The activity was a spillover of the APO 2018-19. It included the construction of new poly house and repair of the old shade house & poly house, fiber/coir pith root trainers (630 nos.), excavation work, weed cleaning and concrete floor preparation and furniture. The activities have been physically verified.

Overall, an amount of Rs. 1.50 lakhs was allotted to the circle during the period, which was fully utilised.

Working Plan and Research

I. Protection of plantations and forests

Protection of research plots and Seed Production Areas: Under the component protection of plantations and forests, the various research plots and seed sources of different species maintained by the forest department were maintained using CAMPA funds. This was the first time the CAMPA funds were utilised to maintain the genetic assets available with the Department under the CAMPA. The research division has two circles. The north circle reported activities in 33 plots, while the south reported in 17 plots. Of the 33, 20 were assessed in the North, while all 17 were assessed in the south. The details with remarks of each plot are elaborated in the table.

Component/ Particulars of Work	GPS of the Location	Location	Area (ha)	Remarks
Research (North), Division				
Maintenance of Bamboo trial plot at Venmani	N11°49'42.8" E75°55'45.7"	Venmani	5.25	The trial plot established in 2003 comprises 7 species of bamboo namely <i>Gigantochola migroaliata</i> , <i>Dendrocalamus brandisii</i> , <i>D. giganteus</i> , <i>D. strictus</i> , <i>Thyrsostachys siamensis</i> , <i>Bambusa bambos</i> , <i>Bambusa membranaceous</i> in an area of 5.25ha. Protection to the trial has been ensured through creation of firelines (5.2 x 1100m). The trial is intact and well maintained. The records were verified and found correct.
Maintenance of Simaruba glauca plot at Venmani	N11°49'37.5" E75°55'46.0"	Venmani	5	The Simaruba glauca trial plot formed in 2001-02 in an area of 5 ha. The average height was 7 m and girth 32 cm. Protection to the trial has been ensured



Component/ Particulars of Work	GPS of the Location	Location	Area (ha)	Remarks
				through creation of firelines (5.2 x 500 m). The trial is intact and well maintained. The records were verified and found correct.
Maintenance of Permanent Preservation Plot Pine at Chandanathode	N11°50'97.5" E75°48'22.7"	Chandanathode	14	The pine trial plot established in 1955 in an area of 14 Ha. The species <i>Pinus oocarpa</i> planted in 2 ha in the year of 1955 and expanded the trial plot in 1986 by including the species <i>Pinus caribaea</i> in 12 Ha. The average height was 35 m and girth were 100 cm. No work was carried out in this trial using CAMPA fund.
Maintenance of Permanent Preservation Plot Andaman padoak at Nedumpoyil	N11°55'04.05" E75°45'11.5"	Nedumpoyil	0.36	The <i>Andaman padau</i> trial plot was established in the year 1939 and formed as Permanent Preservation Plot in 1954 in an area of 0.36 Ha with live 63 trees. The average height was 38 m and girth were 149 cm. Protection to the trial has been ensured through creation of firelines (5.2 x 280 m). The trial is intact and well maintained. The records were verified and found correct.
Maintenance of Permanent Preservation Plot Teak at Kolayad	N11°50'55.3" E75°40'97.0"	Kolayad	1	The teak trial plot was established in the year 1898 and formed as Permanent Preservation Plot in 1950 in an area of 1 Ha with remaining 107 trees. The average height was 38 m and girth were 212 cm. Protection to the trial has been ensured through creation of firelines (5.2 x 460 m). The trial is intact and well maintained. The records were verified and found correct.



Component/ Particulars of Work	GPS of the Location	Location	Area (ha)	Remarks
Maintenance of Permanent Preservation Plot arboratum at Vattapoyil	N11°50'18.3" E75°40'71.8"	Vattapoyil	0.25	The arboretum was established in an area of 0.25 ha with 49 evergreen tree species. The exact year of plantation was unknown. An estimate submitted under CAMPA for protection of the trial, but tender not processed due to low availability of fund.
Maintenance of Permanent Preservation Plot Rosewood at Pokalamalam	N11°44'10.1" E76°14'17.0"	Pokalamalam	5.25	The rosewood trial plot was formed as Permanent Preservation Plot in 1991 in an area of 5.25 ha with 65 trees per ha. Protection to the trial has been ensured through creation of firelines (5.2 x 625 m). The trial is intact and well maintained. The records were verified and found correct.
Maintenance of Permanent Preservation Plot (Experimental garden-Bit I & II) at Begur	N11°53'73.2" E76°04'35.2"	Begur	7.94	The teak trial plot established year was unknown and it was formed as Permanent Preservation Plot in 1956 in an area of 7.94 ha. The average height was 36 m and girth were 178 cm. Protection to the trial has been ensured through creation of firelines (5.2 x 2.2 km). The trial is intact and well maintained. The records were verified and found correct.
Maintenance of Permanent Preservation Plot Teak at Begur	N11°52'84.8" E76°04'66.6"	Begur	0.39	The teak trial plot was established in the year 1892 and formed as Permanent Preservation Plot in 1966 in an area of 0.39 ha with remaining 30 trees after the formation. The average height was 40 m and girth were 259 cm. An estimate has been submitted but no work have been carried out under CAMPA fund.



Component/ Particulars of Work	GPS of the Location	Location	Area (ha)	Remarks
Maintenance of Permanent Preservation Plot Mahagony at Kolayad	N11°50'53.6" E75°41'83.3"	Kolayad	10	The <i>Switenia macrophylla</i> plot was established in the year 1945 and was formed as Permanent Preservation Plot in 1992 in an area of 10 Ha. The average height was 24 m and girth were 310 cm. Protection to the trial has been ensured through creation of firelines (5.2 x 2130m). The trial is intact and well maintained. The records were verified and found correct.
Maintenance of Research Plot at Mallankuzhy	N10°42'33.7" E76°08'59.9"	Mallankuzhy	6	Not assessed / evaluated
Maintenance of Research Plot at Madathikkunnu	N10°37'29.9" E76°17'28.7"	Madathikkunnu	8	Not assessed / evaluated
Maintenance of Research Plot at Kudampuli at Mundoor	N10°50'16.9" E76°34'8.3"	Mundoor	1.14	Not assessed / evaluated
Maintenance of Research Plot of Njaval at Puliampully	N10°52'19.8" E76°35'36.3"	Puliampully	2	The <i>S.cumini</i> trial established in 2006 was over an area of 4ha with 1000 plants /ha. Fire broke out two years back in the plantation and 2 ha was destroyed. The remaining 2ha area is maintained. Protection measures include seasonal employment of watchers, creation of a 540 x 5.2 m fireline. The trials is frequently grazed; hence protection from grazing needs to be addressed. Gap planting will be carried out during the planting season in 2021-22.
Maintenance of Research Plot of Bamboo at Kunnukadu	N10°50'51.0" E76°34'27.3"	Kunnukadu	4.18	Not assessed / evaluated
Maintenance of in-situ conservation plot at Vallikkode and Malampuzha	N10°48'55.5" E76°35'51.7"	Malampuzha	49.58	Not assessed / evaluated



Component/ Particulars of Work	GPS of the Location	Location	Area (ha)	Remarks
Maintenance of Research Plot of Mavu at Munnoorkodu	N10°51'9.0" E76°22'36.9"	Munnoorkodu	2.5	Not assessed / evaluated
Maintenance of research plot at Virippaka	N10°51'9.0" E76°17'26.7"	Virippaka	3	Not assessed / evaluated
Vadapuram Mavu Kudampuli Plot in Nilambur	N11°06'56.39" E76°07'34.39"	Nilambur	3	Not assessed / evaluated
Maintenance of Dalbergia plots at Vadapuram, Nilambur Range	N11°09'23.97" E76°07'34.36"	Vadapuram	0.8	Not assessed / evaluated
Teak trial Plot at Ramallur in Eadavanna Range	N11°12'58.60" E76°12'22.57"	Ramallur	2	Not assessed / evaluated
Maintenance of Seedling seed orchard & Clonal Seed Orchard 2000 at Old Amarambalam, Kalikavu Range	N11°08'01.79" E76°10'01.2"	Old Amarambalam	7.5	Not assessed / evaluated
Maintenance of plus trees plots (Thanni, Karimaruthu), Nilambur Range	N11°10'11.35" E76°10'19.09"	Nilambur	2.5	Not assessed / evaluated
Maintenance of 1986 Teak Provenance Trial Plot Nellikkuth, Vazhikadavu Range	N11°12'53.1" E76°12'37.33"	Nellikkuth	5	Not assessed / evaluated
Maintenance of 1976 TP -TSPA Mathamangalam of Chedalath Range	N11°45'08.7" E076°13'27.1"	Mathamangalam	41.2	The Teak trial plot was established in the year 1976 and converted in to Seed Production Area in 2012 in an area of 41.2 Ha. The average height was 20 m and girth were 110 cm. Protection of the trial has been ensured through creation of firelines (5.2 x 2775 m). The trial is intact and well maintained. The records were verified and found correct.



Component/ Particulars of Work	GPS of the Location	Location	Area (ha)	Remarks
Maintenance of 1977 TP -TSPA Mathamangalam of Chedalath Range	N11°45'46.4" E076°13'44.1"	Mathamangalam	38.1	The teak trial plot was established in the year 1977 and converted in to Seed Production Area in 2012 in an area of 38.1 Ha. The average height was 30 m and girth were 142 cm. Protection to the trial has been ensured through creation of firelines (5.2 x 3.02 Km). The trial is intact and well maintained. The records were verified and found correct.
Maintenance of 1977 TP -TSPA Changambam of Chedalath Range under Research Manathavady Range	N11°49'01.9" E076°08'12.2"	Changambam	61.5	The teak trial plot was established in the year 1981 and converted in to Seed Production Area in 2012 in an area of 61.5 Ha. The average height was 30 m and girth were 125 cm. 900 kg of seed collected from this trial and handed over to KFRI using CAMPA fund. The records were verified and found correct.
Maintenance of 1981 Bit 1TP -TSPA Begur of Begur Range under Research Manathavady	N11°52'57.52" E076°33'43.2"	Begur	51.5	The teak trial plot was established in the year 1981 and converted in to Seed Production Area in 2012 in an area of 51.5 Ha. The average height was 32 m and girth were 133 cm. 2004 kg of seed collected from this trial and handed over to KFRI using CAMPA fund. The records were verified and found correct.
Maintenance of 1970 TSPA, Nedunkayam, Karuli Range	N11°17.845 E076°20.114	Nedunkayam	55.4	The teak trial plot was established in the year 1970 and converted in to Seed Production Area in 2012 in an area of 55.4 Ha. The average height was 30 m and girth were 125 cm. 900 kg of seed collected from this trial and handed over to KFRI using



Component/ Particulars of Work	GPS of the Location	Location	Area (ha)	Remarks
				CAMPA fund. The records were verified and found correct.
Maintenance of 1973 TSPA, Nedunkayam Karulai Range	N11°16.940 E076°20.345	Nedunkayam	65	The teak trial plot was established in the year 1981 and converted in to Seed Production Area in 2012 in an area of 61.5 Ha. The average height was 30 m and girth were 125 cm. 900 kg of seed collected from this trial and handed over to KFRI using CAMPA fund. The records were verified and found correct.
Maintenance of 1970 TSPA, Poolakkapara, Karuali Range	N11°21.722 E076°22.031	Poolakkapara	43	The teak trial plot was established in the year 1981 and converted in to Seed Production Area in 2012 in an area of 61.5 Ha. The average height was 30 m and girth were 125 cm. 900 kg of seed collected from this trial and handed over to KFRI using CAMPA fund. The records were verified and found correct.
Maintenance of 1972 TSPA Nedumkayam	N11°16.943 E076°20.343	Nedumkayam	9	The teak trial plot was established in the year 1981 and converted in to Seed Production Area in 2012 in an area of 61.5 Ha. The average height was 30 m and girth were 125 cm. 900 kg of seed collected from this trial and handed over to KFRI using CAMPA fund. The records were verified and found correct.
Maintenance of 1971 TSPA, Cherupuzha, Karulai Range	N11°16.855 E076°12.555	Cherupuzha	20	The teak trial plot was established in the year 1981 and converted in to Seed Production Area in 2012 in an area of 61.5 Ha. The average height was 30 m and girth



Component/ Particulars of Work	GPS of the Location	Location	Area (ha)	Remarks
				were 125 cm. 900 kg of seed collected from this trial and handed over to KFRI using CAMPA fund. The records were verified and found correct.
Research (South), Division				
Maintenance of 2000 TCSO at Decentmukku	N08°50.48.4' E077°01.57.4'	Decentmukku	1.72	The teak trial was established in the year 2000 in an area of 1.72 ha with 600 plants, out of which 60 plants were dead. The average height was 13.2 m and girth were 66.2 cm. Protection measures include seasonal employment of watchers, creation of a 600 x 3m fireline. Efficiency of fire line created is good. Weeding was carried out whenever fund is released. When compared to the unworked adjacent plot the weeds were 32 percent less. The common weeds found were <i>Chromolaena odorata</i> , <i>Clidemia hirta</i> , <i>Glycosmis pentaphylla</i> , <i>Acacia caesia</i> , <i>Tabernaemontana alternifolia</i> and <i>Ziziphus oenoplia</i> . The trials are occasionally grazed; hence protection from grazing needs to be addressed.
Maintenance of 2000 Medical Demonstration Garden at Chozhiyakode	N08°54.11.2' E077°04.07.2'	Chozhiyakode	4.5	The medicinal plants garden was established in the year 2004 covering an area of 4.5 ha. The major medicinal plant species observed were <i>Pterocarpus santalinus</i> , <i>Sesbania grandiflora</i> , <i>Gmelina arborea</i> , <i>Murraya koeinigi</i> , <i>Phyllanthus emblica</i> , <i>Terminalia bellirica</i> , <i>Dysoxylum beddomei</i> , <i>Baliospernum axilliere</i> , <i>Caesalpinia sappan</i> , <i>Butea</i>



Component/ Particulars of Work	GPS of the Location	Location	Area (ha)	Remarks
				<i>monosperma, Aegle marmelos, Garcinias gummigutta, Oroxylum indicum, Pongamia pinnat and Justicia adhatoda</i> . A fireline of 1 km x 5.2m was created during the year 2020-2021 as protection measure. Weeding was also carried out during the same time. The common weeds found were <i>Curculigo orchioides, Chamaecostus sps, Tabernaemontana alternifolia, Ziziphus rugosa, Ziziphus oenoplia, Clidemia hirta</i> . When compared to the unworked adjacent plot the weeds were only 39 percent less.
Maintenance of 2016 TCSO at Central Nursery, Kulathupuzha	N08°54.02.2' E077°03.49.0'	Kulathupuzha	0.75	The teak trial was established in the year 2016 in an area of 0.75 ha with 770 plants, out of which 92 plants were dead. The average height was 10.8 m and girth were 36 cm. Protection measures include seasonal employment of watchers, creation of a 500 x 5.2m fireline. Weeding was carried out whenever fund is released. The common weeds found were <i>Acacia mangium, Glycosmis pentaphylla, Clerodendrum infortunatum, Croton hirtus, Axonopus compressus, Chromolaena odorata, Mimosa diplotricha, Tabernaemontana alternifolia, Spermacoce hispida, Lantana camara, Canthium sps, Urena lobata and Mimosa pudica</i> . When compared to the unworked adjacent plot the weeds were 26 percent less. So, the weeding is only partially effective.



Component/ Particulars of Work	GPS of the Location	Location	Area (ha)	Remarks
Maintenance of 2019 Trial Plots of Teak Clones under custody of KFDC Peringamala	N08°43.677' E077°03.744'	Peringamala	2	The teak tissue culture trial was established in the year 2019 in an area of 0.52 ha with 1000 plants, out of which 137 plants were dead. The average height was 4.35 m and girth was 10.9 cm. Protection measures include seasonal employment of watchers, creation of a 500 x 5.2m fireline. Weeding was carried out in the year 2020-21. The common weeds found were <i>Mimosa pudica</i> , <i>Mikania micrantha</i> , <i>Chromolaena odorata</i> , <i>Clerodendrum infortunatum</i> , <i>Hibiscus hispidissimus</i> , <i>Axonopus compressus</i> , <i>Cyperus rotundus</i> . When compared to the unworked adjacent plot the weeds were 19 percent less. So, the weeding is only partially effective. The weeds have started to grow back so weeding may be done more frequently.
Maintenance of 1980 Sandal Regeneration trial plot at Anakkalpetty	N10°14.767' E077°09.767'	Anakkalpetty	2	Naturally grown trees of sandal converted to sandal regeneration trial plot in the year 1980 in an area of 2 Ha. Protection of the trial has been ensured through creation of firelines (5.2 x 700 m). Collected 4.420 kg of seed using CAMPA fund and handed over to KFRI. No regeneration observed in the trial due to deer grazing; hence protection from grazing needs to be addressed. The records were verified and found correct.



Component/ Particulars of Work	GPS of the Location	Location	Area (ha)	Remarks
Maintenance of 1980-81 Sandal Seed Stand at Anakkalpetty	N10°14.780' E77°09.366'	Anakkalpetty	3.2	Naturally grown trees of sandal converted to sandal seed stand in the year 1980-81 in an area of 3.2 Ha. Protection of the trial has been ensured through creation of firelines (5.2 x 750 m). Collected 5 kg of seed using CAMPA fund and handed over to KFRI. The records were verified and found correct.
Maintenance of 1982 Sandal Regeneration Trial Plot at Nachivayal	N10°14.969' E077°09.392'	Nachivayal	5.9	Naturally grown trees of sandal converted to sandal regeneration trial plot in the year 1982 in an area of 5.9 Ha. Protection of the trial has been ensured through creation of firelines (5.2 x 1000 m). Collected 9.580 kg of seed using CAMPA fund and handed over to KFRI. No regeneration observed in the trial due to deer grazing; hence protection from grazing needs to be addressed. The records were verified and found correct.
Maintenance of 1983 Sandal Seed Stand at Nachivayal	N10°15.279' E77°09.489'	Nachivayal	4.4	Naturally grown trees of sandal converted to sandal seed stand in the year 1983 in an area of 4.4 Ha. Protection of the trial has been ensured through creation of firelines (5.2 x 1000 m). Collected 8.980 kg of seed using CAMPA fund and handed over to KFRI. The records were verified and found correct.
Maintenance of 1981 Sandal Seed Stand at Anakkalpetty	N10°14.956' E77°09.392'	Anakkalpetty	5.5	Naturally grown trees of sandal converted to sandal seed stand in the year 1981 in an area of 5.5 Ha. Protection of the trial has been ensured through creation of firelines



Component/ Particulars of Work	GPS of the Location	Location	Area (ha)	Remarks
				(5.2 x 1000 m). Collected 9.420 kg of seed using CAMPA fund and handed over to KFRI. The records were verified and found correct.
Maintenance of 1982 Sandal Seed Stand at Anakkalpetty	N10°14.963' E77°09.380'	Anakkalpetty	4.4	Naturally grown trees of sandal converted to sandal seed stand in the year 1982 in an area of 4.4 Ha. Protection of the trial has been ensured through creation of firelines (5.2 x 1000 m). Collected 5.940 kg of seed using CAMPA fund and handed over to KFRI. The records were verified and found correct.
Maintenance of 1985 Sandal Seed Stand at Nachivayal	N10°15.184' E77°09.462'	Nachivayal	3.3	Naturally grown trees of sandal converted to sandal seed stand in the year 1985 in an area of 3.3 Ha. Protection of the trial has been ensured through creation of firelines (5.2 x 750 m). Collected 8.520 kg of seed using CAMPA fund and handed over to KFRI. The records were verified and found correct.
Maintenance of 1987 Sandal Regeneration Trial Plot at Anakkalpetty	N10°14.953' E077°09.181'	Anakkalpetty	4.4	Naturally grown trees of sandal converted to sandal regeneration trial plot in the year 1987 in an area of 4.4 Ha. Protection of the trial has been ensured through creation of firelines (5.2 x 1000 m). Collected 9.940 kg of seed using CAMPA fund and handed over to KFRI. No regeneration observed in the trial due to deer grazing; hence protection from grazing needs to be addressed. The records were verified and found correct.



Component/ Particulars of Work	GPS of the Location	Location	Area (ha)	Remarks
Maintenance of 2005 Gene Bank of Fruit bearing Trees at Chully	N10°15.698' E76°27.980'	Chully	1	The fruit plants garden was established in the year 2005 covering an area of 1ha with 175 trees. The species observed were <i>Magnifera indica</i> , <i>Artocarpus hetrophyllus</i> , <i>Garcinia gummigutta</i> . However, the <i>Garcinia gummigutta</i> trees did not survive. A fireline was created as protection measure under a different scheme. Weeding was carried out during 2021. The common weeds found were <i>Curcuma angustifolia</i> , <i>Helictres isora</i> , <i>Clerodendrum infortunatum</i> , <i>Pseudarthria viscia</i> , <i>Asystasia gangetica</i> , <i>Glycosmis pentaphylla</i> , <i>Ziziphus oenoplia</i> , <i>Hemidesmus indicus</i> , <i>Chromolaena odorata</i> , <i>Lantana camara</i> , <i>Canthium sps</i> , <i>Mimosa pudica</i> . When compared to the unworked adjacent plot the weeds were only 19 percent less. So, the weeding is only partially effective. The weeds have started to grow back so weeding may be done more frequently.
Maintenance of 2014-15 Teak CSO and CHG plot at Chettikkulam	N10°20.434' E76°23.382'; N10°20.488' E76°23.473'	Chettikkulam	1.1	Two teak trial established by KFRI as hedge garden in the year 2014 in an area of 1.1 ha with 770 plants, out of which 62 plants were dead. The average height was 7.8 m and girth was 38.3 cm. Another plot close by is CSO of teak with average height 4.85 m and girth 32.6 cm. During 2017 KFRI handed over the plot to research Division of KFD. Weeding was carried out



Component/ Particulars of Work	GPS of the Location	Location	Area (ha)	Remarks
				whenever fund is released. The common weeds found were <i>Macaranga peltata</i> , <i>Chromolaena odorata</i> , <i>Oplismenus hirtellus</i> , <i>Clitoria ternatea</i> , <i>Mikania micrantha</i> , <i>Zizyphus oenoplia</i> , <i>Zizyphus rugosa</i> , <i>Asystasia gangetica</i> , <i>Spermacoce hispida</i> , <i>Breynia</i> sps and <i>Mimosa diplotricha</i> . When compared to the unworked adjacent plot the weeds were 32 percent less. So, the weeding is only partially effective.
Maintenance of 2016 Experimental plot for comparative study of teak plantations raised through teak stump and root trainer seedlings site quality-II at Karikkadavu	N10°22.546' E76°27.450'	Karikkadavu	2	The teak trials were established in the year 2016 in an area of 2 ha each as an experimental plot for a comparative study of teak plantations raised through teak stumps and root trainer seedlings. The plots were elephant infested. All the plants were damaged and stunted with multiple branching. It was not in a condition for assessment and study.
Maintenance of 2016 Experimental plot for comparative study of teak plantations raised through teak stump and root trainer seedlings site quality-IV at Karikkadavu	N10°22.565' E76°27.216'	Karikkadavu	2	The red sander trial was established in the year 1983 in an area of 1.07 ha. Weeding was carried out whenever fund is released. The common weeds found were <i>Chasalia curviflora</i> , <i>Macaranga peltate</i> , <i>Asystasia gangetica</i> , <i>Chamaecostus</i> sps, <i>Clerodendrum infortunatum</i> , <i>Annona squamosa</i> , <i>Glycosmis pentaphylla</i> , <i>Cayratia pedata</i> , <i>Curcuma angustifolia</i> , <i>Achyranthes bidentata</i> . When
Maintenance of 1983 <i>Pterocarpus santalinus</i> permanent preservation plot at Palalpilly	N10°25.380' E76°20.567'	Palalpilly	1.07	



Component/ Particulars of Work	GPS of the Location	Location	Area (ha)	Remarks
				compared to the unworked adjacent plot the weeds were 35 percent less. The weeding is only partially effective.

In addition to the aforementioned, two trials worked using CAMPA funds were also assessed.

Component/ Particulars of Work	GPS of the Location	Location	Area (ha)	Remarks
Comparitive study of Teak root trainer and stump experimental plot, Panniyode	N11°50'05.98" E75°40'32.36"	Panniyode, Kannur, North Research Division	2	The teak trials were established in the year 2015 in an area of 2 Ha (1 ha each) as an experimental plot for a comparative study of teak plantations raised through teak stumps and root trainer seedlings with 2654 stumps and 2628 seedlings. Weeding was carried out in the year 2020-21. The common weeds found were <i>Chromolaena odorata</i> , <i>Dichrostachys</i> and common grass. When compared to the unworked adjacent plot the weeds were 96.5 percent less. So, the weeding is clearly effective. The records were verified and found correct.
Maintenance of 1985 Sandal seed stand Anakkalpetty	N10°14'54.60" E77°09'18.91"	Anakkalpetty, Marayoor	1.3	Naturally grown trees of sandal converted to sandal seed stand in the year 1985 in an area of 1.3 Ha. Protection of the trial has been ensured through creation of firelines (5.2 x 500 m). Collected 9 kg of seed using CAMPA fund and handed over to KFRI. The records were verified and found correct.

Overall, an amount of Rs. 57.46 lakhs was allotted to the circle during the period, with 96.75 per cent expenditure.



1976 TSPA at Mathamangalam



Andaman Padauk at Nedumpoyil



1977 TSPA at Mathamangalam



Bamboo trial plot at Venmani



Permanent Preservation Plot at Begur



Rosewood trial at Pokalamalam



PPP at Vattapoyil



Teak Experimental trial at Mananthavady



1980 Sandal Reg Plot Anakkalpetty Marayur



1985 Sandal seed stand Anakkalpetty Marayur



Seed collection details from Marayur



Sandalwood regeneration plot at Marayoor



Teak experimental plot at Peringamala



TCSO at Ariyankavu



Nellikuth-1986 Teak Provenance Trial Plot



Poolallapara 1970 TSPA



Cherupuzha-1971 TSPA



Nedunkayam 1970 SPA



Amaramalam TSSO



Amaramalam TCSO



Vadapuram Mavu Kudampuli Plot in Nilambur



Dalbergia plots at Vadapuram, Nilambur Range



Estimate for the construction of 1000 m² Soil/Water Conservation Structures at Marayoor

Name of work: 1000 m² SWC structure construction 2019-20
Name of division: 7 District Forest Office (Marayoor) Forest Division (FO) Marayoor

Date of assessment: 20/10/2019
Book completed on: 20/10/2019
Book completed by: [Signature]

Particulars	Unit	Rate	Measurement up to date				Contract or Bill
			A	B	C	D	
1000 m ² SWC structure construction	m ²	14047.00					
5% Provision for work		982.00					
10% Provision for work		1507.90					
6.5% Provision for work		1074.50					
Total		17606.56					

net 6.5% above estimate measured by [Signature]

Regional Office Marayoor

Responsible unit: [Signature]

Project Completion of Forest Department (Marayoor)

M-book maintenance details in Marayoor

5. Recommendations and Suggestions

The proposed evaluation had multiple objectives. *Inter alia*, this evaluation examined the impact of various activities in terms of increase in vegetation spread, soil and water conservation measures, infrastructure development, capacity building and the extent to which the objectives of CAMPA were achieved. The qualitative data were used to support further analysis of variations across regions and categories. The following are the recommendations and suggestions arising out of this present monitoring and evaluation of CAMPA activities in Kerala

- Soil & Water Conservation (SWC) Works:** The present APO focussed more on the maintenance of the existing SWC structures. The SMC activities, in most places, have increased the vegetation, indicating the moisture retention impacts. Since most of the structures are in difficult areas, allocation towards such maintenance activities could be enhanced.
- Connectivity:** The present APO improved connectivity through construction of bridges, trek paths and forest roads. Many of these structures are very crucial as they connect different ranges within a division. Such structures deserve special attention and need stronger reinforcement in the face of frequent floods.
- Most of the water-holding structures are old, and not capable of holding water to the designed potential. Such structures may be reworked.
- The river stabilisation process in many circles could be encouraged in the coming years as severe erosion has been observed in many stretches.
- Improvement of Wildlife Habitat:** Activities undertaken under this component could be given more emphasis, wider publicity and involving local public. This would bring more visibility to the conservation efforts of the department.
- Awareness programmes involving the local communities and imparting trainings to staff have been taken up consistently. It would be more effective if a group of trainers are empowered from the communities who would then undertake to train others within the communities under the supervision of the forest department staff.
- Regional and State level workshop could be organized for prioritisation of species for Afforestation/Enrichment planting in the forest areas by involving local



communities, field staff of SFDs, Forestry Research institutions, NGOs and other stakeholders.

- (h) Technical support can be obtained from Forestry Research institutions for transferring/developing seed handling techniques and nursery technologies for indigenous species prioritized for Afforestation / Enrichment planting.
- (i) In remote locations and in locations with high damages to the planted seedlings by wild animals, manual seeding of indigenous species using "Seed Ball Technologies" could be attempted.
- (j) Maintenance costs should be linked to survival rates and strict guidelines should be framed regarding replanting in failed sites.
- (k) Maintenance efforts in plantations were not effective in many places. It is essential to provide maintenance provisions for five years so that the purpose is well achieved.
- (l) Fodder Plantations should be prioritized in elephant corridors which would act as deterrents to their entry into human-habitation.
- (m) **Protection of Forests and Wildlife:** Anti-Poaching Camps (APC) have been established throughout the state in almost all divisions. The APCs are sufficiently equipped with staff and modern equipment for protection activities. There is a need to regularly support the staff with protective gears and field survival kits.
- (n) GIS-based forest survey monitoring has been attempted in the state. The staff report that this has helped prevent, contain and douse forest fires in many places. All staff have to be provided basic training in the use of advanced methods of monitoring for protection. The procedures of fire management / fire protection can be extended to the forest fringe area inhabitants in addition to school/ college students.
- (o) Provisions need to be made in the budget for procuring more field vehicles, as a dearth in availability of these was observed.
- (p) In almost all divisions, the maintenance of buildings, roads, SMCs are taken up regularly. A fixed cycle could be adopted for maintenance and repair of civil works, rather than taking a routine annual maintenance.
- (q) A decentralised allotment to the social forestry wings may be thought of, to meet the local needs for each division.
- (r) Incentives to temporary staff associated with the department's activities for more than ten years.
- (s) Digitisation of records would enable easy access to information.
- (t) Internal evaluation needs to be strengthened and a database must be established to monitor the changes. This would enable regular assessment of seasonal works like protection camps, fire protection works etc. Further, this report should also be made available during third party monitoring and evaluation.
- (u) Permanent structures created under CAMPA should be displayed/indicated through suitable markings to ensure proper visibility of CAMPA-funded activities.



ANNEXURES

Annexure I

Minutes of meeting
Third Party Evaluation of State CAMPA Activities in Kerala
23rd November 2021
Venue: VC Hall, IFGTB

Participants:

IFGTB	Kerala Forest Department
Dr. C. Kunhikannan, Director IFGTB	Shri. Rajeesh Ravindran IFS, CEO CAMPA & APCCF
Dr. R. Yasodha, Scientist G & GCR	Ms P. T. Sreelekha, ACF, SA&NO, CAMPA
Dr. JP Jacob, Scientist G – <i>on leave</i>	
Shri. Rajesh Gopalan IFS - <i>online</i>	
Dr. C. Buvaneshwaran, Scientist F	
Dr. Kannan CS Warriar, Scientist F	
Dr. A. Karthikeyan, Scientist F	
Dr. D.R.S. Sekar, Scientist F – <i>not attended</i>	
Dr. Rekha R Warriar, Scientist F	
Dr. S. Saravanan, Scientist F	
Dr. A. Rajasekaran, Scientist F	

An online meeting was held on 23rd November 2021 at 10.00 am to discuss the modalities of third party evaluation of CAMPA-related works undertaken in Kerala by Kerala Forest Department.

Under CAMPA, various activities have been taken up to accelerate preservation of natural forests, management of wildlife, infrastructure development in the sector and other allied works.

Shri Rajesh Ravindran, CEO-CAMPA listed the different circles where CAMPA activities have been taken up. He sought evaluation of different protection activities, labour deployed for watch and ward, fire protection, and site suitability, especially regarding



ecorestoration of monoculture plantations, the species planted and their performance, etc.

Dr. S. Saravanan, Scientist F, presented the need for third-party evaluation to assess the various activities taken under State CAMPA. He elaborated on the requirements of the National CAMPA Authority concerning the monitoring while carrying out the evaluation. He also detailed the methodology for the evaluation process and the extent of sampling for the different activities taken under CAMPA based on the guidelines provided by the IIFM, Bhopal with necessary modifications. He also informed that IFGTB has experience working towards the evaluation of NAP of the NAEB in Kerala and providing consultancies to various industries. A team has been formed for the execution of the work.

This was followed by a discussion on the modalities for execution of the evaluation. The following points emerged.

1. An MoU would be signed between the Kerala Forest Department and IFGTB towards the activity. IFGTB would complete the evaluation within a period of six months from the date of release of funds.
2. State CAMPA would provide information, plantation journals, maps, measurement books, and all relevant records pertaining to the CAMPA works from 2009 to the present. Co-ordination in the state, local travel, lodging, and field support of personnel would also be provided by the Department.
3. The Department looks forward to APO-wise reports. Thus, six reports are envisaged at the end of the evaluation.
4. The sampling intensity was agreed upon.
5. A proposal including financial requirements and draft MoU would be sent to the CEO-CAMPA for perusal.
6. The CEO-CAMPA would visit IFGTB during the last week of November, 2021 for a detailed discussion and finalising the proposal.



Annexure II

Timelines of the Evaluation

Milestone	Activity
September 2021	Identification of IFGTB for Third party Monitoring
November 2021	Finalisation of activities under the Third Party Monitoring
January 2022	Acceptance of Project proposal of IFGTB for Monitoring & Evaluation of CAMPA activities in Kerala . Approval of the MoU.
March 2022	Signing of the MoU and Release of the First Instalment
April to June 2022	Field works
July to September 2022	Report preparation
September 2022	Release of the Second Instalment
October 2022	Submission of Final Report

Annexure III

APO-wise components implemented in various Circles

Components	Particulars
Better connectivity	Maintenance of trek path/patrolling route
	Maintenance of Forest Roads Capacity Building
	Awareness Program/ training to staff and VSS/EDC members
	Conducting Nature Camps to School and College children
Catchment Area Treatment Plan Fund	River Bank Stabilization
Compensatory Afforestation Funds	Compensatory Afforestation Works (Creation - Preparatory works)
	Compensatory Afforestation Works (Maintenance)
Forest and Wildlife Protection	Soil and Moisture Conservation, Gully Plugging etc.
Forest Fire Prevention and control operation	Creation of fire-break
	Engaging Fire Gang through participatory forest management
	Fire Awareness Campaign
	Fire Fighting Equipment
Human Animal Conflict Mitigation	Engaging watchers to mitigate human animal interface
	Protective Gears for wildlife conflict mitigation staff
	Purchase of Equipment/Ration for Rapid Response Teams (RRTs)
Improvement of Wildlife Habitat	Bird survey and conservation
	Eradication of Exotic Weeds
	Maintenance of Vayal (marshy grasslands which are source of fodder for herbivores)
	Sea Turtle Conservation



Components	Particulars
Protection of plantations and forests	Eco-restoration activities in monoculture plantations by planting indigenous/misc. species/preparatory works
	Field survival kits and field Equipment
	Interior Campshed maintenance
	Organising Joint Patrolling and Raids along inter-divisional and interstate boundaries
	Protection of Research Plots and Seed Production Areas
	Provision of field ration for interior camps

Annexure IV

Monitoring and evaluation teams

Teams	1	2	3	4	5
Region	Southern Circle, Kollam (1)	Southern Circle, Kollam (2)	High Range Circle, Kottayam (1)	High Range Circle, Kottayam (2)	FD PT, Kottayam (1)
Team Co-ordinators (Dr/Mr/Ms)	C. Buvanewaran	Rekha R Warriar	Kannan CS Warriar	K. Murali Shankar	S. Saravanan
Team Leaders (Dr/Mr/Ms)	A. Balasubramanian	R. Sumathi	K. Gireesan	A. Mayavel	S.P. Subramani
Member	N. Sivadasan	L. Vivek	K. Sureshkumar	J. Soosairaj	K. Senthil
Member	V. Mareeswaran	S. Sudha	K. Gopalakrishnan	P. Vignesh	M. Suryaprakash
Member	S.S. Abijith	R.G. Anitha	T. Pradeep	K.R. Shankar	R. Ariharasuthan
Member			C. Muthumanikam	M. Vishnu	M. Mahalingam
Team Co-ordinator (KFD)	Fen Antony, ACF	Fen Antony, ACF	KS Subash, ACF	Subash, ACF	Sandeep.S, ACF



Teams Region	6 FD PT, Kottayam (2)	7 Agasthyavanam Biological Park	8 Social Forestry, Southern Region, Kollam	9 Central Circle, Thrissur	10 Social Forestry, Central Region, Thrissur
Team Co-ordinators (Dr/Mr/Ms)	N.V. Mathish	A. Rajasekaran	A.C. Surya Prabha	D. Raja Suguna Sekar	J. Sriram
Team Leaders (Dr/Mr/Ms)	S.P.Subramani	Muhammad Ali	P. Chandrasekar Noushad	B. Deeparaj	A. Mayavel
Member	K. Senthil	P. Manoharan	J. Soosairaj	P. Malliga	R. Abinaya
Member	M. Suryaprakash	L. Mahalingam	P. Vignesh	S. Pragadeesh	C.V. Vijayam
Member	R. Ariharasuthan	S. Selvakumar	K.R. Shankar	R. Kalaiselvi	R. Sathishkumar
Member	M. Mahalingam	N. Vijayanand	M. Vishnu	C. Thamocharan	Rudranath, V.R.
Team Co-ordinator (KFD)	Sandeep.S, ACF	Ajith.N , ACF	Rohini. GR, ACF	V.P. Jayaprakash, ACF	Chinnu Janardhanan, ACF

Teams Region	11 Social Forestry, Northern Region, Kannur	12 Northern Circle, Kannur	13 Eastern Circle, Palakkad	14 Wildlife Circle, Palakkad	15 Research Division N and S, & Head quarters
Team Co-ordinators (Dr/Mr/Ms)	Madhavraj G. R	A. Karthikeyan	Rekha R Warriar	Rekha R Warriar	JP Jacob
Team Leaders (Dr/Mr/Ms)	K.N. Ashirth	R. Archana	S.Lalitha	A. Shanthi	K. Shanthi & Muhammad Ali Noushad
Member	Srijita Ganguly	C. Rajesh	M. Ganesan	R. Velumani	M.V. Vineetha
Member	M. Jeyakumar	S.M. Paulraj	N. Sudha	A. Sathish	P. Vipin
Member	V. Abirami	Remya T Radhan	Mishra Avinash	K. Rajasekaran	C. Kandasamy
Member	C.K. Suresh	M. Manikandan	S. Ajay		T. Govindaraj
Team Co-ordinator (KFD)	Sunil Kumar. K, ACF	Ajith K Raman, ACF	K. Manoj, ACF	Sanall.P., ACF	Adersh. M, ACF

Report Preparation

Dr C. Kunhikannan, Director
Dr R. Yasodha, Scientist G & GCR
Dr Rekha R Warriar, Scientist F

Editorial Assistance

Mrs R. Sumathi, Chief Technical Officer



