CHAPTER 1
INTRODUCTION

1.1. PROJECT BACKGROUND

Watershed management is a single window integrated area development programme. Integrated watershed management can't be achieved just by funding or support provided under any watershed programme alone. This may also involve harmonized use of resources available from other ongoing development schemes in the project area . Such resources can be dovetailed with the watershed programmes, that will not only help useful convergence of various schemes and programmes for overall development of the area but also in effective monitoring.

Watershed management is the study of relevant character of a watershed aimed at the sustainable distribution of its resources and the process of creating and implementing plans, programmes and projects to sustain and enhance watershed functions that affect the plant, animal and human community within watershed boundaries. Features of a watershed that agencies seek to manage include water supply, water quality and drainage, storm water runoff and the overall planning and utilization of water.

Watershed management implies the wise use of soil, water and bio resources in a watershed to obtain optimum production with minimum disturbance to environment. The basic objective of watershed management is to solve the problems of soil and water based on the concept that all the resources are interdependent and must therefore be considered together. Among all the interventions envisaged in watershed management measures, water resource development and management gain primary importance.

The new concept of training and capacity building in integrated watershed management is most important both for field level project staff and officers. Apart from enhancing technical skill of project staff, this would also provide opportunities to community members develop their capacity to sustain the programme as the future custodians of the programme at the time of withdrawal.

1.2. NEED AND SCOPE FOR WATERSHED DEVELOPMENT

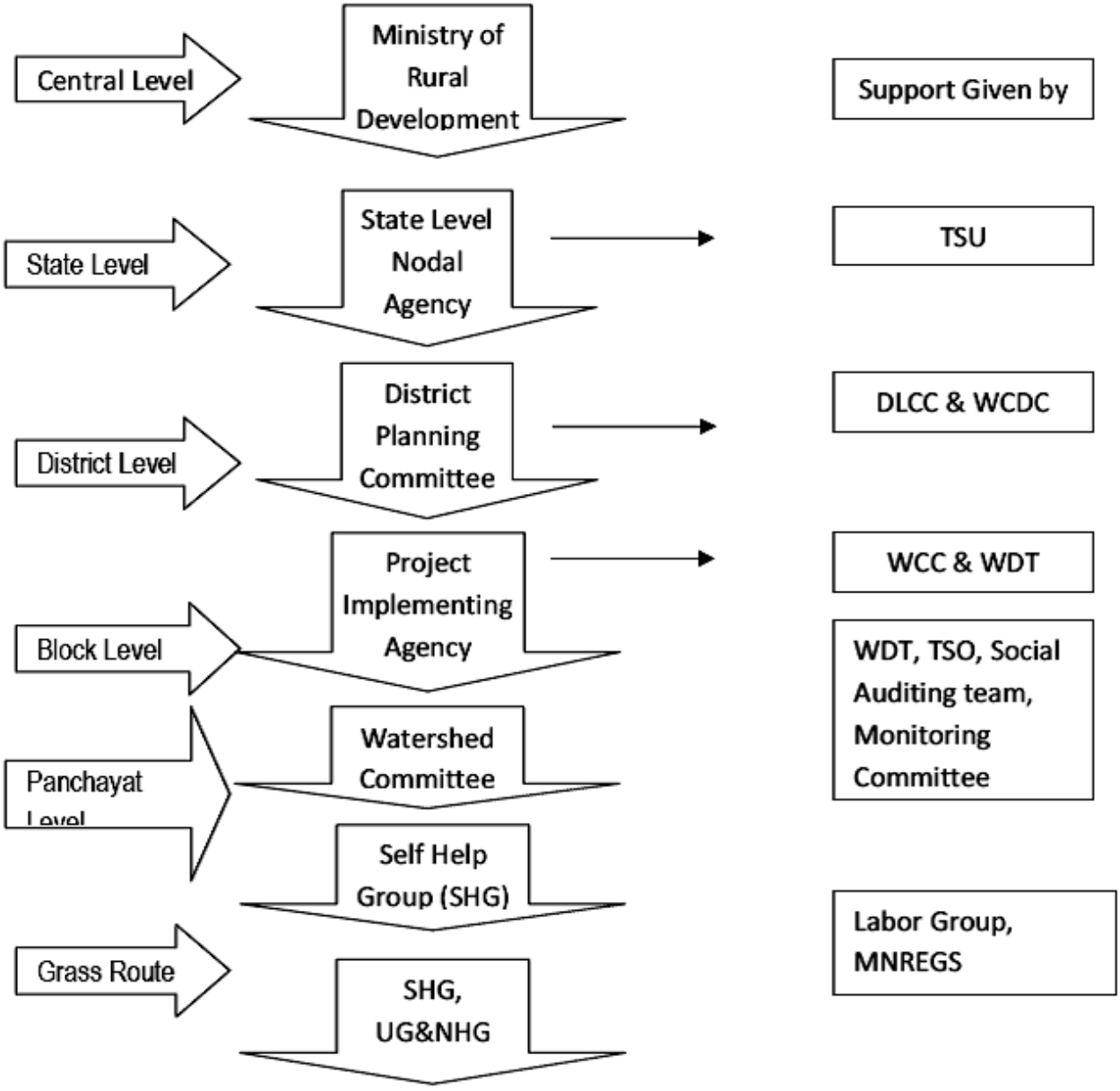
Loss of vegetative cover followed by soil degradation through various forms of erosion has resulted into lands which are thirsty in terms of water as well as hungry in terms of soil nutrients. All these regions have predominantly livestock centered farming systems; less biomass for animals not only reduces animal productivity but also deteriorates the ecological balance.

Watershed management has therefore emerged as a new paradigm for planning, development and management of land, water and biomass resources with a focus on social and institutional aspects apart from biophysical aspects. Watershed management becomes increasingly important as a way to improve livelihood of people while conserving and regenerating their natural resource. The role and importance of community participation is now accepted. Watershed management programmes therefore should be intimately linked with the people whose socio economic and cultural backgrounds play a decisive role in meaningful planning, implementation and operations of watershed programmes

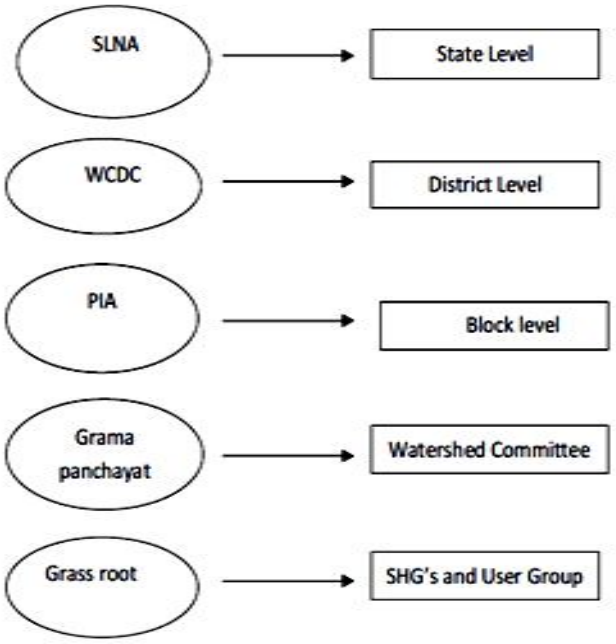
1.3. OBJECTIVES OF THE PROJECT

- Main objective of IWMP is to preserve and conserve the ecology, restore and develop degraded natural resources by arresting soil loss, improving soil health and soil moisture.
- Rain water harvesting and recharging of ground water table enables multi cropping and introduction of diverse agro based activities which help to provide sustainable livelihood to the people residing in watershed area.
- To promote livestock development, fishery management, and to encourage dairying and marketing of dairy products.
- Improving the capacity of community to manage common natural resource.
- Enhancing the efficiency and effectiveness of rain water and runoff use, improve vegetative cover and reduce soil erosion through better rain water management.
- Conserving as much rain water as possible in the place where it falls and also increasing the ground water level to get water throughout the year and maintaining it for sustainability.
- Utilizing the available land to its maximum productivity by adopting various or suitable measures according to the land capability and without any environmental degradation.

1.4. ORGANIZATIONAL SET-UP OF IWMP



1.5. FUNDING PATTERN



Administrative exp.	10%
Monitoring	1 %
Evaluation	1 %
Entry Point Activities	4 %
Institution and capacity building	5 %
DPR Preparation	1 %
Watershed development works (NRM)	56 %
Livelihood Activities	9 %
Production System and Micro Enterprises	10 %
Consolidation Phase	3 %
Total	**100 %**

1.6. ROLE OF PANCHAYATHI RAJ INSTITUTIONS (PRIs) AT DISTRICT AND INTERMEDIATE LEVELS

- The full responsibility of overseeing the watershed programme in the district lies to WCDC and WCDC work in collaboration with DPC.
- The DPC approve DPR and AAPs.
- DPC integrate Watershed Development Plans with District Plans.
- PIA work in collaboration with WCDC.
- Block level co- ordination committee coordinate works in project area.
- Block Panchayath committee implements the project.

1.7. INSTITUTIONAL ARRANGEMENT AT PROJECT LEVEL

- Project Implementing Agency (PIA) is responsible for implementation of watershed Projects.
- PIA sign MOU with WCDC.
- PIA form Watershed Development Team (WDT) with approval of WCDC.
- To arrange physical/financial and social audit.

1.8. INSTITUTIONAL ARRANGEMENTS AT VILLAGE LEVEL AND PEOPLE'S PARTICIPATION

(A) Self Help Groups (SHGs)

- With help of WDT, Watershed Committee constitutes Self Help Groups from amongest poor.
- These groups are homogeneous groups.
- SHGS will be provided with revolving fund.

(B) User Groups (UGs)

- Watershed Committee with the help of WDT constitutes User Groups.
- User Groups are direct beneficiaries of watershed activities.
- Watershed Committee facilitates resource use agreement among the User Groups.
- User Groups are responsible for operation and maintenance of assets created.

(C) Watershed Committees (WC)

- The Grama Sabha constitutes Watershed Committee to implement project with technical
- support of WDT.
- The Watershed Committees are registered under the Society Registration Act, 1860 or formed as sub - committee GP
- The Watershed Committee comprises of at least 10 members and 50 % of members
- should be representatives of SHGs/UGs/SC-ST, women and landless persons.
- The Chairman / Chairperson of Watershed Committee is Gram Panchayath President and
- Village Extension Officer as Secretary.
- If a watershed area covers more than one Gram Panchayath, separate committees are
- constituted for each Gram Panchayath.
- Separate account for each watershed committee.
- PIA release funds for Watershed Committee.

1.9. SELF HELP GROUPS

Table.1.1: Details of SHG's and NHG's existing in Project Area

Name of Watershed	No. of SHG's	People registered under MGNREG's
Alakode	32	622
Muthiyamala	16	256
Koovapally	29	329
Thalayanadu-Malankara	4	76
Anchukallingal Thodu	10	284
Total	**91**	**1567**

Source: Primary data

1.10. APPROACH AND METHODOLOGY OF PREPARING THE DETAILED PROJECT REPORT (DPR)

The project area comes under hill land of Idukki district. The common guidelines provide a flexible framework for the preparation of the Detailed Project Report of the projects under IWMP.

The methodologies adopted for the preparation of Detailed Project Report(DPR) are mentioned below.

A .Transect walk

In order to identify and familiarize the project area we have conducted a transect walk in each watershed with the participation of peoples representatives in Grama Panchayath, Block Panchayath and District Panchayath, farmers, concerned officials and TSO. At the time of transect walk the group analyzed and found the problems in watershed area and suggested possible interventions to solve the problems.

B. Base line survey

The participation of stakeholders is essential in identifying the problems and needs of the people in the project area and in identifying suitable watershed development activities. In the watershed area Base line survey is done by collecting various details using a detailed survey form through trained enumerators.The enumerators visited eachindividual households and collected data. Later

the survey forms were consolidated to get the overall socio-economic condition, agricultural practices, problems etc… of the watershed area.

C. Drainage line Survey

rainage line survey was conducted for realizingthe present status of themain streams and sub streams such as the present level of stream bank erosion, locations where the stream velocity needed to be controlled etc... It was held by walking along the stream sides with representation of people residing near by the streams, farmers etc...

By conducting the drainage line survey we realized the locations where check dams, Gully plugging, Stone revetments for side protection needed to be constructed. Also initial measurements for possible interventions were recorded during the drainage line survey

D. Secondary Data Collection

For the preparation of DPR various secondary data such as Agricultural Statistics, Infrastructural facilities, Water supply and Irrigation , Employment Opportunities, Soil details, Ground water data , Climatic data such as rainfall, temperature, humidity etc..were collected from respective departments and other organizations. The database thus created is expected to facilitate the assessment of impact of the watershed development programme in the project area during and after the implementation of the project.

E. Problem analysis

Social mapping and resource mapping , transect walk, Focused Group Discussion (FGD) , problem tree analysis , pair wise and matrix ranking , seasonality calendar , historical time line , inflow – outflow were the main tools applied to identify and analyze the problems in the watershed. After the scientific analysis we found the following problems.

- Drinking water scarcity during summer, mainly in ridge areas.
- High run off during rainy season.
- The ridge area of the watershed is highly slopy therefore are prone to Severe soil erosion.
- Silting up of dams and reservoirs.
- Decline in production and productivity of farmlands.
- Extensive mono cropping like Rubber makes an imbalance in agriculture sector.
- Lack of irrigation facilities during summer.
- Uncontrolled and unscientific use of fertilizers and chemicals cause loss of fertility.

- Stream bank erosion
- Lack of Agricultural processing units

F. Suggested Interventions.

- Construct Stone pitched bund to reduce soil erosion and enhance moisture conservation in the watershed area.
- Construction of centripetal terracing to collect rain water and recharge ground water.
- Construction of ponds and renovate other water sources like natural springs called 'Oleys'.
- Stream bank protection by vegetative measures such as bamboo planting.
- Contour trenches and bunds.
- Rainwater harvesting tanks in ridge areas.
- Percolation pits
- Well recharging
- Afforestation
- Constructions of different types of Check dam
- Soak pit for waste water collection
- Staggered trenches
- Promote self-help groups improving livelihood opportunities
- Organic manure distribution for improving productivity of soil
- Distribution of agricultural tools

1.11. USE OF GIS IN DPR PREPARARTION

GIS and remote sensing devices have been used in the preparation of DPR. Arc GIS Software was used for the preparation of maps. All watershed interventions are prepared in cadastral maps in GIS platform. Google Earth images of the project area were also used for the planning. 1: 4000 scale cadastral maps of each village were the base map for planning.

1.12. IWMP PROJECT MANAGEMENT

Table 1.2: Implementation Phases of IWMP

Phase	Name	Duration(years)
I	Preparatory Phase	1
II	Watershed Works Phase	3
III	Consolidation &Withdrawal Phase	1

1.12.1 PREPARATORY PHASE

- Institution building, training and empowerment of institutions like watershed committee.
- Preparation of Detailed Project Report with detailed action plans through participatory exercise(PRA, FGD)
- Entry Point Activity shall be taken up during this phase to establish creditability of the Watershed Development Team (WDT) and create rapport with the village community.

1.12. 2 WATERSHED WORKS PHASE

- This is the important phase of the programme in which the DPR will be implemented.
- Execution of action plans(NRM works, Agriculture and Allied sectors works, Production system &Micro enterprises, Livelihood and Livestock improvement measures)

1.12.3 CONSOLIDATION AND WITHDRAWAL PHASE

- In this phase the resource augmented and economic plans developed in Phase II are made the foundation to create new nature-based, sustained livelihoods and raise productivity levels
- Bridging the gaps for post project sustainability.
- Building the capacity of the community based organizations to carry out the new agenda items during post project period.
- Preparation of project completion report with details about status of each intervention
- Documentation of successful experiences as well as lessons learnt for future use.

1.13. WATERSHED DEVELOPMENT FUND

One of the mandatory conditions for the selection of villages for watershed project is people's contributions towards the watershed development fund. The contribution of WDF shall be a minimum 10 % of cost of NRM works executed on private land only. However, in case of SC/ST, small and marginal farmers, the minimum contribution shall be 5 % of cost of NRM works executed on their land. This contribution would be acceptable either in cash at the time of execution of works or voluntary labor. A sum equivalent to the monetary value of the voluntary labour would be transferred from the watershed project account to the WDF bank account that is different fromthe watershed committee (WC) bank account. The user charges collected from the beneficiaries of the watershed, the Share from the beneficiaries, the income from the public assets, contributions and other source of income should be deposited with the WDF account. Income earned from assets created under the project on common property resources shall also be credited to WDF.

1.14. HYDROLOGICAL MODELLING

Hydrology modelling technique was used for locating drainage, stream length, flow direction, sink, and flow accumulation. This model overlaid over cadastral map to calculate the catchment area of each structures like the check dam etc. This has helped to remove the human error which generally occurs while calculating the catchment area of a check dam.

Table 1.3: Details of Scientific Planning and Inputs in IWMP projects

List of scientific criteria	Whether scientific criteria was used
(A)Planning	
Cluster approach	Yes
Whether technical back-stopping for the project has been arranged? If yes, mention the name of the Institute.	Yes
Baseline survey	Yes
Hydro-geological survey	Yes
Contour mapping	Yes
Participatory Net Planning (PNP)	Yes
Remote sensing data-especially soil/ crop/run-off cover	
Ridge to Valley treatment	Yes
Online IT connectivity between Project and DRDA cell/ZP	Yes
Availability of GIS layers	
1. Cadastral map	Yes
2. Village boundaries	Yes
3. Drainage	Yes
4. Soil (Soil nutrient status)	Yes
5. Land use	Yes
6. Ground water status	Yes
7. Watershed boundaries	Yes
8. Activity	Yes
Weather Stations	Yes

1.15. PLANNING AND IMPLEMENTATION OF LIVELIHOOD SUPPORT SYSTEM

The most important aspect is the inclusion of 'micro level livelihood planning' an empowerment tool for the marginalized communities. This planning helps in understanding existing livelihood assets/capitals in a highly participatory manner to augment the existing livelihood platform.

1.15.1 PLANNING

- An awareness drive was undertaken at Grama Panchayath level for communication & sensitization of the target beneficiaries
- A "Livelihood Action Plan" (LAP) was prepared for availing the funds under the livelihood component.
- The livelihood action plan was prepared by analyzing the socio-economic conditions and existing livelihood capitals of the watershed, during the situation analysis by means of PRA and focus group discussion, in order to facilitate collection of information to feed into the livelihood action planning process. Livelihood action plan contains schedule of activities, interventions, no. of SHGs to be assisted and expected outcome.
- To promote convergence, the PIA has worked in close association with other Employment generating programmes such as MGNREGS, NRLM, Kudumbashree, VFPCK, NHM, etc.

1.15.2 GUIDING PRINCIPLES

Livelihood improvement initiative emphasizes on natural resource based activities and conforms to principles of equity, gender sensitivity and transparency. It strives to:-

- Enhance livelihood opportunities for the poor through investment into asset creation and improvement in productivity and income.
- Improve access of the marginalized communities, including SC/ST, landless/asset less people, women etc., to the benefits.
- Select the beneficiaries in a transparent manner. Livelihood guidelines for landless/ asset less households aims at improved household income, participation and division of labour, access to information, knowledge, appropriate technologies and resources.

1.15.3 MODE OF OPERATION

- The livelihood action plan will be implemented through Self Help Groups and/or their federation. However financial support to enterprising individuals was also be considered subject to a maximum of 10% of the funds under the livelihood component.
- Livelihood activities will be carried out either through the existing SHGs having good performance or new SHGs formed with a group of 5-20 persons.
- SHGs selected for implementing livelihood action plan will be homogeneous in terms of their existing livelihood capitals, common interest and need.
- SHGs can undertake any permissible activity jointly as a group or the group may decide to support individual(s) for the activities under the umbrella of the main SHG. In case of individual support under the SHGs, the individuals will be accountable to the main SHG for finances and performance.
- The financial support to enterprising individuals who prepare and submit a viable livelihood proposal, will be considered by Watershed Cell cum Data Centre (WCDC) on the recommendation of the Watershed Committee (WC). The plan has to be approved by the WCDC before extending financial support. However, support to individuals should not exceed a maximum of 10 % of funds under the livelihood component.

1.15.4 FUNDING PATTERN

The funding pattern under the livelihood components will be as follows

- Seed money for Enterprising Individuals 10 percent
- Seed money for SHGs 60 percent
- Funding for Major Livelihood activities 30 percent

1.15.5 CAPACITY BUILDING FOR BENEFICIARIES

The capacity building needs of the marginalized communities, including SC/ST, landless/asset less people, women, etc is also be included in the livelihood action plan prepared after the livelihood analysis. The capacity building aims at skill enhancement and not just knowledge and information. The expenditure for the training for livelihood component will be met from 5% of the budget component of the project cost earmarked for institution and capacity building.

1.16. ELIGIBILITY FOR AVAILING THE PRODUCTION SYSTEM FUNDS:

- Individual land holders/owners can avail the benefits of production system on their private land. The small and marginal farming households, women headed farming households, SC & ST farmers will be given preference based on the wealth ranking exercise conducted during PRA. Those households whose land is in close proximity to the developed natural resources may be preferred to make full use of natural resource potential.
- Selection of beneficiaries will be done by PIA, in consultation with WC.
- Beneficiaries having common interest will be organized into User Groups to pool and manage their resources as well as manage aggregating their produce for effective disposal and marketing, besides maintaining their natural resource base. This may also provide a means for deciding resource use arrangements based on equity and sustainability.
- The funds were earmarked for cost intensive farming system based livelihood activities/interventions such as aquaculture, agriculture, horticulture, agro forestry, animal husbandry, agro-processing, value addition, etc.
- The beneficiary contribution of farmers will be 20 percent for general category and 10 percent for SC/ST.

CHAPTER II
THE PROJECT AREA

2. 1 INTRODUCTION

Idukki District was formed on 26th January 1972, the name Idukki was derived from the Malayalam word 'Idukki' meaning constriction. The terrain of Idukki is about 2000 feet above MSL. The highest peak in South India 'Anamudy' is in the district with an estimated height of 2695 m. The district falls under the High Altitude Zone as per Agro-Climatic Zonation by ICAR.

Elamdesam Block is located in the western part of Idukki District. Major part of the Block area is hilly and enriched with variety of flora and fauna. The Block Panchayath consists of seven Grama Panchayath viz Alakode, Karimannoor, Kodikulam, Kudayathoor, Udumbannoor, Vannappuram and Velliyamattom. The total area is l87.22 Km^2. Majority of the population depends upon agriculture and allied activities for their livelihood. The non-availability of labours and diminishing prices of paddy led to severe crisis in paddy cultivation. Therefore farmers shifted to cultivation of other cash crops like rubber, cocoa, etc. Even though there are large-scale cultivation of rubber, cocoa etc, there is no processing units functioning. There is lot of opportunities for the livestock development and fisheries.

Elamdesom is the catchment area of Muvattupuzha River. It induces plain areas, hills and mountains. There is a nationally important tourist spot known as 'Thommankuthu waterfalls"

The region is famous for crops like Rubber, Cocoa, Pepper, Coconut, Areca nut, Ginger, Turmeric, Rice, Banana etc. Here mono-cropping and mixed cropping pattern with 3-tier system of canopy is adopted. Rubber is the most important cash crop and an important livelihood for a major population. A vast area of non-irrigated land is another characteristic of this place, despite many water sources.

There are mainly three seasons like summer, winter and monsoon. Though it has more or less tropical climate like that in rest of country, it enjoys a moderate temperature due to monsoons. There are two monsoon seasons, southwest monsoon and northeast monsoon. The mean average temperature ranges from 20-25^oC.

2. 2 LOCATION

Latitude	**N 9^0 48'3" - 9^0 53'48"**
Longitude	**E 75^0 51'9" - 75^0 57'9"**

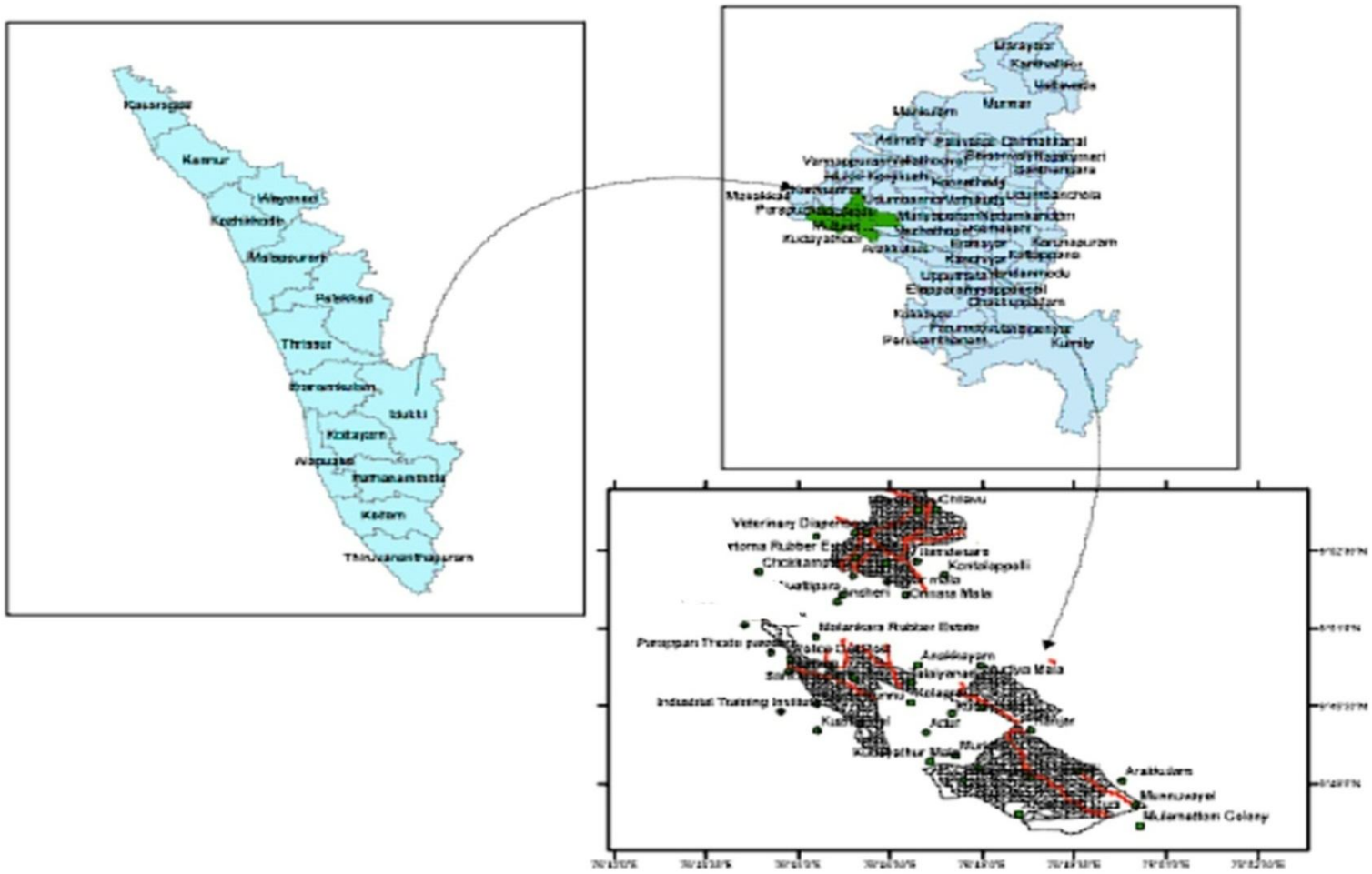
Elamdesom (IWMP I/2010-11) project is located in Elamdesom block Panchayath of Idukki district, Kerala. The project area lies between 9^0 48'3" & 9^0 53'48" North latitude and 75^0 51'9" & 75^0 57'9" east longitudinal extension. The project comprises of five micro-watersheds namely Anchukallingal thodu (13M5a), Koovapally(13M48a), Muthiyamalathodu (13M45a), Alakode (13M41b) and Thalayanadu - Malankara (13M43a).The project, with an area of 2172 hectares has been selected for treatment under the Integrated Watershed Management Programme (IWMP). The project area covers the Grama Panchayaths of Alakode, Muttom, Velliyamattom and Kudayathoor coming under Elamdesom block and Thodupuzha block). The project area lies in hilly areas of the Idukki district

2. 3 DETAILS OF WATERSHED IN THE PROJECT AREA

Table 2.1 Details of Watershed in the Project Area

STATE	DISTRICT	TALUK	BLOCK	PROJECT	MICRO WATERSHEDS			GRAMA PAN-CHAYATHU	WARDS	TOTAL AREA	TREATABLE AREA	PROJECT AMOUNT
					NAME	CODE	AREA					
					Alakode	13M41b	625 Ha	Alakode	2,3,4,5,11,12,13, ,13			
					Thalayanadu - Malankara	13M43a	255 Ha	Alakode Kudayathoor	8 13			
KERALA	**IDUKKI**	**THODUPUZHA**	**ELAMDEOSOM**	**IWMP I / 2010 - 2011**	Muthiyamalathodu	13M45a	191 Ha	Kudayathoor Velliyamattom	1,2,3 14	**6708 Ha**	**2172 Ha**	**3258000/-**
					Koovappally thodu	13M48a	798 Ha	Kudayathoor	4,5,6,7			
					Anchukallingal thodu	13M50a	303 Ha	Muttom Kudayathoor	2,3,4,5,6 12			

MAP 2.1: LOCATION MAP



2. 4 PHYSIOGRAPHY

Physiographically Elamdesom block belongs to high land division. The elevated places of the project area are Chakkikavu (681m), Anakunnumudi (741m) and Koovapally (260m) in Koovapally watershed, Kollam Kunnu(481m) and Kudayathoor mala (820m) in Anchukallingal thodu watershed, Thalayanadu(104m) in Thalayanad - Malankara watershed, Muthiyamala (269m) in Muthiyamalathodu watershed and Chilavu (222m) and Tevarmala (261m) in Alakode Watershed.

Table 2.2 Physiograpy

Physiography	Range	Place	Elevation
Mid Up Land	100 - 300	Koovappally	260 m
		Thalayanadu	104 m
		Muthiyamala	269 m
		Chilavu	222 m
		Thevarmala	261 m
Up Land	300 - 600	Kollamkunnu	481 m
High Land	600 - 1200	Chakkikavu	681 m
		Anakunnumudi	741 m
		Kudayathore Mala	820 m

2. 5 SLOPE

The slope direction of the project area is north to south in some area and south to north in other area.Slope range of the project area table is shown below.

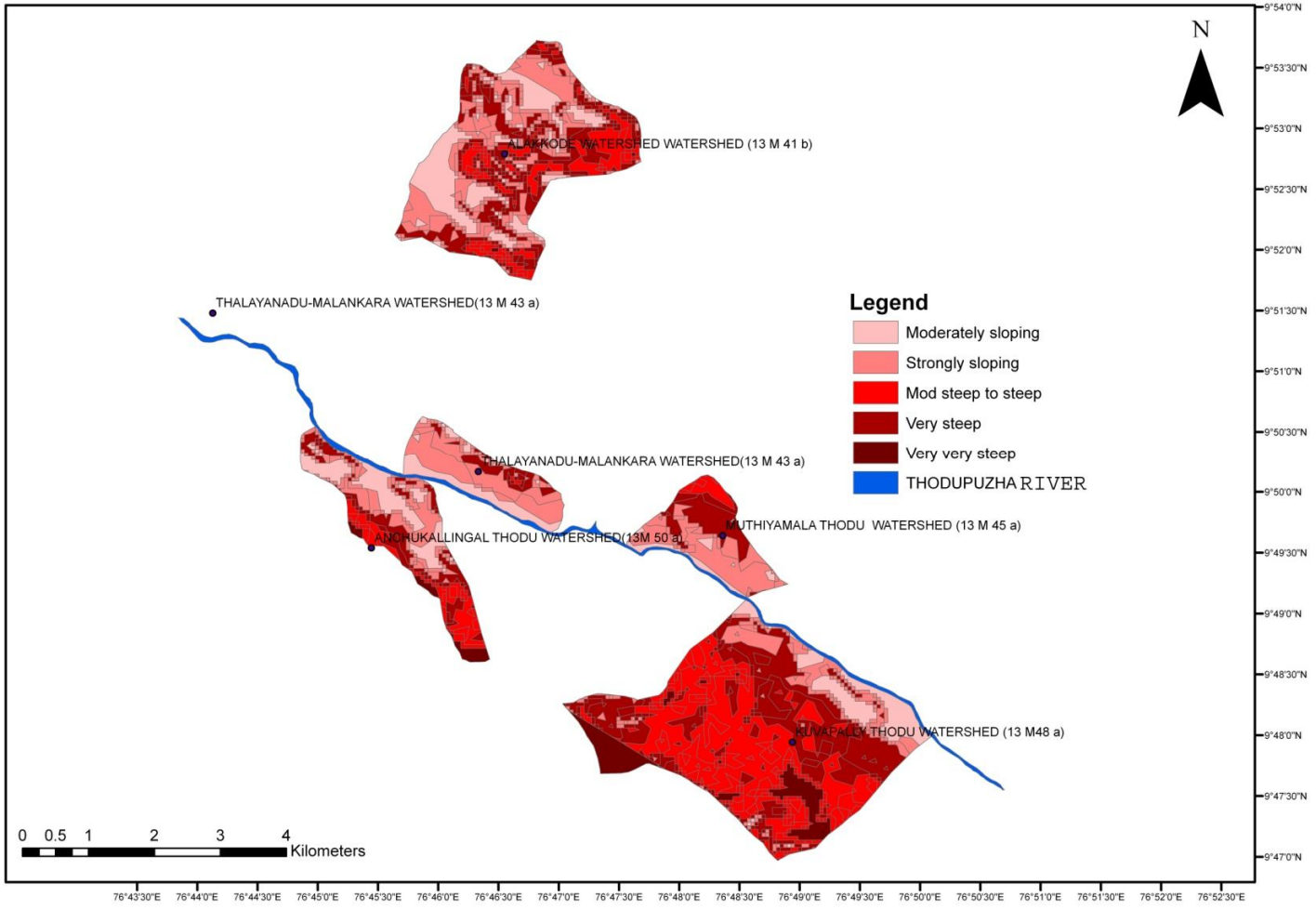
Table 2.3 Slope of the Project Area

Slope Range	Slope	Area (Ha)
Moderately sloping	5-10%	547
Strongly sloping	10 - 15%	751
Mod steep to steep	15 - 33%	462

Very steep	33 - 50%	321
Very very steep	>50%	91
Total		**2172**

The above table summarizes the entire slope of the project area. The highest area covers strongly sloping (10-15%) which is 34.57 % of the area. The slope map of the project area is shown below.

Map 2.2: Slope of the project area

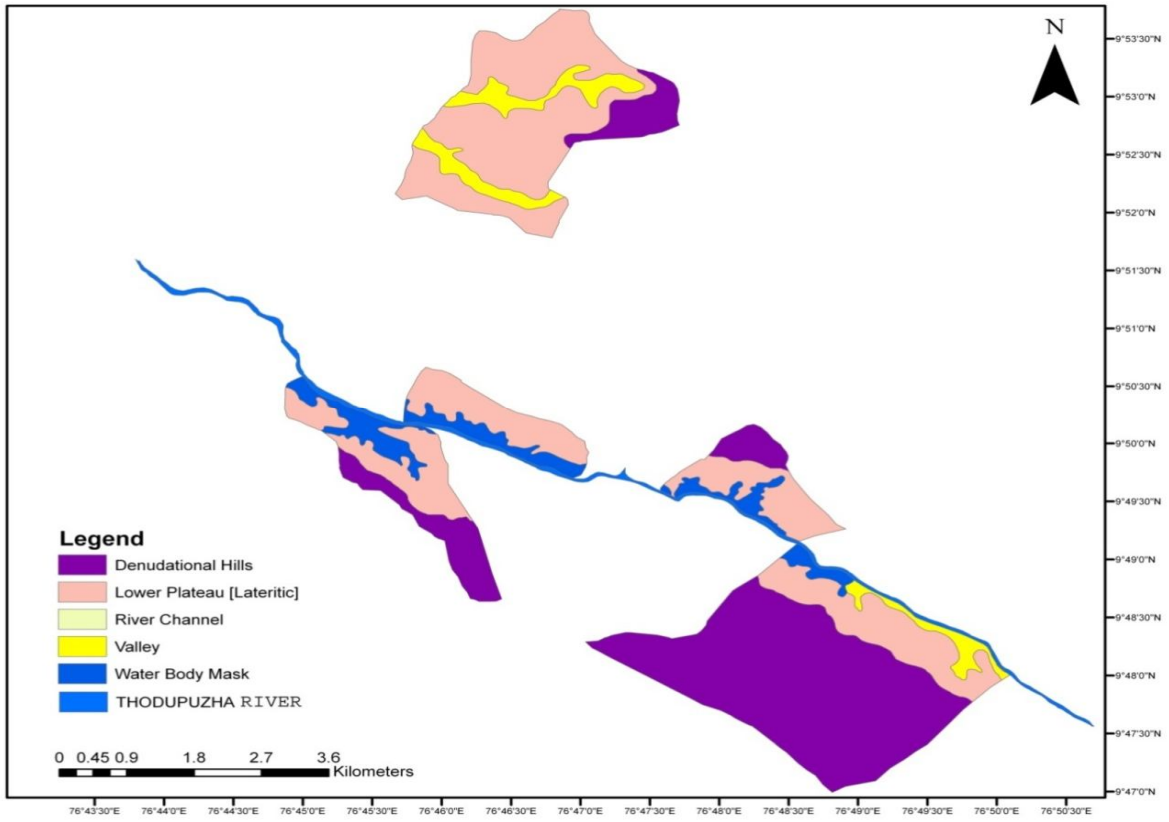


Source : Aster G Dem

2. 6 GEOMORPHOLOGY

The most of the places underlain by denudation hills and lower plateau. The Geomorphology (Map.3) of the project area shown below.

Map 2.3 Geomorphology



Source:CESS

2. 7 CLIMATE

2.7.1 Rainfall

Table 2.4 : Average rainfall over last 10 years

YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
2003	0	51	338	273	193	542.9	809.7	567	128	0	114	0
2004	0	15	197	220	825.4	801	697.6	494	332	542.8	77	0
2005	0	0	109	367.2	534	1196	2159	632.6	730.6	417.6	130	4.6
2006	25	0	242.2	183.6	636.4	435	495	389.2	422	477	322	0
2007	0	0	17	310.6	140.1	695.2	976.6	434.2	605.8	472	167	31
2008	0	23	113	261.8	37	458.2	553	618	375	283	66	14
2009	30	0	31	50	342.5	452	729	380	419	266	272	135
2010	13	0	73	125.5	229	737	644.3	394	326.6	470	403.9	22.6
2011	84.6	38.9	41.5	448.6	66.8	855.8	628.5	692.5	391.2	502.6	253.8	78
2012	0	10.2	95.7	470.9	117.5	367.9	544.4	544.4	246.5	264.8	230	7.9

Source: Indian Meteorological Department, Thiruvananthapuram.

The watershed experiences an average annual rainfall of 3105 mm.

2.7.2 Temperature

The maximum, minimum and mean temperature of the watershed area is 25.81, 17.07 and 21.44^{0}C respectively. The maximum temperature is experienced during the month of March and minimum during the month of December.

Table 2.5 : Temperature

Year	Temperature (Max)	Temperature (Min)
2003	25.62	17.6
2004	25.89	17.3
2004	25.44	17.1
2006	25.4	16.8
2007	25.7	16.9
2008	25.7	17.6
2009	25.8	17.2
2010	26.5	17.5
2011	25.81	15.55
2012	26.19	17.12

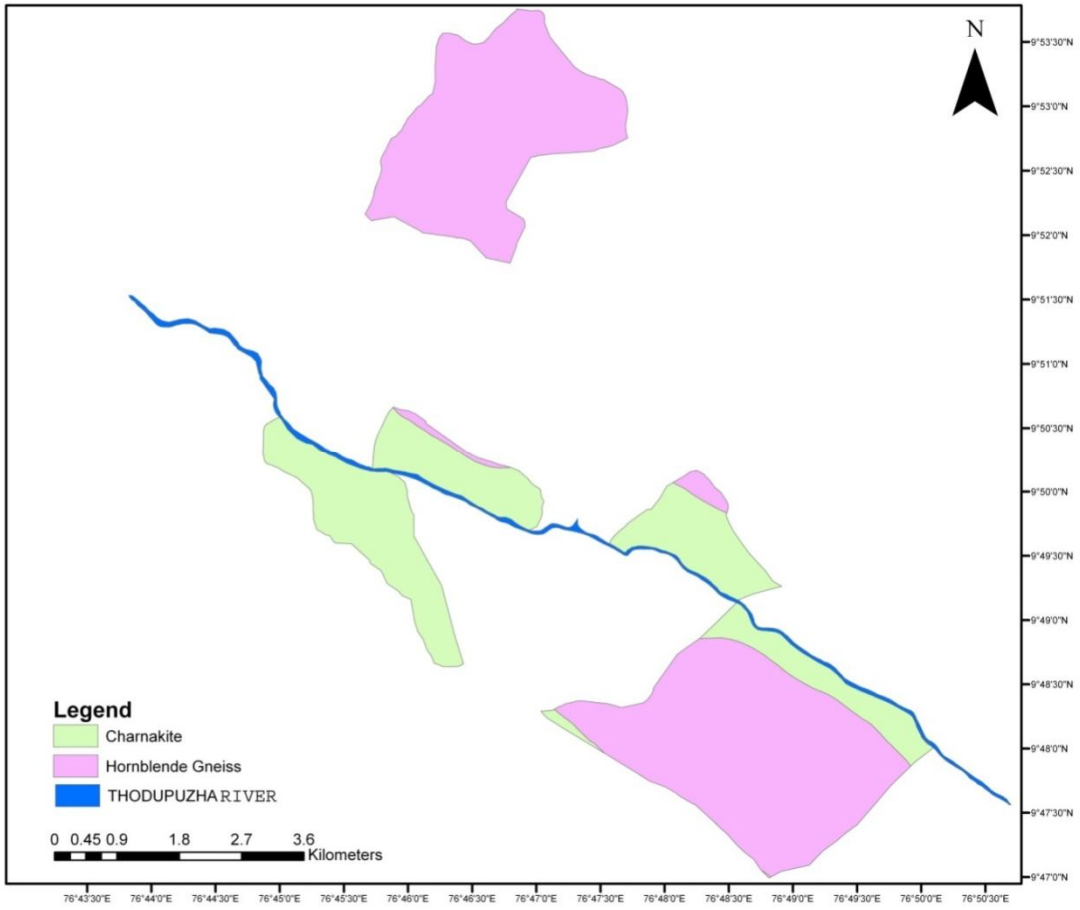
2.7.3 Humidity

The humidity of the watershed ranges from 83% to 88% at 8-30 hrs. And 70% to 80% at 17-30 hrs.

2. 8 GEOLOGY

The project area comes entirely under the Western Ghats and the main rock types are charnockite, & hornblende gneisses of Archaean age. The Geology (Map.4) of the project area is shown below.

Map :2.4 Geology



Source: Natmo Map

2. 9 SOIL

Soils of the watershed vary in their depth, texture, internal drainage and degree of erosion. The salient attributes of the soils occurring in different physiographic regions of the watershed are furnished table below. Soil texture (Map.7) and Soil erosion (Map.8) shown below.

Table 2.6: Soils Series of the Project Area

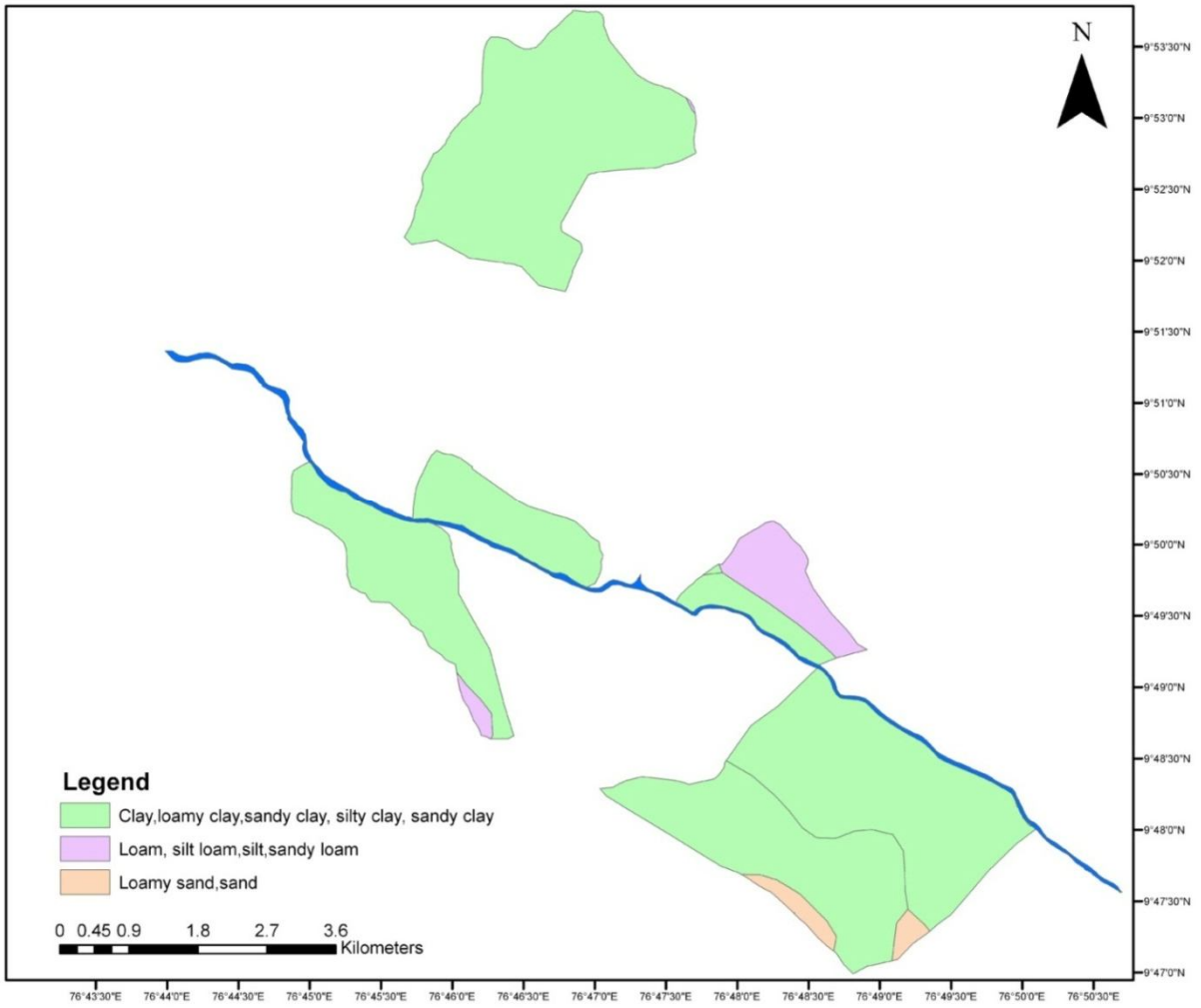
Major soil series	Erosion status	Depth of soil	Slope range	Drainage details	Soil fertility
Manakkad Series	Moderate	>150 cm	1-5%	Well drained	Medium
Cheenikuzhy Series	Moderate to severe	>150 cm	25-50%	Well drained	Medium
Manakkad Series	Moderate	>150 cm	1-5%	Well drained	Medium
Koovappally Series	Moderate to severe	100-151	25-50%	Well drained	Medium
Koovappally Series	Moderate to severe	100-151	25-50%	Well drained	Medium
Manakkad Series	Moderate	>150 cm	1-5%	Well drained	Medium

Table 2.7: Soil Texture of the Project Area

Characteristics	Upper Region	Middle Region	Lower Region
Texture	Loam, Gravelly loam, clay, gravelly clay	Clay, gravelly clay	Sandy, clayey, gravelly clay
Depth	Deep (100-150 cm) to very deep (>150cm)	Very deep(>150 cm)	Very deep (>150 cm)
Drainage	Well drained	Well drained to moderately well drained	Very poorly drained to somewhat excessively drained
Erosion status	Moderate to severe	Slight to moderate	Slight to moderate

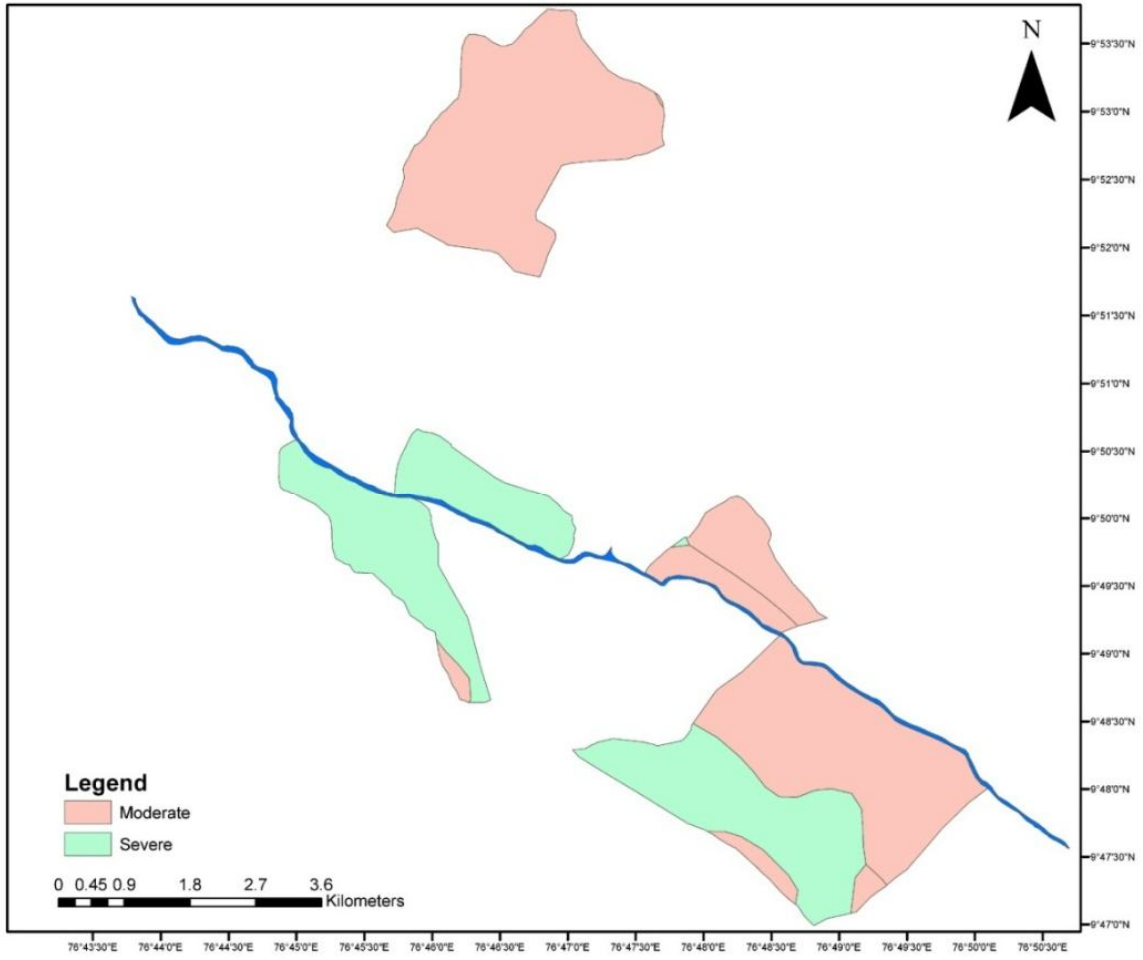
Source: Integrated district development plan (IDDP), 2012

Map 2.5 : Soil texture of the project area



Source : Department of Soil Survey , Idukki

MAP 2.6: Soil Erosion of the Project area



Source: Soil Survey department, Idukki

2. 10 WATER SUPPLY

There are 3 major water supply projects in the project area such as Morkad drinking water supply project in Koovapally watershed for 150 families, Pullonnoppara water supply project in Muthiyamala watershed for 100 families and water supply project by water authority in Thalayanadu Malankara watershed.

Table 2.8: Major Water Supply Projects in the Watershed Area

Watershed	Name of Grama Panchayath	Name of Scheme	No. of Beneficieries
Muthiyamalathodu	Koovappally	Water Supply Scheme Operated by Panchayath	75
Anchukallingal thodu	Muttom	Water Authority Project	110
	Muttom	Water Supply Scheme Operated by Panchayath	48
Thalayanadu Malankara	Alakode	Water Supply Scheme Operated by Panchayath	159

The project area lies along the mid-upland, upland & highland area. Major area is under rubber plantation and mixed crops. Other crops like coconut, banana, ginger, pineapple, tuber crops etc are also grown here. Thodupuzha River and Malankara reservoir are the major water resources in the project area. The ground water prosperity map is shown below. Ground water prosperity is poor in portion of Koovapally Muthiyamala and some portion of Anchukallingal thodu watersheds.

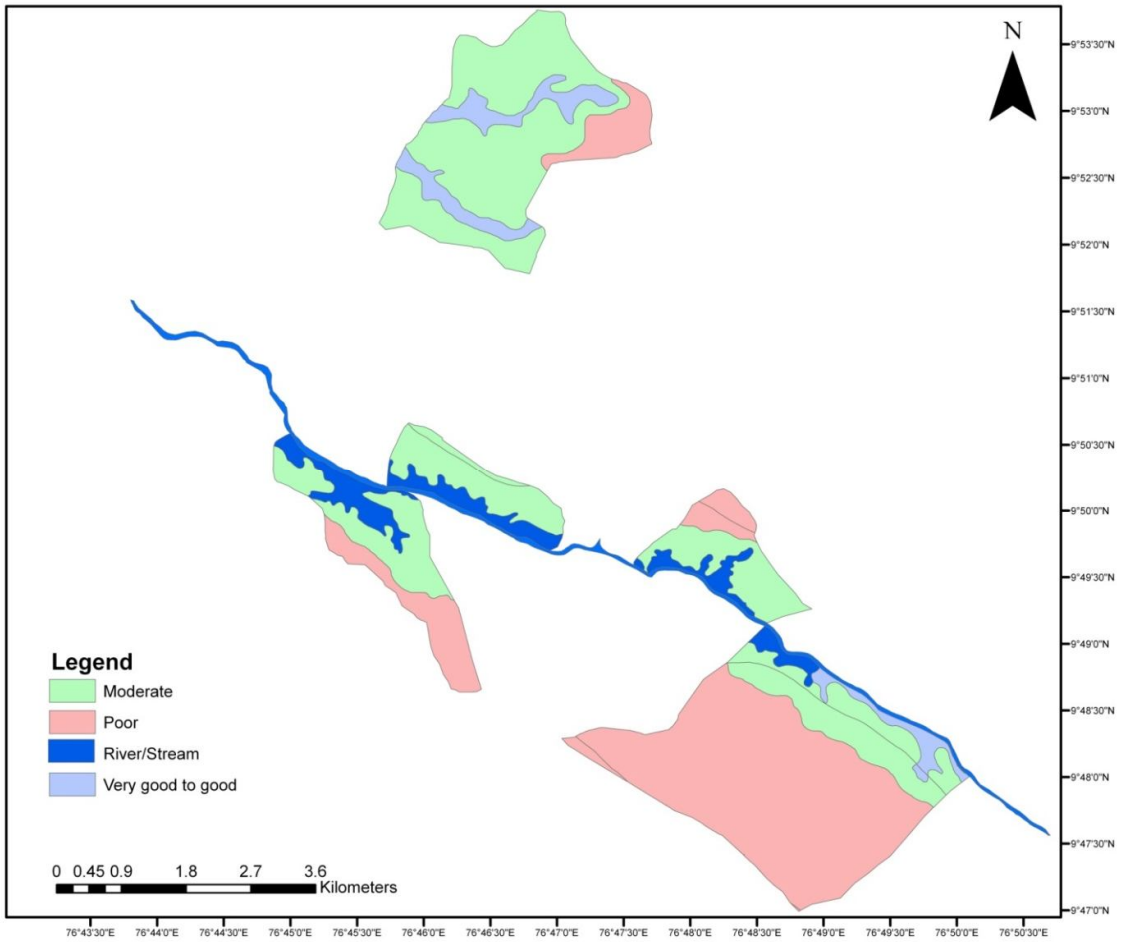
2. 11 GROUND WATER LEVEL

Table 2.9: Ground Water Level of the Project Area

Name of Watershed	Depth range (Water level-Phreatic aquifer-1997-2010)			Depth range (Water level-Semi-confined aquifer-1997-2010)		
	Minimum Depth Range	Maximum Depth Range	Average Depth Range	Minimum Depth Range	Maximum Depth Range	Average Depth Range
Alakode	1.76	9.1	5.36	1.45	3.16	2.21
Thalayanad-Malankara	0.93	8.75	5.25	2.6	5.66	4.16
Koovappally	0.36	6.17	3.47	2.6	5.66	4.16
Muthiya malathodu	1.76	9.1	5.36	1.45	3.16	2.21
Anchukallingal thodu	.36	6.17	3.47	2.6	5.66	4.16

Source: Integrated district development plan (IDDP), 2012

Map 2.7: Ground Water Prosperity of the Project area



Source: CESS

2. 12 SOCIO-ECONOMIC CONDITION

Table: 2.10: Socio-Economic Condition of the Project area

Watershed Name	House Holds	Total Population	Male	Female	SC	ST	BPL	Small Farmers	Marginal Farmers	Large	Land less
Alakode	930	3752	1854	1898	16	5	450	580	282	46	22
Muthiyamala	405	1864	918	946	11	-	329	240	90	27	48
Koovapally	501	2028	1003	1025	7	33	138	350	80	31	40
Thalayanadu-Malankara	109	429	204	225	5	3	28	53	25	8	23
Anchukallingalthodu	486	1897	937	960	21	11	124	254	189	12	31
Total	2431	9970	4916	5054	57	49	1069	1477	666	124	164

Source: Primary data

2. 13 EMPLOYMENT ANALYSIS

Table 2.11: Employment Analysis

Sl No.	**Employment**	**Nos**
1	Agriculture	1182
2	Business	987
3	Coolie	1211
4	Government	1500
5	MGNREGS	679
6	Pension	982
7	Student	1987
8	Others	1442
	Total	**9970**

2. 14 TYPE OF DWELLING

Table 2.12: Type of dwelling

House Type	No. of Families
Concrete	978
Tiled	1171
Huts	178
Temporary Shelter	104
Total	**2431**

2. 15 LIVESTOCK POPULATION

Table 2.13: Livestock Population

Watersheds	Cow	Milk/Yr	Buffalo	Milk/yr	Goat	Milk/Yr	Poultry	Duck	Rabbit	Piggery	Milk Market-ing Societies
Alakode	242	145200	12	7200	342	20520	563	498	146	324	9
Muthiyamala	132	79200	8	4800	216	12960	298	234	98	187	7
Koovapally	262	157200	28	16800	326	19560	453	398	56	214	8
Thalayanadu-Malankara	48	28800	9	5400	123	7380	287	135	34	78	2
Anchukallin-gal Thodu	187	112200	11	6600	289	17340	543	346	135	187	6
Total	871	522600	68	40800	1296	77760	2144	1611	469	990	32

Source: Primary data

2. 16 INFRASTRUCTURE

Table 2.14: Infrastructures of the Project area

Infrastructure	Number	Infrastructure	Number
Anganvadies	12	Market	1

LP school	6	Temple	7
UP school	4	Church	4
High school	6	Mosque	6
PHC	2	Colony	3
Clinic	4	Library	2
Banks	2	Clubs	5
Post office	3	Madrassa	5
Ratio shop	3	Village office	4
Milma society	6	Agriculture office	2
Dispensary	2		

2. 17 LAND HOLDING SIZE

Table 2.15 : Land holding size

Project Name	IWMP – I /2010-11
0-5 Cents	1315
5-50 Cents	835
50-250 Cents	128
250-500 Cents	46
Above 500 Cents	107
TOTAL	**2431**

Source: Primary data

2. 18 MAJOR CROPS / VEGETATION IN MICRO WATERSHEDS

Table 2.16: Crops of the project area (In ha)

WATERSHED NAME	Coconut	Paddy	Mixed	Rubber	Total
Alakode	10	100	431	84	625
Muthiyamala	0.2	3	183	4.8	191
Koovapally	2	2	753	41	798
Thalayanadu-Malankara	1	12	160	82	255
Anchukallingal Thodu	10	3	281	9	303
Total	**23.2**	**120**	**1808**	**220.8**	**2172**

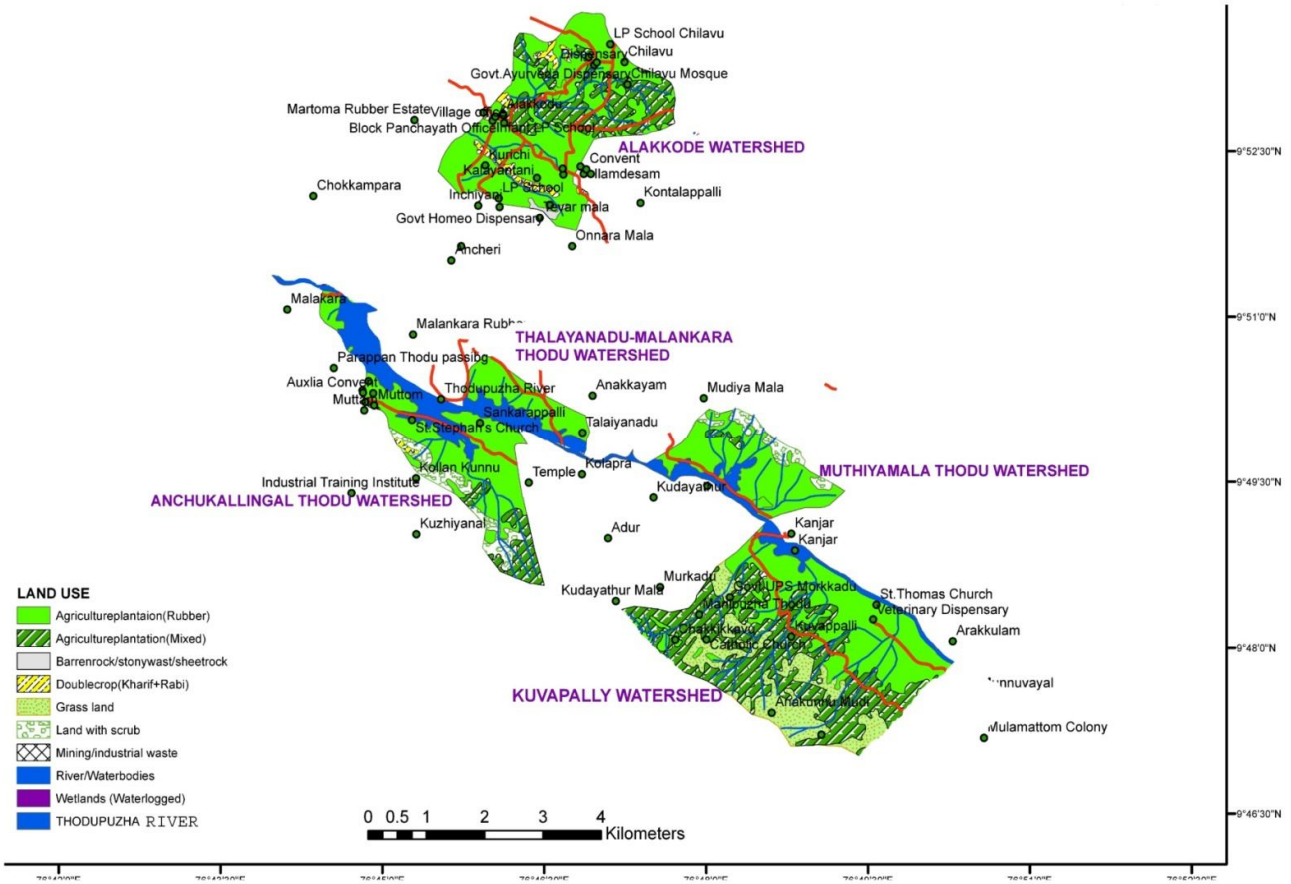
2. 19 LAND USE OF THE PROJECT AREA

Table 2.17: Land use of the Project Area

LAND USE	Hectares	%
Paddy	120	6
Coconut	23.2	1
Land with scrub	1	0.05
Agriculture plantation(Rubber)	220.8	10
Arecanut	799	37
Grass land	507	23
Plantation	500.8	23
Total	**2172**	**100**

Source: Kerala State Land Use Board

MAP 2.8: Land use of the Project area



Source: Kerala State Land Use Board

CHAPTER III

WATERSHED INTERVENTIONS IN THE PROJECT AREA

3.1 INTRODUCTION

The major objective of Integrated Watershed Management Programme (IWMP) is to restore the ecological balance by harnessing, conserving and developing degraded natural resources such as soil, vegetative cover and water. The watershed approach would result in improving the productivity of not only agriculture sector but also the overall enhancement of self-employment opportunities and thus the overall income of the rural households. Based on the problems identified through participatory methods and the inputs from several rounds of discussions with stakeholders including experts, suitable interventions for watershed development of the project area have been identified. The specific interventions under IWMP are broadly classified into Entry Point Activities (EPA), Natural Resource Management (NRM), Production System and Microenterprises, Livelihood Supporting Activities.

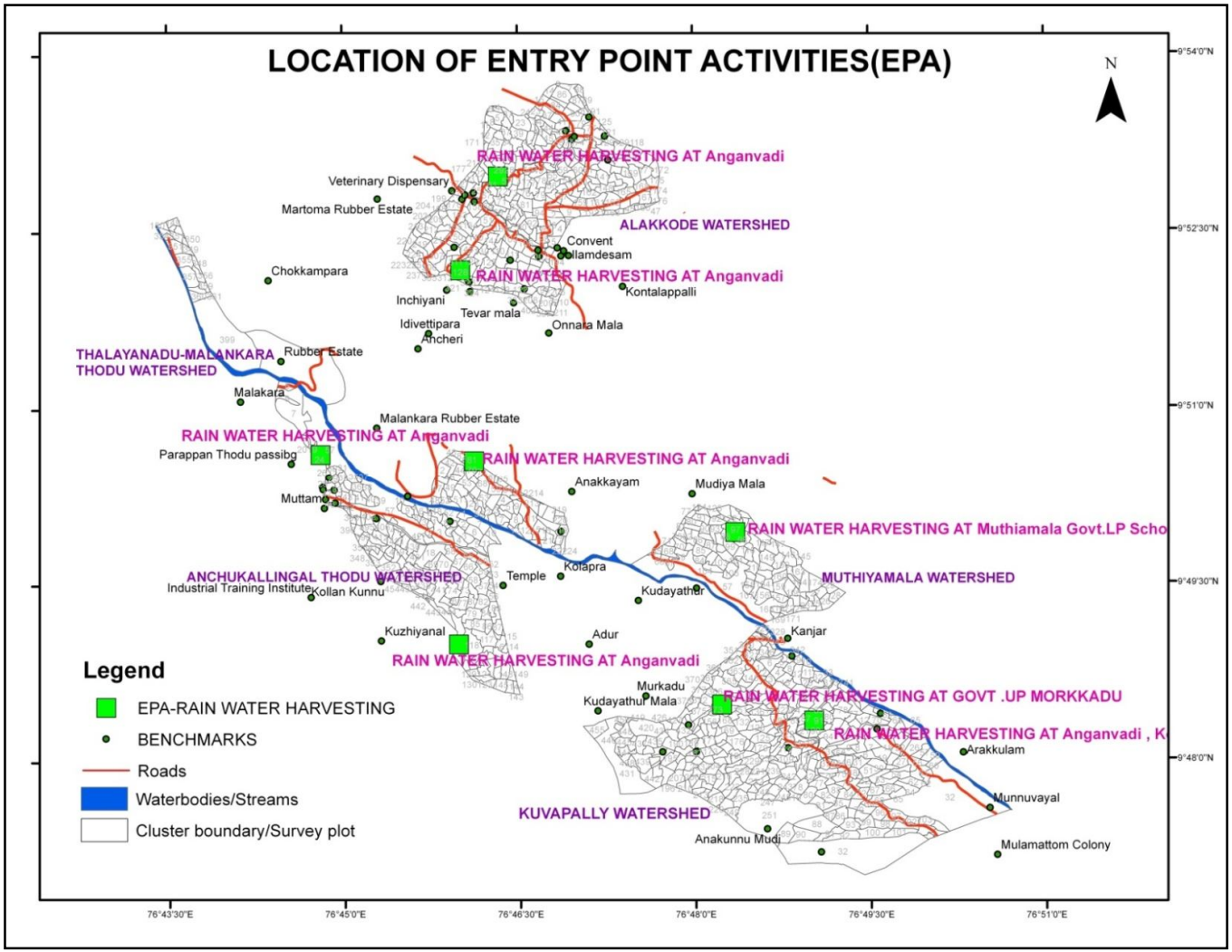
3.2 ENTRY POINT ACTIVITIES (EPA)

Entry point activities aim to mobilize the community in support of the subsequent interventions under the project. EPA helps to create rapport with the village community. Entry point activities are identified with a view to showcase them as model intervention which, in turn, would generate the interest of the community in watershed development activities. Community participation is essential to maximize the impact of the project and to ensure the sustainability of the project outcomes. Entry point activities identified in the project area are presented below:

Table 3.1. Entry Point Activities

Name of Watershed	Entry Point Activities	Target	
		Physical	**Financial**
Alakode	a) 10,000 Ltr Rain water harvesting tank system for Anganvadi No:109, Inchiyani	Construction of 10,000 Ltr Rain Water Harvesting System	55,000/-
	b) 10,000 Ltr Rain water harvesting tank system for Anganvadi No:108, Inchiyani	Construction of 10,000 Ltr Rain Water Harvesting System	55,000/-
	c) Plant Distribution for watershed community	240 nos	24000/-
Thalayanadu- Malankara	**a)** 10,000 Ltr Rain water harvesting tank system for Anganvadi No:105 , Thalayanadu	Construction of 10,000 Ltr Rain Water Harvesting System	55,000/-
	b)Plants distribution to the watershed community	800 nos	8000/-
Muthiyamalathodu	**a)** 20,000 Ltr Rain water harvesting tank system at Govt,LPS, Muthiyamala	Construction of 20,000 Ltr Rain Water Harvesting System	1,10,000/-
	b) Plants distribution to the watershed community	460 nos	4600/-
Koovappally thodu	a) 25,000 Ltr Rain water harvesting tank system for Govt.LP School , Morkad	Construction of 25,000 Ltr Rain Water Harvesting System	1,35,000/-
	b) 5,000 Ltr Rain water harvesting tank system for Koovapally Aanganvady No.91	Construction of 5,000 Ltr Rain Water Harvesting System	28000/-
	C) 50000 Ltr Rain water harvesting tank system for Koovapally PHC.	Construction of 50000 Ltr Rain Water Harvesting System	255000/-
	d)Bamboos plantation on the side streams	Bamboo Planting	53550/-
	e) Plants distribution to the watershed community	725 nos	7250/-
Anchukallingal Thodu	a)MathapparaAnganvadi No.43	Construction of 10000Ltr Rain Water Harvesting System-	110000/--
	b)Kakomb Anganvadi No.101	Construction of 10000 Ltr Rain Water Harvesting System	55000/-
	d) Plants distribution to the watershed community	330 nos	16800/-
TOTAL			**9,73,200/-**

MAP3.1: Location of Entry Point Activities



3.2.1: KOOVAPALLY WATERSHED

Name of work: Construction of **25,000** Litres of Ferro-cement rainwater harvesting system having 4m diameter and **2m** height (internal)

Location: Morkad Govt.LP School, Morkad

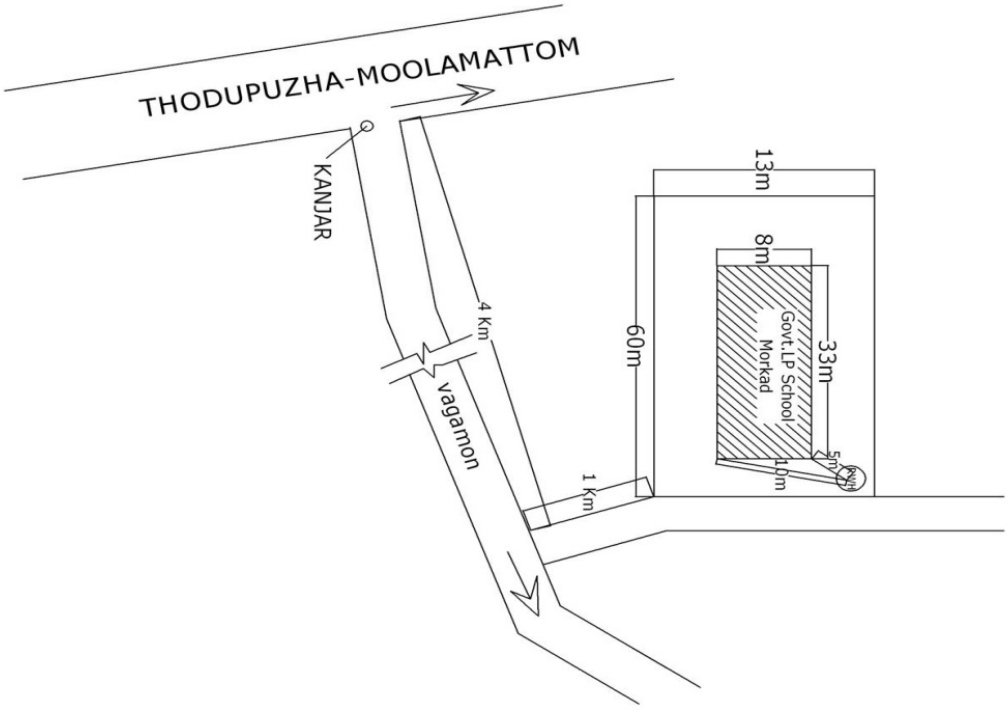
Rain water harvesting is the collection and storage of rainwater. Later it is used as drinking water, water for livestock, water for irrigation, as well as for other domestic uses. The method of rain water harvesting has been practicing since ancient times. It is the best possible way to conserve water and awaken the society towards the importance of water. The method is simple and cost effective. It is especially beneficial in the areas, which faces the scarcity of water. Rooftop Rain Water Harvesting is the technique through which rain water is captured from the roof catchments and stored in reservoirs.

As part of Entry Point Activities (EPA) for Integrated Watershed Management Program (IWMP) in Elamdesom Block Panchayath, Elamdesom Block committee have decided to construct a 25,000 litre Ferro cement rainwater harvesting system in Govt. LP School situated at Morkad in Koovappally Thodu watershed. This proposed school accommodates almost 65 students and they were facing scarcity of water in summer season. This rain water harvesting tank is capable for satisfying the water requirement during summer season. Here rain water is collected from the roof top by PVC half pipes and fed to a filtering chamber and finally collected on a Ferro cement rain water harvesting tank. By the efficient utilization they can achieve a storage and consumption of 1, 25,000 Litres of water every year.

Detailed Specifications and Estimate

Construction of Ferro cement rainwater harvesting system having a capacity of 20,000 litres with 3.8m diameter and 1.8m height or nearest size with ample foundation and basement, rainwater collection system, filter materials, necessary outlet arrangements, name board showing project details etc…

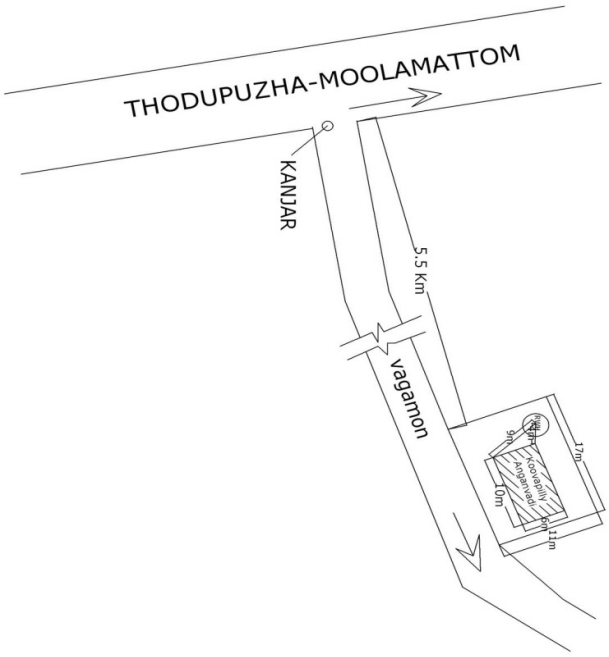
1 nos	
1 x 25,000 litre @Rs.5 / litre	= 1, 25,000/-
VAT 5%	= 6250/-
WWTF	= 1250/-
Unforeseen any	= 2500/-
TOTAL	= 1**, 35,000/-**



2. Name of work: Construction of **5,000**Litres of Ferro-cement rainwater harvesting system having **2.3 m** diameter and **1.25m** height (internal) at Koovappally Anganvadi NO:91

Construction of Ferro cement rainwater harvesting system having a capacity of 5,000 Litres with 2.7m diameter and 1.8m height or nearest size with ample foundation and basement, rainwater collection system, filter materials, necessary outlet arrangements, name board showing project details etc…

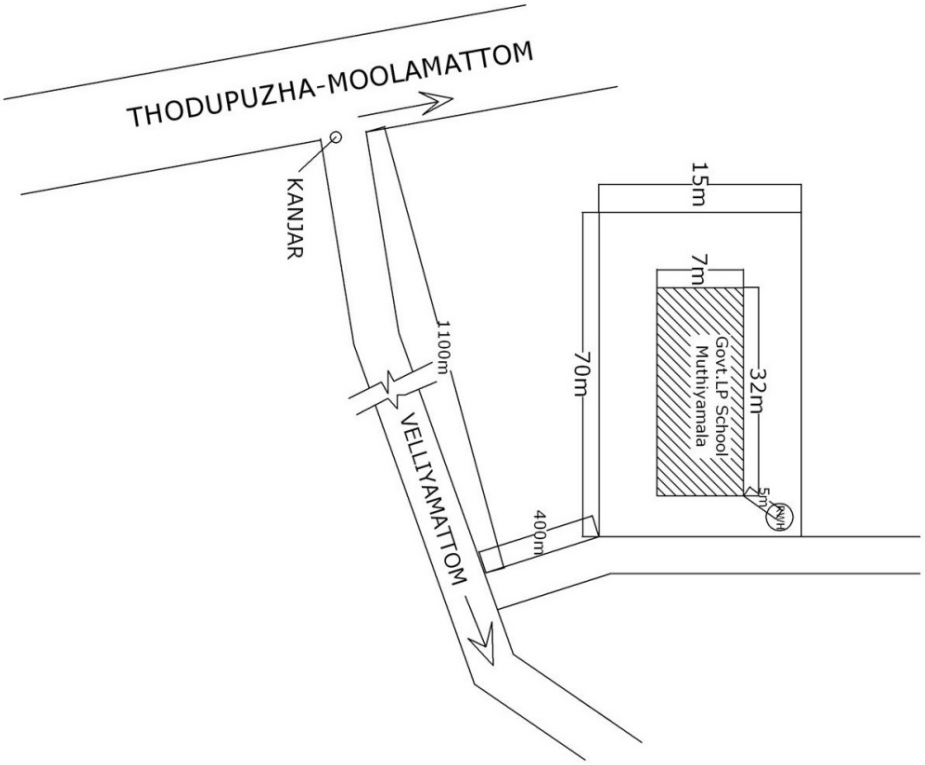
1 nos	
1 x 5,000 litre @ Rs.5 / litre	= 25,000/-
VAT 5%	= 1000/-
WWTF 1%	= 250/-
Unforeseen any	= 1750/-
TOTAL	= 28,000/-



3.2.2: MUTHIYAMALATHODU WATERSHED

Name of work: Construction of **20,000**Litres of Ferro-cement rainwater harvesting system having **3.8m** diameter and **1.8m** height (internal) at Muthiyamala Govt. LP School.

1 nos		
1 x 20,000 litre @Rs.5 / litre		= 1, 00,000/-
VAT 5%		= 5000/-
WWTF		= 1000/-
Unforeseen any	= 4000/-	
TOTAL	=	**1, 10,000/-**

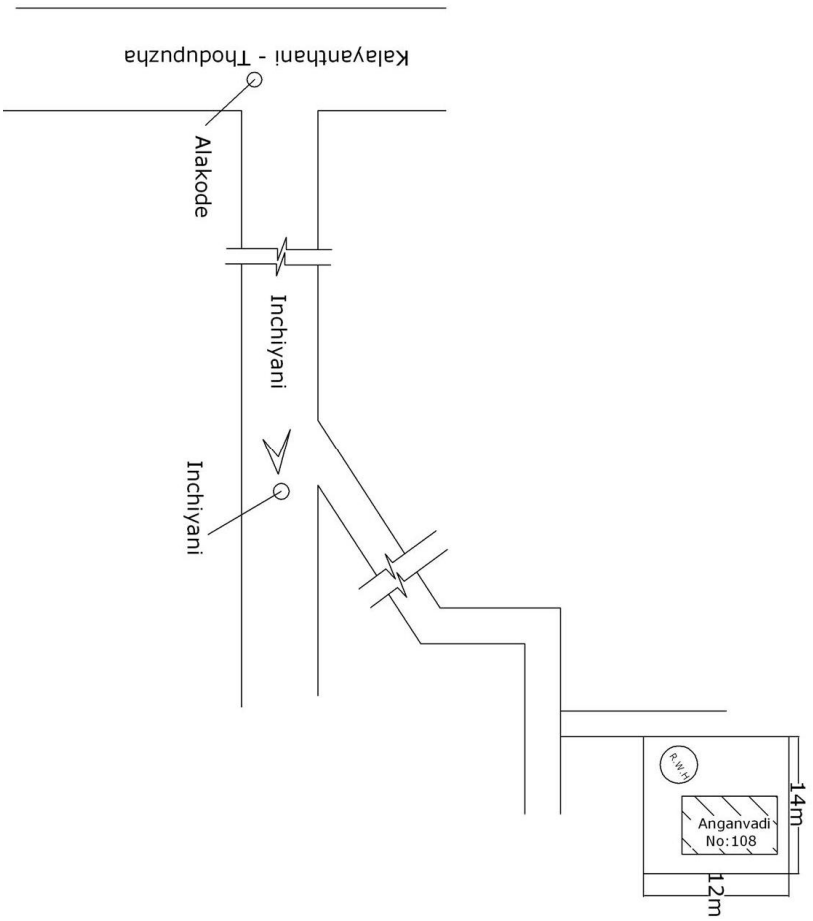


3.2.3. ALAKODE WATERSHED

Name of work: Construction of **10,000**Litres of Ferro-cement rainwater harvesting system having **2.7 m** diameter and **1.8m** height (internal) at Anganvadi , Inchiyani No:108

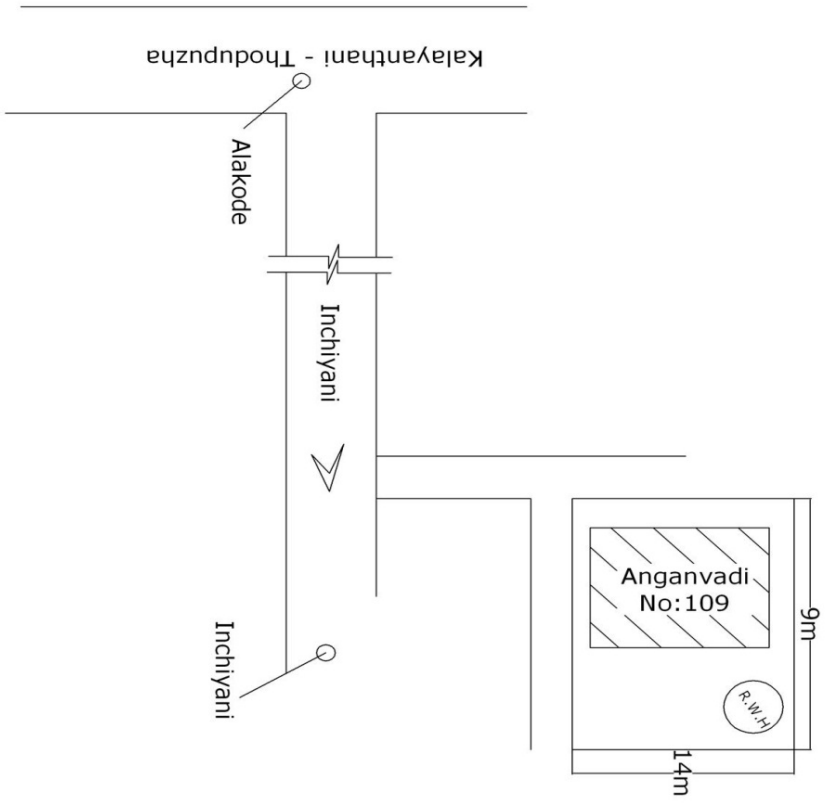
1 nos

1 x 10,000 litre @Rs.5 / litre	= 50,000/-
VAT 5%	= 2500/-
WWTF	= 500/-
Unforeseen any	= 2000/-
TOTAL	**= 55,000/-**



2.Name Of Work: Construction of **10,000**Litres of Ferro-cement rainwater harvesting system having **2.7 m** diameter and **1.8m** height (internal) Anganvadi , Inchiyani No:109

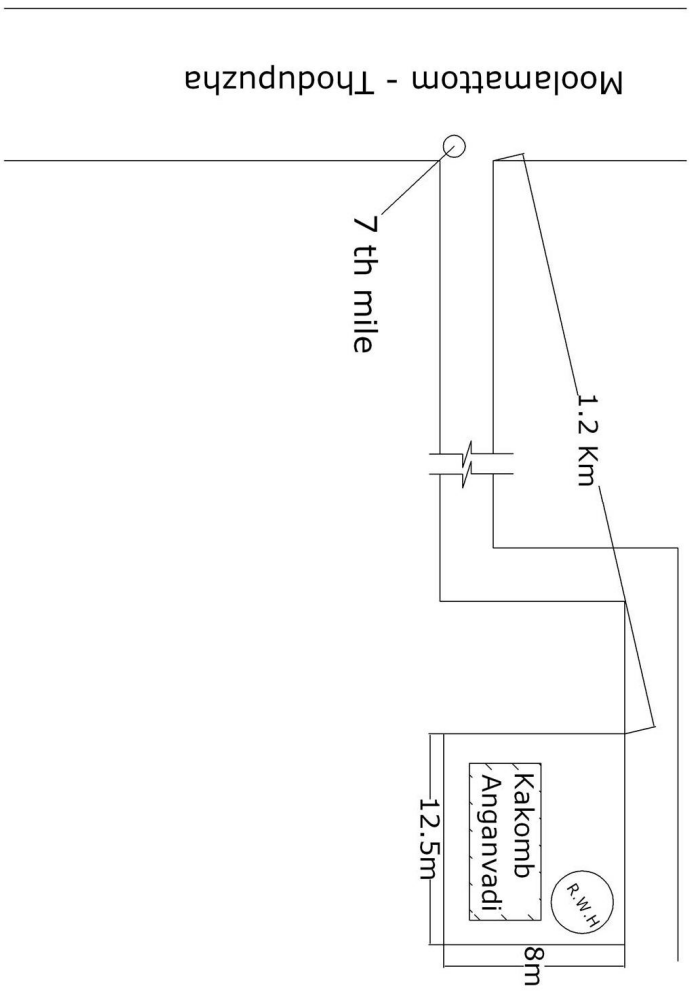
1 nos	
1 x 10,000 litre @Rs.5 / litre	= 50,000/-
VAT 5%	= 2500/-
WWTF	= 500/-
Unforeseen any	= 2000/-
TOTAL	**= 55,000/-**



3.2.4: ANCHUKALLINGAL THODU WATERSHED

Name of work: Construction of **10,000**Litres of Ferro-cement rainwater harvesting system having 2.7 **m** diameter and **1.8m** height (internal) at Anganvadi , Kakomb No:101

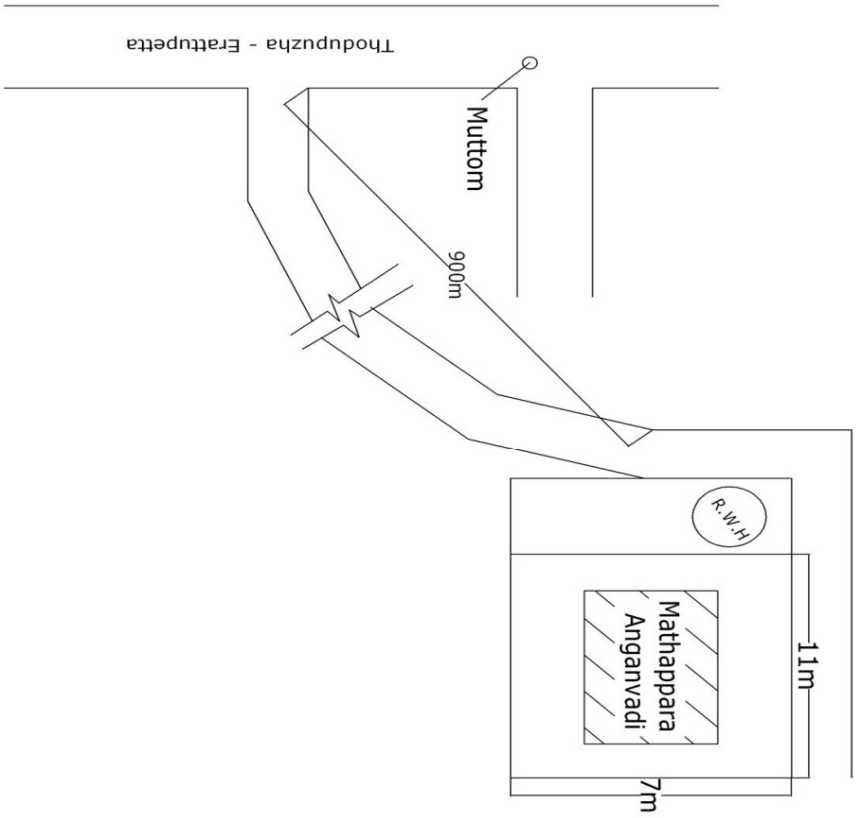
1 nos	
1 x 10,000 litre @Rs.5 / litre	= 50,000/-
VAT 5%	= 2500/-
WWTF	= 500/-
Unforeseen any	= 2000/-
TOTAL	**= 55,000/-**



2.Name of work: Construction of **20,000**Litres of Ferro-cement rainwater harvesting system having **3.8m** diameter and **1.8m** height (internal) at Anganvadi, Mathappara , Thodupuzha Block Panchayath

1 nos

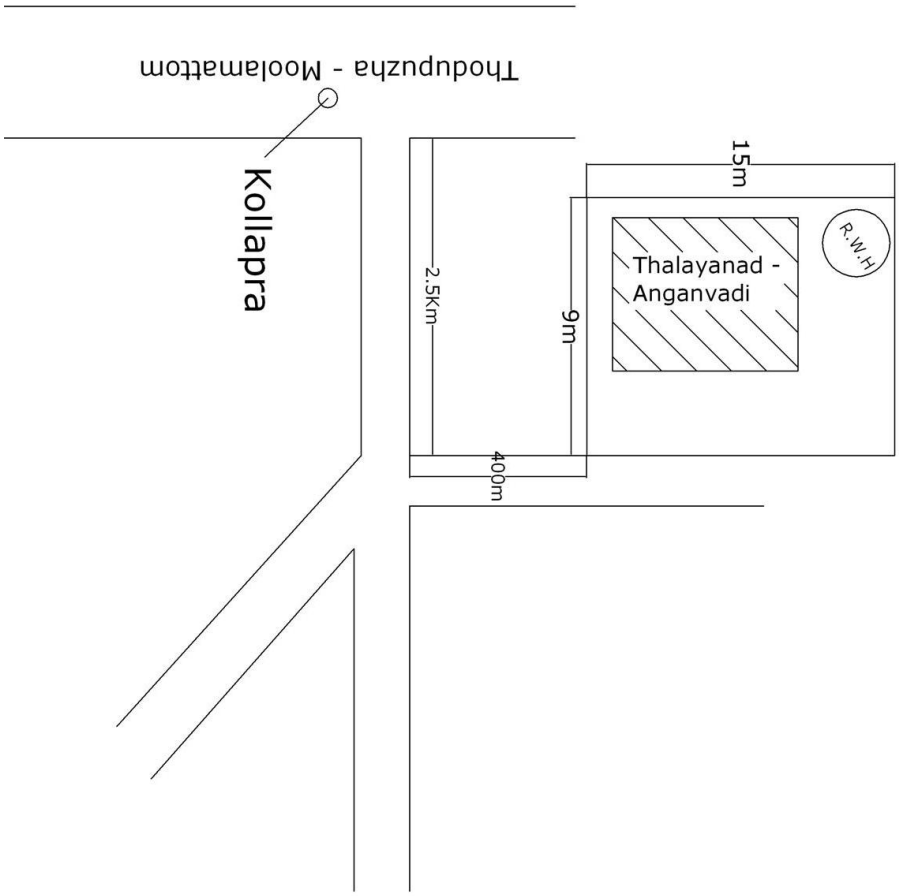
1 x 20,000 litre @Rs.5 / litre	=	1, 00,000/-
VAT 5%	=	5000/-
WWTF	=	1000/-
Unforeseen any	=	4000/-
TOTAL	**=**	**1, 10,000/-**



3.2.5. THALAYANADU- MALANKARA

Name of work: Construction of **10,000**Litres of Ferro-cement rainwater harvesting system having **2.7 m** diameter and **1.8m** height (internal) at Manjapra Anganvadi , Thalayanadu

1 nos	
1 x 10,000 litre @Rs.5 / litre	= 50,000/-
VAT 5%	= 2500/-
WWTF	= 500/-
Unforeseen any	= 2000/-
TOTAL	**= 55,000/-**



3.3 NATURAL RESOURCE MANAGEMENT (NRM)

Natural resource management aims to maintain and to improve natural resource base. People in the project area depend upon agriculture and allied activities. Management of natural resources helps to enhance livelihood of the local community on a sustainable basis. The main NRM activities identified in the project area are as follows:

Centripetal Terracing

This is the practice of taking circular bunds around the bottom of tree like coconut. The bunds are made in such a way that the center portion of the bund is lowered and the outer portion is raised. Those bunds capture water from the tree and retained for a very long period and completely percolate to the soil very slowly.

Rain water harvesting

Rain water harvesting means collecting rain, storing and preserving it for the dry season. It can be practiced at any place where rainfall occurs and it has a particular advantage in hilly areas.

Check Dams

A check dam is generally constructed on small streams and long gullies formed by the erosive activity of water. Ideally a check dam can be constructed in a stream with high banks. The main advantage of check dam is that it cuts off the runoff velocity and reduces erosive activity and the water stored improves soil moisture of the adjoining areas allows percolation to recharge the aquifers.

Well recharging

The broad aim of the programme is to improve the water quantity and quality levels of homestead open dug wells and small homestead ponds. This will contribute to enhanced health and welfare of the community through improved access to drinking water. This helps to limit the public spending on tanker water distribution on summer seasons is also envisaged as a broader goal of the project

SIDE PROTECTION WORKS OF STREAM

Stone pitched Bund

This involves construction of horizontal lines of stone pitched contour bunds across the sloping land surface. Contour bunding is practiced to intercept the runoff flowing down the slope by an embankment with either open or closed ends to conserve moisture as well as to reduce erosion. The land treatment in between the bunds is desirable for uniform conservation of moisture. The practice of contour bunding is found to increase crop yield by about 15-20 per cent.

Fodder grass

Grasses control water erosion through a three tier action of canopy, runners and roots. By adopting grass land management measures such as controlled or rotational grazing, fencing, weed control, etc would improve the soil and water conservation in grass lands.

Percolation ponds

Percolation pond, like an irrigation tank, is a structure to impound rainwater flowing through a watershed, and a waste weir to dispose of the surplus flow in excess of the storage capacity of lake created.

Mulching

Mulching is the practice of providing soil cover by spreading stubble, trash or organic materials. The use of organic mulches has the advantage of minimizing the impact of rain-

drops and controlling splash, reducing evaporation, controlling weeds, reducing soil temperature during day time, encouraging microbial growth and adding nutrients to the soil.

3.4 PRODUCTION SYSTEM AND MICRO-ENTERPRISES

Bio gas Plant

The term 'biogas' is commonly used to refer a gas which has been produced by the biological breakdown of organic matter in the absence of oxygen. The gases like methane, hydrogen and carbon monoxide can be combusted or oxidized with oxygen and the resultant energy release allows biogas to be used as a fuel. Biogas is a commonly used bio fuel around the world and is generated through the process of anaerobic digestion or the fermentation of biodegradable materials such as biomass, manure, sewage, municipal waste, rubbish dumps, septic tanks, green waste and energy crops. This type of biogas comprises primarily methane and carbon dioxide.

Biogas has a wide variety of uses and can be used as a relatively low-cost fuel for the generation of energy and heating purposes, such as cooking. Biogas can be compressed, similar to natural gas, and is used in power motor vehicles. Biogas is a renewable fuel, so it qualifies for renewable energy subsidies in some parts of the world. It is possible to concentrate the methane within biogas to the same quality standards as fossil fuel derived natural gas to produce bio-methane. If concentrated and compressed this biogas can then be used in vehicle transportation.

Banana Cultivation

Banana (Musa sp.) is the second most important fruit crop in India next to mango. Its year round availability, affordability, varietals range, taste, nutritive and medicinal value makes it the favorite fruit among all classes of people. Hi-tech cultivation of the crop by an economically viable enterprise helps to increase in productivity, improve the quality and early crop maturity with the produce commanding premium price.

Some other main production systems are

- Fodder grass cultivation
- Distribution of agricultural tools
- Distribution of organic manure
- Distribution of herbal plants

3.5 LIVELIHOOD SUPPORT SYTEM

The Common Guidelines for Watershed Development Projects (2008) gives priority for livelihood support for landless/asset less persons. 9% of the total project cost is assigned

to support the livelihood activities for landless/asset less households. This aims to maximize the utilization of potential generated by watershed activities and to create sustainable livelihoods and to enhanced incomes for households within the watershed area. It also facilitates enhanced livelihood opportunities for the poor through investment into assets, improvements in productivity, access of the poor to common resources and to augment and benefit the livelihood strategy at household level.

- **Goat Rearing**

Rearing goats is a profitable business. Goat has been rearing since the time immemorial. Generally goat farming means rearing goats for the purpose of milk, meat. At present, goat farming has become a profitable business with a very low investment because of its multifunctional utility. It keeps a great contribution to the economy and nutrition of a country.

Benefits of Goat Farming:

- Starting goat farming business needs low initial or investment
- No need huge area for goat housing.
- Usually goats are friendly with nature.
- Goats are plentiful breeders and reach sexual maturity at the age of 10-12 month and give birth kids within a short time.

- **Poultry**

Many families in the district are rearing back on yard poultry units as additional source of income. Majority of the farmers are providing much importance for egg chicken units. Backyard poultry rearing has been an integral part of rural life in the Watershed area. Poultry in backyards of rural households could become an important element in augmenting the household income and intake of nutrition by the families without any external inputs being made.

- **Milch Cow rearing**
  - The watershed communities of the area are familiar with animal husbandry practices especially cow rearing. People are getting reasonable price for the milk and milk related products. Marketing system is very much organized through the cooperative societies. Promotion of calf rearing is a support to the farmers to find out additional income for their livelihood. Apart from this we will provide first priority for the people who have the cattle shed.
  - Some other main livelihood activities are
  - Tailoring Unit

- Heifer distribution
- Lease farming
- Food stuff unit
- Value added products
- Bee keeping
- Pig rearing unit
- Mushroom cultivation
- Vermin compost

CHAPTER IV
MICRO WATERSHEDS IN THE PROJECT AREA AND ACTION PLAN

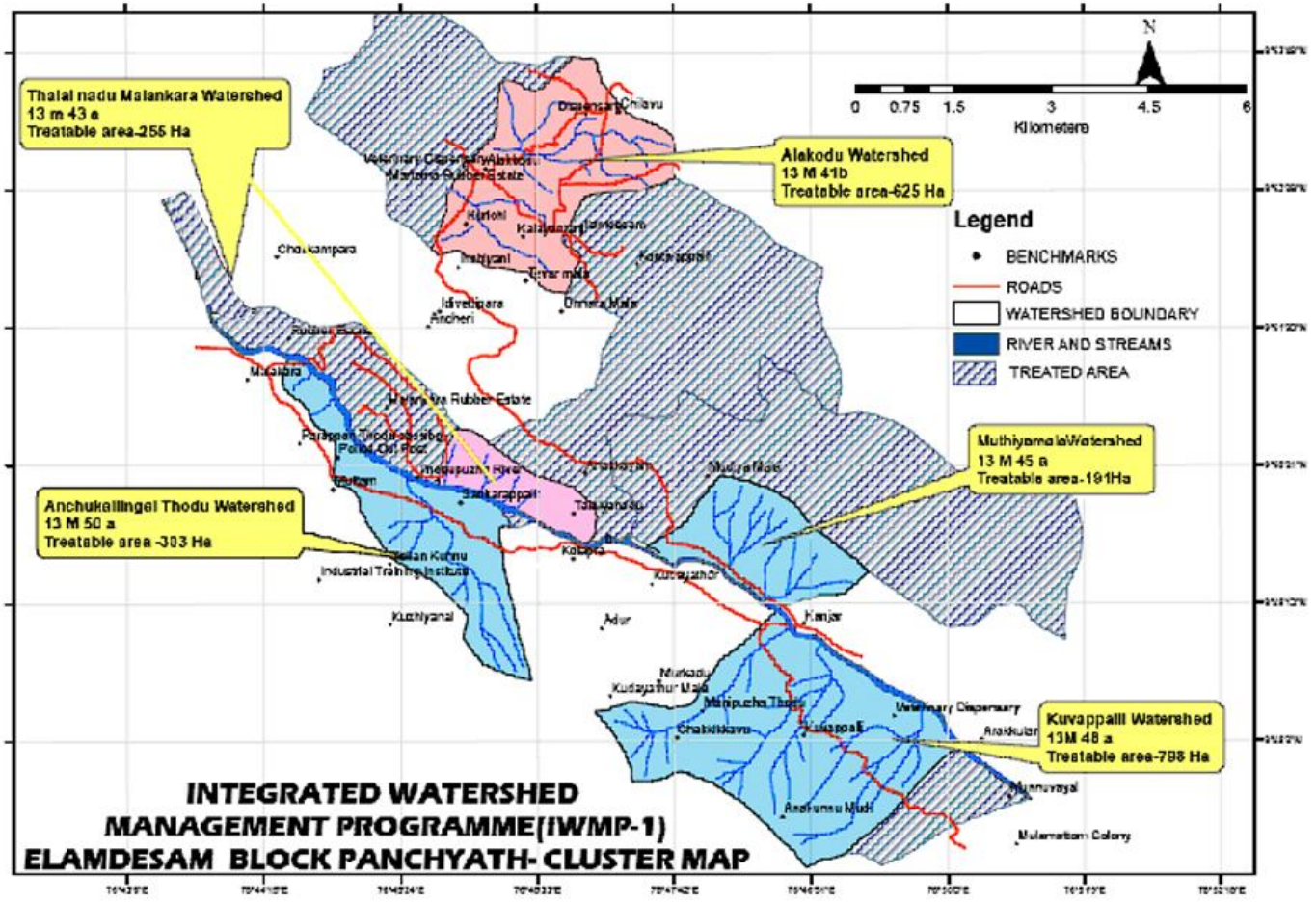
4.1 INTRODUCTION

The project IWMP I /2010-2011 is a cluster of five micro-watersheds namely Alakode (13M41b), Thalayanadu Malankara (13M43a), Anchukallingalthodu (13M50a) and Koovap-pally thodu (13M48a) and Muthiyamalathodu (13M45a) The details of each micro watershed in the project area are presented in this chapter.

4.2 LOCATION AND EXTENT OF MICRO WATERSHEDS

The location and extent of the selected watersheds in the project area are presented in Map 9

Map 4.1 Location and Extent of Micro Watersheds



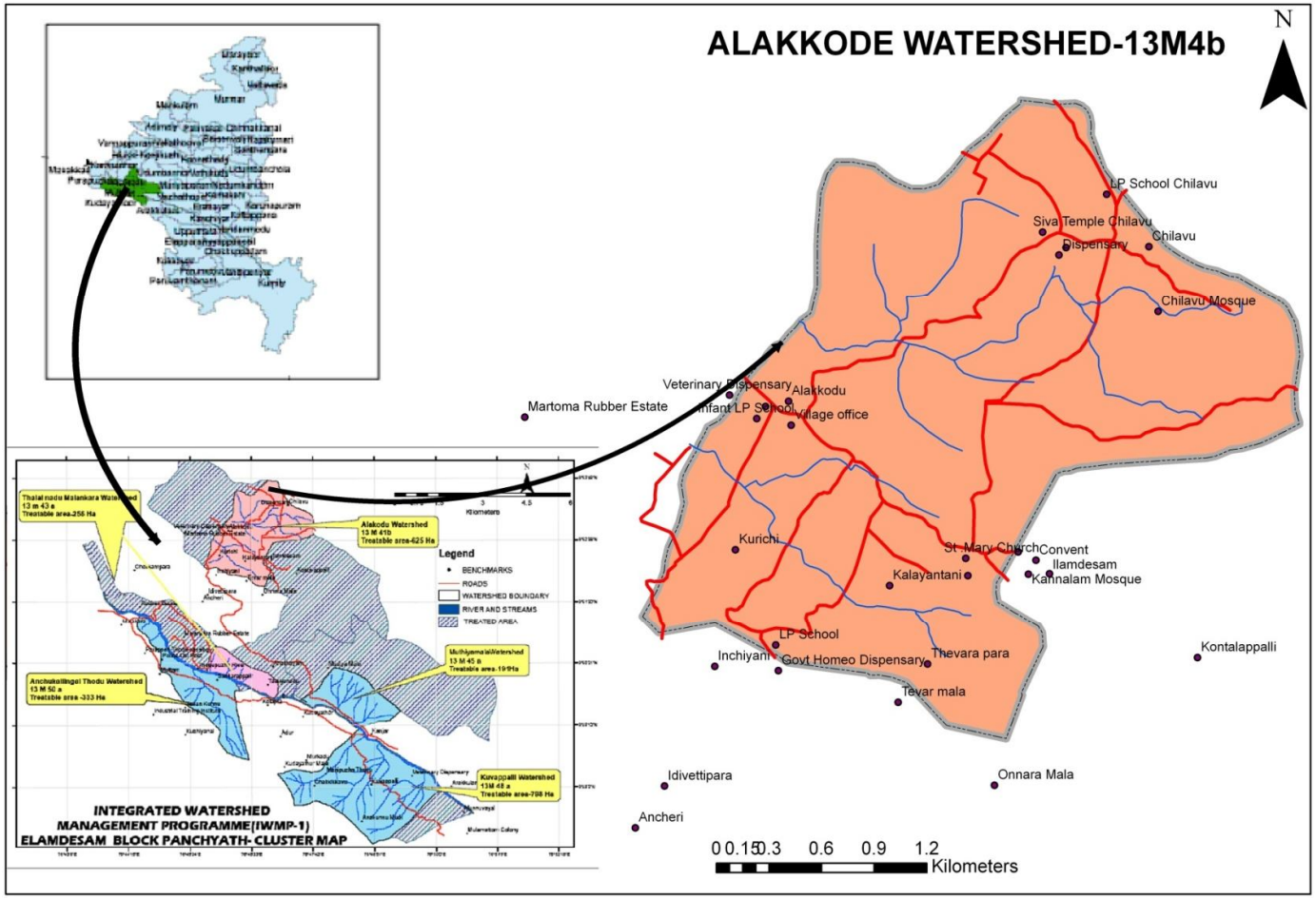
4.3 DETAILED ACTION PLAN

Table 4.1: Funding Pattern of IWMP

Sl. No	Particulars	Percentage of Fund	Amount
1	Administration Cost	10.00	3258000
2	Monitoring	1.00	325800
3	Evaluation	1.00	325800
4	Entry Point Activities	4.00	1303200
5	Institution & Capacity Building	5.00	1629000
6	DPR	1.00	325800
7	Watershed Development Works	56.00	18244800
8	Livelihood Activities	9.00	2932200
9	Production System & Micro Enterprises	10.00	3258000
10	Consolidation Phase	3.00	977400
Total		**100**	**32580000**

4.4 INDIVIDUAL MICROWATERSHEDS

Map 4.2 Alakkode Watershed



The latitudinal extension of the watershed is 9°51'44.79" to 9°53'45.205"N and longitudinal 76°45'28.106"E 76°47'49.462"E. The total area of the watershed is 625 hectares. The panchayath wards including in the watershed are 2, 3, 4, 5, 11, 12 & 13. The major places of the watershed are Inchiyani, Kurichippadam, Alakode and Chilavu. The highest elevated area of the watershed is located in the eastern part of the watershed, which is 498 Meters from Mean sea level. The lowest point is located in the southern part of the watershed, which is 138 meters above Mean sea level.

GENERAL INFORMATION

Name Of Watershed	Alakode
Name Of Village	Alakode
Name Of Panchayath	Alakode
Wards	2,3,4,5,11,12,13
Geographical area	**625 ha**
Average Slope	Moderate
Total Amount	9375000/-
Length of Main stream	4kms
Shape index(Compactness)	Rectangle
Fund Allocation	**NRM –5250000/-**
	Lively hood – 843750 /-
	PSM – 937500/-

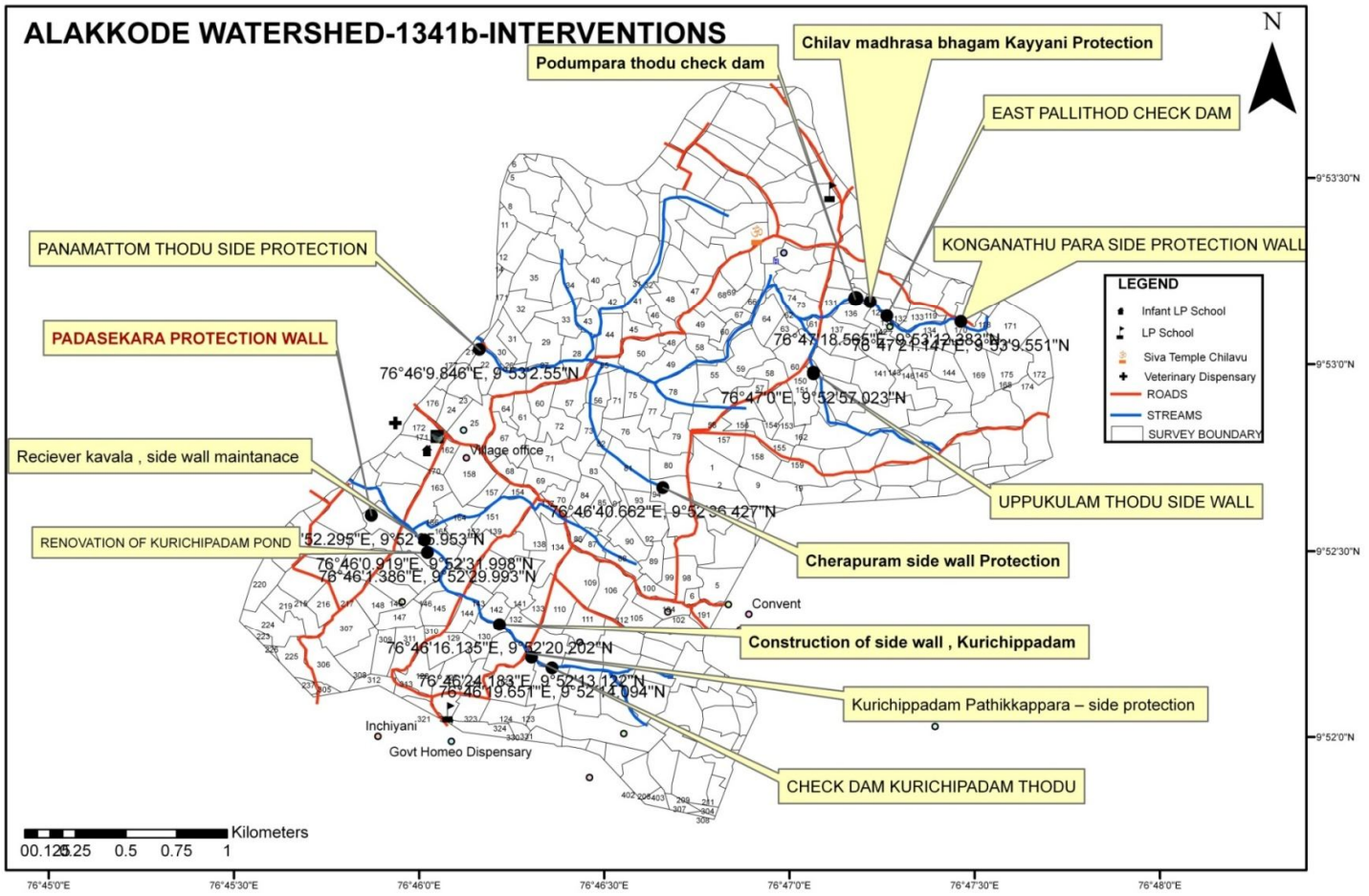
Table 4.2 : Annual Action Plan - Alakode

ALAKODE WATERSHED										
Sl no	**Name of activity**	**Unit**	**1 YEAR**		**2 YEAR**		**3 YEAR**		**4YEAR**	
			Physical	Financial	Physical	Financial	Physical	Financial	Physical	Financial
1	**Soil and Moisture conservation Activities**									
1.1	Stone Pitched Contour Bunding(nos/RM)	m	825	0.86	4630	6.115	3066	4.05	299	0.41
1.2	Afforestation	Ha		0.5		0.5		0.25		0.3
1.3	Bio - Mulching	no			350	0.63				
Sub total				**1.36**		**7.245**		**4.3**		**.71**
2	**Water harvesting structures**									
2.1	Check dams	No								
2.1.1	East Pallithodu	No	1	3						
2.1.2	Kurichipadam Thodu	No					1	0.5		
2.1.3	Kurichipadam Thodu	No							1	1.5
2.2	Renovation of Kurichippadam Pond	No			1	0.43				
2.3	Podumparathodu side wall protection by stone revetment	No	1	2						
2.4	Percolation Pit	No	310	0.25	125	0.1	125	0.1	125	0.1
2.5	GW recharge structures	No								
2.5.1	Well Recharging System	No	8	.8	10	1	12	1.2	20	2
2.6	Ferro cement Rain water harvesting system	No	3	0.9	10	3	8	2.4	5	1.5
2.7	Silpaulin Tank (paduthakulam)	No	25	2.5	12	1.2	25	2.5	12	1.2
Sub total				**9.45**		**5.73**		**6.7**		**6.3**
3	**Drainage line treatment**									
3.1	Side wall protection by stone revetment									

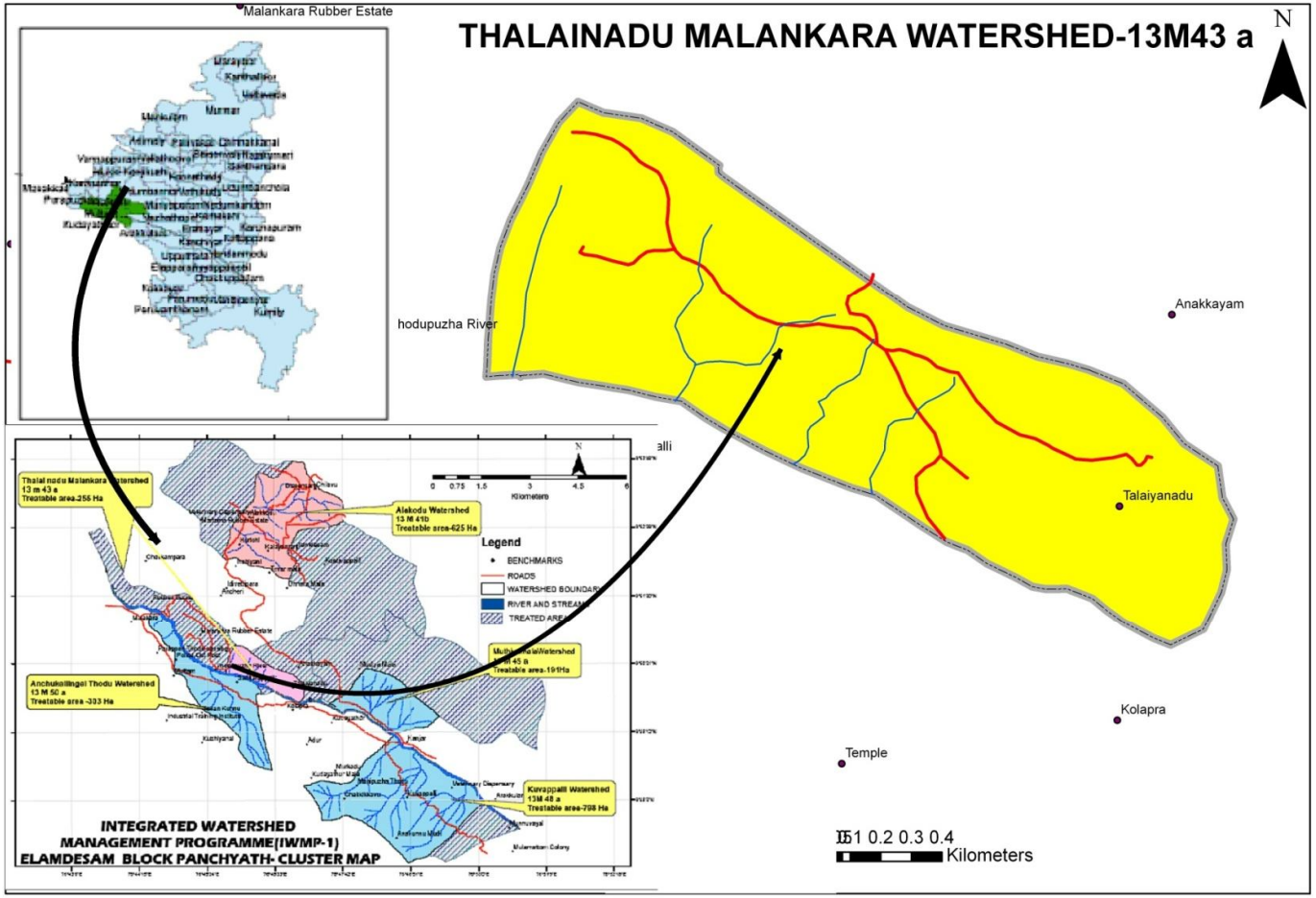
3.1.1	Konkanathupara	No	1	2.67						
3.1.2	Uppukulam thodu	no			1	4				
3.1.3	Recieverkavala side wall maintenance	No			1	0.35				
3.1.4	Cherappuram	No			1	3				
3.1.5	Padasekhara Protection Wall	No					1	3.6		
3.1.6	Kurichipadam Pathikkappara	No					1	2		
3.1.7	Chilavu Madrasabhagom Kayyani	No					1	1		
3.1.8	Panamattom thodu	No							1	2
3.2	Brush wood check dam	No	10	0.08						
Sub total				**2.75**		**7.35**		**6.6**		**2**
4	**Production System**									
4.1	Systemic Rice Intensification	Ha			5	0.6	5	0.6		
4.2	Bio Gas Plant	Ha			11	1.54	10	1.4		
4.3	Banana Cultivation	Ha			2	0.5	2	0.5		
4.4	Distribution of Organic Manure	qtl			50	1	45	0.9		
4.5	Distribution of Agricultural Tools	Ha			100	1	99	0.99		
4.6	Distribution of fruit bearing plant				40	0.2	29	0.145		
Sub total						**4.84**		**4.535**		
5	**Livelihood Support System**									
5.1	**Seed Money**									
5.1.2	**Seed Money for SHG'**									
	Heifer	No			10	.5	10	.5		
	Goat Rearing Unit	No			30	1.5	25	1.25		
	Bee keeping				5	.5	5	.5		
	Vegetable cultivation and vermi compost Unit	No			1	.25	0	0		

		No			1	.1925				
	Poultry Unit	No			20	.22	20	.22		
	Tailoring Unit	No			2	.30	1	.15		
		Sub Total				**3.12**		**2.77**		
2	**Grant –in- aid for SHGs**									
	a) Candle making unit	No			2	1.6	1	.8		
	b) Dairy Unit				1	1.0				
	c) Readymade Garment Making Unit				1	.20	1	.20		
	d) Lease Farming				1	.125	0	0		
		Sub total				**2.325**		**.2**		
		TOTAL				**4.7175**		**3.67**		
Grant Total				**8.415**		**5.445**		**2.97**		**9.01**

MAP 4.3: Intervention Map of Alakode Watershed



Map 4.4 Thalainadu Malankara Watershed



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Thalayanadu– Malankara watershed lies in Alakode and Kudayathoor Grama Panchayath. The area is included within the Integrated Watershed Management program of Elamdesom block in Idukki district. The total area of the watershed is 225 hectares.The area is inhibited by people migrated from other districts, mainly from Kottayam district in 1930's. They cleared the forest and cultivated tapioca, tubers, paddy etc in early years of their migration. There was no transportation facility during the time and used to carry their agricultural produce to market by head load.

In the year 1936 Thalayanad Lurd Matha church was constructed and in 1960 a hanging bridge was constructed across Thodupuzha River. Before the construction of the hanging bridge they used to cross the river on country boats.

The latitudinal extension of the watershed is 9°49'41.678"N " to 9°52'42.405"N and longitudinal 76°43'9.708"E to 76°46'58.042"E. The total area of the watershed is 255 hectares. The wards of the watershed are 8 in Alakode Panchayath and ward No.13in Kudayathoor Panchayath. The highest elevated area of the watershed is located in the northern part of the watershed, which is 104Meters above Mean sea level. The lowest point is located in the eastern part of the watershed, which is 25 meters above Mean sea level.

GENERAL INFORMATION

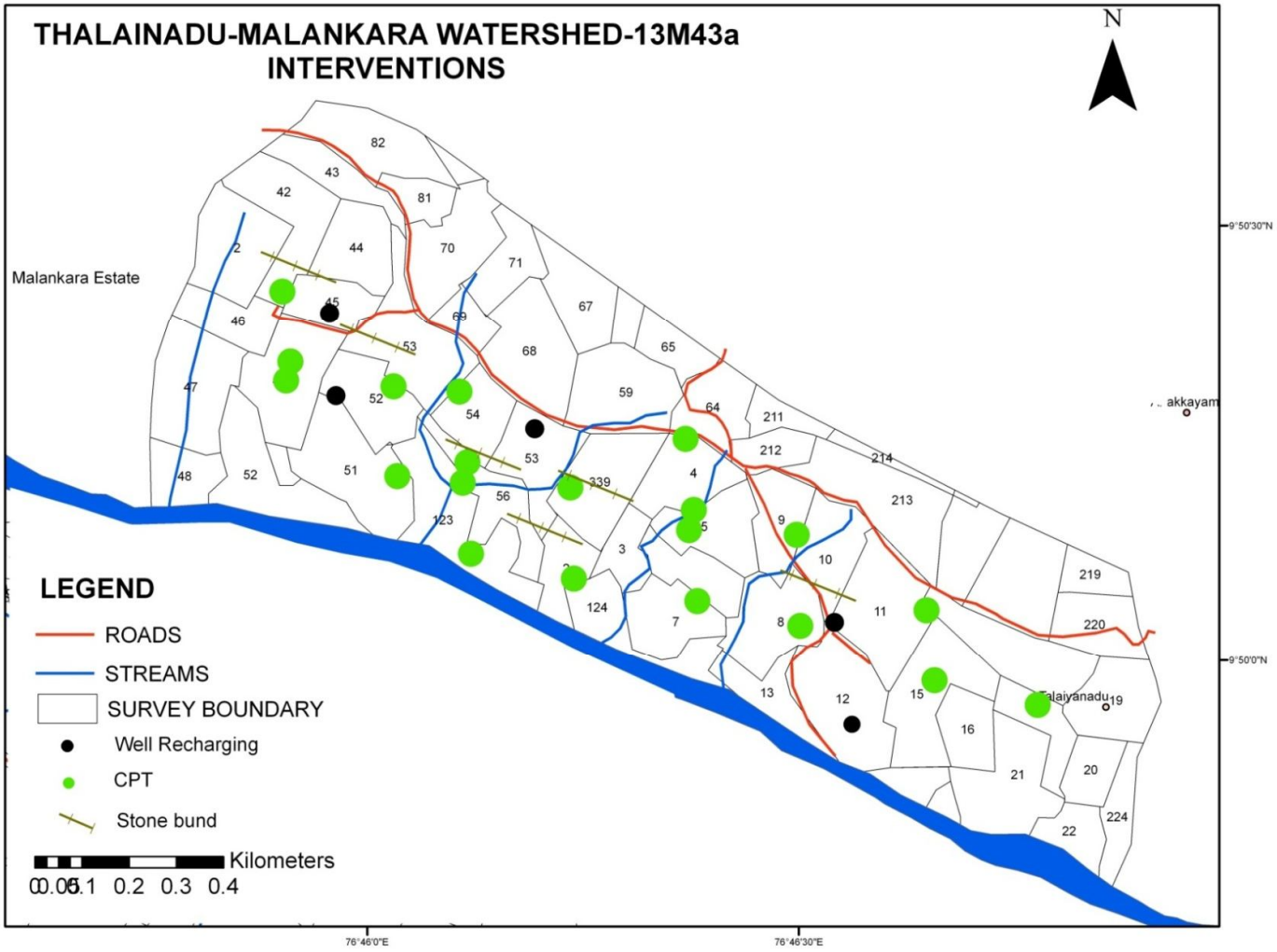
Name Of Watershed	Thalayanadu Malankara
Name Of Village	Muttom
Name Of Panchayath	Alakode , Muttom
Wards	Alakode - 8
	Kudayathoor - 13
Geographical area	**255 ha**
Length of Main	6kms
Shape index(Compactness)	Triangular
Fund Allocation	**NRM –2142000/-**
	Lively hood –344250/-
	PSM –382500/843-

Table 4.3 Annual Action Plan – Thalayanadu Malankara

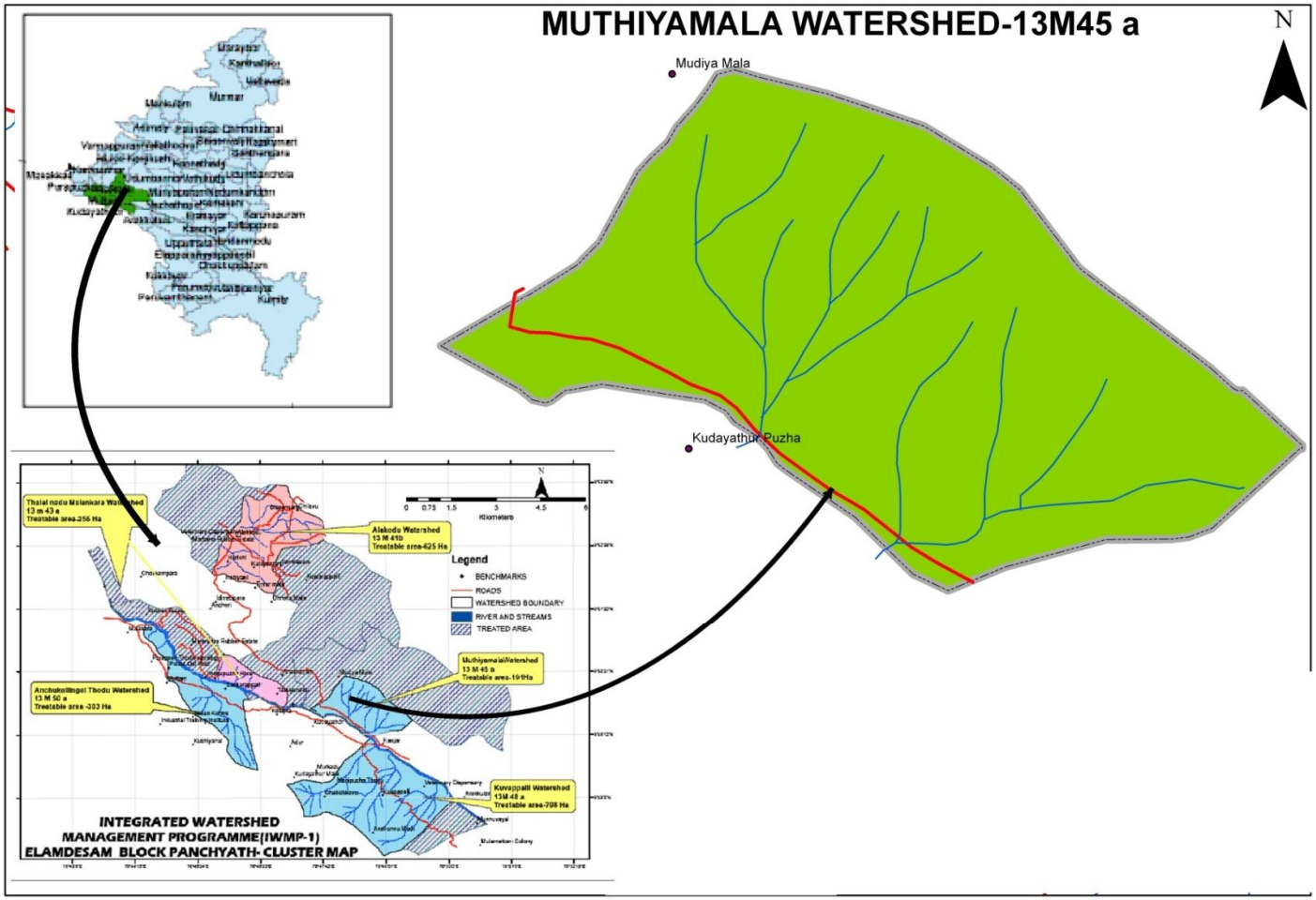
Sl no	Name of activity	Unit	1 YEAR		2 YEAR		3 YEAR		4YEAR	
			Physical	Financial	Physical	Financial	Physical	Financial	Physical	Financial
1	**Soil and Moisture conservation Activities**									
1.1	Centripetal Terracing	Ha	2080	0.625	1285	0.3855	33	0.1		
1.2	Stone Pitched Contour Bunding (nos/RM)	Rm	800	0.9	1013	1.32	1360	1.144	636	0.84
1.3	Soak Pit	No	100	0.4	50	0.2				
1.4	Afforestation	Ha		0.2		0.2		0.15		0.2
Sub total				**2.125**		**2.1055**		**1.394**		**1.04**
2	**Water harvesting structures**									
2.1	Percolation pit	No	186	0.15	125	0.1	125	0.1	125	0.1
2.2	Well Recharging Structures	No	10	1	10	1	8	0.8	2	0.2
2.3	Rain water harvesting system	no	8	2.4	15	4.5	13	3.9	5	1.5
2.4	Silpaulin tank (paduthakulam)	no	2	0.2	2	0.2	11	1.144	16	1.6
Sub total				**3.6**		**5.8**		**5.844**		**3.3**
3	**Production System**									
3.1	Bio Gas Plant	no			6	0.84	5	0.7		
3.2	Banana Cultivation	Ha			2	0.5	2	0.5		
3.3	Distribution of Organic Manure	qtl			8.25	0.165	7	0.14		
3.4	Distribution of Agricultural Tools	no			50	0.5	34	0.34		
3.5	Distribution of fruit bearing plant	no			10	0.07	10	0.07		

Sub total						**2.075**		**1.75**			
4	**Livelihood Support System**										
4.1	**Seed Money**										
4.2	**Seed Money For SHG's**										
	Heifer Distributions	No			10	.5	10	.5			
	Goat Rearing	No			5	.25	10	.5			
	Value added Products making unit	No			5	.25		00			
	Poultry Distribution	No			20	.22	15	.165			
		Sub Total				**1.22**		**1.165**			
4.3	**Grant –in- aid for SHG's**										
	a) Milk Collection Centre	No			1	.50					
	b) Tailoring cum textile retail unit	No			1	.50					
		Sub Total				**1**					
Grant Total						**12.3255**		**10.083**		**4.34**	

MAP 4.5 .INTERVENTION MAP OF THALAYANADU-MALANKARA



Map 4.6 Muthiyamala Watershed



The latitudinal extension of the watershed is 9°49'4.008"N to 9°50'14.388"N and longitudinal 76°47'22.609"E to 76°49'19.852"E.The Grama panchayath wards falling in the watershed are 1,2,3 of Kudayathoor and 14 of Velliyamattom.

The major streams of the watershed are Panamthanam Thodu, Karumthalapuzha ThoduKandavaraliyil Thodu &Parambukatt Thodu. The major ponds Veettiyankal Pond & Kochupuraykal Pond.Both these ponds are to be renovated to store the water required to the area

GENERAL INFORMATION OF THE WATERSHED:

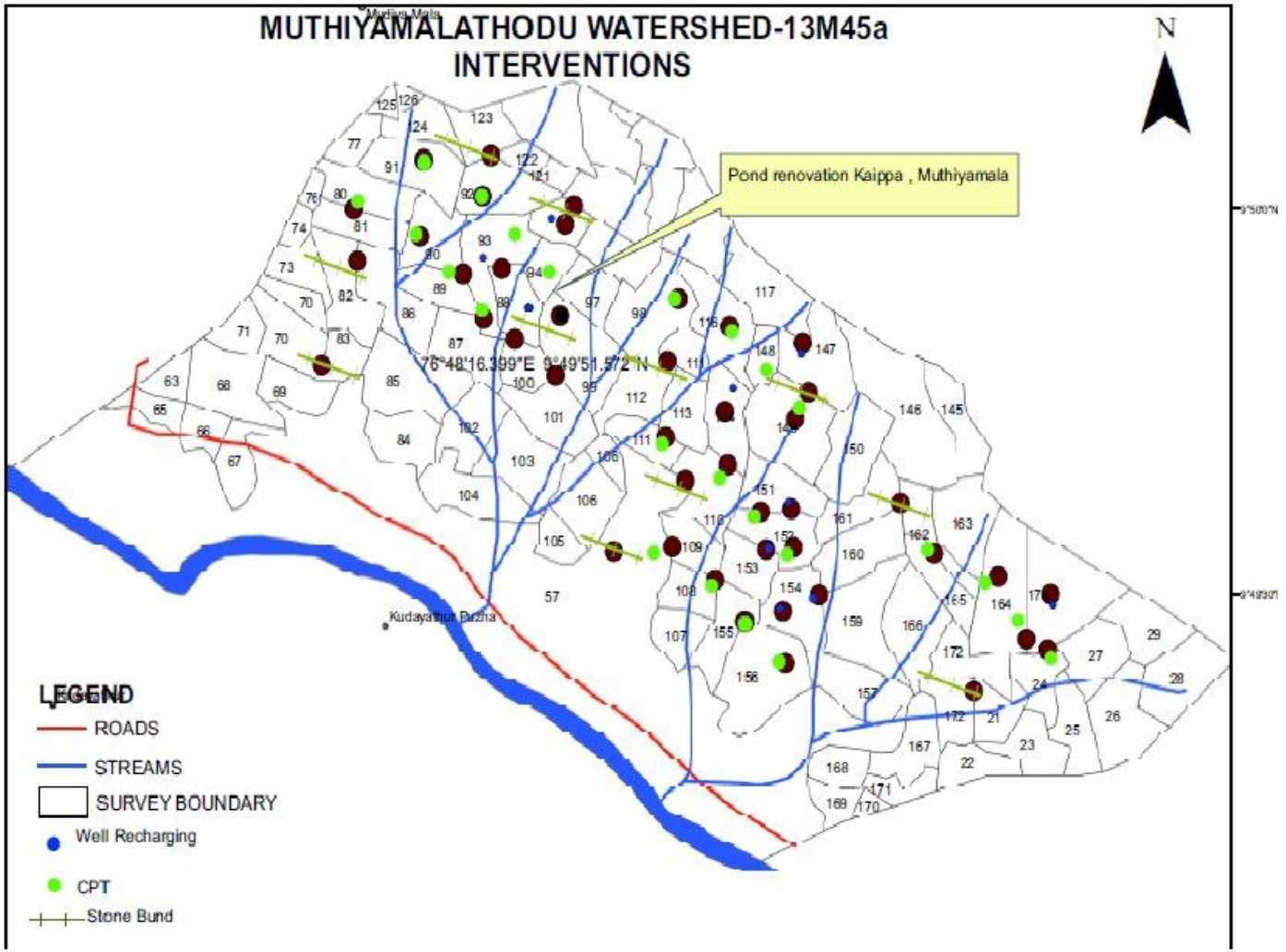
Name of watershed	Muthiyamala Thodu
Name of the Panchayath	Kudayathoor , Velliyamattom
Name of the District	Idukki
Name of the Block	Elamdesom
Wards	Kudayathoor1, 2, 3 Velliyamattom 14
Total Area of the watershed	**191 Ha**
Fund Allocation	**NRM –1604400/-**
	Lively hood –257850/-
	PSM –286500/-

Table 4.4 Annual Action Plan - Muthiyamala Thodu

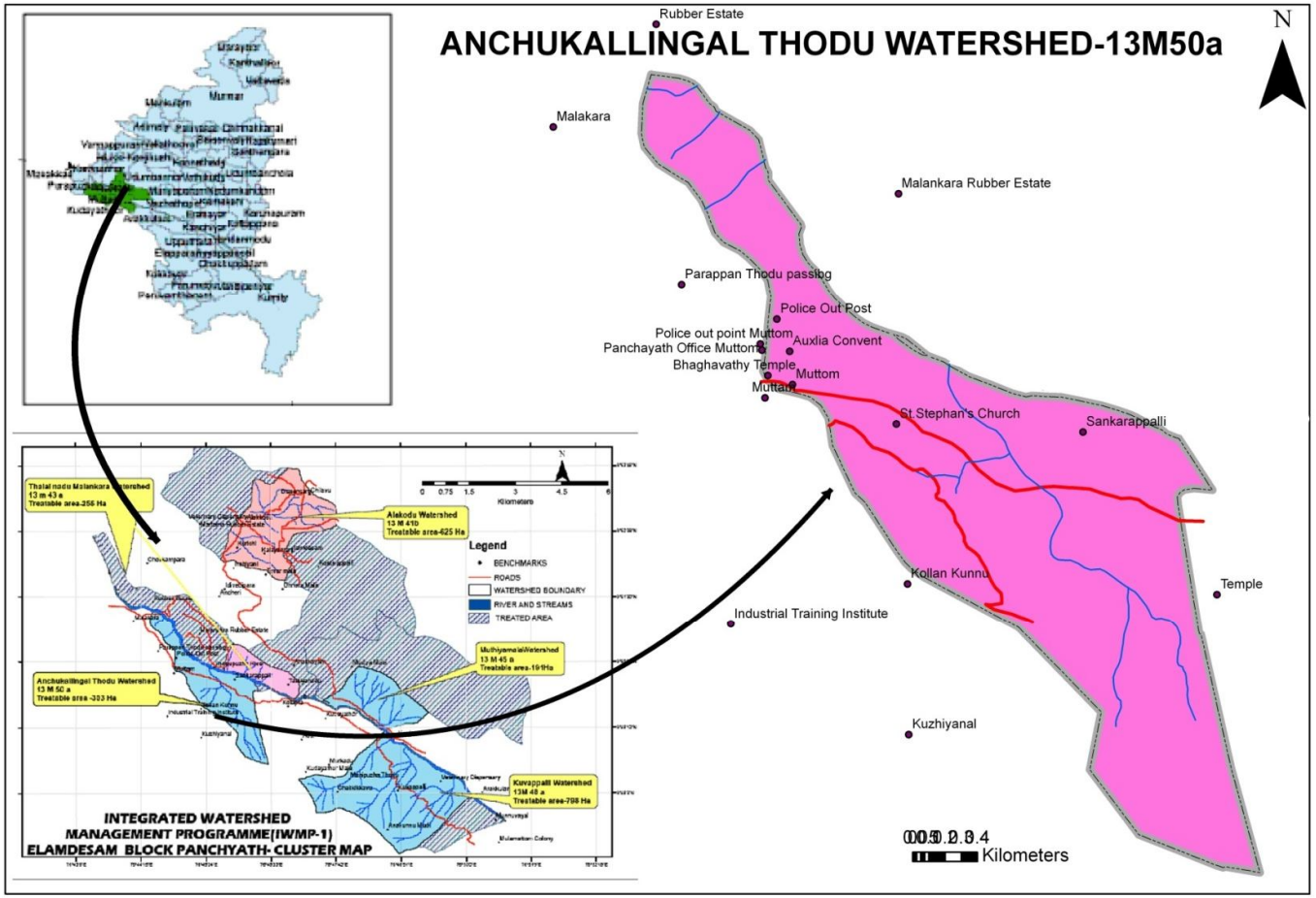
MUTHIYAMALATHODU WATERSHED										
Sl no	Name of activity	Unit	1 YEAR		2 YEAR		3 YEAR		4YEAR	
			Physical	Financial	Physical	Financial	Physical	Financial	Physical	Financial
1	**Soil and Moisture conservation Activities**									
1.1	Centripetal Terracing	no					4000	1.25	500	0.15
1.2	Stone Pitched Contour Bunding (nos/RM)	rm	250	0.25	1983	2.62	1015	1.34	371	0.49
1.3	Soak Pit	no			50	0.2	5	0.02	16	0.064
1.4	Afforestation	ha		0.15		0.2		0.1		
Sub total				**0.4**		**3.02**		**2.71**		**0.704**
2	**Water harvesting structures**									
2.1	Pond Renovation Kaippa Muthiyamala			.	1	0.3				
2.2	Percolation pit	No	125	0.1	125	0.15	125	0.1		
2.3	Well Recharging System	No	5	0.5	5	0.5	5	0.5	3	0.3
2.4	Ferro Cement Rain water harvesting system	No	5	1.5	5	1.5	5	1.5	4	1.2
2.5	RWH at Anganwadi No97&PhC	No	1	0.9						
2.6	Silpaulin tank (paduthakulam)	no	5	0.5	12	1.22	5	0.5	5	0.5
Sub total				**3.5**		**3.67**		**2.6**		**2**
3	**Production System**									
3.1	Systemic Rice Intensification	Ha			50	0.11	50	0.11		
3.2	Bio Gas Plant	no			3	0.42	2	0.28		
3.3	Banana Cultivation	Ha			2	0.5	2	0.5		
3.4	Distribution of Organic Manure	qtl			13.625	0.2725	34.7	0.2725		
3.5	Distribution of Agricultural Tools	no			20	0.2	20	0.2		
Sub total						**1.5025**		**1.3625**		

4	**Livelihood Activities**									
4.1	**Seed Money for SHG's**									
	Goat rearing unit				5	.25	5	.25		
	Pig rearing unit				5	.25	0	0		
	Mushroom Cultivation unit (40 beds)				7	.31500	6	.27000		
	Vermi Compost Unit				3	.324	0	0		
	Bee Keeping				5	.05175	5	.05175		
		Sub Total				**1.24275**		**0.57175**		
4.2	**Grant –in- aid for SHG's**									
	Milch cow rearing unit				1	.46	0	0		
	Goat rearing unit				10	.30	0	0		
		Sub Total				**.76**				
Grant Total						**2.00275**		**0.57175**		

MAP 12: INTERVENTION MAP OF MUTHIYAMALATHODE WATERSHED



Map 4.8 Anchukallingal thodu Watershed



Anchukallingal thodu watershed is located at Kudayathoor and Muttom Grama panchayaths of Idukki district. The latitudinal extension of the watershed is 9°48'33.393"N to 9°50'52.423"N and longitudinal extension 76°44'41.359"E to 76°46'33.048"E. The highest elevated area is located in southern part of the watershed, which is 820 Meters above MSL as well as the lowest area in the northern part which is 20 meters above MSL. The slope of the watershed is in south to north direction.

GENERAL INFORMATION

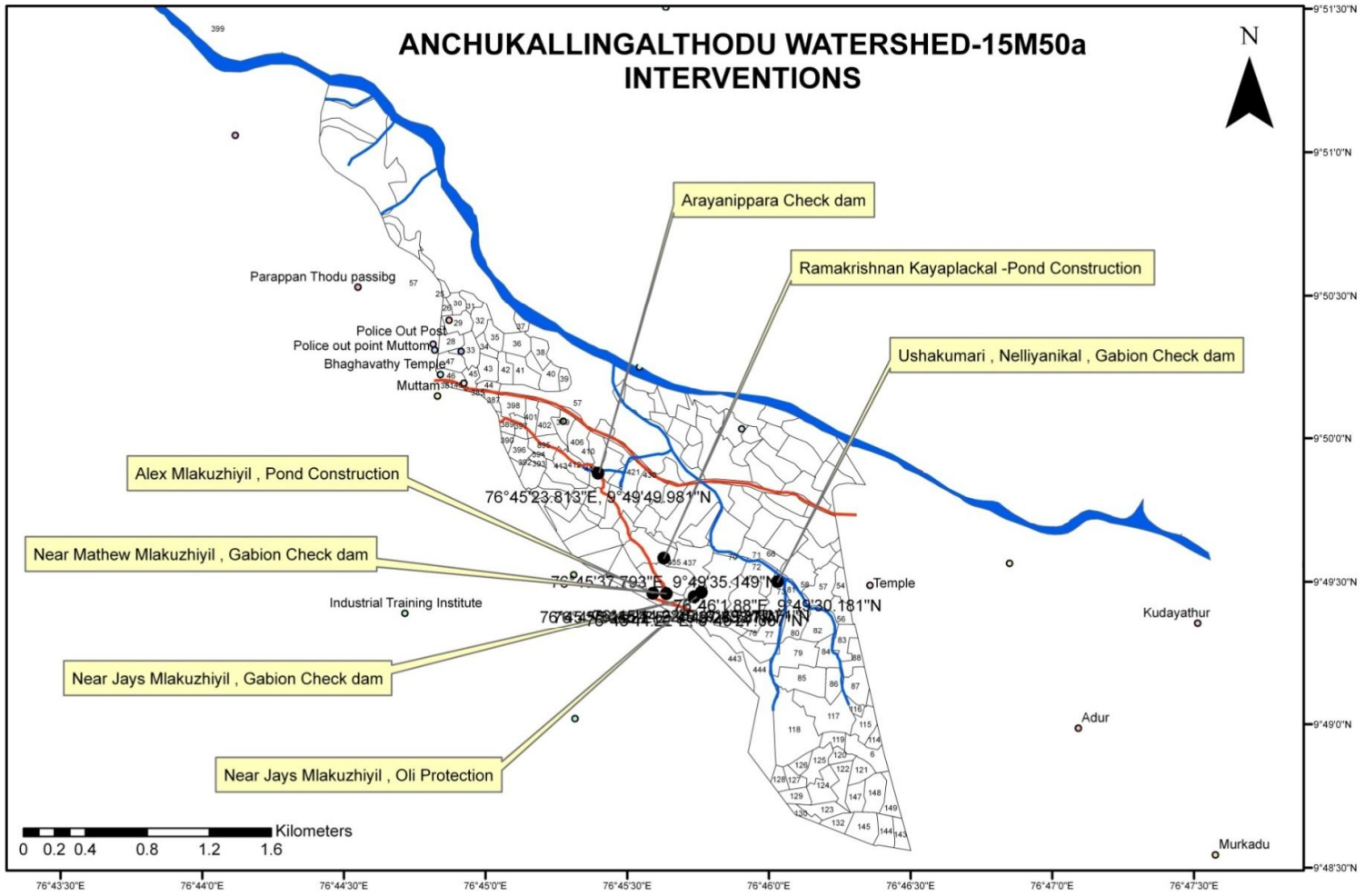
Name of Watershed	Anchukallingal Thodu
Name of Panchayath	Muttom, Kudayathoor
Wards	2,3,4,5,6, 12
Name of district	Idukki
Name of block	Elamdesom , Thodupuzha
Total Area of the watershed	**303 Ha**
Fund Allocation	**NRM –2545200/-**
	Lively hood –409050/-
	PSM –454500/-

Table 4.5 : Annual Action Plan - Anchukallingal Thodu

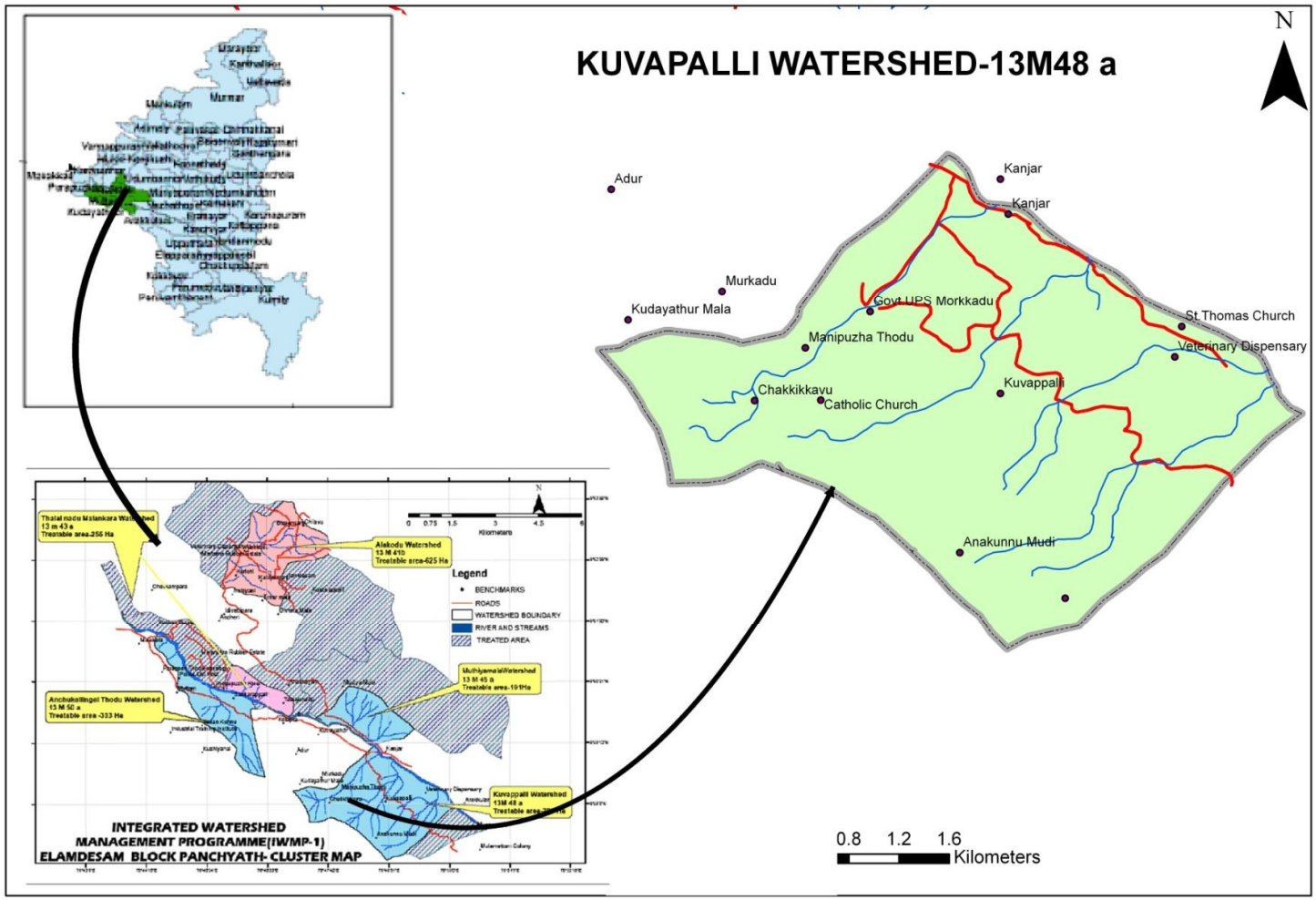
Sl no	Name of activity	Unit	1 YEAR		2 YEAR		3 YEAR		4YEAR	
			Physical	Financial	Physical	Financial	Physical	Financial	Physical	Financial
1	**Soil and Moisture conservation Activities**									
1.1	Centripetal Terracing	no					333	1	2083	0.625
1.2	Stone Pitched Contour Bunding (nos/RM)	m	200	1.305	1082	1.43	1771	2.34	674	0.89
1.3	Soak Pit	no			150	0.6	25	0.1	25	0.1
1.4	Afforestation	ha		0.2						0.2
Sub total				**1.505**		**2.03**		**3.44**		**1.815**
2	**Water harvesting structures**									
2.1	Arayanippara check dam	No	1	2						
2.2	Gabion Check Dam									
2.2.1	Mathew Mlankuzhiyil	No			1	0.2				
2.2.2	Jays Mlankuzhiyil	No			1	0.25				
2.2.3	Ushakumari Nelliyanikkal	No			1	0.31				
2.3	Oli protection (Jays Mlakkuzhiyil)	No			1	0.12				
2.4	Head Pond(Ramakrishnan)	No	1	0.12						
2.5	Pond Construction Alex Mlakkuzhiyil	no	1	2						
2.6	Percolation pit	No	250	0.2					250	0.2
2.7	Well RechargingSystem	No	4	0.4	10	1	25	2.5	5	0.5
2.8	Ferro Cement Rain water harvesting system	no	1	0.3	15	4.5	5	1.5	5	1.5
2.9	Silpaulin tank (paduthakulam)	no	5	0.5	12	1.2	5	0.5	5	0.5
Sub total				**5.52**		**7.58**		**4.5**		**2.7**
3	**Production System**									

3.1	Bio Gas Plant	no			5	0.7	6	0.84		
3.2	Banana Cultivation	Ha			2	0.5	2	0.5		
3.3	Distribution of Organic Manure	qtl			7	0.14	7.25	0.145		
3.4	Distribution of Agricultural Tools	no			100	1	37	0.37		
3.5	Distribution of fruit bearing plant	no			30	0.21	20	0.14		
Sub total						**2.55**		**1.995**		
4	**Livelihood Support System**									
1	**Seed Money**									
1.1	**Seed Money for SHG Group**									
	Heifer Distribution	no			10	.5	10	.5		
	Bee keeping	no			5	.5175	0	0		
	Tailoring Unit	no			2	.50	0	0		
	Mushroom Cultivation Unit	no			5	.225	0	0		
	Poultry distribution	no			20	.22	0	0		
	Goat rearing unit	no			8	.40	0	0		
	Sub Total					**2.3625**		**.5**		
2	**Grant-in-Aid for SHG's**	no								
	a) Dairy Unit	no			1	1.00	0	0		
	b)Lease land Farming(banana)1 acre each	no			2	.22	0	0		
	Sub Total					**1.22**		**0**		
	TOTAL					**2.715**		**1.368**		
Grant Total				**7.025**		**2.715**		**1.368**		**4.515**

MAP 4.9: INTERVENTIONS MAP OF ANCHUKALLINGAL THODU WATERSHED



Map 4.10 : Kuvapalli Watershed



The boundaries of the watershed are East, Neranam Puzha RoadWest, Thengumpalli Kavala, South-Malayatoor Puzha and North-Muthiyamala. The latitudinal extension of the watershed is 9°46'51.228"N to 9°49'11.421"N and the longitudinal extension 76°46'54.243"E to 76°50'51.001"E. The grama panchayathwards included in the watershed are 4, 5,6 &7. The highest elevated area of the watershed is located in the southern part of the watershed, whichis Anakunnu mudi(1050 meters MSL) and the lowest area is at Kanjar (19 Meters from MSL)

The people of the area got a church for prayer in 1872 followed with 'Chakkikavu palli' and 'Poonchira Temple'. Collective farming was practiced and wages were given not in cash but in exchange of labor. Religious and political harmony was prevailed in those days. Due to the claimant change and degradation of bio-mass the presence of wild animals became a rare case. In years before people were used to live in huts built on the trees in fear of wild animals.

GENERAL INFORMATION

Name Of Watershed	**Koovapally thodu**
Name Of Village	Kudayathoor
Name Of Grama Panchayath	Kudayathoor
Geographical area	**798 ha**
Topography	Steep slope
Wards	4,5 , 6 , 7
Fund Allocation	**NRM –6703200/-**
	Lively hood –1077300/-
	PSM –1197000/-

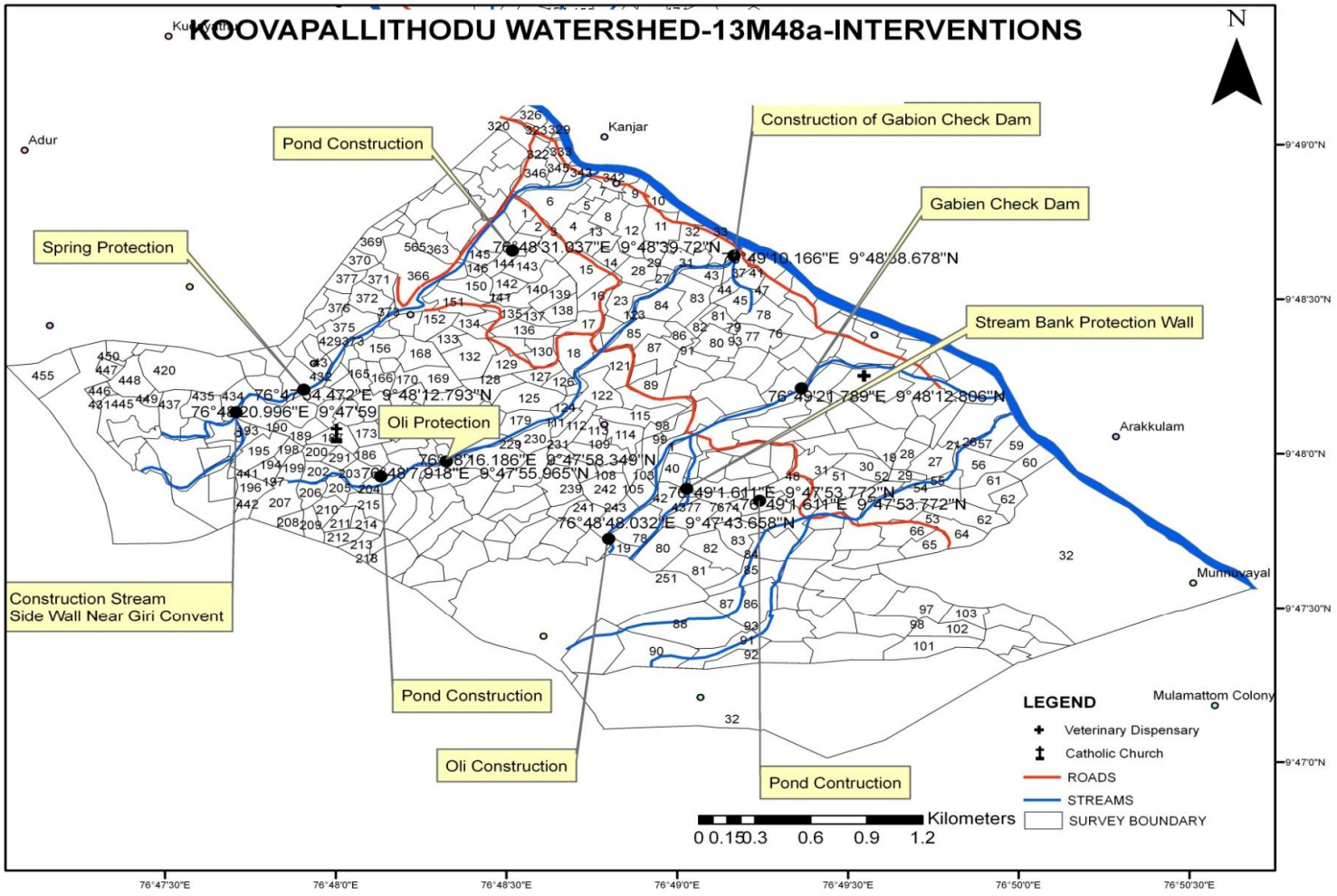
Table 4.6 Annual Action Plan - Koovapally thodu

No	Name of activity	Unit	1 YEAR		2 YEAR		3 YEAR		4YEAR	
			Physical	Financial	Physical	Financial	Physical	Financial	Physical	Financial
1	**Soil and Moisture conservation Activities**									
1.1	Centripetal Terracing	No							2083	0.625
1.2	Stone Pitched Contour Bunding (nos/RM)	m	2726	3.6	5535	7.31	5187	6.85	3498	4.62
1.3	Soak Pit	no							25	0.1
1.4	Afforestation	ha				0.4				0.2
Sub total				**3.6**		**7.71**		**6.85**		**5.545**
2	**Water harvesting structures**									
2.1	Check dams Renovation Chackikkavu	No	1	4						
2.2	Gabion check dam Mary Cheriyan Thackakal	No					1	0.5		
2.3	Spring Bank Protection Satheesh Arackal	No	1	0.2						
2.4	Pond Renovation Saji Vechoor	No	1	5						
2.5	Pond Construction Chacko Thottappalliyil	No	1	0.25						
2.6	Pond Construction Viju Mathew	No			1	1.25				
2.7	Oli Protection Gracy Johnson Thottaplackal	No			1	0.2				
2.8	Oli construction A C Mathew	No			1	0.25				
2.9	Percolation pit	No			250	0.2			250	0.2
2.10	Well RechargingStructures	No	15	1.5	20	2	25	2.5	15	1.5
2.11	Rain water harvesting system	No	15	4.5	15	4.5	20	6	10	3
2.12	Silpaulin tank (paduthakulam)	No	5	0.5	5	0.5	7	0.7	5	0.5
Sub total				**15.95**		**8.9**		**9.7**		**5.2**
3	**Drainage line treatment**									

3.1	Stream Bank Protection Wall(Thomas Devassia)	Cum	1	2.82						
3.2	Kunnathanickal Amminiamma	Cum					1	0.3		
3.3	Construction of stream Side wall Amalagiri Convent	No			1	2.75				
Sub total				**2.82**		**2.75**		**.3**		
4	**Production System**									
4.1	Fodder grass Cultivation	Ha			254.5	0.559	200	0.44		
4.2	Bio Gas Plant	No			25	3.5	25	3.5		
4.3	Banana Cultivation	Ha			2	0.5	2	0.5		
4.4	Distribution of Organic Manure	qtl			26.75	0.535	26.75	.535		
4.5	Distribution of Herbal Plants	No		490	-	-	-	-		
4.6	Micro irrigation Demonstration Plot	No			1	.3	-	-		
4.7	Distribution of Agricultural Tools	No			80	0.8	80	0.8		
Sub total						**6.194**		**5.775**		
5	**Livelihood Support System**									
1.2	**Seed Money for SHG's**									
1	Broom making unit	no			5	1.25	0	0		
2	Heifer Distribution	no			20	1.0	15	.75		
3	Value Added Products making unit	no			3	.75	2	.5		
4	Tailoring Unit	no			3	.75	0	0		
5	Lease farming(banana/tapioca)	ha			2	.32	1	.16		
6	Poultry Unit	no			30	.33	0	0		
7	Mushroom Unit	no			1	.045	1	.045		
8	Rabbit Rearing Unit	no			30	.2025	0	0		
9	Goat Rearing Unit	no			15	.750	13	.650		

10	Vegetable Cultivation Unit	no			14	.07	0			
	SubTotal					**5.4675**		**2.105**		
2	**Grant- in- aid for SHG's**									
	a)Dairy Processing Unit	no			1	1.5	-			
	b)Nursery unit	no			1	.70	-	-		
	c)Dairy Unit	no			1	1.0	00	0		
	Sub Total					**3.2**		**.48**		
Grant Total				**13.72**		**8.6675**		**2.105**		**10.745**

MAP 14: INTERVENTION MAP OF KOOVAPALLITHODU WATERSHED



CHAPTER V
IEC & CAPACITY BUILDING

5.1 INTRODUCTION

Institutional and capacity building plan is an indivisible part of IWMP as it strengthening the skills, competencies and abilities of people and communities in watershed area .It helps over-come the causes of their exclusion and suffering. Each and every people, has to be trained initially for the smooth implementation of the project. It is proposed to carry out the follow-ing institutional based training and capacity building programmes during the project period in Order to equip various stakeholders for successful participation and implementation of the project.

Table.5.1 Fund distribution for IEC & Capacity Building activities

Sl.No	Watershed	Area	Amount
1.	Alakode	625	468750
2.	Koovapally	798	598500
3.	Thalayanadu-Malankara	255	191250
4.	Muthiyamala thodu	191	143250
5.	Anchukallinkalthodu	303	227250
	TOTAL	**2172**	**1629000**

5.2 CAPACITY BUILDING PLAN

Table.5.2. CAPACITY BUILDING PLAN

No	Name of training programme	Objectives	Target group	Executing agency	No. of participants	Amount
1.	Concept of watershed management	To Familiarize the concept of watershed To realize Scope of watershed management To understand various activities under NRM, livelihood& production system	Peoples representatives, Concerned department officials	PIA	70	13400/-
2	One day Training program on roles and responsibilities of watershed committee	To create awareness among the watershed committees regarding the concept of watershed management To define the roles and responsibilities of WC. Financial management of the project. Management of WDF fund	Watershed committee members	WCDC	100	19000/-
3	2 day residential training programme on technical knowledge regarding watershed management	To empower technical knowledge regarding watershed development	BDO/ J.BDO,HSC,UDC, LDC,WDT	SLNA	10	7500/-
4.	One day workshop on capacity building &IEC	To realize the importance of IEC activities in the IWMP project	BDO/ J.BDO, HSC,UDC, LDC,WDT	WCDC	10	2000 /-
5	One day workshop on convergence possibilities In IWMP.	To find convergence possibilities in IWMP. To discover the implementation strategies To ensure the active participation of different department in the implementation.	Different department officials, peoples representatives, WDT	WCDC	100	19000/-

6.	Awareness Programme on livelihood, production system& micro enterprises	Livelihood& production system concepts Relevance of livelihood, production system & ME in IWMP Guidelines of lively hood and production system. Activities under livelihood and production system	Watershed committee, (Progressive community, SHG representatives , Kudumbasree members , MGNREG's workers	PIA	300	75000/-
7.	Technical training on watershed management	Familiarizing different NRM interventiontechnical feasibility of different NRM works with regard to slope – soil Design criteria for NRM works	WDT members	WCDC	4	1000 /-
8.	2 day residential training on financial guide lines	To familiarize funding pattern and financial guideline of IWMP	BDO/ J.BDO, HSC,UDC,LDC,WDT	SLNA	10	7500 /-
9.	Planning and implementation of projects related to creation of common assets	Create awareness on responsibilities of UG's Mode of operation in establishing common assets Financial procedures involved in the process	WC , UG	PIA	500	100000 /-
10	Training program on "water literacy "	To preserve and utilizes the water effectively To make awareness in women groups	Women in the watershed area	PIA	5 * 60	60000/-

11	NHG level training	Create the awareness among the people regarding the needs for watershed based development programs Concept of IWMP Project involved in the program Scope of the project Role and responsibility Financial management Follow -up	NHG's members	PIA	1500	75000/-
12	Skill training program on ground water recharging practices	To attain knowledge and skills regarding ground water recharge	Watershed community	PIA	500	100000/-
13	Exposure visit	To acquire knowledge on the importance in our environment and practice it as in their own watershed area	WC members , user group	PIA	125	250000/-
14	One day training program on deterioration of environment to school children.	To acquire and learn about the causes of climate change To know the occurrence of frequent droughts, crop failures.	School children	PIA	200	40000/-
15	Water quality test campaign	Monitor the quality of water in the watershed area	Watershed community	PIA	500	50000/-
16.	one day training program for SHG	To learn the importance of SHG in the IWMP Project	SHG members	PIA	1000	258800/-
17	Soil test campaign	o understand and analyse the soil fertility in the watershed area	Watershed community	PIA	500	50000/-

Table 5.3: SKILL TRAINING

No	Name of training programme	Objectives	Target group	Executing agency	No. of participants	Amount
1	Lively hood 1. Poultry 2. Animal husbandry 3. Value added products and services **4.** Fruit bearing plant	To develop technical skills of participants on lively hood activities	User Group	PIA	600	120000/-
2	Production system • Banana cultivation • Ginger cultivation • Organic manure • Tapioca cultivation • Fodder grass cultivation	To develop technical skills of participants on production system activities	User Group	PIA	600/-	1200000/-
TOTAL						**1303200/-**

5.3. IEC ACTION PLAN

Table 5.4 IEC ACTION PLAN

Sl. No:	Activity	Expected Outcome	Target Group	Executing Agency	Estimated Expenditure
1	Printing of Booklet	Printing of 3000 booklet	Individual households in Watershed community	PIA	36000
2	Printing of Brochures	Printing of 3000 brochures	Individual households in Watershed community	PIA	21000
3	Printing of Sticker	Printing of 3000 stick-	Individual households	PIA	6000

		ers	in Watershed community		
4	Documentary Preparation	To advertise and familiarize the importance of watershed management concept	Common peoples	PIA	75000
5	Telecasting the Docume ntary in Local Channels	To advertise and familiarize watershed management concept	Common peoples	PIA	10000
6	Posters	To exhibit and familiarize watershed management concept	Common peoples	PIA	10000
7	Awareness Program in Kalayanthani High School Students • Quiz Competition • Poster • Painting Competition • Essay Writing • Colah Making • Slogan writing	To provide the knowledge and keep the balance environment.	Students	PIA	20000
8	Awareness Program in Koovappally CMS High School Students • Quiz Competition • Poster • Painting Competition	To advertise and familiarize watershed management concept	Students	PIA	20000

	• Essay Writing				
9	Awareness Program in Muthiyamala Govt. LP School Students • Quiz Competition • Painting Competition • Colah Making	To advertise and familiarize watershed management concept	Students	PIA	10000
10	Awareness Program in Morkad Govt. LP School Students • Quiz Competition • Painting Competition • Collague Making	To advertise and familiarize watershed management concept	Students	PIA	5000
11	Street play	To advertise and familiarize watershed management concept	Peoples in the market	PIA	10000
12	"Paristhithi souhrutha kootayma" campaign	To create responsibility among the watershed community for safeguard and preserve natural resources.	Watershed community	PIA	47800
13	Bio – diversity manual preparation	To discover and understand different ethnic resources in the	Common People	PIA	20000

		watershed area			
14.	Fixing Boards	To impart & advertise knowledge regarding IWMP Project.	Common People	PIA	35000
14.	**TOTAL**				**325800**
	GRAND TOTAL				**1629000**

CHAPTER VI
EXPECTED OUTCOMES

6.1 EXPECTED OUTCOMES

The expected outcomes of the IWMP project are detailed below:

Table.24: Expected Outcomes

No	Activity	Target Group	Pre Project Status	Expected Outcomes	Quantification of Outcomes
1	Providing Safe drinking water	Watershed community	Lack of drinking water facilities	Construction of Ferro-cement Rain Water Harvesting Tank and Facilities for well recharging.	Provide better drinking water for 825 families
2	Irrigation	Watershed community	Lack of Irrigation facilities for agricultural development in high land region	Construction of silpaulin lined water storage structures in high land region	Irrigation of almost 192 hectares of agricultural land
3	Livelihood Activities	Poor people (landless or asset less)	Lack of Livelihood Activities for Income generation for poor people	1. Formation of JLGs for strengthening livelihood activities. 2. Generation of employment Opportunities. 3.Empowering land less, asset less people	Increased annual income and living standards of 500-575 families.
4	NRM activities	Watershed Community	Runoff and soil erosion is very high, shortage of water during summer season	Construction of Contour Bunds, Trenches, Check dams , Gully plugs etc. for Raising the ground water level and reduce soil ero-	Raise the ground water level by 60-95 cms.

				sion thereby Increasing the productivity of soil and avoid shortage of water during summer	
5	Production system	Watershed Community	1. Lack of fodder for feeding Livestock Animals 2. Decreasing Rice Production in the area 3. Milk production is insufficient 4. Deterioration of Soil Productivity due to overuse of chemical fertilizers	Increase in Rice Production through SRI system of Cultivation, Increase in Fodder Grass Production, Use of Biofertilisers for regaining fertility of the soil	Provide food security among watershed community for around 600 families and improve their living standards.
6	Use of Renewable Sources of Energy	Watershed community	Using conventional methods such as Fire woods, LPG etc.	Use of bio gas for Cooking	Beneficial for 100 families

6.2 EXIT PROTOCOL

The main source of financial assistance for the post implementation period is Watershed Development Fund (WDF). One of the mandatory conditions for the selection of villages for watershed projects is people's contribution towards WDF. The Contribution to WDF shall be a minimum 10 % of the cost of NRM works executed on private land only. However, in case of SC/ST, small and marginal farmers, the minimum contribution shall be 5 % of cost of NRM works executed on their land. These contributions would be acceptable either in cash at the time of execution of works or voluntary labour. A sum equivalent to them one "**mandatory"** value of the voluntary labour would be transferred from the watershed project account to the WDF bank account that will be distinct from the Watershed Committee (WC) bank account. User charges, sales proceeds and other contributions, disposal amounts of intermediate

usufruct rights shall also be deposited in the WDF bank account. Income earned from assets created under the project on common property resources shall also be credited to WDF.

For other cost intensive farming system based livelihood activities/interventions such as Aquaculture, Horticulture, Agro-Forestry, Animal Husbandry etc. on private land directly benefiting the individual farmers, the contribution of farmers will be 20 percent for general category and 10 percent for SC/ST beneficiaries and the project funds will 96 meet the cost of farming system activity to a maximum limit of an amount equal to double of the unit cost of the project for watershed development Farmers' contribution i.e. 20 percent for general category and 10 percent for SC/ST of this amount as the case may be, respectively for general category and SC/ST beneficiaries) will go to WDF.

The Secretary, Watershed Committee (WC) shall maintain a completely separate account of the income and expenditure of the WDF. Rules for operation of the fund should be prepared by the Watershed Committee (WC) and ratified by the Gram Sabha. The WDF bank account should be operated by the President of the Gram Panchayath and any member from the SHG nominated by the Grama Sabha. Alternatively, the guidelines for the management and utilization of the WDF may be evolved by the concerned Nodal Ministry.

After completion of Phase II, at least 50% of the WDF funds shall be reserved for maintenance of assets created on community land or for common use under the project. Works taken up on private land shall not be eligible for repairing/ maintenance out of this Fund. The remaining money may be used as a revolving fund to advance loans to the villagers of the project area who have contributed to the fund. Individuals as well as charitable institutions should be encouraged to contribute generously to this Fund.

6.3 SUMMARY AND CONCLUSION

Elamdesom (IWMP-1) project is located in Elamdesom block Panchayath of Idukki district. The project comprises of five micro-watersheds namely AlakodeAnchukallingal thodu, Muthiyamalathodu, Thalayanadu-Malankara, and Koovapally.The project area covers the Grama Panchayats of Muttom, Kudayathoor, Velliyamattom and Alakode There are **2310**households in the project area and the total population is **9774**. The total project cost of the ElamdesomIWMP-1project is Rs. **325.85** lakhs. Department of Local Self Government is the nodal department for the implementation of IWMP at the state level. State Level Nodal Agency (SLNA) is coordinating and providing guidelines for the effective planning and implementation of the individual IWMP projects. District Planning Committee (DPC) is responsible for the planning and implementation of the projects at the district level. To help the

DPC and to coordinate the project level activities, Watershed Cell Cum Data Centre (WCDC) is working at the district level. The ElamdesomBlock Panchayath is the Programme Implementing Agency (PIA) of the Elamdesom-1 project. A Block Level Coordination Committee (BLCC) has been formed for the timely implementation of the project and to provide help to the PIA in technical and administrative matters related to the project. Watershed Development Team (WDT) has been formed under the PIA. SEID (TSO). A cluster approach was followed in the preparation of DPR. The preparation of the DPR involved several rounds of discussions with elected representatives, officials and other stakeholders. A situational analysis was undertaken using secondary data and information collected from different sources. A baseline survey covering all the households in the project area was also conducted. A Logical Framework Analysis was done at the project level for identifying the important problems as well as for the purpose of assessing the present situation. Other PRA techniques like transect walk, social mapping, resource mapping, seasonal calendar, etc., were employed in each micro watershed area. GIS and remote sensing devices have been made use in the preparation of DPR. 1: 4000 scaled cadastral maps of each village formed the base map for planning. Depth interviews with officials, farmers, fisher folk, entrepreneurs of micro-enterprises etc. were also undertaken. Field level verification of the identified interventions was undertaken by the DPR preparation team.

The seven micro watersheds in the project area face many common problems because of the similarities existing among the micro watersheds. The major problems identified through PRA techniques which have led to the identification of the interventions to be undertaken under the IWMP project are acute drinking water shortage, dumping of waste into streams, Paddy land conversion, Shortage of agricultural labours and in accessible roads.

APPENDIX

1. NATURAL RESOURCE MANAGEMENT

I) DRAFT ESTIMATE AND UNIT RATES

Contour bunding using collected jungle stones of size 15 to 22 cms. Stones laying with 1 in 5 battersand filling the back of stone packing with earth so as to get a top width of 45 to 50 cms.IncludingFoundation of 15 to 20 cms.

*Unit rate = **130.2 / m²**

Source : Kerala Land use board

Afforestation

*Unit rate = 150 / plant

Plant having 5 x 4 m disatance can be planted 500 nos in a Hacter

Cost = 500 x 150 = **75000/-**

Source : Department of Kerala Agro Forestry.

1. ALAKODE WATERSHED

1.East Pallithodu Check Dam , Chilavu

No	Description of work	N	L	B	H	Qty	Unit	Rate	Amount
1	Earth work excavation in ordinary soil for formation and depositing on bank with lead up to 50m and lift up to 1.50 m including neat banking								
	Foundation	1	6	3	0.6	10.8			
	Side wall	2	62	1	0.20	24.8			
	Total					35.6	m^3	1263.0	4496.28
2	D.R. masonry for foundation and superstructure of retaining wall								

	including all cost conveyance and all labour charges complete								
	Foundation	1	6	3	0.45	8.1			
	Side wall	2	62	0.65	1.40	113			
	Total					121	m³	1592.0	192536.48
3	RCC 1:2:4 using 20 mm metal including all cost conveyance and all labour charges watering, curing etc complete								
	Foundation	1	6	3	0.15	2.7			
	Side wall	2	6	0.35	1.00	4.2			
	Cross Bund	2	0.15	0.4	1.00	0.12			
	Total					7.02	m³	67.90	47665.00
4	Reinforcement for RCC works bend, tied and placed in position including material cost, convey-ance charge and all labour charges etc. complete	Qty vide item no 3 above 0.3m3@ 70 kg/m3				4.91	qtl	6339.0	31149.85
5	Plastering with CM 1:4, 12 mm thick and 1 coat floated hard and trowelled smooth including water-ing curring material cost, convey-ance and all labour charges etc complete	1	62	0.5		31	m²	1814.0	5623.40
6	Shutter	LS							15000.00
7	Unforseen items if any								3528.99
Total									**300000.00**

2.Podumpara Thodu Check Dam

No	Description of work	N	L	B	H	Qty	Unit	Rate	Amount
1	Earth work excavation in ordinary soil for formation and depositing on bank with lead up to 50m and lift up to 1.50 m including neat banking								
	Foundation	1	6	3	0.6	10.8			
	Side wall	2	30	0.8	1.00	48			
	Total					58.8	m^3	1263.00	7426.44
2	D.R. masonry for foundation and superstructure of retaining wall including all cost conveyance and all labour charges complete								
	Foundation	1	6	3	0.60	10.8			
	Side wall	2	30	0.75	1.00	45			
	Total					55.8	m^3	1592.00	88833.60
3	RCC 1:2:4 using 20 mm metal in-cluding all cost conveyance and all labour charges watering, curing etc complete								
	Foundation	1	6	3	0.15	2.7			
	Side wall	2	6	0.35	1.00	4.2			
	Cross Bund	2	0.15	0.4	1.00	0.12			
	Total					7.02	m^3	67.90	47665.80
4	Reinforcement for RCC works bend, tied and placed in position including material cost, conveyance charge and all labour charges etc. complete.	Qty vide item no 3				4.91	qtl	6339.00	31149.85

5	Plastering with CM 1:4, 12 mm thick and 1 coat floated hard and trowelled smooth including watering curring material cost, conveyance and all labour charges etc complete	1	30	0.6		18	m²	1814.00	3265.20
6	Shutter	LS							15000.00
7	Unforseen items if any								6659.11
Total									**200000.00**

3. Konkanathparathodu Side Protection wall

No	Description of work	N	L	B	H	Qty	Unit	Rate	Amount
1	Earth work excavation in ordinary soil for formation and depositing on bank with lead up to 50m and lift up to 1.50 m including neat banking								
	Foundation	2	46	1.5	0.4	55.2	m³	1263.00	6971.76
2	D.R. masonry for foundation and super structure of retaining wall including all cost conveyance and all labour charges complete								
	Foundation	2	46	1.5	0.40	55.2			
	Side Wall	2	46	0.9	1.20	99.4			
	Total					155	m³	1592.00	246059.52
3	Plastering with CM 1:4, 12 mm thick and 1 coat floated hard and trowelled smooth including watering curring material cost, conveyance and all labour charges etc complete	1	92	0.6		55.2	m²	1814.00	10013.28
4	Unforseen items if any								3955.44
Total									**267000.00**

4.Check Dam – Kurichipadam Thodu

Sl No	Description of work	N	L	B	H	QTY	Unit	Rate	Amount
1	Earth work excavation in ordinary soil for formation and depositing on bank with lead up to 50m and lift up to 1.50 m including neat banking								
	Foundation	1	3	3	0.4	3.6			
	Total					3.6	m^3	1263.00	454.68
2	D.R. masonry for foundation and superstructure of retaining wall including all cost conveyance and all labour charges complete								
	Foundation	1	3	3	0.40	3.6			
	Total					3.6	m^3	1592.00	5731.20
3	RCC 1:2:4 using 20 mm metal including all cost conveyance and all labour charges watering, curing etc complete								
	Foundation	1	3	3	0.10	0.9			
	Side wall	2	3	0.4	1.00	2.1			
	Cross Bund	2	0.2	0.4	1.00	0.12			
	Total					3.12	m^3	75.27	23484.24
4	Reinforcement for RCC works bend, tied and placed in position including material cost, conveyance charge and all labour charges etc. complete.	Qty vide item				2.18	qtl	6339.00	13844.38
5	Shutter	LS							5000.00
6	Unforseen items if any								1485.50
Total									**50000.00**

5.Renovation of Kurichippadam Pond

No	Description of work	N	L	B	H	QTY	Unit	Rate	Amount
1	Desiltation of pond	1	8.00	6.50	1.00	52.00	$10m^3$	1266.72	6586.94
2	D.R. masonry for foundation and superstructure of retaining wall including all cost conveyance and all labour charges complete								
	Total	1	10.00	1.00	1.00	10.00	m^3	1592.00	15920.00
3	RCC 1:2:4 using 20 mm metal including all cost conveyance and all labour charges watering, curing etc complete . (Top)	1	26	0.5	0.15	1.95	m^3	67.90	13240.50
4	Bailing out water with 5 HP oil engine and pumpset including conveyance to site, erection, cost of fuel, lubricating oil and pay of staff etc. complete	3 days						1312.00	3936.00
5	Unforseen items if any and tax								3316.56
Total									**43000.00**

6.Receiver kavala Side Wall Maintenance

No	Description of work	N	L	B	H	Qty	Unit	Rate	Amount

1	CC 1:2:4 using 20 mm metal including all cost conveyance and all labour charges watering, curing etc complete. (Top)	1	100	0.5	0.10	5.00	m³	65.90	32950.00
2	Unforseen items if any and tax								2050.00
Total									**35000.00**

7.Cherapuram Thodu Protection Wall

Sl No	Description of work	N	L	B	H	QTY	Unit	Rate	Amount
1	Earth work excavation in ordinary soil for formation and depositing on bank with lead up to 50m and lift up to 1.50 m including neat banking								
	Foundation	1	104	1.5	0.4	62.4	m³	1263.00	7881.12
2	D.R. masonry for foundation and superstructure of retaining wall including all cost conveyance and all labour charges complete								
	Foundation	1	104	1.5	0.40	62.4			
	Side Wall	1	104	0.9	1.20	112			
	Total					175	m³	1592.00	278154.24
3	Plastering with CM 1:4, 12 mm thick and 1 coat floated hard and trowelled smooth including watering curring material cost, conveyance and all labour charges etc complete	1	104	0.6		62.4	m²	1814.00	11319.36
4	Unforseen items if any								2645.28
Total									**300000.00**

8.Protection Wall , Near Joy Kallidukkile

No	Description of work	N	L	B	H	Qty	Unit	Rate	Amount
1	Earth work excavation in ordinary soil for formation and depositing on bank with lead up to 50m and lift up to 1.50 m including neat banking								
	Foundation	1	125	1.5	0.4	75	m^3	1263.00	9472.50
2	D.R. masonry for foundation and superstructure of retaining wall including all cost conveyance and all labour charges complete								
	Foundation	1	125	1.5	0.40	75			
	Side Wall	1	125	0.9	1.20	135			
	Total					210	m^3	1592.00	334320.00
3	Plastering with CM 1:4, 12 mm thick and 1 coat floated hard and trowelled smooth including watering curring material cost, conveyance and all labour charges etc complete	1	125	0.6		75	m^2	1814.00	13605.00
4	Unforseen items if any								2602.50
Total									**360000.00**

9.Side wall for Kurichippadam , Pathikappara

Sl No	Description of work	N	L	B	H	QTY	Unit	Rate	Amount
1	Earth work excavation in ordinary soil for formation and depositing on bank with lead up to 50m and lift up to 1.50 m including neat banking								
	Foundation	1	69	1.5	0.4	41.4	m^3	1263.00	5228.82

2	D.R. masonry for foundation and superstructure of retaining wall including all cost conveyance and all labour charges complete								
	Foundation	1	69	1.5	0.40	41.4			
	Side Wall	1	69	0.9	1.20	74.5			
	Total					116	m^3	1592.00	184544.64
3	Plastering with CM 1:4, 12 mm thick and 1 coat floated hard and trowelled smooth including watering curring material cost, conveyance and all labour charges etc complete	1	69	0.6		41.4	m^2	1814.00	7509.96
4	Unforseen items if any								2716.58
Total									**200000.00**

10.Kayyani Protection

No	Description of work	N	L	B	H	QTY	Unit	Rate	Amount
1	Earth work excavation in ordinary soil for formation and depositing on bank with lead up to 50m and lift up to 1.50 m including neat banking								
	Foundation	1	34	1.5	0.4	20.4	m^3	1263.00	2576.52
2	D.R. masonry for foundation and superstructure of retaining wall including all cost conveyance and all labour charges complete								
	Foundation	1	34	1.5	0.40	20.4			
	Side Wall	1	34	0.9	1.20	36.7			
	Total					57.1	m^3	1592.00	90935.04

3	Plastering with CM 1:4, 12 mm thick and 1 coat floated hard and trowelled smooth including watering curring material cost, conveyance and all labour charges etc complete	1	34	0.6		20.4	m²	1814.00	3700.56
4	Unforseen items if any								2787.88
Total									**100000.00**

11.Panamattam Thodu Protection Wall

No	Description of work	N	L	B	H	QTY	Unit	Rate	Amount
1	Earth work excavation in ordinary soil for formation and depositing on bank with lead up to 50m and lift up to 1.50 m including neat banking								
	Foundation	1	68	1.5	0.4	40.8	m³	1263.00	5153.04
2	D.R. masonry for foundation and superstructure of retaining wall including all cost conveyance and all labour charges complete								
	Foundation	1	68	1.5	0.40	40.8			
	Side Wall	1	68	0.9	1.20	73.4			
	Total					114	m³	1592.00	181870.08
3	Plastering with CM 1:4, 12 mm thick and 1 coat floated hard and trowelled smooth including watering curring material cost, conveyance and all labour charges etc complete	1	68	0.6		40.8	m²	1814.00	7401.12
4	Unforseen items if any								5575.76

Total	**200000.00**

12.Kurichippadam Thodu Check Dam

No	Description of work	N	L	B	H	QTY	Unit	Rate	Amount
1	Earth work excavation in ordinary soil for formation and depositing on bank with lead up to 50m and lift up to 1.50 m including neat bank-ing								
	Foundation	1	6	3	0.6	10.8			
	Side wall	2	20	0.8	1.00	32			
	Total					42.8	m^3	1263.00	5405.64
2	D.R. masonry for founda-tion and superstructure of retaining wall including all cost conveyance and all labour charges complete								
	Foundation	1	6	3	0.60	10.8			
	Side wall	2	20	0.75	1.00	30			
	Total					40.8	m^3	1592.00	64953.60
3	RCC 1:2:4 using 20 mm metal including all cost conveyance and all labour charges watering, curing etc complete								
	Foundation	1	6	1.3	0.15	1.17			
	Side wall	2	6	0.35	0.90	3.78			
	Cross Bund	2	1	0.4	0.90	0.72			
	Total					5.67	m3	75.27	42678.09

4	Reinforcement for RCC works bend, tied and placed in position including mate-rial cost, conveyance charge and all labour charges etc. complete.	Qty vide item no 3 above 30.3m3@ 70 kg/m3				3.97	qtl	6339.00	25159.49
5	Plastering with CM 1:4, 12 mm thick and 1 coat floated hard and trowelled smooth including watering curring material cost, conveyance and all labour charges etc complete	1	20	0.6		12	m2	1814.00	2176.80
6	Shutter	LS							7500.00
7	Unforseen items if any								2126.38
Total									**150000.00**

13.Uppukulam Thodu Side Wall

Sl No	Description of work	N	L	B	H	Qty	Unit	Rate	Amount
1	Earth work excavation in ordinary soil for formation and depositing on bank with lead up to 50m and lift up to 1.50 m including neat banking								
	Foundation	1	145	1.5	0.4	87	m3	1263.00	10988.10
2	D.R. masonry for foundation and superstructure of retaining wall including all cost conveyance and all labour charges complete								
	Foundation	1	145	1.5	0.40	87			

	Side Wall	1	145	0.9	1.20	157			
	Total					244	m3	1592.00	387811.20
3	Unforseen items if any								1200.70
Total									**400000.00**

2.ANCHUKALLINGAL THODU WATERSHRD

1.Arayani Para Check Dam

No	Description of work	N	L	B	H	QTY	Unit	Rate	Amount
	RCC 1:2:4 using 20 mm metal including all cost conveyance and all labour charges watering, curing etc complete								
	Foundation	1	12	1.3	0.15	2.34			
	Side wall	2	12	0.35	1.50	12.6			
1	Total					14.9	m^3	75.27	112453.38
2	Reinforcement for RCC works bend, tied and placed in position including material cost, conveyance charge and all labour charges etc. complete.	Qty vide item no 3 above 30.3m3@ 70 kg/m^3				10.5	qtl	6339.00	66293.26
3	Plastering with CM 1:4, 12 mm thick and 1 coat floated hard and trowelled smooth including watering curring material cost, con-veyance and all labour charges etc complete	1	12	0.6		7.2	m^2	1814.00	1306.08
4	Shutter	LS							15000.00
5	Unforseen items if any								4947.28
Total									**200000.00**

2.Pond Construction (Alex Mlakkuzhiyil)

No	Description of work	N	L	B	H	QTY	Unit	Rate	Amount
1	Earth work excavation in ordinary soil for formation and depositing on bank with lead up to 50m and lift up to 1.50 m including neat banking	1	12	12	2.25	324	m^3	1263.00	40921.20
2	D.R. masonry for foundation and superstructure of retaining wall including all cost conveyance and all labour charges complete								
	Foundation	1	48	1.1	0.60	31.7			
	Side Wall	1	48	0.8	1.65	63.4			
	Total					95	m^3	1592.00	151303.68
3	Plastering with CM 1:4, 12 mm thick and 1 coat floated hard and trowelled smooth including watering curring material cost, conveyance and all labour charges etc complete	1	36	0.6		21.6	m^2	1814.00	3918.24
4	Unforseen items if any								3856.88
Total									**200000.00**

3.Check Dam (Gabien) Mathew , Mlankuzhiyil

Sl No	Description of work	N	L	B	H	QTY	Unit	Rate	Amount
1	Earth work excavation in ordinary soil for formation and depositing on bank with lead up to 50m and lift up to 1.50 m including neat banking	1	2.5	2	0.6	3	m^3	1263.00	378.90

2	D.R. masonry for foundation and superstructure of retaining wall including all cost conveyance and all labour charges complete								
	Foundation	1	2.5	2	0.60	3			
	Cross bund	1	3.25	1.5	1.50	7.31			
	Total					10.3	m³	1592.00	16417.50
3	Supplying10 Guage Welded mesh	1	14				m²	217.00	3038.00
4	Unforseen items if any								165.60
Total									**20000.00**

4.Gabien Check Dam (Jays , Malankuzhiyil)

No	Description of work	N	L	B	H	QTY	Unit	Rate	Amount
1	Earth work excavation in ordinary soil for formation and depositing on bank with lead up to 50m and lift up to 1.50 m including neat banking	1	2.5	2	0.6	3	m³	1263.00	378.90
2	D.R. masonry for foundation and superstructure of retaining wall including all cost conveyance and all labour charges complete								
	Foundation	1	2.5	2	0.60	3			
	Cross bund	1	3.25	1.5	2.00	9.75			
	Total					12.8	m³	1592.00	20298.00
3	Supplying10 Guage Welded mesh	1	19				m²	217.00	4123.00
4	Unforseen items if any								200.10
Total									**25000.00**

5.Gabien Check Dam (Uzhakumari , Nelliyanikkal)

No	Description of work	N	L	B	H	QTY	Unit	Rate	Amount
1	Earth work excavation in ordinary soil for formation and depositing on bank with lead up to 50m and lift up to 1.50 m including neat banking	1	6	2	0.4	4.8	m^3	1263.00	606.24
2	D.R. masonry for foundation and superstructure of retaining wall including all cost conveyance and all labour charges complete								
	Foundation	1	6	2	0.40	4.8			
	Cross bund	1	6	1.5	1.20	10.8			
	Total					15.6	m^3	1592.00	24835.20
3	Supplying10 Guage Welded mesh	1	25				m^2	217.00	5425.00
4	Unforseen items if any								133.56
Total									**31000.00**

6.Oli renovation (Near Jays Mlakkuzhiyil)

No	Description of work	N	L	B	H	QTY	Unit	Rate	Amount
1	Earth work excavation in ordinary soil for formation and depositing on bank with lead up to 50m and lift up to 1.50 m including neat banking	1	6	1	1	6	m^3	1263.00	757.80
2	D.R. masonry for foundation and superstructure of retaining wall including all cost conveyance and all labour charges complete								
	Foundation	1	5	0.9	0.30	1.35			
	Side Wall	1	5	0.8	1.00	4			
	Total					5.35	m^3	1592.00	8517.20
3	RCC work 1:2:4 using 20mm metal including all cost of material , conveyance ,all labour charges , watering , curing etc	1	1.5	0.3	1.00	0.45	m^2	67.90	30.56
4	Unforseen items if any								3694.44
Total									**13000.00**

7. Head Pond (Ramakrishnan Kayaplakal)

No	Description of work	N	L	B	H	QTY	Unit	Rate	Amount
1	Earth work excavation in ordinary soil for formation and depositing on bank with lead up to 50m and lift up to 1.50 m including neat banking	1	7	7	2	98	m^3	1263.00	12377.40
2	Silpolin	LS							5000.00
3	Unforseen items if any								622.60
Total									**18000.00**

3. KOOVAPPALLY THODU WATERSHED

1.Pond Construction (Saji Vechoor)

No	Description of work	N	L	B	H	QTY	Unit	Rate	Amount
1	Earth work excavation in ordinary soil for formation and depositing on bank with lead up to 50m and lift up to 1.50 m including neat banking	1	12	12	2.5	360	m3	1263.00	45468.00
2	D.R. masonry for foundation and superstructure of retaining wall in-cluding all cost conveyance and all labour charges complete								
	Foundation	1	48	1.1	0.60	31.7			
	Side Wall	1	48	0.8	2.00	76.8			
	Total					108	m3	1592.00	172700.16
3	Plastering with CM 1:4, 12 mm thick and 1 coat floated hard and trowelled smooth including watering curring material cost, conveyance and all labour charges etc complete	1	36	0.6		21.6	m2	1814.00	3918.24
4	Unforseen items if any								2913.60
Total									**225000.00**

2.Gabion Check Dam (MaryCheriyan , Thacakkal)

No	Description of work	N	L	B	H	QTY	Unit	Rate	Amount
1	Earth work excavation in ordinary soil for formation and depositing on bank with lead up to 50m and lift up to 1.50 m in-cluding neat banking	1	6	3	0.4	7.2	m^3	1263.00	909.36
2	D.R. masonry for foundation and super-structure of retaining wall including all cost conveyance and all labour charges complete								

	Foundation	1	6	3	0.40	7.2			
	Cross bund	1	6.3	2	1.50	18.9			
	Total					26.1	m^3	1592.00	41551.20
3	Supplying10 Guage Welded mesh	1	34				m^2	217.00	7378.00
4	Unforseen items if any								161.44
Total									**50000.00**

3.Stream Bank ProtectionWall (Kunnathanikkal , Amminiyamma)

No	Description of work	N	L	B	H	QTY	Unit	Rate	Amount
1	Earth work excavation in ordinary soil for formation and depositing on bank with lead up to 50m and lift up to 1.50 m including neat banking								
	Foundation	1	7	2	0.4	5.6	m^3	1263.00	707.28
2	D.R. masonry for foundation and superstructure of retaining wall in-cluding all cost conveyance and all labour charges complete								
	Foundation	1	7	2	0.40	5.6			
	Side Wall	1	7	1.5	1.10	11.6			
	Total					17.2	m^3	1592.00	27302.80
3	Plastering with CM 1:4, 12 mm thick and 1 coat floated hard and trowelled smooth including watering curring material cost, conveyance and all labour charges etc complete	1	7	1.5		10.5	m^2	1814.00	1904.70
4	Unforseen items if any								85.22
Total									**30000.00**

4.Panamattam Thodu Protection Wall

No	Description of work	N	L	B	H	QTY	Unit	Rate	Amount
1	Earth work excavation in ordinary soil for formation and depositing on bank with lead up to 50m and lift up to 1.50 m including neat banking								
	Foundation	1	63	1.5	0.6	56.7	m^3	1263.00	7161.21
2	D.R. masonry for foundation and superstructure of retaining wall in-cluding all cost conveyance and all labour charges complete								
	Foundation	1	63	1.5	0.60	56.7			
	Side Wall	1	63	0.9	1.00	56.7			
	Total					113	m^3	1592.00	180532.80
3	Plastering with CM 1:4, 12 mm thick and 1 coat floated hard and trowelled smooth including water-ing curring material cost, convey-ance and all labour charges etc complete	1	63	0.6		37.8	m^2	1814.00	6856.92
4	Unforseen items if any								5449.07
Total									**200000.00**

5.Check Dam Renovation – Chakkikavu

No	Description of work	N	L	B	H	QTY	Unit	Rate	Amount
1	Earth work excavation in ordinary soil for formation and depositing on bank with lead up to 50m and lift up to 1.50 m including								

	neat banking								
	Foundation	1	10	1.5	0.6	9			
	Total					9	m³	1263.00	1136.70
2	RCC 1:2:4 using 20 mm metal including all cost conveyance and all labour charges watering, curing etc complete								
	Foundation	1	10	1.5	0.60	9			
	Side wall	1	34	0.4	2.00	23.8			
	Total					32.8	m³	75.27	246885.60
3	Reinforcement for RCC works bend, tied and placed in position including material cost, conveyance charge and all labour charges etc. complete.	Qty vide item no 3 above 30.3m3@ 70 kg/m3				23	qtl	6339.00	145543.44
4	Unforseen items if any								6434.26
Total									**400000.00**

6.Spring Protection (Satheesh , Arakkal)

No	Description of work	N	L	B	H	QTY	Unit	Rate	Amount
1	Earth work excavation in ordinary soil for formation and depositing on bank with lead up to 50m and lift up to 1.50 m including neat banking								
	Foundation	1	2.5	2	0.4	2	m³	1263.	252.60

2	D.R. masonry for foundation and superstructure of retaining wall including all cost conveyance and all labour charges complete								
	Foundation	1	2.5	2	0.40	2			
	Side Wall	1	10	0.6	1.00	6			
	Total					8	m^3	1592.	12736.00
3	RCC 1:2:4 using 20 mm metal including all cost conveyance and all labour charges watering, curing etc complete								
	Cover slab	1	2.7	2.2	0.10	0.6			
	Total					0.6	m^3	75.27	4471.04
4	Reinforcement for RCC works bend, tied and placed in position including material cost, conveyance charge and all labour charges etc. complete.	Qty vide item no 3 above 30.3m3@ 60 kg/m3				0.4	qtl	6339.	2259.22
5	Unforseen items if any								281.14
Total									**20000.00**

7.Pond Construction (Chacko ,Thottappalliyil)

No	Description of work	N	L	B	H	QTY	Unit	Rate	Amount
1	Earth work excavation in ordinary soil for formation and depositing on bank with lead up to 50m and lift up to 1.50 m including neat banking	1	6	4	1.3	31.2	m^3	1263.00	3940.56
2	D.R. masonry for foundation and superstructure of retaining wall including all cost conveyance and all								

	labour charges complete								
	Side Wall	1	17	0.5	1.40	11.9			
	Total					11.9	m3	1592.00	18944.80
3	Plastering with CM 1:4, 12 mm thick and 1 coat floated hard and trowelled smooth including watering curring material cost, conveyance and all labour charges etc complete	1	17	0.6		10.2	m²	1814.00	1850.28
4	Unforseen items if any								264.36
Total									**25000.00**

8.Construction Stream Side Wall Near Amala Giri Convent

No	Description of work	N	L	B	H	QTY	Unit	Rate	Amount
1	Earth work excavation in ordinary soil for formation and depositing on bank with lead up to 50m and lift up to 1.50 m including neat banking								
	Foundation	1	82	1.1	0.6	54.1	m³	1263.00	6835.36
2	D.R. masonry for foundation and superstructure of retaining wall including all cost conveyance and all labour charges complete								
	Foundation	1	82	1.1	0.60	54.1			
	Side Wall	1	82	0.8	1.50	98.4			
	Total					153	m³	1592.00	242811.84
3	Plastering with CM 1:4, 12 mm thick and 1 coat floated hard and trowelled smooth including watering curring material cost, conveyance and all labour charges etc complete	1	82	1.5		123	m²	1814.00	22312.20
4	Unforseen items if any								3040.60
Total									**275000.00**

9.Pond Construction (Biju Mathew ,Chediyarathu)

No	Description of work	N	L	B	H	QTY	Unit	Rate	Amount
1	Earth work excavation in ordinary soil for formation and depositing on bank with lead up to 50m and lift up to 1.50 m including neat banking	1	12	9	2.5	270	m3	1263.00	34101.00
2	D.R. masonry for foundation and superstructure of retaining wall in-cluding all cost conveyance and all labour charges complete								
	Side Wall	1	42	0.5	2.50	52.5			
	Total					52.5	m3	1592.00	83580.00
3	Plastering with CM 1:4, 12 mm thick and 1 coat floated hard and trowelled smooth including water-ing curring material cost, convey-ance and all labour charges etc complete	1	42	0.6		25.2	m2	1814.00	4571.28
4	Unforseen items if any								2747.72
Total									**125000.00**

10.Oli Protection (Gracy Johnson –Thottaplakkal)

No	Description of work	N	L	B	H	QTY	Unit	Rate	Amount
1	Earth work excavation in ordinary soil for formation and deposit-ing on bank with lead up to 50m and lift up to 1.50 m including neat banking								
	Foundation	1	2.5	2	0.4	2	m^3	1263.00	252.60
2	D.R. masonry for								

	foundation and super-structure of retaining wall including all cost conveyance and all labour charges com-plete								
	Foundation	1	2.5	2	0.40	2			
	Side Wall	1	10	0.6	1.00	6			
	Total					8	m^3	1592.00	12736.00
3	RCC 1:2:4 using 20 mm metal including all cost conveyance and all labour charges wa-tering, curing etc com-plete								
	Cover slab	1	2.7	2.2	0.10	0.59			
	Total					0.59	m^3	75.27	4471.04
4	Reinforcement for RCC works bend, tied and placed in position including material cost, conveyance charge and all labour charges etc. complete.	Qty vide item no 3 above 30.3m3@ 60 kg/m3				0.36	qtl	6339.00	2259.22
5	Unforseen items if any								281.14
Total									**20000.00**

11.Oli Construction – Ac Mathew Aimanathu

No	Description of work	N	L	B	H	QTY	Unit	Rate	Amount
1	Earth work excavation in ordinary soil for formation and depositing on bank with lead up to 50m and lift up to 1.50 m including neat banking								
	Foundation	1	2	2	0.4	1.6	m^3	1263.00	202.08
2	D.R. masonry for foundation and superstructure of retaining wall including all cost conveyance and all labour charges complete								
	Foundation	1	2	2	0.40	1.6			
	Side Wall	1	8	0.6	0.80	3.8			
	Total					5.4	m^3	1592.00	8660.48
3	RCC 1:2:4 using 20 mm metal including all cost conveyance and all labour charges watering, curing etc complete								
	Cover slab	1	2	2.2	0.10	0.5			
	Total					0.5	m^3	75.27	3643.07
4	Reinforcement for RCC works bend, tied and placed in position including material cost, conveyance charge and all labour charges etc. complete.	Qty vide item no 3 above 30.3m3@ 60 kg/m3				0.3	qtl	6339.00	1840.85
5	Unforseen items if any								653.53

Total	**15000.00**

4. MUTHIYAMALA THODU WATERSHED

Pond Construction of Kyppa Muthiyamala.

No	Description of work	N	L	B	H	QTY	Unit	Rate	Amount
1	Earth work excavation in ordinary soil for formation and depositing on bank with lead up to 50m and lift up to 1.50 m including neat banking	1	4	3	2	24	m^3	1263.00	3031.20
2	D.R. masonry for foundation and superstructure of retaining wall including all cost conveyance and all labour charges complete								
	Side Wall	1	14	0.5	2.00	14			
	Total					14	m^3	1592.00	22288.00
3	Plastering with CM 1:4, 12 mm thick and 1 coat floated hard and trowelled smooth including watering curring material cost, conveyance and all labour charges etc complete	1	14	0.6		8.4	m^2	1814.00	1523.76
4	Unforseen items if any								3157.04
Total									**30000.00**

MISCELLANIOUS ITEMS

1.Paduthakkulam (Silpolin Tank)

No	Description of work	N	L	B	H	QTY	Unit	Rate	Amount

1	Earth work excavation in ordinary soil for formation and depositing on bank with lead up to 50m and lift up to 1.50 m including neat banking	1	6	6	1.5	54	m^3	1263.00	6820.20
2	Silpolin	LS							2000.00
3	Unforseen items if any								1179.80
Total									**10000.00**

2.Detailed Estimate For Well Recharge Pit

No	Description of work	N	L	B	H	QTY	Unit	Rate	Amount
1	Earth work excavation in ordinary soil for formation and depositing on bank with lead up to 50m and lift up to 1.50 m including neat banking								
	Pit	1	3.14x1.1x1.1/4		1.2	1.14			
	Parapet Wall	1	3.14x1.3	0.2	0.2	0.16			
	Total					1.30	m^3	1263/10m^3	164.19
2	Cement concrete 1:4:8 (one cement, four sand and eight metal using 40 mm normal size hard granite broken stone including all cost conveyance and all labour charges, watering etc complete	1	3.14x1.1x1.1/4		0.10	0.09	m^3	4355.10/m^3	391.96
3	Supplying10 Guage Welded mesh for sides of Tank	1	2x3.14x0.55		1.2	4.14	m^2	217/m	898.38
4	Supplying 22 Guage chicken mesh for all sides of tank	1	2x3.14x0.55		1.2	4.14	m^2	37/m	153.18
5	Plastering With CM 1:3:12mm thick 2 sides for covering welded mesh and chicken mesh For finishing with Cm 1:3 12mm thick for finishing the plastered area.	2	2x3.14x0.55		1.2	8.29	m^2	1846.83/10m^2	1531.02

6	Plastering in CM 1:5 for 12mm thick Brick works	1	2x3.14x0.65	0.6	0.2	2.45	m^2	1799.35/10m^2	440.84
7	Brick work in cement mortar 1:5 with wire cut bricks 19 cm x 9cmx9 cm including cost, conveyance and all labour charges etc complete	1	2x3.14x0.65	0.2	0.4	0.33	m^2	3636.64/m^2	1200.09
8	RCC 1:2:4 using 20 mm metal including all cost conveyance and all labour charges watering, curing etc complete	1	3.14x1.5x1.5/4		0.10	0.177	m^3	69.57/10dm^3	1231.39
9	Reinforcement for R.C.C work bent tied and placed in position including all cost, conveyance and labour charges all charges		Qty vide item no 8 above 0.177m3@ 60 kg/m3			0.106	Qtl	6339.41/qtl	671.98
10	Sand for filter including all cost of conveyance labour charges etc. complete		3.14x1.1x1.1/4		0.1	0.10	m^3	3231/m^3	323.10
11	20mm Brocken stone for filter including all cost of conveyance labour charges etc. complete		3.14x1.1x1.1/4		0.2	0.19	m^3	1396/m^3	265.24
12	6mm Brocken stone for filter including all cost of conveyance labour charges etc. complete		3.14x1.1x1.1/4		0.2	0.19	m^3	1154/m^3	219.26
13	Brick Pieces for filter including all cost of conveyance labour charges etc.complete.		3.14x1.1x1.1/4		0.1	0.10	m^3	720/m^3	72.00
14	Charcolel for filter including all cost of conveyance labour charges etc. complete		LS			20.00	kg		145.00
15	Plumbing arrangements		LS						1000.00
	Supplying Gutter pipe 150mm 4kg		5				m	84/m	420.00
	Supplying 75mm PVC 10 kg/cm2		5				m	146/m	730.00
16	Unforseen items if any								142.37
Total									**10000.00**

3.Rain Water Harvesting System - 5000 Ltr

No	Description of Item	Quantity	Unit	Rate	Amount
1.	Earth work Excavation in soil and depositing on bank with initial lead and lift upto 1.5m including neat banking having 40cm width and 45cm depth.	.42 m^3	10 m^3	1117	**47**
2.	Cement concrete 1:4:8, 10cm thickness using 40mm broken stone including all cost, conveya nce of materials and all labour and labour charges etc…Complete as per specifications.	.24 m^3	10 dm^3	66	**165**
3.	Random rubble masonry in CM 1:6 for basement 30cm width and 30cm depth including all cost and conveyance of all materials and labour charges etc…Complete as per specifications	.68 m^3	m^3	2750	**1870**
4.	R.C.C 1:1½ :3 using 20mm broken stone including all cost and conveyance of materials and labour charges , all formwork , watering, curing, etc... Complete as per specifications.	.17 m^3	10 dm^3	73	**125**
5.	6mm nominal reinforcement for RCC work bent tied and placed in position including cost and conveyance of materials and all labour charges etc… Complete as per specifications.	40.5 Kg	Qtl	6330	**2563**
6.	Supplying and fixing welded mesh 50 x 50 mm, 10 guage for side wall and filtering chamber including cost and conveyance of materials and labour charges etc… Completed as per specifications	9.35 m^2	10 m^2	2473	**2313**
7.	Supplying and fixing 2 layers of (inner and outer) good quality chicken mesh for side wall and filtering chamber including cost and conveyance of materials and labour charges etc…Completed as per specifications.	26.32 m^2	m^2	150.30	**3955**

8.	Plastering with cement mortar 1:3 having 4 coats (2 coats inner and 2 coats outer) ,each having 12mm thick for side wall (water proofing compound @ 1Kg / 1 bag of cement) and 2 coats for filtering chamber including all cost and conveyance of all materials and labour charges etc…Complete as per specifications.	35.64 m²	10 m²	2233.55	**7960**
9.	White cement washing two coats including all cost and conveyance of all materials and labour charges etc…Complete as per specifications.	20.6 m²	10 m²	181.35	**374**
10.	Providing and fixing best quality 160mm PVC high density half round gutters for collecting rain water with suitable clamps at 1m interval including supporting adjustable brackets , elbows stopened etc…complete as per specifications	5 m	Rm	446.1	**2230**
11.	Sypplying , laying and joining high density first quality 63mm dia 12 Kg/m² PVC pipes from the roof outlet to the ferro cement tank filter including all charges of fixing in position	4 m	Rm	167	**668**
12.	Filter media having sand , gravel , charcoal etc… having required thickness	LS			**500**
	TOTAL				**22800**
	VAT 5%				**1140**
	WWTF 1%				**228**
	Miscellaneous any				**832**
	GRAND TOTAL				**25,000/-**

II) FIGURES – NRM ACTIVITIES

1. Typical Cross Section of Side Wall Protection (StoneRevetment)

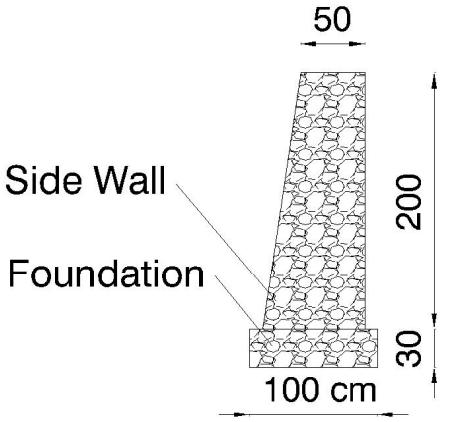


Fig.1.Typical Cross - section of stream wall Protection

2. Silpolin Tank 50,000 Ltr

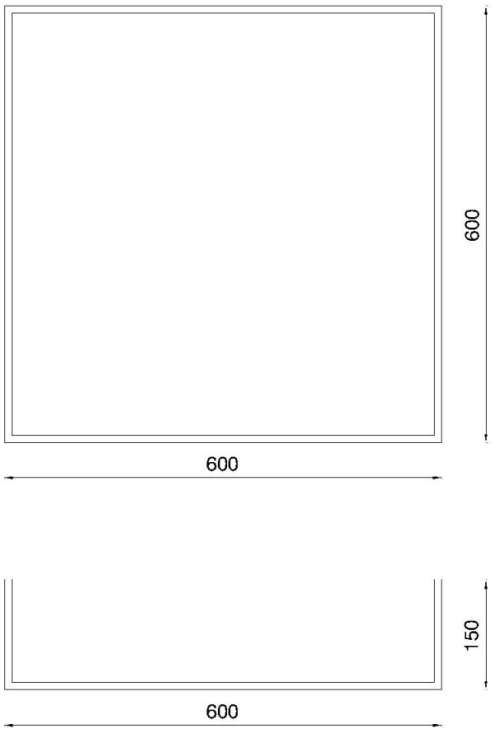
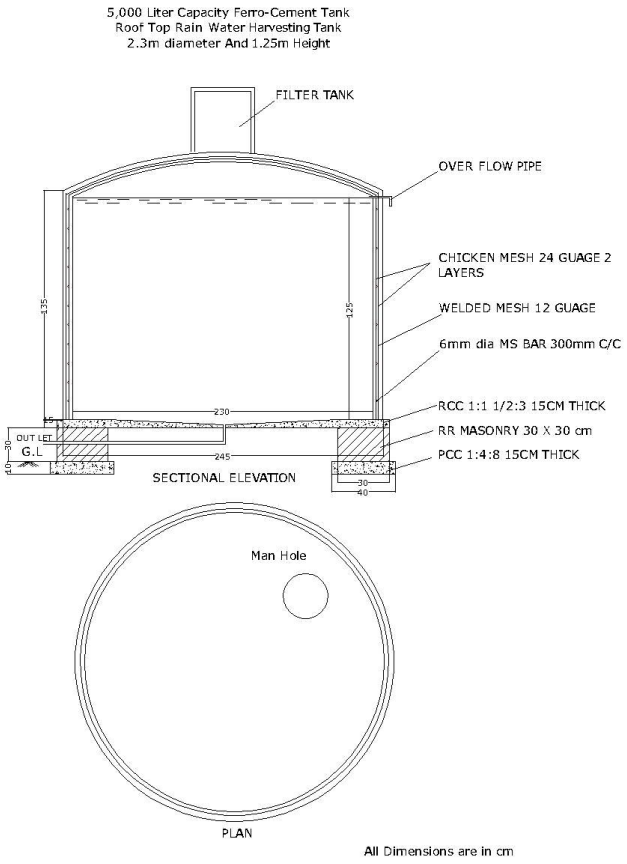
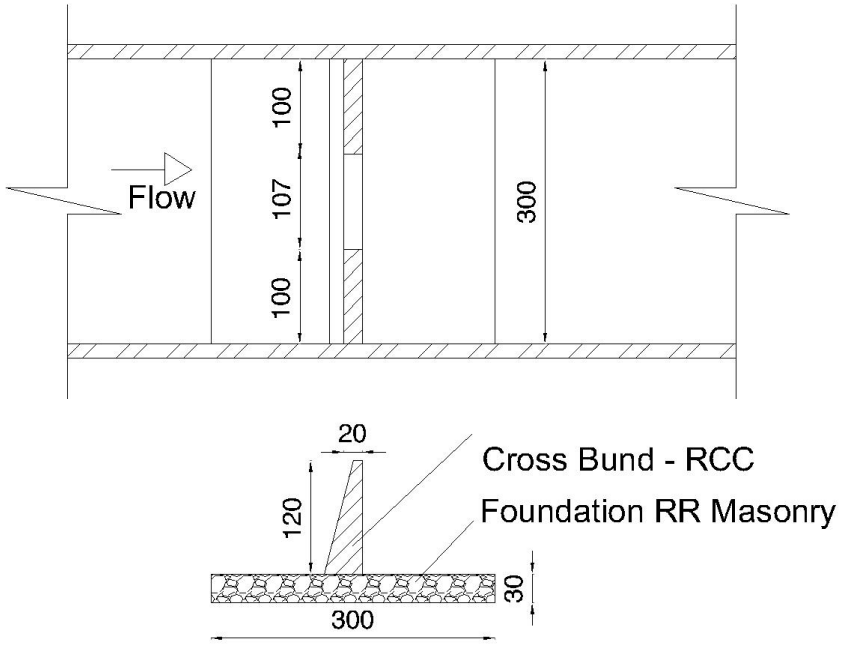


Fig.2.Typical Cross - section & Plan of Silpolin Tank

3. Rain water Recharging System – 5000 Ltr


5,000 Liter Capacity Ferro-Cement Tank
Roof Top Rain Water Harvesting Tank
2.3m diameter And 1.25m Height
FILTER TANK
OVER FLOW PIPE
CHICKEN MESH 24 GUAGE 2 LAYERS
WELDED MESH 12 GUAGE
6mm dia MS BAR 300mm C/C
RCC 1:1 1/2:3 15CM THICK
RR MASONRY 30 X 30 cm
PCC 1:4:8 15CM THICK
OUT LET
G.L
SECTIONAL ELEVATION
Man Hole
PLAN
All Dimensions are in cm

4.Check Dam



Typical Plan & Cross section of a Check Dam

III) PRODUCTION SYSTEM MANAGEMENT

Sl No.	Activity	Unit	Unit Cost	IWMP Fund
1	System of rice intensification	ha	12000	12000
2	Bio gas plant	$1m^3$	14000	14,000
3	Banana Cultivation	Ha	2500	25,000
4	Distribution of organic manure(Neem Cake)	Unit	2000	2,000
5	Fodder grass Cultivation	Cent	220	220
8	a) Fruit bearing plants	4 nos	700	700
	b) Fruit bearing plants	3 nos	500	500

IV) LIVELIHOOD ACTIVITIES

Sl No.	Activity	Unit	Unit cost	IWMP Fund
1	**Poultry Distribution** Egg laying chicken having an age of 45 – 60 days	No.	110	110
2	Milch Cow rearing	No	32000	16000
3	Goat rearing	No	5000	5,000
4	Tailoring Unit	No	15000	15000
5	Heifer	No	7000	7000
6	Lease farming	ha	25000	25000
9	Value added product making unit	Unit	18000	18000
10	Bee keeping	Box	1150	1150
11	Pig rearing	No	5000	5000
12	Mushroom Cultivation	40 Bed	5000	5000
13	Vermi Compost	Unit	12000	12000

PRODUCTION SYSTEM & LIVELIHOOD ESTIMATE

I) Poultry Distribution

Egg laying chicken having an age of 45 to 60 days purchasing from an authorized poultry farms.

Rate per Chick x 1 = 90
Vat - @ 6.67 % = 13.5
Miscellaneous = 6.5
Total = 110/-
Unit cost – 10 Nos @ 110 = 1100/-
Total = 1100/-
Poultry Distribution Rs.1100/unit.
Medicine and feed for 1 month per unit Rs.110/-

Total project cost of a backyard poultry farm =1100+110=Rs.1210 per head.

2) Milch Cow Rearing

As per the approved rate of NABARD

Cow @ 4000/ Ltr – Satisfying all requirements regarding Department of Animal Husbandry.

Rate – Cow having almost an yield of 8 Litre per day

Unit cost for milch cow -8 x 4000 = 32000/-

Rate for Cow shed =10000/-

Insurance charge for a cow=2000/-

Charges for Feed, Medicine and transportation=2000/-

Total unit cost for a diary unit=46000 per each

For a JLG Group including 5 members Unit cost for the group is 5x 46000=2.3 lakhs out of which subsidy of Rs 1 lakhs under IWMP can be given and bank loan amounted to 1.30 lakhs.

3) Goat Rearing

As per the specification of NABARD, goat having an age of 5 month approximate weight of 10Kg. For a JLG group consist 5 Members.

Unit cost = 5000/each

Goat rearing unit consist 5 nos

Total cost = 5x 5000 = 25000 / unit

Unit Rate for Goat Shed including insurance charge =Rs.1000/-each

For the JLG Group 5x 1000=5000/

Unit Rate for Goat Rearing for the JLG group=5000+1000=6000x5=30000/-

90% of the seed money is 27000/ is limited as per IWMP guidelines comes to Rs.25000/-

4) a. Fruit Bearing Plants

Romboottan x 1 = 200/-

Mongostin x 1 = 150/-

Mango graft x 1 = 150/-

Kudampuli x 1 = 150/-

Miscellaneous = 50/-

Grand Total = 700/-

Unit cost of Fruit Bearing distribution 700/unit.

b. Fruit Bearing Plants

Romboottan x 1 = 200/-

Mongostin x 1 = 150/-

Mango graft x 1 = 150/-

Total = **500 / unit**

5) Fodder Grass Cultivation

Unit Cost (per 1 ha fodder cultivation)

Cost of slips (15000/ha)-		15000 x 0.50ps/slips	– 7 500
Land preparation	–	25 man days x Rs.500/man day	– 12500
Basal manuring	–		- 15000
Planting	–	20 man days x Rs.500/man day	– 10000
Weeding / irrigation	–	10 man days x Rs. 500/man day	– 5000
Top dressing	–		- 4500
Total	–		**54500/-**

Subsidy @ Rs. 20000/ha

6) Biogas Plant

As per the specification of Suchitva Mission, portable biogas having a capacity of 1m3.

Rate 1m³– 14000/-

7) Distribution of Organic Manure

Neem Cake - @ Rs.20/Kg

1 Unit = 100Kg @ 20/Kg = **2000/-**

Unit cost of distribution of organic manure = 2000/unit

8) Banana Cultivation

Rate 10/each banana, 2500/Ha

Therefore, 2500x 10 = 25000/-

Unit Rate – 10 x 100 = **1000/-**

9) System of Rice Intensification

1 acre **@ 4000/-**

10) Centripetal Terracing

1x 3.14 (1.50²-100²)0+0.30**/2 = 0.588m³**

Rate 30 / Each

11) Tailoring unit

Include two tailoring machines and necessary other materials = Rs. 15000 / unit

Machine-2x 8000= Rs.16000

Cutting Table =Rs.10000

Scissors- Rs.500

Chair- Rs.1000/-

Rack-Rs.3000/-

Iron Box-Rs.1000/-

Almarah-Rs.5000/-

Miscellaneous-Rs.500/-

Working Capital-Rs.3000/

Total- Rs. 40000/-

12) <u>Heifer Distribution</u>

Rate of Heifer =Rs. 5000 / each

Cost of a unit = 5000 x 5 = 25000 / unit

Unit Rate for Heifer Shed including insurance charge =Rs.1000/-each

For the JLG Group 5x 1000= Rs 5000/

Unit Rate for Heifer Rearing for the JLG group=5000+1000=6000 x 5= Rs 30000/-

90% of the seed money is 27000/ is limited as per IWMP guidelines comes to Rs.25000/-

13) <u>Value Added Product (Agricultural) Making unit</u>

Unit cost of a Value added product making unit = Rs 6000 / unit.

Iwmp provides a maximum of 90% of project cost.6000 x 90%= Rs 5400/-

IWMP provides the revolving fund of 5000/each. Project cost is limited to Rs. 5000/-

14) <u>Bee Keeping</u>

Bee keeping rate = 1150 / box

Unit contain 10 nos of boxes

Unit cost = 1150 x 10 = 11500 / unit

15) <u>Pig fattener unit</u>

Rate of a Pig = Rs 200 per Kg 1 piglet comes approx.10 Kg

Cost of a piglet comes upto Rs. 2000/-

1 unit means 2 piglets, amount of which is Rs. 4000/-

Insurance Transportation & medicines Rs. 1000/-

Unit cost is Rs.5000/-. A JLG Group including 5 members can be given 5 units, amount of which is Rs.25000/-

IWMP fund Rs.22500/-. Balance amount Rs.2500/-must be met by the group.

Unit cost = 5 x 5000 = 25000 / unit

16) Mushroom Cultivation unit

Room specification**-10 x 10 sq ft**

Straw 1Kg for 1 bed @ Rs 25/ Kg

For 40 beds, amount=40 x 25=Rs.1000/-

1 packet of spawn of 300 gm @ Rs.50/-

1 packet spawn for 1 bed. Therefore 40 bed requires 40 packets of spawn amounted to Rs.2000/-

Cost of Polythene cover& rope-Rs.700/-

For instruments for irrigation purpose-Rs.800/-

Room covered using Jute bags-Rs.500/-

1 Unit consist of 40 beds of mushroom.

Total Cost for 1 unit=Rs.5000/-

17) Vermi compost

Size of tank = 3.5 x 1.5 x 1 m

Rate = 10,000 /unit.

Raw Material Cost= Rs.2000/-

Total = Rs.12, 000/-

18) <u>Candle Making</u>

Machineries = Rs.1 lakh

Raw Materials = Rs.90, 000/-

Transportation of Machineries = Rs.10000/-

Total =2 lakh

Rs.2 lakhs out of which subsidy of Rs 1 lakhs under IWMP fund can be given and bank loan amounted to Rs.1 lakhs

19) <u>Broom Making</u>

The Raw material used for the broom making Unit is "CHITTEENTH"

Unit cost of the Project – 28000/-

IWMP fund limited to Rs.**25000/-**

20) <u>Vegetable Cultivation</u>

Unit Cost for 10 Cent of land cultivated to vegetables= Rs 600/-

IWMP fund can be limited to **Rs.500/-**