

# **Third Party Monitoring and Evaluation of CAMPA Plantations and Other Activities**

**for the period  
2016-2018**

Submitted to  
**Kerala Forests & Wildlife Department (CAMPA)**



**ICFRE - INSTITUTE OF FOREST GENETICS AND TREE BREEDING**

(Indian Council of Forestry Research and Education)  
Coimbatore – 641002



**October 2022**



# **Third Party Monitoring and Evaluation of CAMPA Plantations and Other Activities**

**for the period  
2016-2018**

Submitted to  
**Kerala Forests & Wildlife Department (CAMPA)**



**ICFRE-Institute of Forest Genetics and Tree Breeding**

(Indian Council of Forestry Research and Education)

Coimbatore – 641002

**October 2022**







डॉ. सि. कुडिकण्णन  
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 years 2016-2017 & 2017-2018, which the MoEFCC, GoI approved. As per the APOs, the state planned various activities, including compensatory afforestation, soil and moisture conservation, biodiversity conservation, awareness campaigns on forests, wildlife and the environment, eradication of invasive alien weeds, river bank 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 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. 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 from 2016 to 2018. 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 finalizing the formats for assessment 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 Vana Samrakshana Samidi 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	12
Central Circle, Thrissur	14
High Range Circle, Kottayam	14
Southern Circle, Kollam	18
Wildlife Circle, Palakkad	22
Field Director Project Tiger, Kottayam	26
Agasthyavanam Biological Park Circle, Thiruvananthapuram	31
Social Forestry, Central Circle, Ernakulam	36
Social Forestry, Southern Circle, Kollam	37
Social Forestry, Northern Circle, Kozhikode	38
Recommendations	38
ANNEXURES	40







## 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 (2016-18)
2.	Period of evaluation work	Signing of MoU – March 2022 Field works – April to June 2022 Report preparation – July to September 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"> <li>To evaluate different plantations established under CAMPA in different forest divisions of Kerala.</li> <li>To evaluate the civil structures (buildings and soil &amp; water conservation structures) established under CAMPA in different forest divisions of Kerala.</li> <li>To suggest for improvement in quality of plantations for future.</li> </ul>
6.	Area covered 25 territorial forest divisions.	14 social forestry divisions. 11 wildlife divisions.
7.	Sample size	<p><b>Plantation:</b> 20% plantation randomly selected from various divisions. Sampling intensity for evaluation is nearly 10% for block plantations. For every hectare (ha) of plantation, the evaluation to be done on a 30 x 30 m plot. In the case of a linear plantation, evaluation of every 10<sup>th</sup> tree/planted sapling of each row for 25% of its length per running km basis.</p> <p><b>Soil and Moisture Conservation (SMC) activities:</b> 20% of SMC works evaluated in each division based on random selection from measurement book (Mbook).</p> <p><b>Eradication of weeds:</b> Density assessment and plot transects.</p> <p><b>Forest protection:</b> 10% of all fire lines evaluated in each division.</p>
8.	Findings	<ul style="list-style-type: none"> <li>The quality of departmental works was mostly high (82%)</li> <li>Check-dams and gullies are the major SMC works taken up.</li> <li>The involvement of the VSS in various department activities has ensured a participatory approach to the protection and conservation of forests.</li> <li>The activities undertaken were minimal due to delayed release of funds.</li> </ul>



ICFRE - IFGTB



## 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 APO for the period 2016-17 to 2017-18 were approved vide No. 15-2(18)/2017-CAMPA dated 18.12.2017.

The Government of India released **Rs. 6,22,25,000** for the period 2016 to 2018 to Kerala to implement CAMPA Activities.

### The Assignment

As a range of activities were taken up under CAMPA, a technical evaluation of the activities by a third party was considered essential. 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 specifically 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 Vana Samrakshana Samidi 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 such as planning and decision making, implementation, monitoring and evaluation. This included Divisional Forest Officers (DFOs), Forest Range Officers (FROs), Forest Beat Officers (FBOs), Foresters, Forest Guards, etc.
- ◆ **Field Observation:** Data on survival, field measurements to assess growth in different plantations, condition of physical structures in 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 2016 to 2018

- ◆ The total funds received from the adhoc CAMPA up to APO year 2016-18 stands at Rs. 6.22 crores and the expenditure ending March 2018 was 3.92 crores which is 63.02% of the funds received.
- ◆ The core activities undertaken with the CAMPA funds comprise creation of SMC structures, forest protection and assistance to tribal Vana Samrakshana Samidi.
- ◆ The non-core activities comprised biodiversity conservation, infrastructure development, forest Information Technology, monitoring, evaluation and accounting.
- ◆ This period focussed more on soil and moisture conservation activities, assistance to tribal Vana Samrakshana Samidi and improving connectivity (50%). The VSS members were engaged in almost all the activities.
- ◆ Various SMC structures in CAMPA APOs includes check dams, contour trenches, gully plugging etc. SMC structures undertaken by frontline forest officers under CAMPA are site-specific as per the site requirement.
- ◆ Preparatory works for ecorestoration were taken up. Most activities were done departmentally, economically and in time-saving approach.
- ◆ Eradication of weeds were taken up in five divisions while river stabilisation was taken up by three divisions. This is an improvement over the earlier APOs.
- ◆ Inclusion of Vana Samrakshana Samidi members in patrolling, fire break creation, developing infrastructure in interior forest areas, has encouraged their active participation in conservation activities.



- ◆ Training and capacity development programmes did not receive much attention during this period.
- ◆ Under infrastructure development, efforts were taken to repair / improve dilapidated structures. The major construction activities undertaken with the help of CAMPA funds were antipoaching campsheds.

### **Recommendations & Suggestions**

1. Maintenance and watch and ward may be continued for 4 to 5 years for better establishment.
2. Number of watchers should be increased proportionate to the size of the plantation site.
3. There should be a 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.
4. 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.
5. 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 (2016-2018)

### 1. Introduction

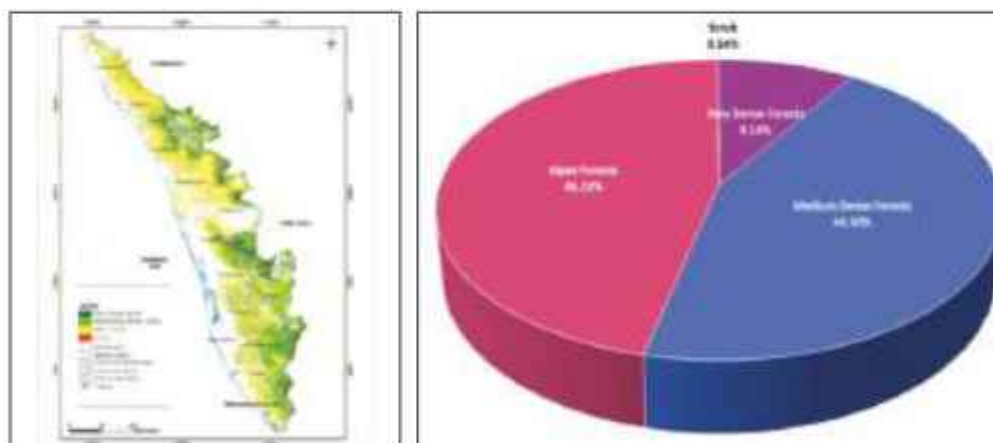
#### 1.1 Background

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 neighborhood. 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 minimizing 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.

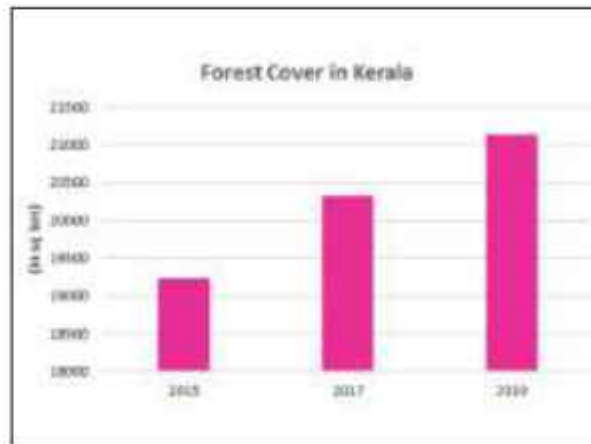


Figure 1.1 Forest Cover in Kerala From 2015 To 2019

### 1.4 District-wise Forest Coverage in Kerala

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



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 eucalypts. 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.

The 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 were 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 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 cost of CAMPA activities from 2016 to 2018 is Rs. 6.22 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 10<sup>th</sup> tree/planted sapling of each row was evaluated for 25% of its length per running km basis (5 intermittent line transects – each for 5% of length per running km).
- ✦ The evaluation was done on 0.1 ha by laying a 30 x 30 m plot based on random sampling.



## II. Soil and water conservation measures

- (a) The teams obtained the norms and expenditure of SMC activities taken up in the plantation site from the respective offices.
- (b) The teams assessed the quantity/ present condition/ treatment plans of the different SMC works. 20% sampling was carried out.
- (c) For civil works, 50% M & E was carried out, based on random selection from M-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 ha, multiplied the average number of plants in the plots by 100.

### Plot transects

- ◆ Marked out 100m transects, keeping them parallel to one another (10m-50m apart). Using a 2 x 2 m 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 ha)

## IV. Forest protection

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

## V. Qualitative Aspects

Focused group discussion: FGD was conducted for 10% of the villages in which CAMPA works were undertaken with at least 15 villagers in a commonplace within the village. The group comprised office bearers of Joint Forest Management Committee, Below Poverty Line 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 61 cm, rainfall range between 1270 to 3810 mm, average prevalence of adverse biotic factors, gentle to moderate slopes.
- (b) **Medium site:** Soil depth ranges between 30.4 cm to 61 cm, rainfall ranges between 889 to 1270 mm, average prevalence of adverse biotic factors, gentle to moderate slopes.
- (c) **Poor site:** Soil depth less than 30.4 cm, rainfall less than 889 mm and excessive prevalence of mist and fog during monsoon, prevalence of adverse biotic factors and steep slopes.

This approach 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 was visited by the monitoring team and the following details were 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 while planting
- ✦ 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**





- Qualitative – site suitability (both climatic and edaphic factors), condition of the plantation, choice of species, etc.
- Quantitative - Total seedling/tree height, collar girth/GBH, survival percentage, etc.
- Other parameters – Management practices, biotic and abiotic factors, etc.

✦ **For civil constructions**

- 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.

	<b>Circles</b>	<b>Divisions</b>
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, Achenkovil and Thiruvananthapuram Forest Divisions
Wildlife Circles and Divisions	Wildlife, Palakkad.	Aralam, Wayanad, Parambikulam, Peechi and Silent Valley National Park Wildlife Divisions.
	Field Director Project Tiger, Kottayam.	Munnar, Idukki, Periyar Tiger Reserve East & 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.



	Circles	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 (2016 - 18)

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

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

Seven different activities were undertaken in the circle. The distribution of activities is as follows

S. No.	Activity	Divisions
1.	Assistance to tribal Vana Samrakshana Samidi	Kannur, Wayanad
2.	Improving connectivity	Kozhikode
3.	CAW - Completion of central nursery work (Phase II)	Wayanad
4.	CAW - Preparatory work for setting up permanent nursery	Thiruvananthapuram, Pathanamthitta.
5.	Eradication of exotic weeds	Wayanad South
6.	River bank stabilization/ protection	Wayanad
7.	Soil and moisture conservation	Wayanad

In addition, activities envisaged during 2014 to 2016 were also taken up during this period.

### 1. Assistance to Tribal Vana Samrakshana Samidi

The activities envisaged in the reporting period were carried out in 2018-19. The spill overactivities of 2014-15 and 2015-16 were completed during the reporting period.

Sl.No	Location / Range / Division	Activity	Year of activity	Remark
1	Karakunnu/ Pulppally FS Chedleth Range/ South Wayanad	Wheel track concrete near tribal colony	2017-18	Work carried over from APO 2014-15 & 2015-16
2	Vettathoor/ Pulppally FS Chedleth Range/ South Wayanad	Wheel track concrete near tribal colony	2017-18	Work carried over from APO 2014-15 & 2015-16
3	Vettathoor/ under Pulppally FS Chedleth Range/ South Wayanad	Wheel track concrete near tribal colony	2017-18	Work carried over from APO 2014-15 & 2015-16
4	Karukanthode sandal area in Klapetta Range/ South Wayanad	Maintenance of Machans	2017-18	Work carried over from APO 2014-15 & 2015-16





Further, as part of assistance to the tribal VSS, Fire Mazdoor/Fire Gangs/ activities were taken up which involved the VSS members.



Wheel track concrete near tribal colony

Sl.No	Location / Range / Division	Activity	Year	Remark
1.	Kattipara/ Puthuppady / Thamarassery / Kozhikode	Fire mazdoor	2017-18	Work carried over from APO 2014-16
2.	Ponnankayam/ North beat/ Nairkolly/ Thamarassery/ Kozhikode	Fire mazdoor	2017-18	Work carried over from APO 2014-16
3.	Kolamala/ Puthuppady / Thamarassery/ Kozhikode	Fire mazdoor	2017-18	Work carried over from APO 2014-16
4.	Kakkavayal/ Kanalad / Thamarassery/ Kozhikode	Fire mazdoor	2017-18	Work carried over from APO 2014-16
5.	Kodothikkunnu/ Nairkolly/ Thamarassery/ Kozhikode	Fire mazdoor	2017-18	Work carried over from APO 2014-16
6.	Kakkad/ Puthuppady/ Thamarassery / Kozhikode	Fire mazdoor	2017-18	Work carried over from APO 2014-16
7.	Maruthilavu/ Kanalad / Thamarassery/ Kozhikode	Fire mazdoor	2017-18	Work carried over from APO 2014-16
8.	Kuttiyadi/ Thamarasseri/ Kozhikode	Fire protection and mazdoor, Rescuing wild animals	2017-18	Work carried over from APO 2014-16
9.	Neelimala/ Baderi/ Meppady/ South Wayanad	Fire gang	2017-18	Work carried over from APO 2014-16
10.	Palachuram/ Badery/ Meppady/ South Wayanad	Fire gang	2017-18	Work carried over from APO 2014-16
11.	Settukunnu/ Sugandagiri/ Kalpetta/ South Wayanad	Fire gang	2017-18	Work carried over from APO 2014-16
12.	Valanchola medicinal plantation/ Sugandagiri/ Kalpetta/ South Wayanad	Fire gang	2017-18	Work carried over from APO 2014-16
13.	Aranamala/ Mundakai/ Meppady/ South Wayanad	Fire gang	2017-18	Work carried over from APO 2014-16



## 2. Improving connectivity

The activities envisaged in the reporting period were carried out in 2018-19.

## 3. Soil and moisture conservation

Activities such as Contour bunding / Gully Plugging / Pond Desiltation were deferred to 2018-19. However, the spill over from APO 2014-15 & 2015-16 - construction/ cleaning/ distillation of pond was carried out.

Site	Location / Range / Division	GPS Location	Activity	Year of Construction	Dimensions (m)	Remarks
1	Manthodam / Pulpally / Chedelth / South Wayanad	N11°32'22.8" E76°00'98.2"	Construction of Pond	2017 -2018	14 x 11.2x 1.9	Work carried over from APO 2014 - 16
2	Udhaynkara/Pulpally / Chedelth / South Wayanad	N11°41'17.5" E76°56'30.7"	Construction of Pond	2017 -2018	15 x 5 x 2	Work carried over from APO 2014-16
3	Mandankolly/Irulam / Chedelth /South Wayanad	N12°34'14.8" E75°08'61.7"	Construction of Pond	2017 -2018	16 x 13 x 10.5	Work carried over from APO 2014-16.
4	Nairkolly/Irulam / Chedelth /South Wayanad	N12°34'14.8" E75°08'61.7"	Construction of Pond	2017 -2018	13 x 10 x 10.5	Work carried over from APO 2014-16

Observations of the Evaluation Team: The records were verified and found correct. Ponds retain only 60 - 75% envisaged capacity. Hence, needs periodical desiltation.

Sl. No.	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
1	Pond / Chedelth / South Wayanad	Four ponds were constructed. Water retention is medium. The ponds need to be desilted periodically.	Presently the ponds are able to retain only 60 -75 % envisaged capacity.	6	Medium



Pond at Udhaynkara



Pond at Mandankolly





#### 4. Eradication of weeds

The activities envisaged in the reporting period were carried out in 2018-19.

#### 5. River bank stabilization/ protection

The activity was carried out during 2017-2018 and was physically verified records perused and found correct.

Location / Range /Division	GPS Location	Activity	Year of Activity	Dimensions (m)	Remarks
Balavanthadukka / Kasargode	N12°53'53.5" E75°18'80.56"	Altitude: 62 msl River Bank Stabilization	2017-18	160 x 1.7 x 0.5	The vegetation has established well.

#### 6. Purchase of equipment

This activity was a spillover from the APOs of 2014-15 and 2015-16. The equipment procured by the divisions was physically verified, and records checked and found correct.

Sl.No	Location / Range / Division	Activity	Year of activity	Remark
1	Mananthavady Range/ North Wayanad	Firefighting equipments	2017-18	Work carried over from APO 2014-16. Verified the records and found correct.
2	Peria range / North Wayanad	First Aid Box for field staff	2017-18	Work carried over from APO 2014-16. Verified the records and found correct.
	Kalpetta Range / South Wayanad	Purchase of animal rescue articles rescuing wild animals	2017-18	Work carried over from APO 2014-16. Verified the records and found correct.
1	Division office/ Kozhikode	Purchase of Cages, Snake catching equipments	2017-18	Work carried over from APO 2014-16. Verified the records and found correct.
2	Division office/ Kozhikode	Purchase of rope, trapping net for RRT	2017-18	Work carried over from APO 2014-16. Verified the records and found correct.
	Padinjaraathara section/ Kalpetta Range / South Wayanad	Purchase of life saving equipment for departmental petrol boat	2017-18	Work carried over from APO 2014-16. Verified the records and found correct.





Fire fighting and life saving equipment

### 7. Awareness program/ Nature camps/ Training to protective staffs

This activity was a spillover from the APOs of 2014-15 and 2015-16. The records were checked and found correct.

Sl.No	Location / Range / Division	Activity	Year	Remark
1.	Kuruva/ Pulppally/ South Wayanad	Conducted fire awareness rally from Tholpetty to Muthanga	2017-18	Work carried over from APO 2014-16
2.	Kalpetta / South Wayanad	Conducted training to protective staff	2017-18	Work carried over from APO 2014-16
3.	Mundakkai / Meppady / South Wayanad	Conducted training to protective staff and watchers	2017-18	Work carried over from APO 2014-16
4.	Meppady / South Wayanad	Legal training on Forest Laws and precaution measures to be taken against forest fire	2017-18	Work carried over from APO 2014-16
5.	Vythiry & Muttill / Meppady / South Wayanad	Conducted training to protective staff and watchers	2017-18	Work carried over from APO 2014-16
6.	Mananthavady / North Wayanad	Fire awareness programme for staff & watchers	2017-18	Work carried over from APO 2014-16
7.	Begur / North Wayanad	Training to protective staff for All India Tiger estimation Phase-I	2017-18	Work carried over from APO 2014-16





Sl.No	Location / Range / Division	Activity	Year	Remark
8.	Mananthavady / North Wayanad	Fire awareness programme by fire & rescue service	2017-18	Work carried over from APO 2014-16
9.	Begur / North Wayanad	Fire awareness programme for field staff	2017-18	Work carried over from APO 2014-16
10.	Peria / North Wayanad	one day awareness camp at varayal for field staff	2017-18	Work carried over from APO 2014-16
11.	North Wayanad	GPS training for protective staff	2017-18	Work carried over from APO 2014-16
12.	Peruvannamuzhy, Kozhikode	Fire awareness programme to staffs and fire watchers	2017-18	Work carried over from APO 2014-16

The spillover activities of 2014-15 and 2015-16 with regard to assistance to Vana Samrakshana Samidi, Soil and Moisture conservation and purchase of equipments were completed during the reporting period. One activity was taken up during 2017-2018 and rest of the 5 activities envisaged in the reporting period were carried out in 2018-19 in the circle. Overall, an amount of Rs. 213 lakhs was allotted to the circle during the period of which 67% financial achievement was observed.

#### Eastern circle, Palakkad (2016 - 2018)

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

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

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

S. No.	Activity	Divisions
1.	Assistance to Tribal VSS	Nilambur, Nemmara, Mannarkkad and Palakkad
2.	Construction & Maintenance of Camp Shed	Nilambur, Nemmara, Mannarkkad

#### 1. Assistance to Tribal Vana Samrakshana Samidi

The Appankavu village in Vazhikkadavu range of Nilambur North received library books supporting education. The Agali village of Attapadi and Mannarkkad ranges were provided with 174 gas connections. Gas connections were also extended to Olavakkode and Walayar ranges of Palakkad.



A beneficiary with the LPG Cylinder

## 2. Construction and maintenance of campshed

Sites	GPS Location	Year of Construction	Dimensions (m <sup>3</sup> )	Remarks
Bommiyampadi campshed/ Pudur, Attappadi/ Mannarkkad	N11°7'2.21" E76°33'4.88"	2016-18	337m <sup>3</sup>	The condition of the structure is good.

The physical condition and asset quality of the camp shed was assessed. Physical measurements and verification of vouchers and estimations were used to verify the specifications of the camp sheds.



Bommiyampadi campshed





### Remarks

Sl. No.	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
1.	Campshed/ Bommiyampadi /Attappadi	The shed is maintained well.	The shed is routinely used by the frontline staff.	7	High

The works carried out for interior camp shed and ration were evaluated for the physical existence and for the quality. The specifications of the camp shed was checked by verifying the old vouchers and the estimates and found to be correct and the structure is maintained well and used by the frontline staff regularly.

The circle received Rs. 9.00 lakhs; the financial achievement was 99.67%.

### Central circle, Thrissur (2016 - 2018)

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

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

Only eradication of weeds was envisaged in the circle, which was verified through records. Due to delay in the release of funds, activities were shifted to 2018-19. An amount of Rs.4.00 lakhs was allotted which was spent on the activity.

### High range circle, Kottayam (2016 - 18)

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

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

Four different activities were undertaken in the circle. The distribution of activities is as follows:

S. No.	Activity	Divisions
1.	Construction, cleaning, desiltation of pond	Munnar
2.	Fire watch stations	Kothamangalam
3.	Improving connectivity	Marayoor
4.	Soil and moisture conservation	Kottayam, Mankulam, Marayoor, Munnar, Kothamangalam

In most divisions, no funds were allocated during these years; hence, the activities were shifted to the subsequent years. In addition, spillover activities of 2009-14 were taken up during this period.



### 1. Construction, cleaning, desiltation of pond

Sites	GPS Location	Year of Construction	Dimensions (m)	Remarks
Perumbankuthu	N10°08'24.08" E76°54'37.28" Elevation- 405m	2017-2018	10 x 10 x 1.40	Water stored at full level

The structure was physically verified and records inspected and found correct.



Perumbankuthu Waterhole in Munnar Division

### Observations of the Evaluation Team

Sl. No.	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
1.	Water Hole/ Munnar Division / Adimali Range /Perumbankuthu	Clearing of ground level vegetation grasses and weeds, earth work for excavation.	This water hole is mostly used to provide water for animals. Water level is maintained throughout the year.	8	High

### 2. Fire watch stations

Sites	GPS Location	Year of Construction	Dimensions (m <sup>3</sup> )	Remarks
1	N10°02'11" E76°80'035" Elevation- 86 msl	2017-18	Plastering: 58.75m <sup>3</sup> Earthwork: 58.05m <sup>3</sup> Foundation: 33.15m <sup>3</sup> RCC: 26.1m <sup>3</sup>	The structure is intact.
2	N10°16' 01.03" E77°09'09.14" Elevation- 979msl	2017-18	8.19 m <sup>3</sup>	The structure is intact





Under this activity, two forest watch stations were established. The structures were verified physically and dimensions were measured and confirmed with the vouchers/records.

### Observations of the evaluation team

Sl. No.	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
1.	Forest Watch Station / Kothamangalam Mullaringad/ Chullikkandam/ Bluvady	The total plinth area covered is 6.81 sq m. The structure comprises two storeys.	It is useful for the frontline staff to monitor various activities.	9	High
2.	Fire Watch Station / Ooruvasal/ Marayoor Division / Marayoor Range	The total plinth area covered is 8.19 sq m. The structure comprises two storeys.	It is being used by the frontline staff	9	High



Forest Watch Station at Kothamangalam



### 3. Soil and moisture conservation

In Kottayam division, SMC related activities were carried out as a spillover of 2009-14 works during 2017-18. The vouchers/records were verified and found correct.



Sites	GPS Location	Year of Construction	Dimensions (m <sup>3</sup> )	Remarks
A1/4	N09°27' 50.6" E76°49' 30.5"	2017-18	2 x 0.933 x 5.7	Work carried over from APO 2009-14
A2/4	N09°43' 34.9" E77°01' 10.2"	2017-18	2 x 0.875 x 5.5	Work carried over from APO 2009-14
A3/4	N09°43.554" E76°59.958"	2017-18	2 x 0.941 x 6.65	Work carried over from APO 2009-14
A4/4	N09°27' 50.6" E76°49' 30.5"	2017-18	2 x 1.09 x 9.25	Work carried over from APO 2009-14

#### Observations of the Evaluation Team

Sl. No.	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
1.	Gully plugs / Kottayam/ Kanchiyar / Ayyappancoil/ Kallar	Water stored at half level	The gullies have been laid out in a teak plantation area. The moisture content in surrounding areas is improved.	9	High



Gully Plug at Ayyappancoil

#### 4. Construction and maintenance of campshed

Sites	GPS Location	Year of Construction	Dimensions (m <sup>3</sup> )	Remarks
1	N10°08' 13.59" E76°54' 53.56" Elevation- 433m	2017-2018	294.28 m <sup>3</sup>	The structure is intact





### Observations of the evaluation team

Sl. No.	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
1.	Antipoaching camp shed / Perumbankuthu, Munnar Division / Adimali Range	The structure comprises two bedrooms, a kitchen and a varandah.	It is being used by the frontline staff	10	High



Perumbankuthu Camp Shed

The work was evaluated for physical existence and quality. The specifications of the camp shed were checked by verifying vouchers and estimates.

The spillover activities of 2009-14 with regard to Soil and Moisture conservation were completed during the reporting period. The other three activities were completed as per the APO. Overall, an amount of Rs. 29.23 lakhs was allotted to the circle during the period of which 94.14% financial achievement was observed.

### Southern circle, Kollam (2016 - 2018)

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

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

Five different activities were envisaged in the circle. The distribution of activities is as follows:



S. No.	Activity	Divisions
1.	Assistance to tribal Vana Samrakshana Samidi	Ranni
2.	Construction and maintenance of campshed	Achenkovil
3.	Improving connectivity	Achenkovil
4.	Soil and moisture conservation / Gully plugging	Achenkovil, Konni
5.	River Bank Stabilization/ protection	Punalur*

\*This activity was handled by the Timber Sales Division, Punalur.

### 1. Assistance to tribal Vana Samrakshana Samidi

In Paruthipally forest range of Ranni division, basic infrastructures such as LPG connection were provided to the tribal settlement the beneficiaries mentioned that the LPG provision is highly useful, time saving and reduced their dependence on forests for firewood. As part of the CAMPA operation, the tribal communities in the Ranni division, a turmeric processing unit has been established. This was made functional in the following year.

Site	Year	LPG connection beneficiaries interviewed	Remarks
Thendiyamala, Karipalam, Valiyakilikode, Paruthipally Forest Range	2016-17 & 2017-18	Smt. Omana Smt. Vasantha SA Smt. Salini S Smt. Sarojoni Smt. Sujatha Smt. Deepa Smt. Indira Smt. Radha K Shri. Deepu K Smt. Deepa S	The beneficiaries support rendered by the forest department has reduced their dependence on forests for firewood.



Smt. Omana, Kizhakkumkara Veedu, Thendiyamala, Paruthipally Forest range beneficiary of LPG connection under CAMPA fund



Smt. Sujatha, Vishnubhavan, Valiyakilikode, Paruthipally Forest range beneficiary of LPG connection under CAMPA fund





## 2. Construction and maintenance of campshed

Sites	GPS Location	Year of Construction	Dimensions (m <sup>2</sup> )	Remarks
1	N09°8'2.382" E77°8'44.52"	2017-2018	9 x 6	Used by the forest staff regularly for their stay. A 20 x 3 x 3 EPT on 4 sides of the camp shed has also been created.

At Pulikayam, Achenkoil, a camp-shed was built and maintained. On inspection it was found that the specifications were in accordance with the dimensions mentioned in vouchers. At present, the physical structure is in good condition and well-maintained. The frontline personnel reported that the shed is quite helpful in carrying out forestry activities. The elephant proof trench executed around the camp shed on all four sides were inspected and found that about 30% of the area is damaged due to rain. It needs reworking to safeguard the camp shed and to enable stay of frontline staff.

### Remarks

Sl. No.	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
1.	Campshed/ Pulikayam/ Achenkoil	The shed is maintained well.	The shed is useful for the frontline staff.	7	High
2.	Elephant Proof Trench / Pulikayam / Achenkoil	20x3x3 on 4 sides of the campshed	To safeguard the Campshed from elephants	5	The trenches were physically verified. It was 30 % damaged due to rain. Reworking of the trench is needed.s



Camp Shed with Elephant Proof Trench



### 3. Improving connectivity

Patrolling routes and trek paths were laid from Vazhaperiyar to Onnamkallu of Kanayar Range of Achenkovil division. Boundary lines were made in 84 blocks and all are found to be intact during evaluation team inspection. The trek paths, forest roads and patrolling routes are well maintained. Fireline was laid for 3.5 Km at Savacotta of Achenkoil division.

### 4. Soil and moisture conservation

Under this activity, gully plugging was carried out in 25 sites in Mundomoozhy of Konni division, 3 sites in Kattikuzhy of Achenkoil division and 6 sites in Vazhaperiyar of Achenkoil division. These activities were verified physically and dimensions were measured and confirmed with the vouchers/records. All the structures were in healthy conditions and useful in soil moisture conservation.

Sites	GPS Location	Year of Construction	Dimensions (m <sup>3</sup> )	Remarks
1	N09°8'09.06" E77°12'0.006"	2017-18	3.8 x 1.5 x 0.65 m	At Kattikuzhy, Achenkoil: Healthy with no damage
2	N09° 07' 8.83" E 77°11' 5.51"	2017-18	13.33 x 1.37 x 0.73 m	At Kattikuzhy, Achenkoil: Healthy with no damage
3	N 09°10' 06.6" E77 °10' 1.26"	2017-18	2.55 x 1.6 x 0.35 m	At Kattikuzhy, Achenkoil: Healthy with no damage
4	N09°7'26.58" E77°11'24.912"	2017-18	6 gullies of size 4 x 1.2 x 1.2 m	At Vazhaperiyar, Achenkoil: Healthy with no damage



Gully Plugging at Kattikuzhy





No spillover activities were taken up in this circle during the reporting period. One activity, river bank stabilisation was undertaken by the Timber Sales Division, which is not within the team's purview. Overall, an amount of Rs. 28.46 lakhs was allotted to the circle during the period which was fully utilised.

### Wildlife circle, Palakkad (2016 - 2018)

The evaluation covered four divisions of the circle. They include

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

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

S. No.	Activity	Divisions
1.	Assistance to tribal Vana Samrakshana Samidi	Parambikulam, Peechi
2.	Construction and maintenance of campshed	Wayanad, Parambikulam, Peechi
3.	Improving connectivity	Silent valley, Wayanad
4.	Eradication of exotic weeds	Peechi
5.	Soil and moisture conservation / Gully Plugging	Peechi

#### 1. Assistance to tribal Vana Samrakshana Samidi

Discussions were held with the tribal members of Van Samraksha Samiti living in different villages of Parambikulam forest division. Solar street lights distributed under CAMPA activities were physically verified in some of the locations. The villagers of Wayanad division have made a request to implement scheme for house construction.

In the most vulnerable areas in the forest divisions of Parambikulam, Wayanad and Peechi, the forest department constructed solar power fences during 2016-17 and 2017-18. The locations include Karimala, Nallathanni and Mankuchy. The entire stretch of solar fencing was physically verified. There are minor damages to the fences. Relevant records were verified and found to be in order.

Location	Year	Remarks
Karimala section in Parambikulam	2016-17	The solar fencing was physically verified. There are minor damages to the fences. Records were verified and found correct.
Nallathanni, Sultha bathery range, Wayanad	2016-17	The solar fencing was physically verified. There are minor damages to the fences. Records were verified and found correct.
Mankuchy, Chimony range, Peechi division	2017-18	The solar fencing was physically verified. There are minor damages to the fences. Records were verified and found correct.



## 2. Construction and maintenance of campshed

The campshed established under CAMPA in Muthanga range of Wayanad division is well maintained. It is useful to the forestry personnel. The physical quality was assessed and found satisfactory. In the Payampara location of the Peechi division, the campshed was refurbished (kitchen) for the use by the frontline staff. The inspection team evaluated the work for physical existence and quality. Frontline staff informed that the shed is in regular use. The specifications of camp shed were verified with vouchers and estimates and found to be in order.

Sites	GPS Location	Year of Construction	Dimensions (m <sup>2</sup> )	Remarks
1.	N11°39'19.28" E76°25'51.78"	2016-17	-	Maintenance only
2.	N10°25'53.4" E76°30'19.02"	2016-17	5.5 x 2.9 (Kitchen only)	The structure is in good condition.

### Remarks

Sl. No.	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
1.	Campshed/ Wayanad/ Muthanga range	The shed is maintained well.	Useful for the frontline staff.	7	High
2.	Campshed / Payampara/ Chimony range/ Peechi	The shed is maintained well.	Regularly used by the frontline staff.	7	High







**Elephant Proof Trench:** Two different locations (Vavala and Anapodu) of Chimony range in Peechi Division were provided with elephant proof trenches during 2016-17. The dimensions of the trenches were physically verified and found to be in conformity with vouchers and records available with the department.

### 3. Improving connectivity

Trek paths, patrolling routes and vista lines were cleared and maintained in the circle in PTR and Wayanad WLS.

Location / Range / Division	GPS Location	Year of Activity	Dimensions (km)
Kathiapalam / Wayanad WL	N11°56'54.2345" E76°4'30.4276"	2017-18	3.5
Onnamkulam / Wayanad WL	N11°38'31.023" E76°25'21.264"	2017-18	2
Ellakalcheranad / Muthanga / Wayanad WL	SN11°44'59.82" E76°21'19.662"	2017-18	4
Muthanga/ Wayanad WL	SN11°40'1.356" E76°22'21.672"	2017-18	1.5
Sulthan bathery/ Wayanad WL	SN11°35'49" E76°13'27"	2017-18	2.25



Trek Path in Muthanga





### Observations of the evaluation team

Sl. No.	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
1	Trek Path/ Kathiapalam / Wayanad WL	The trek path is maintained well.	The path is used regularly by the frontline staff.	7	High
2	Trek Path/ Onnamkulam / Tholpetty / Wayanad WL	The trek path is maintained well.	The path is used regularly by the frontline staff.	7	High
3	Fire line / Ellakalcheranad / Muthanga / Wayanad WLS	The fireline was 20 per cent less than mentioned in records.	The fireline helped protect against fires.	5	Medium
4	Tourism road / Muthanga / Wayanad WLS	The road is well maintained.	Supports ecotourism.	7	High
5	Patrolling road / Sulthan bathery/ Wayanad WLS	The road is well maintained.	Used regularly by the frontline staff.	7	High

The activities were verified through inspection of records and found correct except in S. No. 3 where the length mentioned was 5 km.

### 4. Eradication of exotic weeds

Eradication of Exotic weeds was undertaken in Anaporu (12 ha), Peechi Wildlife Division, Chikkanji (60 ha), Kurichiyat (9 ha) and Tholpetty (260 ha) in Wayanad WL Division the same were verified based on the records. The major weed eradicated was *Sennaspectabilis*. *Lantana camara*, *Chromolaena odorata* and *Mikania macarantha* were also observed.



Weed assessment in Tholpetty



## 5. Purchase of equipment

As a part of forest fire prevention and control operations, and safety, the department purchased protection equipment in Vellanaï section in Peechi division. The forestry personnel informed that these items are put to use effectively. This activity was a spillover from 2009-14.



Safety Equipment

One spillover activity were taken up in this circle during the reporting period. SMC activities could not be undertaken. Overall, an amount of Rs. 27.10 lakhs was allotted to the circle during the period which was fully utilised.

### Field director project tiger, Kottayam (2016-18)

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

1. Periyar East
2. Periyar West
3. Idukki Wildlife sanctuary
4. Munnar Wildlife sanctuary

Three different activities were undertaken in the circle. The distribution of activities is as follows:

S. No.	Activity	Divisions
1.	Eradication of exotic weeds	Idukki WLS
2.	Improving connectivity	Periyar East
3.	Soil and moisture conservation / Gully plugging	Idukki WLS

#### 1. Eradication of exotic weeds

Eradication of weeds envisaged in the circle was verified through records. The sites include Makolikandam, Keerimudi, Chakkakonam, Bharanikkuzhi, Anakkoodu, Sakunthalakadu in the Idukki Wildlife sanctuary. The major exotic weeds present in the area are *Clidemia hirta*, *Chromolaena odorata*, *Lantana camara* and *Mimosa diplotricha*. *Lantana camara* was found to be the most prominent weed.





Weed assessment at Idukki



Weeds at Keerimudi

## 2. Improving connectivity

Sl.No	Location	Year	Activity	Remark
1.	Peermad, Azhutha Range	2016-18	Fire gangs	Forest officials visit the VSS regularly on a month basis to discuss fire protection activities.  Verified the activities through inspecting bills books & vouchers and found correct.





VSS members were involved in the fire protection activities. The activities were verified by inspecting bills books and vouchers and found correct.

### 3. Soil and moisture conservation

Sites	GPS Location	Year of Construction / Maintenance	Dimensions (m)	Remarks
Kizhukkanam	N09°44'42.8" E76°59'09.2"	2016-18	11.5 x 2 x 2 12 x 2 x 3 10 x 2 x 3 7 x 1.6 x 1.1 10 x 2 x 2.5 14 x 2 x 3	Inspected six (6) gullies at Kizhukkanam. Gullies are weakened due to flood and needs strengthening and regular maintenance.
Kathithappan kettuchira	N09°44'26.095" E77°00'04.41"	2016-18	12 x 2 x 3 10 x 1.5 x 2 10 x 2 x 3 12 x 3 x 4.5	Inspected Four(4) gullies at kathithappan kettuchira. Gullies are weakened due to flood and needs strengthening and regular maintenance.
Vagavanam	N09°43'24.06" E76°57'23.3"	2016-18	10 x 2 x 2 11 x 2 x 2.5 8.5 x 1.6 x 2.5 9 x 1.5 x 3	Inspected Four(4) gullies at Vagavanam. They displayed minimal damage. Gullies are weakened due to flood hence needs strengthening and regular maintenance.
Vanmavu	N09°44'31.09" E76°59'09.6"	2016-18	8 x 2 x 3 10 x 1.5 x 3 8.5 x 1.8 x 2.8 10 x 1.6 x 3	Inspected Four(4) gullies at Vanmavu. Two gullies are damaged and 2 need strengthening work.
Kallekkulam area	N09°43'29.08" E76°56'35.3"	2016-18	9 x 1.5 x 1.2 15 x 2 x 3 11 x 1.5 x 2 8 x 2 x 3	Inspected Four(4) gullies at Kallekkulam area. Gullies are weakened due to flood hence needs strengthening and regular maintenance.
Vettalapara	N09°48'16.3" E77°00'14.2"	2016-18	10 x 1.5 x 3 8.5 x 1.8 x 2.8 10 x 1.6 x 3 11 x 1.6 x 4 9 x 1.5 x 8	Inspected Five(5) gullies at Vettalapara. Gullies are weakened due to flood hence needs strengthening



Sites	GPS Location	Year of Construction / Maintenance	Dimensions (m)	Remarks
				and regular maintenance.
Matnai	N10°08'29.07" E76°40'47.25"	2016-18	10 x 1.3 x 1.5 7 x 2 x 1.5 8 x 1.3 x 1.2 10 x 1.3 x 1.25 10 x 1.25 x 1.25 10 x 1.3 x 1.25 8 x 1.3 x 1.25 7 x 1 x 1 7 x 1 x 1 7 x 1 x 1	Inspected Ten(10) gullies at Matnai. They displayed minimal damage. Gullies are weakened due to flood hence needs strengthening and regular maintenance.
Chettipally	N10°07'26.60" E76°42'18.68"	2016-18	12 x 2 x 3 10 x 1.5 x 2 10 x 2 x 3 12 x 3 x 4.5 5 x 1.2 x 1 6 x 1.5 x 1.3 12 x 1.5 x 1	Inspected six (6) gullies at Chettipally. They displayed minimal damage which the staff mentioned was due to washing away in floods.
Anjilithandu	N09°49'03.09" E76°57'25.5"	2016-18	8 x 1.5 x 1.5 7 x 1.5 x 1.3 7 x 1.3 x 1.5	Inspected three (3) gullies at Anjilithandu. Although they are intact, they have been weakened due to floods.

#### Observations of the Evaluation Team

Sl. No.	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
1.	Gully Plugging/ Idukki WL/ Idukki WLS/ Idukki/ Kizhukkanam, Kathithappan kettuchira, Vagavanam, Vanmavu, Kallekkulam area, Vettalapara, Matnai, Chettipally, Anjilithandu.	The gullies were maintained in 2016-18, but weakened due to floods, hence water retention is poor	The gullies needs strengthening. Presently it is able to deliver only 75 % of the envisaged impact.	6	Medium





Inspected 46 gullies at Kizhukkanam, Kathithappan kettuchira, Vagavanam, Vanmavu, Kallekkulam area, Vettalapara, Matnai, Chettipally, Anjilithandu and observed that the gullies are weakened due to flood and needs maintenance and strengthening. The works were evaluated for physical existence and quality. The specifications of all SMC activities were verified with measurement books and found correct.



Matnai Gully Plugging



Chettipally gully plugging





No spillover activities were taken up in this circle during the reporting period. The circle focussed on SMC activities during this period. Overall, an amount of Rs. 7.58 lakhs was allotted to the circle during the period, 81.66 percent financial achievement was observed.

### Agasthyavanam Biological Park Circle, Thiruvananthapuram (2016-18)

The evaluation covered both Shendurney and Thiruvananthapuram Wildlife Divisions of the circle.

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

S. No.	Activity	Divisions
1.	Assistance to tribal Vana Samrakshana Samidi	Thiruvananthapuram
2.	Construction, cleaning, desiltation of pond	Shendurney, Thiruvananthapuram
3.	Eradication of exotic weeds	Shendurney
4.	Improving connectivity	Shendurney, Thiruvananthapuram
5.	River Bank stabilization/ protection	Shendurney, Thiruvananthapuram

Most works was carried out during the period are spillover activities from 2014-2016.

#### 1. Construction, cleaning, desiltation of pond

Sites	GPS Location	Year of Activity	Dimensions (m)	Remarks
Kattilappara	N08°55'41.63" E77°03'41"	2017-18	10 x 6 x 0.3	Due to paucity of funds in 2014-2016, the work was carried out in 2017-2018.
Kattilappara	N08°54'9.53" E77°06'48.6"	2017-18	17 x 7.5 x 0.7	Due to paucity of funds in 2014-2016, the work was carried out in 2017-2018.
Mankuthu	N 08°55' 41" E 77°3' 41"	2017-18	15 x 12.6 x 0.9	Due to paucity of funds in 2014-2016, the work was carried out in 2017-2018.
Samaramukku	N 08°55'11.86" E 77°8'37.268"	2017-18	10 x 9 x 0.9	Due to paucity of funds in 2014-2016, the work was carried out in 2017-2018.

#### Remarks

Sl. No.	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
1.	Pond/ Kalluvarambu / Shendurney Wildlife/ Kattilappara	The water hole is present in a swampy area surrounded by Myristica swamps.	This water hole is mostly used to provide water for animals.	4	Medium



Sl. No.	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
		There is silt deposition and the water depth is less than 50 cm. The water hole is poorly maintained and needs desiltation.			
2	Pond/ Kalluvarambu / Shenduruney Wildlife/ Kattilappara	The water hole is present in a swampy area surrounded by Myristica swamps. There is weed growth on the sides of the pond. The pond is partially maintained and desiltation is needed.	This water hole is mostly used to provide water for animals.	7	High
3	Pond/ Kalluvarambu / Shenduruney Wildlife/ Mankuthu	Tree have fallen into the pond, weed growth is minimal. The pond is well maintained.	This water hole is mostly used to provide water for animals.	9	High
4	Pond / Ettapadappu / Shenduruney / Shenduruney Wildlife / Samaramukku	The pond is filled with soil and silt. The water hole is poorly maintained and needs desiltation.	This water hole is mostly used to provide water for animals.	3	Low

The activity carried out during the period is spillover from 2014-2016. The ponds were evaluated for physical existence and quality and observed that one water hole is maintained well while the remaining rest are poorly maintained and needs desiltation. The specifications of the ponds were checked by verifying the vouchers and estimates.





Heavily silted pond at Ettapadappu



Pond at Kalluvarambu surrounded by Myristica swamps





Pond at Kalluvarambu with logs within

## 2. Eradication of exotic weeds

Eradication of exotic weeds was taken up at Kochuparamedu in Kalluvarambu section in Shenduruney range. The major exotic weeds present in the area are *Clidemia hirta*, *Chromolaena odorata*, *Lantana camara* and *Mimosa diplotricha*. *Clidemia* was found to be the most prominent exotic weed followed by *Chromolaena*, *Lantana* and *Mimosa* respectively. Hence, regular weeding is required to arrest secondary invasion. Eradication of weeds was verified through records and vouchers.

Site	Size/density of weeds in the worked plot	Size/density of weeds in the unworked plot
Kochuparamedu	860/ha	2080/ha



Weed assessment at Kochuparamedu



### 3. Improving connectivity

Location / Range /Division	GPS Location	Year of Activity	Dimensions (m)	Remarks
Vilakkumaram to Kochupara	N08° 53' 5.1" E77° 06' 23.2"	2017-18	3000 x 3	Due to paucity of funds in 2014-2016, the work was carried out in 2017-2018.
Onnammile to Unakkathode	N08° 54' 53.31" E77° 06' 34.2"	2017-18	2000 x 2.5	Due to paucity of funds in 2014-2016, the work was carried out in 2017-2018.
Thenginthope to Azhanthachal	N08° 51' 53.44" E77° 10' 45.8"	2017-18	3000 x 2.5	Due to paucity of funds in 2014-2016, the work was carried out in 2017-2018.

### Observations of the Evaluation Team

Sl. No.	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
1	Maintenance of patrolling route / Shenduruney/ Kalluvarambu / Thiruvananthapuram	The route is maintained well.	The path is used regularly by the frontline staff.	7	High
2	Maintenance of patrolling route / Shenduruney/ Kalluvarambu / Thiruvananthapuram	Some trees have fallen in the trek path and there is minimal weed growth on either side.	The path is used regularly by the frontline staff.	5	Medium
3	Maintenance of patrolling route / Shenduruney/ Kalluvarambu / Thiruvananthapuram	The route is maintained well.	The path is used regularly by the frontline staff.	7	High

The activity carried out is a spillover from 2014-2016. The patrolling route is being regularly used by the frontline staff and maintained well. The activity was verified through inspecting bills books and vouchers and found correct. Construction of hanging bridges in both divisions could not be taken up.

Most activities were spillover for earlier years. Overall, an amount of Rs. 32.54 lakhs was allotted to the circle during the period with 50% financial achievement.





### Social Forestry central circle, Eranakulam (2016 - 18)

The APO for the period listed two activities, both of the activities were undertaken. They include plant diversity and Construction, cleaning, desiltation of pond. The activities envisaged during 2014-15 and 2016-17 were completed during this period. Seven wells and two ponds were cleaned. The water bodies at Malippuram kandal park were also cleaned. The records were verified and found correct. Production and distribution of medicinal seedlings (200 nos), mangroves (5000 nos) and generation of booklets on mangroves were taken up. The records were verified and found correct. The released of amount Rs. 11.55 lakhs was fully utilised.

**Fire Awareness camp at Mangattukkara**

S.No.	Particulars	Quantity	Rate	Amount	Remarks	Total
1	Plant diversity	200	100.00	20000.00		20000.00
2	Construction, cleaning, desiltation of pond	1	10000.00	10000.00		10000.00
3	Production and distribution of medicinal seedlings	5000	100.00	500000.00		500000.00
4	Generation of booklets on mangroves	100	100.00	10000.00		10000.00
5	Transportation	100	100.00	10000.00		10000.00
6	Other	100	100.00	10000.00		10000.00
7	Total			550000.00		550000.00

Latitude: 10.529041  
Longitude: 76.217381  
Altitude: 78.541 m  
Accuracy: 15.1 m  
Time: 13-05-2022 10:44  
Note: Fire awareness for

Fire Awareness camp at Mangattukkara

**Fire Awareness camp at Thalikulam**

S.No.	Particulars	Quantity	Rate	Amount	Remarks	Total
1	Plant diversity	200	100.00	20000.00		20000.00
2	Construction, cleaning, desiltation of pond	1	10000.00	10000.00		10000.00
3	Production and distribution of medicinal seedlings	5000	100.00	500000.00		500000.00
4	Generation of booklets on mangroves	100	100.00	10000.00		10000.00
5	Transportation	100	100.00	10000.00		10000.00
6	Other	100	100.00	10000.00		10000.00
7	Total			550000.00		550000.00

Latitude: 10.529656  
Longitude: 76.217365  
Elevation: 14.791 m  
Accuracy: 18.3 m  
Time: 13-05-2022 10:46  
Note: Fire awareness for

Fire Awareness camp at Thalikulam



### Fire Awareness camp at Chittanukkara

#### Fire Awareness Rally at Kundukkad

Though no activities were listed under the APO, the Social Forestry wing Kollam carried out various extension and campaign activities during 2016-2018 in Kollam, Kottayam, Alappuzha, Thiruvananthapuram and Pathanamthitta divisions. The forestry personnel performed fire awareness programs at schools for students by distributing banners, posters, and awareness notices, among other things.



Inspection of records by the monitoring team

The general public was also informed about the importance of safeguarding environment and damages caused by forest fire. The documents related to these activities including vouchers were verified by the evaluation team members. The records were verified and found correct. A financial achievement of 99.8% was made against a release of Rs. 9.50 lakhs.

#### **Social Forestry northern circle, Kohikode (2016-18)**

No activity was carried out during the evaluation period.

#### **4. 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

- (a) Soil & Water Conservation (SWC) Works: Most SWC works carried out in the forest areas are effective. The SMC activities, in most places, have increased the vegetation, indicating the moisture retention impacts. However, certain SWC structures are very crucial as they connect different ranges within a division. Such chappaths deserve special attention. Due to frequent flooding, heavy wear and tear is observed in most chappaths. The depth and width of rivers has increased in many sections. Such chappaths need to be replaced with concrete structures with the support of the PWD. Some of the water-holding structures are old, and not capable of holding water to the designed potential. Such structures may be abandoned.
- (b) Regional and State level workshops could be organized for prioritization 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.
- (c) 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.



- (d) 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.
- (e) Maintenance costs should be linked to survival rates and strict guidelines should be framed regarding replanting in failed sites.
- (f) Protection measures were not effective in many places. It is essential to provide maintenance provisions for five years so that the purpose is well achieved.
- (g) Fodder Plantations should be prioritised in elephant corridors which would act as deterrents to their entry into human-habitation.
- (h) 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.
- (i) GIS-based forest survey monitoring has been attempted in the state. The staff reported 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.
- (j) Provisions need to be made in the budget for procuring more field vehicles, as a dearth in availability of these was observed.
- (k) 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.
- (l) A decentralised allotment to the social forestry wings may be considered, to meet the local needs for each division.
- (m) Incentives to temporary staff associated with the department's activities may be provided for more than ten years.
- (n) Digitisation of records would enable easy access to information.
- (o) 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.
- (p) Timely fund release is viewed to be more helpful for executing the plantation activities in the respective APO execution years.
- (q) Permanent structures created under CAMPA should be acknowledged 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**  
**23<sup>rd</sup> November 2021**  
**Venue: VC Hall, IFGTB**

Participants:

IFGTB	Kerala Forest Department
Dr. C. Kunhikannan, Director IFGTB	Shri. Rajeesh Ravindran IFS, CEO
Dr. R. Yasodha, Scientist G & GCR	CAMPA & APCCF
Dr. JP Jacob, Scientist G – <i>on leave</i>	Ms P. T. Sreelekha, ACF, SA&NO,
Shri. Rajesh Gopalan IFS - <i>online</i>	CAMPA
Dr. C. Buvaaneswaran, 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 23<sup>rd</sup> 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



ecorestitution 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 ICFRE - IFGTB for third party monitoring
November 2021	Finalisation of activities under the third party monitoring
January 2022	Acceptance of project proposal of ICFRE - 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

Component	Circle
Plant Diversity	Social Forestry central range, Eranakulam
Central Nursery work	Northern Circle, Kannur
Preparatory work for setting up Permanent Nursery	Northern Circle, Kannur
Construction, cleaning, Desiltation of Pond	Agasthyavanam Biological Park Circle, Thiruvananthapuram High Range Circle, Kottayam Social Forestry central range, Eranakulam Southern Circle, Kollam
Eradication of Exotic weeds	Agasthyavanam Biological Park Circle, Thiruvananthapuram Central Circle, Thrissur Field Director Project Tiger, Kottayam Northern Circle, Kannur Wildlife Circle Palakkad
Fire Watch Stations	High Range Circle, Kottayam
Interior Camp Sheds	Eastern Circle, Palakkad Wildlife Circle Palakkad
Assistance to Tribal Vana Samrakshana Samidi	Agasthyavanam Biological Park Circle, Thiruvananthapuram Eastern Circle, Palakkad High Range Circle, Kottayam Northern Circle, Kannur Southern Circle, Kollam Wildlife Circle Palakkad
River Bank Stabilization/Protection	Agasthyavanam Biological Park Circle, Thiruvananthapuram Northern Circle, Kannur Southern Circle, Kollam
Soil and moisture conservation / Gully Plugging	Field Director Project Tiger, Kottayam High Range Circle, Kottayam Northern Circle, Kannur Southern Circle, Kollam Wildlife Circle Palakkad
Improving Connectivity	Agasthyavanam Biological Park Circle, Thiruvananthapuram Field Director Project Tiger, Kottayam High Range Circle, Kottayam Northern Circle, Kannur Southern Circle, Kollam Wildlife Circle Palakkad



## Annexure IV

### Monitoring and evaluation teams

Teams Region	1 Southern Circle, Kollam (1)	2 Southern Circle, Kollam (2)	3 High Range Circle, Kottayam (1)	4 High Range Circle, Kottayam (2)	5 FD PT, Kottayam (1)
Team Co-ordinators (Dr/Mr/Ms)	C. Buvaneswaran	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 Circle	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. SriramTeam
Leaders (Dr/Mr/Ms)	S.P. Subramani	Muhammad Ali Noushad	P. Chandrasekar	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



<b>Teams Region</b>	<b>11 Social Forestry, Northern Region, Kannur</b>	<b>12 Northern Circle, Kannur</b>	<b>13 Eastern Circle, Palakkad</b>	<b>14 Wildlife Circle, Palakkad</b>	<b>15 Research Division N and S, &amp; Headquarters</b>
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. Ashirith	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





