



INTEGRATED WATERSHED MANAGEMENT PROGRAMME

IWMP-VII, KATTAPPANA (BATCH-4)

DETAILED PROJECT REPORT

Kattappana Block Panchayath

**Technical Supporting Organization
SEID WAYANAD**

Phone: 04936 -261431, 09497305518

Email: seid.wyd@gmail.com

PART - I

CHAPTER -1

INTRODUCTION

1. PROJECT BACKGROUND

A watershed can be simply defined as an area where the water from rainfall is drained to a common outlet. Apart from the abstract factors that the watershed experiences, it is comprised of land, water and biomass. Certain delicate balances are maintained in the ever varying interactions among the environmental factors that each individual watershed is exposed to sustain the well-being of it. Every watershed has to be identified as a unique watershed ecosystem. These balances are jeopardized due to disproportionate and irrational interventions of the watershed community. Man spearheads and thus watershed deterioration begins. This basically inflicts upon the water cycle. This has resulted in drinking water scarcity, agricultural drought, fall in farm production, denial of hydel power generation, crisis in industries and ecological problems. Main reasons are topography, intensity and duration of rainfall, land use pattern and population. Watershed development is an integration of technology within the natural boundary of a drainage area for optimum development of land, water and plant resources to meet the basic minimum needs of people in a sustained manner. A developed watershed provides food, fuel, fiber, fodder, fruits, drinking water and employment. Thus scientific water management approach is the only tool to develop a watershed.

Watershed management, the process of guiding &organizing, land and other resource usage in a watershed ensuring the sustenance of the environment (mainly the soil and water resources) i.e. Need to recognize the interrelationships between, land use, soil-water, and slope of terrain. Unifying focus in watershed management is in how various human activities affect the relationship between water and other natural resources .Watershed management provides a basis for actions concerning the development and conservation.

Watershed management is a single window, integrated area development programme. Integrated watershed management cannot perhaps be achieved just by following integration of resources using multidisciplinary approach with the funding or support provided alone under any watershed programme. This may also involve harmonized use of resources available from other ongoing or existing sectoral and development schemes in the area or district. Such resources can be fit together with the watershed programme 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, drainage, storm water runoff water rights and the overall planning and utilization of watershed.

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.

A 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 for community members to develop their capacity to sustain the programme as the future custodians of the programme at the time of withdrawal.

Programme will be sustainable only if it continues to operate after the withdrawal of monetary or technical supports. In Integrated Watershed Management Programme the participation of local community is assured since the different works on private as well importance of “participation” for sustainability in watershed management programmes.

Collective participation of people is very important due to inter dependence of beneficiaries. Transfer of responsibility within their community is a key mandatory for ensuring the sustainability.

2 NEED AND SCOPE FOR WATERSHED DEVELOPMENT

Loss of vegetative cover following 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.

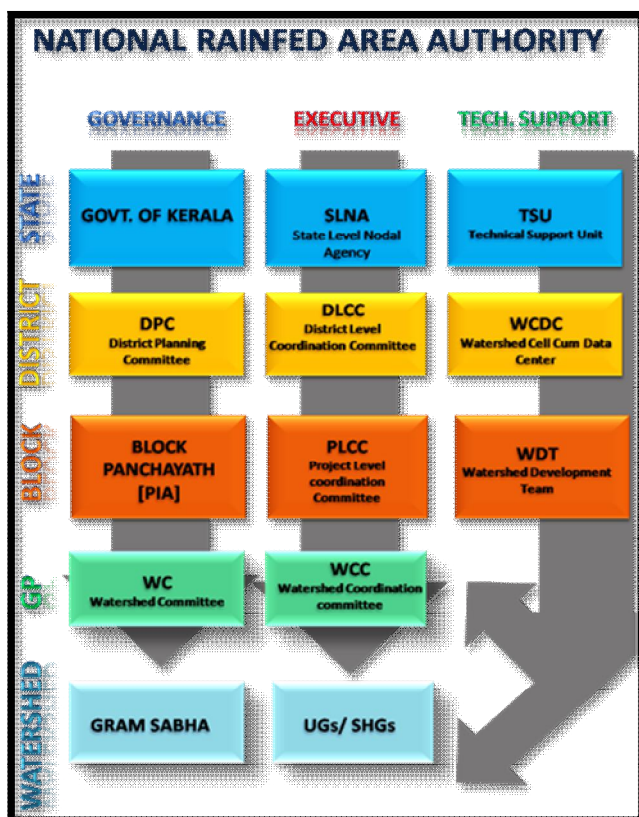
Watershed management has therefore emerged as a new paradigm for planning, development and management of land water and biomass resources with a focus on social and institutional aspects apart from biophysical aspects. Watershed management becomes increasingly important as a way to improve livelihood of people while conserving and regenerating there 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.

2.1 MAIN OBJECTIVES

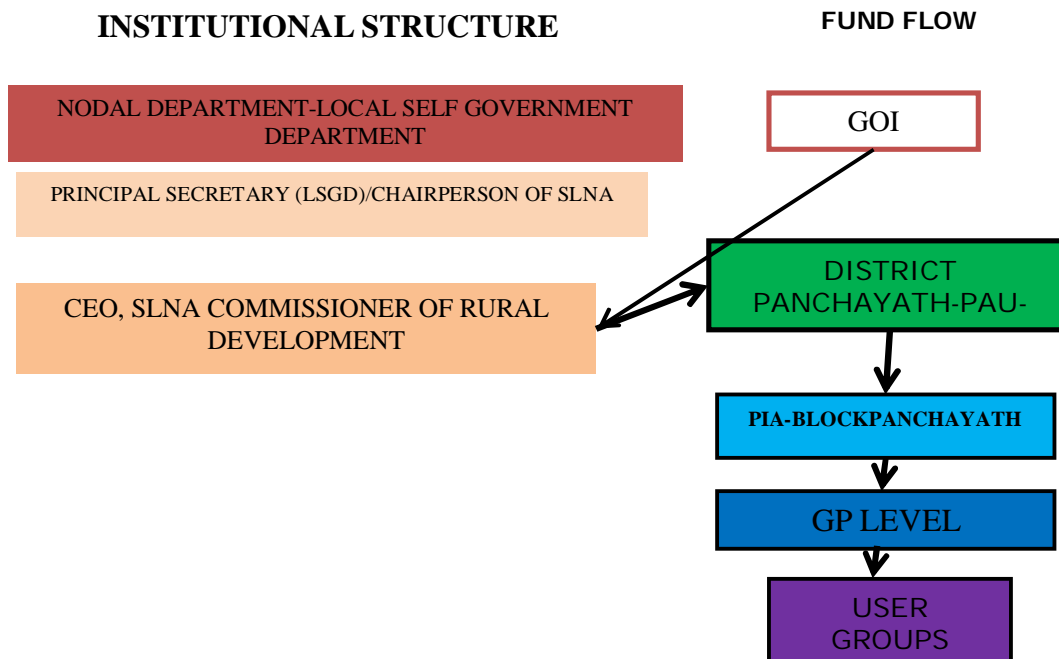
1. Main objective of IWMP is to preserve and conserve the ecology, restore and develop degraded natural resources by arresting soil loss, improving soil health and soil moisture.
2. Rain water harvesting and recharging of ground water enables multi cropping and introduction of diverse agro based activities help to provide sustainable livelihood to the people residing in watershed area.
3. To promote livestock development, fishery management, and to encourage dairying and marketing of dairy products.
4. Improving the capacity of community to manage common natural resource.
5. Enhancing the efficiency and effectiveness of rain water and runoff use, improve vegetative cover and reduce soil erosion through better rain water management.
6. 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.
7. Utilizing the available land to its maximum productivity by adopting various suitable measures according to the land capability and without any environmental degradation.

3. ORGANIZATIONAL SET UP



SLNA- State Level Nodal Agency
 TSU- Technical Support Unit
 DPC- District Planning Committee
 DLCC- District Level Coordination Committee
 WCDC- Watershed Cell cum Data Centre
 PIA- Programme Implementing Agency
 BLCC- Block Level Coordination Committee
 WDT- Watershed Development Team
 WC- Watershed Committee
 WCC- Watershed Coordination Committee
 UG- User Groups
 SHGs- Self Help Groups

4. FUNDING FLOW



5. FUNDING PATTERN

Table.1.1: Funding pattern

Sl. No.	Particulars	Percentage of Fund	Amount(Rs.)
01.	Administration Cost	10.00	66,97,500
02.	Monitoring	1.00	6,69,750
03.	Evaluation	1.00	6,69,750
04.	Entry Point Activities	4.00	26,79,000
05.	Institution & Capacity Building	5.00	33,48,750
06.	DPR	1.00	6,69,750
07.	Watershed Development Works	56.00	3,75,06,000
08.	Livelihood Activities	9.00	60,27,750
09.	Production System & Micro Enterprises	10.00	66,97,500
10.	Consolidation Phase	3.00	20,09,250
	Total	100%	<u>6,69,75,000</u>

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

The project comprises of six micro watersheds. A cluster approach has been followed in the preparation of DPR. The common guidelines provide a flexible framework for the preparation of the Detailed Project Report of the projects under IWMP. The methodology for the preparation of the Detailed Project Report of IWMP-Batch-4 of Idukki District is outlined below:

Following steps were followed for the preparation of the plan:

- Delineation of watershed map from the Toposheet
- Collection of cadastral map from revenue department
- Boundary identification
- Transect walk
- Identification of EPA activities
- Baseline data collection or survey
- Watershed based PRA
- Identification of public works and field level measurement
- Secondary data collection from various departments
- Consolidation of the data collected from the field
- Preparation of the DPR
- Submission of the DPR to SLNA

6.1. BASELINE SURVEY

A detailed baseline survey was conducted covering all households in the project area. The database thus created is expected to facilitate the assessment of the watershed development programme on the project area during and after the implementation of the project.

- **Boundary Identification in watershed Area**
- **Survey training for survey team members**

To assess the impact of any watershed development programme a detailed baseline survey has to be conducted. This acts a benchmark for any intervention during and post implementation of any development programme. A detailed baseline survey was undertaken which involved household census survey, Bio-physical survey and Village level data collection from all villages. Household census survey includes a detailed questionnaire which had been filled by visiting each and every household in the village. This gave in the details of the demographic profile of the village, the literacy percentage, SC/ST population, number of BPL household, cattle population, and net consumption rate in the village, average milk production of the cattle and various schemes running and their benefits.

Secondary Data: The DPR has to be based on a situation analysis of secondary data and information available from various sources. Basic information about the watershed such as History, Climates and rainfall, temperature, location, topography, hydrology, geology,

Geomorphology, soils, demographic and socio-economic characteristics of the population, land-use pattern, Cropping pattern and productivity, irrigation, livestock etc. were collected from different sources such as Census of India, development reports, publications of government departments etc.

6.2. PARTICIPATORY RURAL APPRAISAL

The past experience of watershed has given tremendous input to focus on creating accountability of the stakeholders towards the programme. This has created an emphasis to include all the stakeholder communities and their local and indigenous Technological Knowledge (ITK) while planning for any activity. Participatory approach provides a new path for planning, implementing, and monitoring and post- withdrawal activities with a complete accountability of the stakeholders. Various PRA techniques like resource mapping, social mapping, and season calendars were used to realize the physical and social orientation of the village in general and watershed in specific. These tools put the villagers in simplicity than the complicated questionnaires. Various tools like Matrix ranking, Venn diagram were used to identify various local vegetations (apt for afforestation), Fodders crops, various institutions and their significance in the life of the farmers.

PRA programmes were the significant and enthusiastic exercise to enhance the village level planning of IWMP. These exercises were conducted in all watersheds for the internal support to extending and carry out of the progressive characteristics of IWMP programmes. Its initiation has been helped to internalize the features like people centered Project through the Participatory approach. It has also envisaged the present needs and future thrusts of society. Other noteworthy tips are the Watershed community has realized their strength and capacity to take up such projects without external supports. The following tools were applied in the process of DPR Preparation.

6.2.1 SIGNIFICANCE OF THE PARTICIPATORY RURAL APPRAISAL (PRA)

The study mainly aims to discover the potentials of the area and local needs of the people. It has also internalized the existing crucial issues and constraints in the watershed area. Few drainage line areas of the watersheds is considered as critical area because of its undulating topography, soil erosion, degradation of the agriculture sector, poor livelihood system and water shortage and unscientific waste management etc. There is only a bare minimum effort to tackle the issues. So IWMP aims to bring up an integrated approach in the restoration of the ecosystem and environment and finally sustainable development in all sectors. Participatory planning, formulation of the strategies, implementation, monitoring and evaluation are the major strategy to be adopted. To initiate the corrective measures we have to mobilize the baseline information from the ground level.

This information is the main source to finalize the intervention strategies. Apart from these peoples participation can be ensured to analyze the ground reality. First hand and secondary data collection will help us the strategy formulation.

6.2.2 SUSTAINABILITY ASSURANCE STRATEGIES

The term sustainability describes the ability of a project to maintain and acceptable level of benefit flows through its life. A programme is sustainable of that continue to operate after withdrawal of monitoring or technical support of the project Transfer of responsibility of running with in their communities is key requisite for ensuring the sustainability.

6.2.3 STEPS OF PEOPLE'S PARTICIPATION IN WATERSHED DEVELOPMENT PROGRAMME

- Take grass root level approach in planning and mobilizing, peoples contribution for the project
- Discus plans and options with the leaders have influence in the communities
- Discus plans and options with the leaders have influence in the communities
- Appeal to people individual or collective interest
- Organize the stake holders in to a water users association ensure active involvement by making beneficiary contribute their time and money
- Involve all stake holders in the planning, implementation, monitoring and evaluation

6.2.4 BENEFITS OF PARTICIPATORY APPROACH

- Access to indigenous expertise or local knowledge
- Tacking in to conservation needs of different groups and individual in the project proposal
- Awareness of financial or other limitation to prepare a plan suitable to all
- Identification sensitive issues and ways to avoid the harmful effects
- Overcoming conflicts to reach a consciousness on project components

6.3. USE OF GIS AND REMOTE SENSING FOR PLANNING

Use of various high science tools has been promoted at various stages of watershed development.

6.3.1 GIS

Geographical Information System (GIS) has been used for prioritization process. Various layer maps were created like Geo-morphological, Soil, Drainage, land use, Ground water Status, Drinking water situation and Slope percent. These were all given proper weight age according to the DoLR specification. This helped in prioritization of various watershed areas.

6.3.2 GPS

Global Positioning System (GPS) has been used for boundary identification and the major bench mark of the watersheds area. After using the GPS, it can connect to Google earth and we can derive data which is taken from the field.

6.3.3 REMOTE SENSING IMAGERIES AND TOPOSHEET

Remote sensing imageries are used for the identification of physical and antropogenetic changes in the watershed areas, the temporal changes can be identified with the help of Toposheet and imageries.

6.3.4. PLANNING

An action plan matrix was been formulated by taking into account various features like the slope percent, soil depth, soil texture, soil erosion in the area for wasteland, forest land and agricultural land. Global positioning System (GPS) was used to identify each and every water conservation structures available in the project area. This was used to create a map.

6.3.5. HYDROLOGICAL MODELLING

Hydrology modeling 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.

6.3.6. DETAILS OF SCIENTIFIC PLANNING AND INPUTS IN IWMP PROJECTS

Table.3.1.Details of scientific planning and inputs in IWMP projects

List of scientific criteria/ inputs used	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
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

GENERAL DESCRIPTION OF THE PROJECT AREA

1. BRIEF HISTORY

The project is planned to be carried out in the six watersheds existing in the Panchayath of Ayyappankoil, Kumali, Upputhara, and Elappara in the Kattappana Block Panchayath, which lies on either sides of river Periyar in the district of Idukki. The major watersheds in this Project coming under the Panchayath of Ayyappankoil, Kumali, Upputhara and Elappara are Karinkulam(14P53a),Pookkulam Estate(14P54a), Haileyburia(14P109a),Valakode (14P110i), Cheenthalar (14P110 j) and Chappath (14P111a).

2. LOCATION AND EXTENT

The Project area is located in the Southern part of the Kattappana Block and it is laid on the southern portion of the Idukki district. The Cluster area is situated between 9°38'10.483"N 9°43'43.392"N Latitude and 76°56'41.749"E 77°4'31.141"E Longitude . The total extent of the cluster is 4465 hectares. The cluster area bounded on the North Arakkulam Grama Panchayath and Kanchiyar in Idukki district, South Elappara Grama Panchayath, in West Kumali and Chakkupallam Grama Panchayath and East Elappara Grama Panchayath.

3. PHYSIOGRAPHY

Physiographically the project area forms part of both the midland and highland units. Descending from the heights of the Western Ghats in the east, the land slopes towards the west forming three distinct – the highlands, the plains. Some of the lofty ridges and peaks extend towards the west by a succession of hills of diminishing altitude. Stretching westwards in gentle slopes the plains succeed forest-clad uplands. The highest elevated area in this project is Chekuthan mala, which is 1498 meters from mean sea level and others are Panjalimala 1198, above Kovalayattam 1113 meters, Pookkulam estate 1096 meters, Valakode 1074 and the lowest area is located Chappath 756 meters and Karintharuvi estate. The river, Periyar passing through the central portion of the project area and all are streams are meeting to the Periyar River which is starting from Northern part of the outside project area.

In addition to these, there are streams running between the mountain slopes enriching the water resource of the watershed.. Though the watershed receives moderate annual rain fall, some regions face scarcity of water .More than half of the watershed area is comprised of hills and mountains where as major share of the remaining land is household premises. Tea plantations are seen in hilly areas. Coffee, Cardamom, Pepper, banana, tapioca, coconut, Areacanut and vegetables are the other major crops cultivated.

3.1. RELIEF DATA IN THE PROJECT AREA

Table.4.3.Relief of the Project area

Relief	Area in HA	In %
< 1000 Meters	3538.67	81.06
1000 - 1400 Meters	825.93	18.92
>1400 Meters	0.70	0.02
Total	4365	100

3.2. DRAINAGE (Major drains in the project area)

PERIYAR	PARAPPU-PERiyAR THODU
	POOMALA-PERiyAR THODU
	KANNIKKALLU-PERiyAR THODU
	KAVUNTHY-CHENKARA THODU
	NIRMALAGIRI ESTATE- CHENKARA THODU
	CHEKUTHANMALA- CHENKARA THODU
	PULLUMEDU-SANKARAGIRI THODU
	CHENKARA THODU
	AREEKKAL THODU
	HAILEYBURIYA ESTATE THODU
	23 LAYAM-LONETREE THODU
	MATHAIPPARA-AANAPPALLAM-AALAMPALLY THODU
	VALAKODE OTTAMARAM THODU
	VALAKODE JN,-PASUPPARA THODU
	SOORYAKANTHI THODU
	KAVERIMALA-CHEENTHALAR THODU
PATHEKKAR LONTAPPAN PADI THODU	

Source: base line survey TSO)

3.2.1.Drainage and Density

Table4.5: Drainage and Density

Watershed code	Streams Length	Area km2	Density	Main stream length in km	Perimeter
14P109a	11.481	303	0.0378	1.5	6.28
14P110i	35.52	1021	0.0348	2.6	14.55
14P110j	19.97	821	0.0242	3.25	11.45
14P111a	18.96	517	0.036	4.37	9.96
14P53a	37.36	1046	0.035	9.38	16.27
14P54a	35.399	757	0.046	1.14	13.09

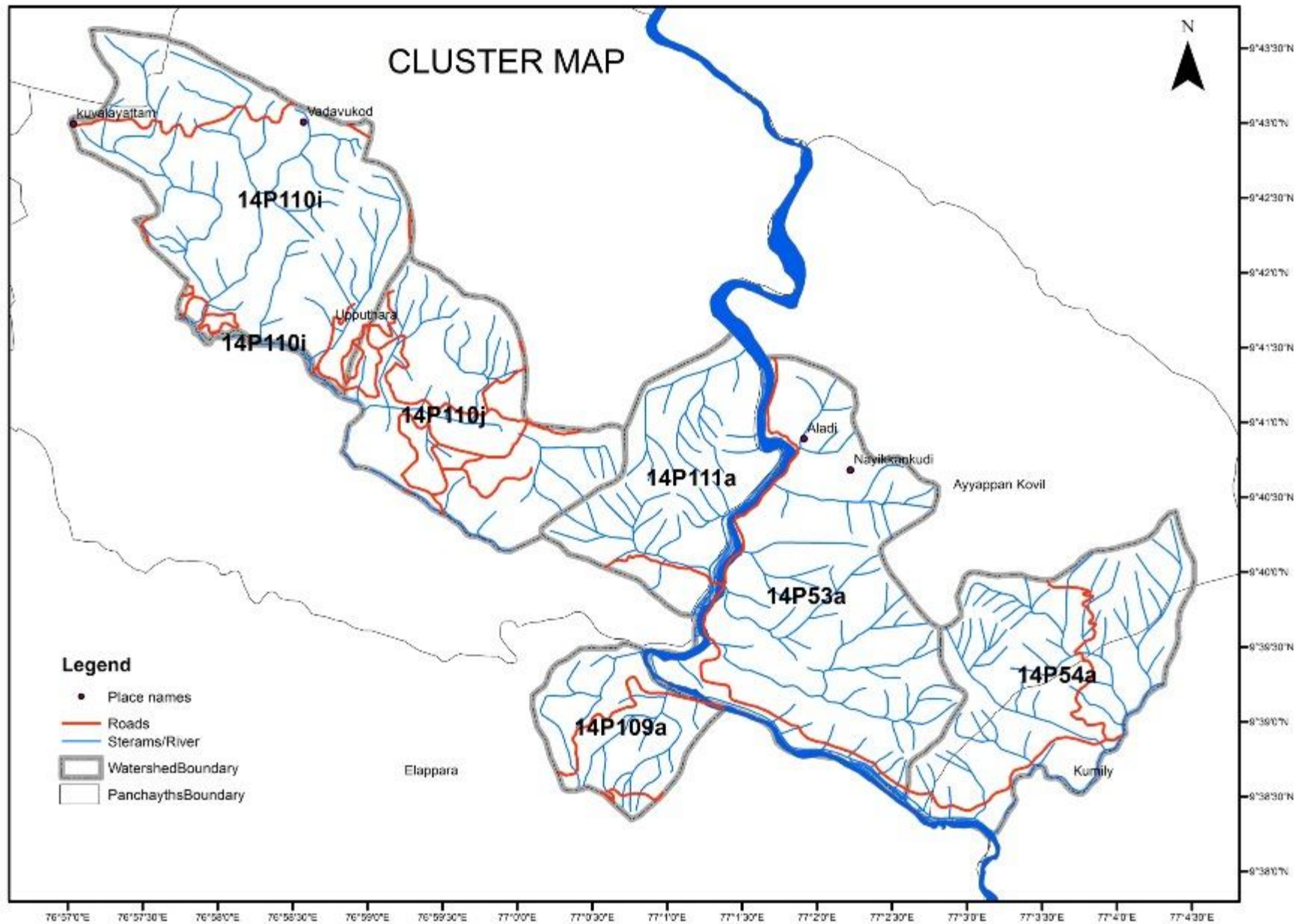
3.3. SLOPE

Majority of the area is Strong slope (1922hectares) which is 44.04 % of the total area followed by steep sloping area covered 1048 hectares which is 24.01%, moderate Slope area covered 857 hectares which is 19.63% , gentle slope covered 496.38 hectares which is 11.37% and last 40.67 covered by Very steep slope which is .9 % of the total area.

3.3.1.SLOPE CATEGORIES OF CLUSTER AREA

Table.4.4. Slope of the project area

Slope	Area in HA	In %
Very steep slope	40.67	0.932
Steep slope	1048.16	24.011
Strong slope	1922.78	44.047
Moderate slope	857.31	19.639
Gentle	496.38	11.371
Total	4365	100



4. CLIMATE

The watershed experiences an average annual rainfall of 2809mm , of which 1785mm is received during the South-West Monsoon (June to August) and 704mm during the North –East Monsoon (September to November)

4.1. TEMPERATURE

The maximum,, minimum and mean temperature of the watershed area 31.00 C, 24.0 C and 27.50 C respectively. The maximum temperature is experienced during the month of March and minimum during the month of December. The mean humidity of the watershed is 83% at 8-30hrs and 75 % at 17-30hrs.

4.2 RAINFALL

Rainfall data obtained from the rain gauge station located in Peerumedu for the period from 2003 to 2012 indicates that this area receives annual average rainfall of 4259 mm. During this period 2005 was the wettest year with annual rainfall of 6882mm and the year 2012 received the lowest annual precipitation of 2749 mm. The monthly average rainfall varies from 229 mm in the month of January to 573 mm in the month of July. It is evident from the Table that the area receives rainfall both during south west and north east monsoons, however all the high rainfall years are supported by high rainfall in the month of July.

Table.4.5.Monthly rainfall in mm

STATION : PEERMADE												
MONTHLY TOTAL RAINFALL IN (MM)												
YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2003	0.0	52.4	128.0	161.0	76.0	506.0	568.0	593.0	167.0	828.0	35.5	0.0
2004	0.0	14.0	33.0	138.0	787.7	966.0	604.0	623.7	452.0	348.7	82.0	2.0
2005	19.3	42.0	97.0	280.0	208.3	844.8	1995.2	525.8	1759.4	457.0	349.0	305.0
2006	1.0	0.0	91.0	140.0	1144.0	906.0	1156.0	422.0	569.3	564.0	144.0	0.0
2007	0.0	28.3	1.0	254.0	227.0	1162.0	1606.0	700.0	677.0	555.0	95.2	40.0
2008	20.0	96.0	166.0	44.0	131.0	634.0	858.5	617.0	556.5	358.0	120.0	0.0
2009	7.0	0.0	129.0	15.0	234.0	562.0	1011.0	318.0	638.0	290.0	234.0	130.0
2010	5.0	0.0	53.0	161.8	218.5	1131.0	800.0	667.0	282.0	492.2	280.0	31.0
2011	15.0	51.0	25.0	241.0	127.2	1055.0	632.5	763.0	453.0	411.0	190.0	58.0
2012	32.0	0.0	30.0	268.0	65.0	579.0	482.0	671.0	316.0	191.0	115.6	0.0

Source: Peermade station

5. GEOMORPHOLGY

The below table giving the geomorphologic divisions of the project area. 51 % of the area is covered by denudational structural hills and 33.28 % of the area is Padi plain.

Table 4.6. Geomorphology of the project area

Geomorphology	Area in Ha	In %
Denudational Hills	280.01	6.27
Denudational Structural Hills	2300.66	51.52
Flood Plain	8.41	0.19
Pedi plain	320.90	7.19
Piedmont Zone	1486.16	33.28
Rock Exposure	28.37	0.64
Water Body	40.78	0.91
Grand Total	4465	100

6. GEOLOGY

Major part of the cluster area underlain by Charnakite rocks of Archaean Age. Charnakite rocks comprises 72.80% of total project area i.e. about 3177.94Ha. 1187Ha of project area comes under Hornblende gneiss. Table showing the distribution of geology in the seven watersheds are given below:

Table .4.7 :Geology

GEOLOGY	AREA HA	%
Charnakite	3277.94	73.40
Hornblende Gneiss	1187.36	27.20
Total	4465	100

7. GROUND WATER

Ground Water occurs under unconfined, semi confined and confined perched aquifer conditions along the foliation planes and joints and mainly along the horizontal to low dipping fracture zones and vertical to sub vertical deep seated fractures in the crystalline rocks. The 86.09% portion of the project area is poor ground water prospered region. Remaining 12.22 % is the very good ground water prospered region. The pore space present in the weathered rocks, lithomarge, Laterite and alluvium from potential phreatic aquifers in the area. The meters below ground level of Upland in summer season is 11.2 and in Monsoon 8.23, Mid land 6.36 in Summer and 5.20 in Monsoon and the low land area in summer 4.36 mbgl and in Monsoon 2.85 mbgl (Meters Below Ground Level).

Table 4.8. GROUND WATER CONDITIONS OF THE PROJECT AREA

Water Prosperity	Area in Ha	%
Poor	3844.13	86.09
River/Stream	75.52	1.69
Very good	545.65	12.22
Grand Total	4465	100

(Source: Ground water Dept. Idukki)

LOCATION	DEPTH OF GROUND WATER (MBGL)	
	Summer	Monsoon
Lowland	4.36	2.85
Midland	6.36	5.20
Upland	11.2	8.23

(Source: Ground water Dept. Idukki)

8. WATER RESOURCES

Table 4.9. Water Resources

Sl no.	WATERSHED	Drinking Water Sources (in numbers)					
		Private well	Public well	Bore well	Public tap	Water connection	Spring wells
1	Karinkulam	212	4	103	12	Nil	14
2.	Pookkulam Estate	82	4	6	8	Nil	8
3.	Haileyburia Estate	12	1	Nil	3	Nil	-
4.	Valakode	174	6	34	21	Nil	-
5.	Cheenthalar	134	16	18	7	Nil	-
6.	Chappath	36	3	Nil	12	Nil	-
	GRAND TOTAL	650	34	161	63	0	22

(Source: base line survey TSO)

TABLE 4.10. WATER SUPPLY SCHEMES IN PROJECT AREA

WATERSHEDS					
KARINKULAM	POOKKULAM	HAILE YBURI A	VALAKODU	CHEENTHALAR	CHAPP ATH
1.Poovanthikkudi water supply scheme, 2.Poomala Estate water supply scheme, 3.Edappookkalam water supply scheme, 4.MGLC School water supply scheme.	1.Nirmalagiri water supply scheme, 2.Pathimukku water supply scheme, 3.Kannikkallu Ettekkar water supply scheme, 4.Kavunthi water supply scheme	1. Vallakkadavu School water supply scheme.	1.Aanappallam - Elappunkal water supply scheme, 2.Mamarathum otta water supply scheme, 3, Aazhamkala Kanisseriparamba water supply scheme.	1.Aanappallam-Mathaippara water supply scheme, 2.MC Kavala-9Acre water supply scheme, 3.Karuntharuvi water supply scheme, 4.Cheenthalar 1 St division water supply scheme	1. Vaakathippadi water supply scheme.

(Source: base line survey TSO)

9. IRRIGATION DETAILS

Table 4.11. Water sources

WATERSHED	SOURCE									
	OPEN WELL		TUBE WELL		PONDS		STREAMLETS		TOTAL	
	Nos	Area irrigated(ha)	Nos	Area irrigated(ha)	Nos	Area irrigated(ha)	Nos	Area irrigated(ha)	Nos	Area irrigated(ha)
Karinkulam	15	37	1	2	8	9.2	16	22	40	70.2
Pookkulam	12	8	1	0.2	11	16	7	14	31	38.2
Haileyburia	2	2.5	Nil	Nil	Nil	Nil	5	12	7	14.5
Valakode	6	0.59	8	26	4	42	5	10	23	78.59
Cheenthalar	11	23	3	4.5	2	4	6	14	22	45.5
Chappath	3	1.5	3	1.2	6	12	5	13	17	27.7
TOTAL	49	72.59	16	33.9	33	83.2	44	85	140	274.69

(Source: base line survey TSO)

10. SOCIO-ECONOMIC CONDITION

Majority of the people here are farmers and Estate labourers. Working as coolies and those who work on small scale industries are also seen. Minority of the population are NRI's, found in small numbers. Along with them, there are a few Govt. employees and self-employed. Most of the women are working under the MGNREGS. In general, the community is economically backward. The new generation is trying to acquire good Education and is trying to get jobs in the government sector as well as abroad.

10.1 HOUSING PATTERN OF THE FAMILIES IN THE PROJECT AREA

Table.4.12: Housing Pattern of the project area

SL NO.	WATERSHED	HOUSING PATTERN				
		SMALL HUT	TILE	ASBESTOS	CONCRETE	TOTAL HOUSE
1	KARINKULAM	12	180	492	259	943
2	POOKKULAM	12	72	273	90	447
3	HAILEYBURIYA	24	36	61	20	141
4	VALAKODE	24	192	407	198	821
5	CHEENTHALAR	1	292	178	28	499
6	CHAPPATH	6	179	370	117	672
TOTAL		79	951	1781	712	3523

(Source: base line survey TSO)

10.2 DEMOGRAPHIC PROFILE OF THE PROJECT AREA

Table 4.13. Demographic profile of the project area

WATERSHED	FAMILY	General			SC			ST			TOTAL		APL	BPL
		M	F	Total	M	F	Total	M	F	Total	M	FM		
KARINKULAM	943	1773	1804	3577	96	109	115	3	7	10	1872	1920	509	434
POOKKULAM	447	793	784	1577	45	36	81	Nil	Nil	Nil	838	820	251	196
HAILEYBURIYA	141	194	176	370	63	61	124	2	2	4	259	239	42	99
VALAKODE	821	1333	1338	2671	Nil	Nil	Nil	Nil	Nil	Nil	1333	1338	440	381
CHEENTHALAR	499	834	814	1648	Nil	Nil	Nil	Nil	Nil	Nil	834	814	259	240
CHAPPATH	672	1183	1179	2362	7	11	18	Nil	Nil	Nil	1190	1190	322	340

(Source: base line survey TSO)

10.3 BASIC FACILITIES OF THE HOUSEHOLDS IN THE PROJECT AREA

Table 4.14. Basic facilities of the project area

	NAME OF WATERSHED	TOILET		SOAK PIT		ELECTRICITY	
		YES	NO	YES	NO	YES	NO
1	KARINKULAM	818	68	2		719	51
2	POOKKULAM	351	43	1		329	19
3	HAILEYBURIYA	51	14	2		45	2
4	VALAKODE	540	186	11		625	64
5	CHEENTHALAR	160	145			363	4
6	CHAPPATH	513	169	1	135	513	169
TOTAL		2237	606	17	135	2411	277

(Source: base line survey TSO)

10.4 INFRASTRUCTURE FACILITIES IN THE PROJECT AREA

Table 4.15. Infrastructure facilities in the project area

SL NO.	INFRASTRUCTURE	TOTAL	ELECTRICITY	DRINKING WATER FACILITY	TOILET
1	ANGAN WADIES	12	YES	YES	YES
2	LP SCHOOL	7	YES	YES	YES
3	UP SCHOOL	2	YES	YES	YES
4	HIGH SCHOOL	1	YES	YES	YES
5	PHC	3	YES	YES	YES
6	POST OFFICE	1	YES	NO	YES
7	RATION SHOP	3	YES	NO	NO
8	CHURCH	13	YES	YES	NO
9	TEMPLE	8	YES	YES	YES
10	MOSQUE	1	YES	YES	YES
11	PLAY GROUND	1	NO	NO	NO
12	CLUBS	1	YES	NO	NO
13	COMMUNITY HALL	2	YES	YES	YES
14	BANKS	2	YES	YES	YES
15	BRIDGE	3	YES	YES	YES

(Source: base line survey TSO)

10.5 LAND HOLDING SIZE

TABLE 4.16 LAND HOLDING SIZE

WATERSHED	0-5 Cents	5-50 Cents	50-250 Cents	250-500 Cents	Above 500 cents	TOTAL
Karinkulam	62	442	277	58	4	943
Pookkulam estate	42	189	162	37	17	447
Haileyburia estate	13	67	49	12	NIL	141
Valakode	18	170	513	107	13	821
Cheenthalar	16	235	204	44	nil	499
Chappath	39	312	286	30	5	672

(Source: base line survey TSO)

10.6 TRANSPORT AND COMMUNICATION

Roads are the major means of transport. Nearly 90% of the roads are motorable. Major roads are Marykulam -Aanavilasam, Chappath-Kumali, Upputhara-Pasuppara road etc. KSRTC and the private buses are the main means of transportation. But people depend upon conveyance like auto-rickshaws and Jeeps also for their day to day needs.

Table 4.17 Roads of cluster area

SL. No.	WATERSHED	PUCCA ROAD (From – To)	KATCHA ROAD (From – To)
1	Karinkulam	Aaladi –Pachakkad Road	Pachakkad-Sankaragiri Road
2	Pookkulam	Marykulam-Kumali Road Sankaragiri-Pullumedu Road	Pullumedu-Kannikkallu Road
3	Haileyburia	Areekkal-Vallakkadave Road Vallakkadave-Chappath Road	Vallakkadave-Haileyburia Road
4	Valakode	Upputhara- Valakode Road	Aazhamkala-Kanisseril Road
5	Cheenthalar	Upputhara- Pasuppara Road	M C Kavala-Upputhara Road
6	Chappath	Upputhara-Pathekkar Road	Upputhara- Porikanni Road

(Source: base line survey TSO)

11. AGRICULTURE AND PRESENT LAND USE

The agriculture sector of this cluster area has been concededly weakened due to lack of labourers, decrease in price of agricultural products and increase in wages. Another problem is the lack of a market to sell these products. However Cardamom, coffee, coconut, Areacanut, pepper, banana, tapioca and vegetables are cultivated here.

11.1. MAJOR CROPS OF PROJECT AREA

Table 4.18.Major Crops

CROPS	Area in Ha	Area at %	Production/Ha/Tonne
Coconut	75.1	1.682	34384
Tea	1796	40.224	2155.2
Coffee	420	9.406	714
Banana	103.5	2.318	2587.5
Vegetables	90	2.016	720
Pepper	303.5	6.797	333.85
Cardamom	758	16.976	530.6
Mixed crops	918.9	20.580	
Total	4465	100	

(Source: Agri. Dept.)

11.2 CROPPING PATTERN (IN Ha)

Watershed	Mono Crops			Double Crops			Inter Crops	Others	Total
	Banana	Tea	Coffee	Cardamom	Vegetables	Pepper	Coconut	Mixed crop	Total
Karinkulam	22	420	137	266	15	85.5	16.3	84.2	1046
Pookkulam	15	303	56	123	10	34	12	204	757
Haileyburia	7.5	121	28	52	5	26	2.8	60.7	303
Valakode	23	408	96	183	20	64	18	209	1021
Cheenthalar	20	334	65	85	25	58	18	216	821
Chappath	16	210	38	49	15	36	8	145	517

(Source: base line survey TSO)

11.3 LAND USE

Table 4. 19. Land Use Details of the Project Area

Land use type	Area	In %
Barren rock/Stony waste/sheetrock	47.09	1.05
Built-up	34.81	0.78
Double crop(Kharif +Rabi)	13.07	0.29
Forest Deciduous(Dense)	101.18	2.27
Forest Evergreen(Dense)	469.12	10.51
Forest evergreen(Open)	1.68	0.04
Forest plantations	102.23	2.29
Land with Scrub	692.16	15.50
Plantations	2925.40	65.51
River/water bodies	40.78	0.91
Sandy Area	37.43	0.84
Wetlands (Waterlogged)	0.34	0.01
Grand Total	4465	100

(Source: Kerala state Land Use Board)

12. COMMUNITY ORGANIZATIONS

Table 4.20. DETAILS OF SELF HELP GROUPS AND NEIGHBOUR HOOD GROUPS

WATERSHED NAME	No of SHGs/UGs	People registered under MGNREGS	No of federations of SHGs	No of JLGs
KARINKULAM	47	54	Nil	37
POOKKULAM	13	55	Nil	9
HAILEYBURIA	6	27	Nil	10
VALAKODE	48	290	Nil	8
CHEENTHALAR	8	236	Nil	20
CHAPPATH	42	75	Nil	23
TOTAL	164	737		107

(Source: base line survey TSO)

13. ANIMAL HUSBANDRY

Table 4.21 Animal Husbandry and Dairying

WATERSHED	COW	RABBIT	GOAT	POULTRY	BUFFALLOW	OTHERS
KARINKULAM	230	118	408	2776	NIL	482
POOKKULAM ESTATE	99	12	133	236	3	178
HAILEYBURIYA ESTATE	12	6	46	27	NIL	17
VALAKODE	311	12	194	1577	2	874
CHEENTHALAR	177	34	145	393	4	174
CHAPPATH	117	18	285	876	1	381

(Source: base line survey TSO)

14. SOILS

Soil is the basic natural resource that supports all life on earth's surface. Most of the Cluster area is covered by hilly soil. The table below giving the soil texture, depth, Erosion status and drainage.

Table4.22: Characteristics of soil

Characteristic	Upper Region	Middle Region	Low Region
Texture	Loam gravelly loam, clay, gravelly clay.	Loam gravelly loam, clay, gravelly clay with moderate surface graveliness.	Sandy, clayey
Depth	Deep(100-150cm) to very deep (>150cm)	Deep(100-150 cm) to very deep(>150cm)	very deep(>150cm)
Drainage	Well drained	Moderately well drained to well drained	Very poorly drained to moderately well drained
Erosion status	Moderate to severe	Slight to moderate	Slight

Soil Association

Table4.23: Soil association

Soil Association	Area in HA	In %
Arivikkad-Pampadumpara-Elappara(VIe)	35.40	0.81109
Elappara-Kanjikuzhi-Kalayanathandu(IVe,VIe)	69.14	1.583991
Elappara-Kanjikuzhi-Kalyanathandu(IVe,VIe)	789.34	18.08313
Erattayar-Kochara(IIw,IIIw)	70.27	1.609772
Kattappana-Pampadumpara(IVe,VIe)	192.44	4.40857
Minmutti-Pampadumpara-Kulamavu(VIe)	2698.50	61.82055
Pampadumpara-Elappara-Amrithamedu(VIe)	437.68	10.02699
Peerumedu-Elappara-Vandiperiyar(IVes,VIes)	26.35	0.603597
Vandiperiyar-Elappara-Kallar(IVe,VIe)	45.93	1.052318
Grand Total	4365	100

15. DETAILS OF WATERSHEDS COMING UNDER THE PROJECT AREA

Table.4.1.Basic information of the project area

State	District	Taluk	Block	Project	Micro Watersheds			Grama Panchayath	Wards Included		Total Area	Treatable Area	Project Amount
					Name	Code No	Area		Full	Partial			
Kerala	Idukki	Peerumedu	Kattappana	IWMP –VII /Kattappana –Batch-4,	Karinkulam	14P53a	1046	Ayyappankoil		1,8,9,10,11,12,13.	4465 Ha	4465 Ha	Rs. 6,69,75,000/-
					Pookkulam	14P54a	757	Ayyappankoil & Kumali		6,7,8,9,12&1(Kumali)			
					Haileyburia	14P109a	303	Elappara		8,9.			
					Valakode	14P110i	1021	Upputhara		1,8,10.			
					Cheenthalar	14P110j	821	Upputhara		10,11,13,14,16			
					Chappath	14P111a	517	Upputhara		12,13,14			

16. INSTITUTION BUILDING AND PROJECT MANAGEMENT

The watershed development project has vast potential and scope to empower socially weekend sections of the community. Considering the requirements and priorities of these sections, particular activities were considered to reduce their drudgery. This involved in a skills up gradation programme. People's organizations hold the key in ensuring the exact integration between sustainable development and social equity. Such organizations have representations from socially backward communities and women with separate special interest groups. Within group interactions across group interactions and representation in village level institutions provide a platform for the disadvantaged groups to become a part of mainstream development. It is also essential to note that it was properly ensured that these groups obtain equal opportunities to access the resources developed at the community level.

In order to implement effectively, under the umbrella of State Level Nodal Agency (SLNA) various institutional mechanisms are formed. They are:

- Watershed Cell cum Data Centre (WCDC)
- Project Implementing Agency (PIA)
- Watershed Development Team (WDT)
- Watershed Committee (WC)
- Neighborhood Groups(NHG)
- Self Help Groups (SHGs)
- User Groups (UGs)

1. STATE LEVEL NODAL AGENCY

A committed State Level Nodal Agency (SLNA) is constituted by the State Government with Agricultural Production Commissioner as the Chairman and Rural Development Commissioner as the CEO. SLNA is having an independent bank account. The SLNA allow watershed projects for the State on the basis of approved state perspective and strategic plan as per procedure in vogue and manage all watershed projects in the state within the parameters set out in these Guidelines.

2. WATERSHED CELL CUM DATA CENTER (WCDC)

In district, a separate dedicated unit, called the Watershed Cell cum Data Centre (WCDC) is established, which oversees the implementation of watershed programme in the district. WCDC has a separate independent account for this purpose. WCDC function in close co-ordination with the District Planning Committee. WCDC is a separate unit with full time Project Manager and 3 to 4 subject matter specialists on Agriculture/ Water Management / Social Mobilization/ Management & Accounts appointed on the basis of their qualification and expertise on contract/deputation/transfer etc.

3. INSTITUTION BUILDING AT DISTRICT LEVEL**Table.2.1: Institution building at District level**

	Designation
Chairman	District Panchayath President
Member Secretary	District Collector
Convener	Project manager IWMP
Joint-Programme Co-ordinator	Members
District Planning office	Members
District Soil survey Officer	Members
District Soil conservation officer	Members
Deputy Director, Fisheries	Members
Executive engineer, Minor Irrigation/LSGD.KWA	Members
Divisional forest officers	Members
District Officer ,GWD	Members
Rep. KRWSA	Members
District mission co-ordinator ,Kudumbasree	Members
District Co-ordinator, IKM	Members
District Co-ordinator ,Horticulture Mission	Members
Other IWMP Officers	Members

4. PROJECT IMPLEMENTING AGENCIES

The Block Panchayath having the major area under the programme is selected as the Project Implementing Agency (PIA) by the State Level Nodal Agency (SLNA) for Integrated Watershed Management Programme (IWMP) in Kerala. The PIAs are responsible for implementation of watershed project. In Idukki district, for the IWMP– batch-4, the Kattappana Block Panchayath is being selected as the Project Implementing Agency.

The Project Implementing Agency (PIA) provides necessary technical guidance to the Grama Panchayath for preparation of developmental plans for the watershed through Participatory Rural Appraisal (PRA) exercise, under take community organization and training for the village communities, supervise watershed development activities, inspect and authenticate project accounts, encourage adoption of low cost technologies and build upon indigenous technical

knowledge, monitor and review the overall project implementation and set up institutional arrangements for post-project operation and maintenance and further development of the assets created during the project period.

The PIA, after careful scrutiny, shall submit the Action Plan for Watershed Development Project for approval of the DRDA and other arrangements. The PIA shall submit the periodical progress report to DRDA. The PIA shall also arrange physical, financial and social audit of the work undertaken. It will facilitate the mobilization of additional financial resources from other government programmes, such as MGNREGS, BRGF, SGRY, National Horticulture Mission, Tribal Welfare Schemes, Artificial Ground Water Recharging, Greening India, etc.

4.1 DETAILS OF PROJECT IMPLEMENTATION AGENCY (PIA)

Table.2.2.Details of project implementation agency

Name of The project	IWMP –KATTAPPANA-BATCH -4
PIA	Kattappana Block Panchayath
Implementation Officer	Block Development Officer
Address PIA	Secretary, Kattappana Block Panchayath, Kattappana
Telephone	Phone: 04868-272482
Email	bdokattappana@gmail.com

5. WATERSHED DEVELOPMENT TEAM

Watershed Development Team is an integral part of the PIA and is set up by the PIA as per the directions of SLNA. WDT has 4 members, broadly with knowledge and experience in agriculture, soil science, water management, social mobilization and institutional building. WDT functions in close collaboration with the team of experts at the district and state level. The expenses towards the salaries of the WDT members are charged from the administrative support to the PIA. WDT guides the Watershed Committee (WC) in the formulation of the watershed action plan. WDT assists Gram Panchayath /watershed Grama Sabha in constitution of the Watershed Committee and their functioning. WDT also assist in organizing and nurturing User Groups and Self-Help Groups. WDT undertakes engineering surveys, prepare engineering drawings and cost estimates for any structures to be built. Monitoring, checking, assessing, and undertaking physical verification and measurements of the work done are also done by WDT

6. INSTITUTIONAL ARRANGEMENTS AT VILLAGE LEVEL

6.1 WATERSHED COMMITTEE

It is a committee that is constituted by Watershed Grama Sabha to implement the watershed project with technical support of WDT in the micro watershed area. The watershed committee has

to be registered under the Society Registration Act/1860. The Watershed Grama Sabha of the Panchayath selects the chairman of the watershed committee with the secretary who will be an employee nominated by the Grama Panchayath, preferably the Village Extension Officer. The Watershed Committee (WC) will comprise of at least 10 members, half of the members shall be representatives of SHGs and User Groups, SC/ST community, women and landless persons in the village. One member of the WDT shall also be represented in the Watershed Committee (WC). Where the Grama Panchayath covers more than one village, they would constitute a separate subcommittee for each village to manage the watershed development project in the concerned village. Where a watershed project covers more than one Grama Panchayath, separate committees will be constituted for each Grama Panchayath.

The Watershed Committee was formed in all the 6 micro watersheds of IWMP-batch-4 project area. The IWMP-batch-4 is a cluster of 4 Grama Panchayaths coming under 2 Block Panchayath. Watershed Committee members are briefed about the project objectives and a workshop is also conducted in this regard at every Panchayath. The watershed committee has a pivotal role to play during and after the project implementation period. The Watershed Committee has a separate bank account to receive funds for watershed projects and will utilize the same for undertaking its activities. The watershed committee details are given below.

6.2 NEIGHBOUR HOOD GROUPS

Neighbour Hood Groups are formed in every micro watershed containing 50 households living as clusters. The overall planning, coordination, management and maintenance of the activities pertaining to the area are implemented through this Group. These families are further subdivided into clusters of 7-8 houses and a person is selected to represent this cluster in the Neighbour Hood Committee ensuring the proper representation on different sections.

6.3 SELF HELP GROUPS

Self Help Groups are self-motivated, small homogenous groups organized together through highly successful of credit and thrift activities. Self Help Group initiative especially for women helps to uplift their livelihood. The Watershed Committee shall constitute SHGs in the watershed area with the help of WDT from amongst poor, small and marginal farmer households, landless/asset less poor, agricultural labourers, women, shepherds and SC/ST persons. These Groups shall be homogenous groups having common identity and interest who are dependent on the watershed area for their livelihood. Each Self Help Group will be provided with a revolving fund of an amount to be decided by the Nodal Ministry SHG initiative in this project was being organized by having a focused group discussion between various homogenous communities of women based on their livelihood separately. Each group discussed their basic problems with their facilitators.

The major problems identified are:

- a) Lack of proper credit facilities due to low intervention of formal financial credit institution.
- b) Excessive exploitation of weaker section by money lenders
- c) Lack of attitude for saving among poor people due to complex and rigid conventional financial institution structures.
- d) Lack of small micro-loans without collaterals and high interest rates.
- e) Lack of knowledge on credit, thrift activity and banking. With a view point of these problems it

Sl. No	Total No of Existing SHGs/ NHGs in the Project Area	No of Men Groups in it	No of Women group in it	Total No of Newly formed for IWMP SHGs/ NHGs in the project area	No of Men Groups newly formed	No of Women Groups newly formed
1	126	-	126	38	nil	38

was planned to organize these women into a group consisting of 5 to 20 in each groups. It was planned to have some capacity building training regarding SHG activities. It was also proposed to have some livelihood activities which will promote women empowerment. This included Bakery units, Garments making, Mushroom Production, and Vermi compost activities with forward and backward linkage. This will ultimately lead into better human development in the village.

6.4. DETAILS OF SELF HELP GROUPS (SHGS) WORKING IN THE PROJECT AREA.

Table.2.6.Details of self-help groups working in the project area

6.5 USER GROUPS

The watershed committee (WC) shall also constitute user groups in the watershed area with the help of WDT. These shall be homogeneous groups of persons most affected by each work/activity and shall include those having land holdings within the watershed areas. Each user group shall consist of those who are likely to derive direct benefits from a particular watershed work or activity. The Watershed Committee (WC) with the help of the WDT shall facilitate resource-use agreements among the User Groups based on the principles of equity and sustainability. These agreements must be worked out before the concerned work is undertaken. It must be regarded as a pre-condition for that activity. The User Groups will be responsible for the operation and maintenance of all the assets created under the project in close collaboration with the Gram Panchayath and the Gramasabha. The user group collects user charges from their members, oversee the works and manage the benefits.

Some of the points which were considered while forming a user group in the villages of the IWMP-Kattappana –batch-4 Project are:

a) In case of, Land Leveling, Farm Bund, Roof Well Recharge, Kitchen Garden, Demonstration Plot, Contour Trench, Ring Bund, Soil Bund, Staggered Trenches, etc all the beneficiaries of the individual and community activities who are involved are made user group members.

b) In case of a check dam or Gully Plug, all the beneficiaries of the individual check dam were involved as user group members. Focused group discussion will be conducted between the user groups to discuss the above conditions and to select potential members. It was decided that each group would formulate certain internal rules and have a feeling of ownership with community spirit. Membership was on voluntary and democratic.

17. PROJECT MANAGEMENT

18.1.IMPLEMENTATION PHASES OF IWMP PROJECT

Table.2.7.Implementation phases of IWMP Project

PHASE	NAME	DURATION(Years)
I	Preparatory Phase	1-2
II	Watershed Works Phase	2-3
III	Consolidation &Withdrawal Phase	1-2

17.2 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.

17.3 WATERSHED WORKS PHASE

- This phase is the very important of the Programme in which the DPR will be implemented.
- Execution of action plans(NRM works, Agriculture and Allied sectors works, Livestock improvement measures)

17.4 CONSOLIDATION AND WITHDRAWAL PHASE

- In this phase the resource augmented and economic plans developed in Phase II are made the foundation to be 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.

17.5. WATERSHED DEVELOPMENT FUND (WDF)

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 labour. 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 will 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

18. CAPACITY BUILDING

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.

18.1 ACTION PLAN FOR ACTIVITIES UNDER CAPACITY BUILDING

Proforma I

Year wise Action Plan of CB and IEC

PIA:

Project Name:

Year	Capacity Building			IEC		Total Estimated Amount (4+6)
	No. of Trainings Planned	No. of persons to be trained	Estimated amount	Activity planned (No.)	Estimated Amount	
1	2	3	4	5	6	7
I	19	1767	756422.5	8	134345	890767.5
II	6	1310	373352.5	8	262910	636262.5
III	11	1690	322510	8	186500	509010
IV	5	715	140255	5	114250	254505
V	9	1050	144627	5	109878	254505
Total	52	6532	1737167/-	39	807883/-	2545050/-

Table.3.2. Community Level Training In Project Area

Proforma 2

Year wise Action Plan CB (I st Year amount-890767.5)

PIA:KATTAPPAN

A

Year of action Plan :2013-2014

Project Name: IWMP VII/2012-13

Sl. No.	Training Programme	Proposed duration & month of Training	Topics to be covered	Target Group / Stake Holders	Input/ Methodology	No.of participants	Estimated amount	Expected Outcome	Remarks
1	Empowering peoples representatives for IWMP	1 day & January	The need for watershed based development programmes, concepts involved in watershed development, IWMP its objectives, steps involved in the implementation of the program, financial management etc.	Block president , GP president block and gram Panchayath members	District level resource person/lecturing	52Participants & 1 batch	9465/-		completed
2	Develop action plan for PS &M &LSS	January February	To prepare livelihood activities.	Secretary, WDT , Block and Grama Panchayath members	Discussions	40participants & 2 batch	food - 40*150=6000 TA-1000 total=7000/-		
3	training on zero budget natural farming	February	zero budget natural farming	WDT members	power point presentations& lecturing	7 participants & 3 batch	3750		completed
4	Orientation of IWMP	March	Orientation & capacity building on conceptual, technical, non-technical and managerial aspects	WC Members	lecturing	98 participants & 2 batches	19656		completed
5	SHG & JLG formation and orientation Training	April-July	Concept of IWMP& Its major activities	SHG representatives	lecturing& discussion	135 Participants & 3 batches	4378		completed

INTEGRATED WATERSHED MANAGEMENT PROGRAMME (IWMP VII – KATTAPPANA-BATCH-4)

6	Convergence	May	convergence	Various department officials	lecturing & discussion	15 Participants	total-3150/-		completed
7	Orientation of Baseline survey	January	To know about different data to be collected in survey and how to collect the data	To selected survey team members	Lecturing	65 Participants	13000		completed
8	LH & PSM	June-August	To know about the various LH and PSM activities that can be taken up in the scheme , its guidelines	SHG,JLG, Farmers and WC	power point presentations & lecturing	SHG & JLG=100, Farmers-20 wc-50 total no=170 (2 BATCHS)	Total=35,000 /-		
9	Implementation of the programme	July, 1 day	IWMP and its major activities	user group members	lecturing	60 participants	10000/-		
10	Training of trainers	August	To create awareness among the peoples representatives and officials	Officials from various departments	lecturing, district level resource persons	30 participants	50000/-		
11	Training on vegetable cultivation	November	vegetable cultivation	students, Teachers and PTA committee members	lecturing, district level resource persons	200 participants, 2 Batch	100000/-		
12	Training on Upland cultivation of rise	October	Upland cultivation of rise	SHG representatives and JLG Members	lecturing cum power point presentations, district level resource persons	100 Participants, 1 batch	50000/-		
13	Lively hood activities	October	Equip Officials to PSM and LSS	VEO's, EOs, WDT	District level resource persons, Power point presentations	15 Participants & 1 batch	30000/-		
14	Fund management	October	financial management skill	WDT, VEO's, Clerk, MS	District level resource persons, power point	20 Participants	50000/-		

INTEGRATED WATERSHED MANAGEMENT PROGRAMME (IWMP VII – KATTAPPANA-BATCH-4)

					presentations				
15	LH & PSM	November	To know about the various LH and PSM activities that can be taken up in the scheme , its guidelines	SHG,JLG, Farmers and WC	District level resource persons, power point presentations	170 Participants & 2 batches	70700/-		
16	Awareness of fund management and record keeping	November	fund management and record keeping	SHG,JLG, WC,& UG representatives	District level resource persons, Lecturing	70 participants & 7 batches	70900/-		
17	Skill Training on LSS	December	LSS	SHG & JLG	block level resource persons, Lecturing.	300 participants,2 batches	80000/-		
18	Training on need and significance of watershed basics etc.	December	need and significance of watershed basics etc	Watershed community	District level resource persons, lecturing	120 participants	100000/- (706999)		
19	Training on livestock management	December	livestock management	SHG Representatives	District level resource persons, lecturing cum power point presentations	100 Participants,1 batch	49423.5/-		
TO TA L						1767/-	756422.5/-		

Methodology - Lectures, PowerPoint Presentations, discussions, etc.

Note: Input - Resources and materials used (Block /District / State level Resource persons/Leaflets, printed materials or any other reading materials)

Year wise Action Plan CB (II nd Year amount-636262.5)

PIA:KATTAPPANA

Year of action Plan : 2014-2015

Project Name: IWMP VII/2012-13

Sl. No.	Training Programme	Proposed duration & month of Training	Topics to be covered	Target Group / Stake Holders	Input/ Methodology	No. of participants	Estimated amount	Expected Outcome	Remarks
1	Skill Training on PSM	January	PSM	JLG members	Block level resource person, Lecturing.	350participants& 5 Batches	80000/-		
2	Training on cloth bag making	February	Cloth bag making	JLG Representatives	skilled person from community, lecturing	60 participants& 1 Batch	14002.5/-		
3	One day skill training program on ground water recharging	February	To attain Know ledgeand skills regarding ground water recharge	Watershed committee & JLG Representatives	district level resource persons, power point presentations	200 participants and 2batchs	65000/-		
4	Training on zero budget natural farming.	February	Zero budget natural farming	Farmers JLG representatives	state level resource persons, power point presentations and discussions.	200 participants and 2batchs	70000/-		
5	Training on Homestead Farming	March	homestead farming	Farmers JLG representatives	state level resource persons, power point presentations and discussions.	200 participants and 2batchs	70000/-		
6	Training on Terrace Farming	March	Terrace Farming	community	state level resource persons, power point presentations and discussions.	300 participants and 3 batches	74350/-		
TOTAL						1310/-	373352.5/-		

Note: Input - Resources and materials used (Block /District / State level Resource persons/Leaflets, printed materials or any other reading materials)

Methodology - Lectures, PowerPoint Presentations, discussions, etc.

Year wise Action Plan CB (III rd Year amount-509010)

III rd Year total Amount=13,39,500

509010/-

PIA:KATTAPPANA

Year of action Plan :509010/-

2015-2016

Project Name: IWMP VII/2012-13

Sl. No.	Training Programme	Proposed duration & month of Training	Topics to be covered	Target Group / Stake Holders	Input/ Methodology	No. of participants	Estimated amount	Expected Outcome	Remarks
1	One day Training Programme for Farmers	1 day, February	To create awareness among the farmers about organic farming	farmers	district level resource persons, lecturing and power point presentations	100 participants, 2 batch	Total=18500/-		
2	Skill Development of SHG & JLG	1 day, February	Skill up gradation	SHG AND JLG Members	block level resource persons, lecturing	200 participants , 2 batch	Total=33750/-		
3	Maintenance and creation of common assets	March	To ensure sustainability of created assets	WC & User group	lecturing	150 participants, 1batch	Total-28800/-		
4	Convergence	March	Convergence of project with MGNREGS	Mates and workers	district level resource persons,lecturing	100 participants	Total=22400/-		
5	Skill Development of NHG & SHG	April	Skill up gradation	SHG & JLG	District level Resource persons Lecturing	200 participants, 2 batch	Total=39400/--		
6	Refreshment Programme	April	Refreshment to User group	user group	block level resource persons,	60 participants	Total=30050/-		
7	Accounting	May	accounting	WC,JLG & User group	Block level resource persons	500 participants, 5 batch	Total=86700/- (grand total-259600)		

INTEGRATED WATERSHED MANAGEMENT PROGRAMME (IWMP VII – KATTAPPANA-BATCH-4)

8	Training on horticulture & floriculture	Jun	Horticulture & Floriculture	WC, JLG & User group	district level resource persons power point presentations	200 participants , 2 batch	Total=40000/- (299600)		
10	Training on water management	July	water management techniques	community, students	District level resource persons and power point presentations	100 participants and 3 batches	Total-7090/- (grand total-306690)		
TOTAL						1690/-	322510/-		

Note: Input - Resources and materials used (Block /District / State level Resource persons/Leaflets, printed materials or any other reading materials)

Methodology - Lectures, PowerPoint Presentations, discussions, etc.

Year wise Action Plan CB

PIA:KATTAPPANA

FOURTH YEAR

Year of action Plan :2016-2017

Project Name:

Sl. No.	Training Programme	Proposed duration & month of Training	Topics to be covered	Target Group / Stake Holders	Input/ Methodology	No.of participants	Estimated amount	Expected Outcome	Remarks
1	Training on mushroom cultivation	March	mushroom cultivation	JLG Representatives, farmers	District level resource persons Power point presentations	100participants and 1 batches	Total-25000/-		
2	training on Vermi compost	March	Vermi compost	farmers JLG representatives	District level resource persons Power point presentations	100 participants	25000/-		
3	Training on floriculture	April	floriculture	farmers JLG representatives	District level resource persons Power point presentations	150	30000/-		
4	Training on Beekeeping	April	Beekeeping	farmers JLG representatives	District level resource persons Power point presentations	150	30000/-		
5	Training on Pisciculture	May	Pisciculture	farmers JLG representatives	District level resource persons Power point presentations	65	30255/-		
Total						715/-	140255/-		

Year wise Action Plan CB (V th Year total Amount=254505)

PIA:KATTAPPANA

Year of action Plan :2017-2018

Project Name:

Sl. No.	Training Programme	Proposed duration & month of Training	Topics to be covered	Target Group / Stake Holders	Input/ Methodology	No. of participants	Estimated amount	Expected Outcome	Remarks
1	Maintenance and creation of common assets		To ensure sustainability of created assets	WC & User group	lecturing	100 participants, 2 batch	Total=15000/-		
2	concepts of community managed production system		seed management soil management irrigation management crop health management livestock health and Husbandry Collective Marketing	JLG	Lecturing and power point presentations	200 participants, 3 batch	Total=15000/-		
3	Training on farm based livelihood activities		Back yard poultry, piggery and fish rearing	JLG	Lecturing and power point presentations	200participants, 3 batch	Total=20000/-		
5	Seminar on Bio - Farming		Topic on Bio farming	Students	Lecturing and power point presentations, district level resource person.	4 School (150 participants)	Total=20000/-		
6	one day work shop on Natural Resource		Natural Resource Management for Food Security and Rural Livelihoods	students and JLG representat	Lecturing and power point presentations,	200 participants	Total=43368/-		

INTEGRATED WATERSHED MANAGEMENT PROGRAMME (IWMP VII – KATTAPPANA-BATCH-4)

	management.			ives	district level resource person.				
8	solid waste management		Topic on solid waste management	students, Farmers and JLG representatives	Lecturing and power point presentations, district level resource person.	100 Participants	Total=10000/-		
9	water supply and treatment		Topic on water supply and treatment	students, Farmers and JLG representatives	Lecturing and power point presentations, district level resource person.	100 Participants	Total=23211/-		
Total						1050/-	144627/-		

Proforma 3

IEC Action Plan -BATCH-IV (1st Year amount- 890767.5)

PIA : KATTAPPANA

Project Name: IWMP VII/2012-13

Year : 2013-2014

Sl. No.	Activity	Proposed month of implementation	Methodology	Target group	No. of people /output targeted	Expected outcome	Estimated Amount
1	Environment day celebration & Distribute trees	April to Jun	competition and distribution of certificate	students	77		14600/-
2	Two Day camp	Jun	folk song practices & awareness programme	students	75		11235/-
3	Distribute of Brochures	August	Brochures	project area	3000		8010/-
4	To conduct awareness programme for waste management and to provide one day training programme.	October	brochures and posters	students SHG representatives WC representatives Division members & Ward members	300		30000/-
5	Distribute Waste bin	November	brochures	Schools , Anganawadi centers, PHC, Grama Panchayath.	10nos		20000/-
6	one day seminar	November	Brochures	SHG representatives			18000/-
7	Supply of booklet	November	booklet	JLG representatives & WC members	1500/-		22500/-
8	Fixing of posters	December	posters	Public place	400		10000/-

PIA : KATTAPPANA		Project Name: IWMP VII/2012-13		TOTAL AMOUNT OF IInd Year-636262.5/-			Year : 2014-2015
Sl. No.	Activity	Proposed month of implementation	Methodology	Target group	No. of people /out put targeted	Expected outcome	Estimated Amount
1		November	booklet	JLG representatives & WC members	1500/-		1500 booklet Rs.15 each =Rs.22500/-
2		November	posters	Public place	350/-		350*Rs.20 each =Rs.7000/-
3	Fixing of sign boards	December	sign boards	For 8 EPA works and NRM works	38 works		38*Rs. 300 =7600
4	Fixing of boards from each watershed	December	boards	common people	6 watershed		6*Rs.10000=60000/-
5	To conduct two day camp	November	brochures	farmers	100 participants, 2 batches		Not pad=50*Rs.10=500 File =50*Rs.40=2000/- Pen=50*Rs.10=500/- Food=100*Rs.200=20000/- Tea& snacks =100*Rs.40=4000/- total=27000/-
6	Distribution of calendar	November	calendar	Project area	3523 families*Rs.20		Calendar 3523*20=70460/-
7	Preparation of documentation	all month	album	to keep office			1 album Rs.1000/-
8	Exposure visits		To discuss about specialized areas of livestock, agriculture/horticulture, fisheries etc.	WC,UG,WDT,VEO Division members, ward members, EOWW,BDO,Block Panchayath President, SHG representatives	150participants		food-300*150=45000/- vehicle rent-20000/- banner-350/- mislineous-2000/- total=67350(grand total=262910)
TOTAL							262910/-
IEC Action Plan -BATCH-IV (III rd Year)							

INTEGRATED WATERSHED MANAGEMENT PROGRAMME (IWMP VII – KATTAPPANA-BATCH-4)

PIA :	KATTAPPANA			Project Name: IWMP VII/2012-13			Year : 2014-2015
Sl. No.	Activity	Proposed month of implementation	Methodology	Target group	No. of people /output targeted	Expected outcome	Estimated Amount
1	To distribute eco-friendly bags	Jun	Notice	Students, Anganawadi teachers	500 Participants		Total=81500
3	To plant trees on each watershed area	July	Notice	Anganwadi Centre , PHC, School and Hospital	3500 no's		Total=18000/-
4	To celebrate important days from each watershed area	30 days	Brochure	community	50participants (30 batches) (50*30=1500)		Total=50000/-
5	To conduct seminar		Brochure	Students, Farmers and SHG representatives	50 participants 3 batches		Total= 2000/-
6	Street play	August	Brochure	students and common people			Total=15000/-
7	To conduct exhibition.	August	Notice	SHG members and Farmers	6 watershed		total=15000/-
8	Water purity test	September	Brochure	school, community	10 Batch,100P participants		20000/-
TOTAL							186500/-

IEC Action Plan -BATCH-IV (IV th Year)							
PIA :	KATTAPPANA			Project Name:IWMP VII/2012-13			Year : 2013-2014
Sl. No.	Activity	Proposed month of implementation	Methodology	Target group	No. of people /output targeted	Expected outcome	Estimated Amount
1	Video shows	October	Film display	students	4 schools		Banner -350/- Honorarium -2000/- Vehicle charge-2500/- Mike, travel expense including CCD-2500/- total=7350/-
2	Present on different concepts of livelihood activities.	November	showing video films	JLG representatives	200 participants		Tea and snacks-200*25=5000/- Banner -700/- Honorarium -1500/- Vehicle charge-2000/- Mike, travel expense including CCD-2500/- total=11700/-
3	wall writing	November	wall writing	Public place			20000/-
4	Exposure visit	December	Exposure visit	WC/SHGs/UGs and others	70 participants		vehicle rent-15000/- food, tea & snacks-70*120=8400/- honorarium -2000/- photo-200/- stationary-1500/- total=27100/-(66150)
5	To distribute umbrella	January	notice	students	300 participants (4 school)		umbrella 300*150=45000/- vehicle rent-2000/- TA-500 Banner-600 total=48100/-
TOTAL					570/-		114250/-

IEC Action Plan -BATCH-IV (V th Year)

PIA : KATTAPPANA

Project Name: IWMP VII/2012-13

Year : 2013-2014

Sl. No.	Activity	Proposed month of implementation	Methodology	Target group	No. of people /output targeted	Expected outcome	Estimated Amount
1	Distribute of sticker	February	sticker	students	1500		22500
2	Distribution of Medicinal and aromatic plants	February	Notice	Farmers and SHG members	30000participants		38528
3	Distribution of Time table card	may	Time table card	students	3000 students		20000/-
4	Awareness Programme in Govt.High school Valakode =Quiz competition = Painting competition = poetry and story = Essay writing = Slogan writing	may	Notice	students	100 students		13850
5	To conduct awareness programme for waste management and to provide one day training programme.	march	Notice	Students SHG representatives	100		15000/-
TOTAL							109878

19. SCOPE FOR CONVERGENCE

- **IMPORTANCE OF CONVERGENCE IN IWMP**
- Commonness of Items in both the Programmes- Labor Intensive
- Avoids duplication of efforts
- Improves quality of service provided.
- Develops effective linkage with various development initiatives.
- Helps to identify new opportunities and options.
- Ensures transparency and accountability in governance.
- Results in the effective monitoring of outcomes.

19.1 Details of convergence in the Project

Table.3.6.Convergence

Sl No	Watershed	COMPONENTS						
		Vegetable Garden	Banana Cultivation	Spices Cultivation	Tuber Crops	Stone Pitched Bund	Water Absorption Pit	Pisciculture
1	14P53a	AGRI DEPT (2 Ha)	AGRI DEPT (2 Ha)	AGRI DEPT (1 Ha)	AGRI DEPT (1Ha)	MGNREGS (750M)	MGNREGS (1000 Nos)	Fisheries Department And PIA (5 Nos)
2	14P54a	AGRI DEPT (2 Ha)	AGRI DEPT (2 Ha)	AGRI DEPT (1 Ha)	AGRI DEPT (1Ha)	MGNREGS (1500M)	MGNREGS (1000 Nos)	Fisheries Department And PIA (5 Nos)
3	14P109a	AGRI DEPT (1 Ha)	AGRI DEPT (2 Ha)	AGRI DEPT (1 Ha)	AGRI DEPT (1 Ha)	MGNREGS (500M)	MGNREGS (500)	Fisheries Department And PIA(4Nos)
4	14P110i	AGRI DEPT (2 Ha)	AGRI DEPT (1 Ha)	AGRI DEPT (1 Ha)	AGRI DEPT (1 Ha)	MGNREGS (1000 M)	MGNREGS (1000)	Fisheries Department And PIA(5 Nos)
5	14P110j	AGRI DEPT (2Ha)	AGRI DEPT (1 Ha)	AGRI DEPT (1Ha)	AGRI DEPT (1 Ha)	MGNREGS (500 M)	MGNREGS (200)	Fisheries Department And PIA(5Nos)
6	14P111a	AGRI DEPT (2 Ha)	AGRI DEPT (2 Ha)	AGRI DEPT (1 Ha)	AGRI DEPT (1 Ha)	MGNREGS (500 M)	MGNREGS (800)	Fisheries Department And PIA(2 Nos)
Total Ha		11	10	6	6	4500	4500	26

20. MAJOR ONGOING AND COMPLETED SCHEMES IN THE PROJECT AREA

Table.3.7. Major ongoing and completed schemes in the project area

SCHEMES / PROJECTS	BRIEF DESCRIPTION
Centrally sponsored schemes	
Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS)	Aims to enhance livelihood security in rural areas by providing at least 100 days of guaranteed wage employment in a financial year to every household whose adult members volunteer to do unskilled manual work.
Sarva Shiksha Abhiyan (SSA)	Flagship programme run by the Government of India to provide universal access to elementary education for children 6-14 years old.
Integrated Child	This scheme represents one of the world's largest and most unique

Development Services (ICDS)	programmes for early childhood development. ICDS is the foremost symbol of India’s commitment to her children – India’s response to the challenge of providing pre-school education on one hand and breaking the vicious cycle of malnutrition, morbidity, reduced learning capacity and mortality, on the other.
Support to State Extension Programmes for Extension Reforms	This is the main scheme to revamp agricultural extension across the country and aims at providing a decentralized and demand driven extension system by way of new institutional arrangements for technology dissemination in the form of an Agricultural Technology Management Agency (ATMA) at district level. Important farmer oriented activities under ATMA includes: (a) training of farmers (b) demonstrations on agriculture and allied sector (c) exposure visit of farmers (d) farmer-scientist interactions (d) farm schools.
Rashtriya Krishi Vikas Yojana(RKVY)	Aims at achieving annual growth in agriculture sector by a holistic development of Agriculture and allied sectors.
State sponsored schemes	
Sustainable Development of Rice-Based Farming System	Aims to sustain rice cultivation and to increase its productivity. It includes group farming, distribution of fertilizer, organic manure and weedicides at subsidized rate.
State Horticulture Mission (SHM)	Area expansion and subsidy for rising banana, pineapple, cocoa, nutmeg, pepper & cut flowers.
Small Farm Mechanization	The objective of the scheme is to provide credit for the purchase of new tractor/new tractor for 2nd time/tractor renovation/ repair/ replacement of spares/small tractors (GOI) scheme/power tiller/ thresher/power sprayer.

21. ACTIVITIES PROPOSED

21.1. ENTRY POINT ACTIVITIES

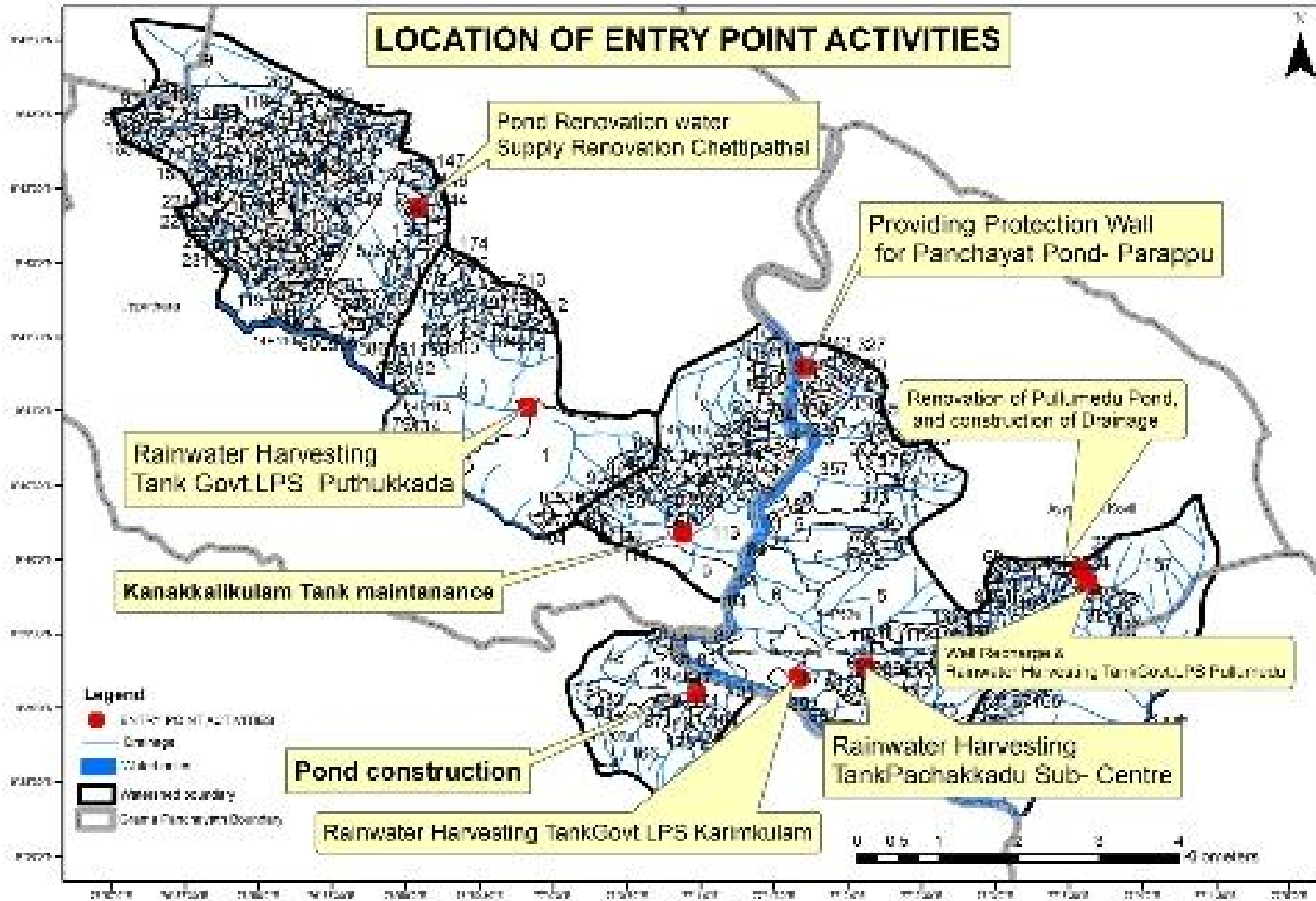
Entry point activity aims to mobilize the community in support of the subsequent interventions under the project. EPA helps to create rapport with the village community. Entry point activities are identified with a view to showcase them as model intervention which, in turn, would generate the interest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

Table.3.5.Entry point activities in the project area

Name Of Watershed	Panchayath	Name Of Work	Amount (Rs.)	Latitude	Longitude	Area benefited (Ha)/beneficiaries	
						Area	Beneficiaries
Karinkulam	Ayyappankoil	1.Rainwater Harvesting Tank at Pachakkadu Sub- Centre	65184	90 39' 15.7"N,	770 2' 7.1" E	*Benefited area 30Ha *Benefited to 50	
		2.Rainwater Harvesting Tank at Govt.LPS Karinkulam	65984	90 39' 11.2"N	770 1' 40.0 " E		
		3.Providing Protection Wall for Panchayath Pond- Parappu	73000	90 41'24.6"N	770 01' 38.6" E		
		4.Renovation of public pond at Kannikkallu, Ayyappan kovil gramapanchayath	169100	90 40'46.1"N	770 2' 36.9" E		
		5. Construction of Rain Water Harvesting Tank at kannikallu Anganwadi	104648				
Pookkulam	Ayyappankoil	1.Rainwater Harvesting Tank Govt.LPS Pullumedu	87005	90 39'58.1"N	770 03' 34.2" E	Staff and Students of the Schools.	
		2.Well Recharge In Govt. LPS Pullumed	16857	90 39'58.1"N	770 03' 34.2"E		
Haileyburia	Elappara	Construction of Rain shelter and vegetable cultivation at Haileyburia school	221500			*Benefited area 20 Ha *Benefited to 40	
		2.Renovation of public well and construction of check Dam Erupathu puthuvel, Elappara Grama Panchayath	238500				

INTEGRATED WATERSHED MANAGEMENT PROGRAMME (IWMP VII – KATTAPPANA-BATCH-4)

Valakode	Upputhara	1.Pond Renovation water Supply Renovation Chettipathal 2.Construction of Rain Water Harvesting Tank at Plamoode Anganwadi , Upputhara Grama Panchayath	502490 84000	90 42' 21.8"N	760 59' 05.9" E	*Benefitted area 15 ha	
Cheenthalar	Upputhara	1.Rainwater Harvesting Tank Govt.LPS Puthukkada	68864	90 41'00.9"N	760 59' 49.9" E	*Benefitted to 30 families	
Chappathu	Upputhara	Renovation of water Tank Porikanni	15120				
	Upputhara &Ayyappanco ilil	Well Recharging in project area 50 nos(ALL WATERSHEDS)	850000/-				
TOTAL			2562252				
TOTAL EPA AMOUNT			2679000				



21.2. NATURAL RESOURCES MANAGEMENT

The physical treatments are to be carried on during the watershed development work phase. While implementing the project, it is necessary that the treatments are carried out starting from ridge and progressing towards the valley. This approach is followed with the following objectives:

- a) Protect the upper reaches to control erosion and reduce runoff
- b) Avoid siltation of structures in the middle and lower catchments.
- c) Ensure the cost effectiveness of structures in the valley and
- d) Improve overall efficacy of the measures.

This phase is the heart of the programme in which the DPR will be implemented. The following are some of the major interventions proposed in this report with a view to conserve and develop the natural resources in the area for bringing out the benefits conceived in the objectives of the project.

21.2.1 Biological measures:

21.2.1A. Live Fencing

Natural fencing is a multi- purposed method to control soil erosion, improve biomass, infiltration rate and for protecting crops by enabling shelter for natural predators of the pest population. The plants suitable for planting on the fences are Cassia, Hibiscus, Lettuce, Tapioca or Glyricidia, Henna etc. Annual or quarterly chopping of the leaves can be used as biomass to the agriculture land. Glyricidia can fix nitrogen to the soil. This is not a new method but one that has been practiced by farmers elsewhere for long time.

21.2.1B. Horticulture

Horticulture promotion is very important in the project area because majority of population buys vegetable and fruits from shops which are grown in other states. Press reports regarding usage of pesticide on vegetables and fruits should be an eye opener. People should be made aware of the health impact of using these vegetables and fruits. This understanding will motivate them to cultivate local fruit plants. This range of food, medicinal, environmental, and social products and services are all fundamental to developing and maintaining human health and well-being. Supply of fruit plants such as Jack fruit, Mango, Pineapple and Papaya for beneficiaries.

21.2.2 Engineering structures:

12.2.2A. Percolation pits

Pits of appropriate dimensions are made at suitable locations in the watersheds for augmenting recharge of ground water through enhanced percolation of rain water. These pits may also be termed as rain pits. This is an intervention suitable for areas with moderate slopes. Plant

Basins can also act as efficient recharge pits. Number and spacing of the pits shall be conducive to the land use in each holding. Rain pits are not recommended in rockery areas of higher altitude and water logged areas.

21.2.2B. Stone Pitched Bund

This measure 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.

Detailed estimate

Estimate for a 100 m length:

1. Cleaning grass and other over growth of vegetation etc. Complete.
 $1 \times 100.00 \times 1.00 = 100m^2$
 Say $10m^2$ @ Rs.177/100m²-----Rs.172.00
2. Earth work excavation in ordinary soil for foundation and initial lead up to 50m and left up to 1.50m including breaking clods, watering , Ramming and sectioning of soil tank etc complete.
 $1 \times 100.00 \times 0.30 \times 0.20 = 6m^3$
 Say $6m^3$ @ Rs.1115.92/10m³-----Rs.669.55
3. Pitching work with locally available dry rubble and back filling of the bund including all cost of materials and labour charges, conveyance etc. complete.
 L.S Rs.13510.4

14352.00

=====

(Rupees fourteen thousand three hundred and fifty two only)

Rs. 14352/100m² or

Rs. 14352/100m length of 1m height

Or Rs. 143.52 /m².

21.2.2C .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. The reduction of public spending on Tanker Water Distribution to the water stressed regions which is common during summer is also envisaged as a broader goal of the programme.

The specific objectives of the programme are

- (i) Ground water recharge
- (ii) improved drinking water availability across the year
- (iii) Improved agricultural production and productivity

- (iv) significantly reduce the impact of drought and consequent public spending on supply of drinking water in tankers to the water stressed regions

The programme would also envisage strengthening of the decentralization programme and the PRIs, in discharging their basic mandate in water sector through community efforts that are cost effective and sustainable.

21.2.2D. Vermi compost

Vermi-compost is the product or process of composting using various worms, usually red wigglers, white worms, and other earthworms to create a heterogeneous mixture of decomposing vegetable or food waste, bedding materials, and vermicast. Vermicast, also called worm castings, worm humus or worm manure, is the end-product of the breakdown of organic matter by an earthworm. These castings have been shown to contain reduced levels of contaminants and a higher saturation of nutrients than do organic materials before Vermi composting.

21.2.2E. Biogas Plant

In the village area people who are living surroundings of watershed are poor farmers. Now a days and scarcity of log wood which required for cooking purpose the people are suffering too much. Hence by using Biogas, this problem can be minimized. By constructing Biogas plant they can make Biogas and use for cooking etc.

21.3 PRODUCTION SYSTEM MANAGEMENT

The major interventions suggested under the Production System and Microenterprises based livelihood activities are the following.

21.3.1A. Bee Keeping

In Kerala Bee-keeping is done by farmers as a source of additional income. Rubber planters place beehives in rubber plantations and gain a good return from it without any risk. Ayurveda Industry is the major consumer of pure honey. This component aims supplying 5-10 cages to selected beneficiaries as one unit.

21.3.1B. Vegetable Cultivation (Kitchen Garden)

Keralites are fully depending on other states for vegetables. These vegetables that arrive from the neighboring states are highly contaminated with toxic compounds through the pesticide applications. As a result, the Keralites are increasingly getting affected with diseases. Though Kerala is blessed with suitable environment (rich soil, availability of water, prolonged monsoon, etc) for the production of many vegetables, there is an apparent lacking of interest among people to cultivate vegetables. Vegetable cultivation is an easy job for those who are interested. As home garden agriculture is mainly a need-oriented, self-provisioning system, the use of chemicals is minimal, and the emphasis is more on

homemade formulations of biological origin, such as tobacco decoction, neem extracts, and so on. This helps to minimize pesticide pollution of the agricultural environment. The system is, by and large, environmentally clean and sustainable. This component aims at supplying 5 type vegetable seeds and biofertilizer as one unit (Rs. 750/-) for beneficiaries who have an area of 2 cent.

21.3.1C. Banana Cultivation

Banana cultivation is a promising activity for farmers in the light of new agricultural scenario. Banana has dual potential as a raw fruit and processed items such as Banana powder, chips and other associated products. The organic wastes available from the household if composted can be used as manure for the crop. The existing waste land can be made productive through banana cultivation. For Kudumbasree units as well as self -help groups, this is an appropriate income generation programme. One important point to be emphasized in the cultivation process is to minimize the use of chemical fertilizers and pesticides in the field. The focus should be on organic methods.

21.3.1D. Spices cultivation

Spice cultivation is the controlled growth of plants whose harvested parts are high in flavour and are used to season other foods. These include herbs, and may take the form of seeds, leaves, roots, bark, or other plant part

21.3.1E. Tapioca as Inter crops

These crops especially Tapioca, still continue to be major crops contributing significantly to human and animal food apart from findings use in various industrial applications, environments. Tuber crops fit well in to a variety of cropping systems and can be profitably intercropped in coconut based cropping system.

21.3.1F. Mushroom Cultivation

Mushrooms have been valued throughout the world as both food and medicine for thousands of years. They are a rich source of nutrition with less fat and that also consists predominantly of unsaturated fatty acids such as linoleic acid. Hence mushroom is considered as the perfect food for maintaining a healthy heart and cardiovascular system.

21.4 LIVELIHOOD SUPPORT SYSTEM

The activities proposed under the livelihood action plan below are meant for improving livelihood of the poor and marginalized people in the project area. It is proposed to earmark 9 percent of the total allotted amount for the activities under this plan. Major portion of this component is suggested to give to the SHGs working in the project area as revolving funds for improving their livelihood improvement/income generation activities. For each SHGs in the project area, will give revolving funds of Rs.25, 000/- per SHG during the project period. The

beneficiary SHGs will be selected mainly on the basis of criteria currently used to rate the SHGs. If any change in the criteria is required with regard to the selection of beneficiary SHGs, same will be decided at the time of selection considering the suitable factors and according to State level policies.

21.4.1 Goat Rearing:

It is an important employment source that can be embraced very profitably by low income group people. As the gestation period is short and the number of the lambs is usually two or more in a single litter, goat rearing can bring in a profit that is two or three times bigger than the invested amount. Women's self-help groups can select the eligible people for goat rearing. This component aims at supplying 5 goats as one unit each of 8 months old to selected beneficiaries.

(5 goats * 6000 Rs = 30000/-)

21.4.2 Dairy

This has much popularity among rural farmers of Kerala as a main sub occupation. Rearing cattle fetches an increase in income from milk production it give cow dung and urine rather. Moreover it leads to biogas production needed for domestic purpose. Cattle rearing have commercial scope as well. This component aims at supplying 2 cows as one unit each of 9 months old to selected beneficiaries. (2 cows @ Rs 20000/-)

21.4.3. Food Processing Unit

It means that to make small units like pickles making/ bakes making units by using selected SHG groups in the watershed area (Rs . 23000/ unit).

Paper bag and cloth bag making units- Rs .23000/

Floriculture, Fruit marketing units,

21.4.4 Poultry

This component aims supplying 6 layer birds each of 50-60 days old (as one unit) to selected beneficiaries. They can thrive well on kitchen waste so that no additional expenditure on feed cost is necessary. Landless people, SC/ST, OBC, and BPL etc. should get the benefits of this. The self-help groups can select the beneficiaries. (6 poultry * 115 Rs = 690/-)

21.4.5 Pisciculture

Fish farming is the principal form of aquaculture, while other methods may fall under Pisciculture. Fish farming involves raising fish commercially in tanks or enclosures, usually for food. There is an increasing demand for fish and fish protein, which has resulted in widespread overfishing in wild fisheries. Fish farming offers fish marketers another source. The self-help groups can select the people who are going for the rabbit keeping.

PART - II
INDIVIDUAL
WATERSHEDS

KARINKULAM WATERSHED

(14P53a)

CHAPTER I

1. INTRODUCTION

Karinkulam watershed bearing the code number (14P53a) lies in the village of Aanavilasam in the Grama Panchayath of Ayyappankoil of the Kattappana block in Idukki district extending to a total area of 1046 ha. The coordinates of the watershed is 77°0'51.072"E 9°39'13.306"N to 77°2'51.685"E 9°41'29.247"N. This watershed shares its boundaries with Kannikkallu, Sankaragiri and Bhajanamadam on the east, Periyar, Chappath and Aaladi on the west, Periyar on the south and Parappu, Arayathanalkunnu, Poomala and Kannikkallu on the north. The Karinkulam watershed comprises of wards 1, 8, 9,10,11,12 and 13. The important land marks in this watershed are Parappu Jn., Aaladi Kurisumala, Karunashramam, Aaladi PHC, Aaladi Public Library, SSA (MGLC) School, Poovanthikkudi Anganwadi, Bhajanamadom, Heaven valley LP School, SN Nagar, Pachakkadu, Chappathu Jn., Aaladi Jn., etc.

Table 1.1 Boundaries of Micro Watershed

Karinkulam Watershed	North	Parappu, Kurisumala, Arayathanalkunnu, Aaladikkunnu, Thaaliyanikkunnu, Poomala, Kannikkallu,
	South	Periyar
	West	Periyar, Chappath, Aaladi,
	East	Kannikkallu, Bhajanamadam, Sankaragiri, Mlamala Cross.
	Geographical Coordinates	Latitude: 77°0'51.072"E - 77°2'51.685"E Longitude: 9°39'13.306"N - 9°41'29.247"N

1. FUNDING PATTERN OF KARINKULAMWATERSHED

TABLE 1.1 FUNDING PATTERN OF KARINKULAM WATERSHED

MASTER PLAN FOR 4 YEAR											
KARINKULAM WATERSHED											
TOTAL TREATABLE AREA - 1046 Ha					TOTAL AMOUNT - 1046 x 15000/ Ha = Rs.15690000/-						
YEAR	ADMINISTRATIO N	MONITORIN G	EVALUATIO N	ENTRY POINT ACTIVIT Y	INSTITUTIO N & CAPACITY BUILDING	DPR PREPERATIO N	NATURAL RESOURCE MANAGEMEN T ACTIVITIES	LIVELIHOOD ACTIVITIES	PRODUCTIO N SYSTEM 7 MICRO ENTERPRISE S	CONSOLIDATIO N PHASE	TOTAL IWMP PROJEC T
FIRST	196125	31380	15690	627600	39225	156900	1757280	282420	313800		1066920
%	1.25	0.2	0.1	4	0.25	1	11.2	1.8	2		6.8
SECON D	549150	39225	39225		313800		2635920	423630	470700		6040650
%	3.5	0.25	0.25		2		16.8	2.7	3		38.5
THIRD	549150	39225	39225		313800		2635920	423630	470700		6040650
%	3.5	0.25	0.25		2		16.8	2.7	3	0	38.5
FOURTH	274575	47070	62760		117675		1757280	282420	313800	470700	2541780
%	1.75	0.3	0.4		0.75		11.2	1.8	2	3	16.2
TOTAL	1569000	156900	156900	627600	784500	156900	8786400	1412100	1569000	470700	15690000 0
%	10	1	1	4	5	1	56	9	10	3	100

2. ENTRY POINT ACTIVITIES

Table 2.1 Activities:

Name Of Watershed	Panchayath	Name Of Work	Ward	Amount	Latitude	Longitude	Area benefited (Ha)/beneficiaries	
Karinkulam	Ayyappankoil	1.Rainwater Harvesting Tank at Pachakkadu Sub- Centre	8 1	Rs. 65184/-	9° 39' 15.7"N,	77° 2' 7.1" E	*The community belongs to Pachakkad area is benefitted. *Benefitted to 50 families	
		2.Rainwater Harvesting Tank Govt.LPS Karinkulam			9° 39' 11.2"N	77° 1' 40.0" E		
		3.Providing Protection Wall for Panchayath Pond- Parappu			9° 41'24.6"N	77° 01' 38.6" E		
		4.6 Acre Tank Maintenance Work			Rs. 73000/-	9° 40'46.1"N		77° 2' 36.9" E
		5. Construction of Rain Water Harvesting Tank at kannikallu Anganwadi						
EPA TOTAL AMOUNT								

The above work under reference has been included in the list of EPA works for providing drinking water to a mass in Ayyappankoil Grama Panchayath in the year 2013-14 vide under IWMP Kattappana-(Batch 4) Entry Point Activity works and hence this estimate is prepared. The site is situated inwards 1 and 8 of Ayyappankoil Panchayath. Detailed site investigations were conducted before deciding the nature of the structure .Foundation provided is decided by considering the soil conditions and all efforts were made to assure the safety of the structure, which is designed according to the site conditions and the public demand.

3. NATURAL RESOURCE MANAGEMENT (NRM)

Natural resource management activities are such as afforestation, Horticulture, Soil & moisture conservation, vegetative and engineering structure and water harvesting structures. Item wise annual action plans are mentioned below as well as the year wise financial tables. The contribution to WDF shall be a minimum 10 % of the cost of NRM works executed on private land. In case of SC/ST, small and marginal farmers, the minimum contribution shall be 5 % of cost of NRM works executed on their land.

MASTER PLAN OF NATURAL RESOURCE MANAGEMENT

Karinkulam Watershed- NRM Consolidated Action Plan

Sl. No.	Activities	Unit	Unit Rate	Physical Units	Financial		
					IWMP	Convergence	Total
1	AGROFORESTRY	NOS.	40	5500	220000		220000
2	FRUIT PLANTS	NOS.	60	6000	360000		360000
3	FODDER GRASS CULTIVATION	Ha	6000	4	24000		24000
4	Soak Pit	NOS.	5617	179	1005443		1005443
5	Stone Pitched Bund(At Heavenvalley, Maruthumpetta, and Pachakkad areas).	RM	143.52	5450	782184		782184
6	Vermicomposting	NOS.	30000	20	600000		600000
7	COMPOST PIT	NOS.	726	67	48642		48642
8	BIOGAS PLANT (2m3)	NOS.	33730	15	505950		505950
9	LIVE FENCING	RM.	20	5545	110900		110900
10	WELL RECHARGE (GROUND WATER RECHARGE)	NOS.	11119	88	978472		978472
11	SILPAULIN TANKS	NOS.	27029	32	864928		864928
12	FARM PONDS (NEW)	NOS.	30000	25	750000		750000
13	FARM POND / WELL RENOVATION	NOS.	14500	25	362500		362500
14	RETAINING WALL OF PACHAKKAD ANGANWADI- SIDE PROTECTION	NOS.	170000	1	170000		170000
15	RAINWATER HARVESTING TANK AT PACHAKKAD ANGANWADI	NOS.	65000	1	65000		65000
16	RAIN WATER HARVESTING TANK(INDIVIDUALS) (CAPACITY-5000LITRE)	NOS.	30000	50	1500000		1500000
17	POOVANTHIKKUDI POND(RENOVATION& SIDE WALL)	NOS.	22500	1	22500		22500
18	RAINWATER HARVESTING TANK AT PATHIMUKKU ANGANWADI(5000 LITRE)	NOS.	39108	1	39108		39108
19	AALADI WATER TANK RENOVATION (PLASTERING ONLY)	NOS.	6759	1	6759		6759
20	OVERHEAD RESERVOIR WATERTANK (15000LITRES) AT 6 ACRE FOR POOVANTHIKKUDI	NOS.	370000	1	370000		370000
	ROUNDED FIGURE						14
	TOTAL						8786386
	GRAND TOTAL						8786400

1. PRODUCTION SYSTEM MANAGEMENT

All the activities in the Production System management activities are included as per the proposals collected from FGDs and SHG/ JLG meetings conducted in the Project area, and a list of beneficiaries were also prepared and kept with the PIA. Item wise annual actions plans are mentioned below.

TABLE 4.1 .MASTER PLAN OF PRODUCTION SYSTEM MANAGEMENT

Karinkulam Watershed PSM Consolidated Action Plan

Sl. No.	Activities	Unit	Unit Rate	Physical Units	Financial		
					IWMP	Convergence	Total
1	VEGETABLE GARDEN (Seed And Organic manure)	Ha	37500	6	225000	AGRI DEPT(1 Ha)	225000
2	BANANA CULTIVATION (Tissue culture)	Ha	50000	9	450000	AGRI DEPT(2Ha)	450000
3	SPICES CULTIVATION (Ginger, Turmeric)	Ha	30000	2.45	73500		73500
4	TAPIOCA CULTIVATION	Ha	30000	5	150000		150000
5	BEEKEEPING	Nos	6000	20	120000		120000
6	MUSHROOM CULTIVATION	Nos.	30000	10	300000		300000
7	PEPPER AREA EXPANSION	Ha	60000	3.5	210000		210000
8	KUTTIMULLA	Ha	40000	1	40000		40000
	ROUNDED FIGURE						500
	TOTAL						1568500
	GRAND TOTAL						1569000

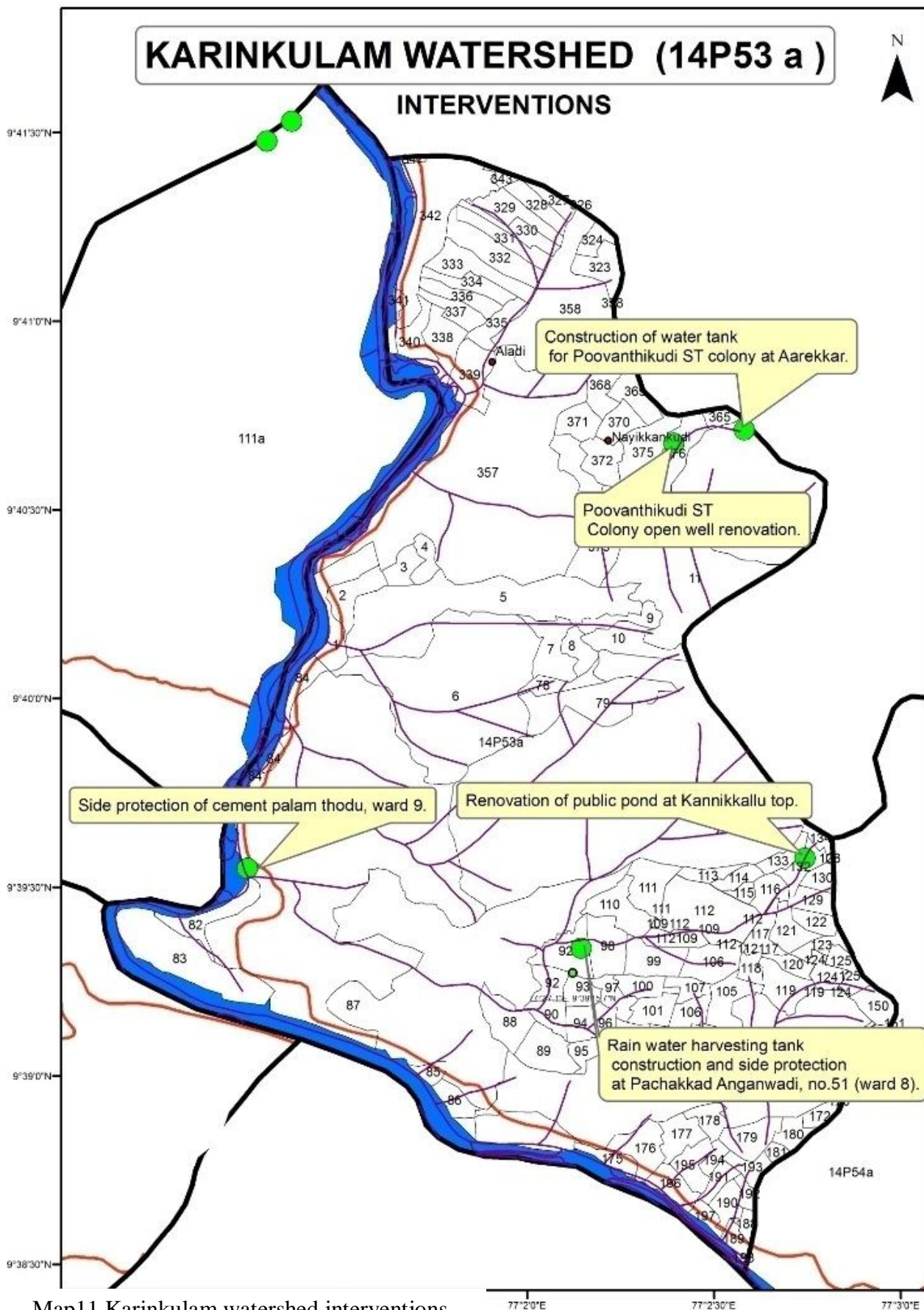
4. LIVELIHOOD SUPPORT SYSTEM

Livelihood support system activities are such as Goat rearing, Floriculture, , Dairy and Food processing units,etc, are included as per the proposals collected from FGDs and SHG/ JLG meetings conducted in the Project area, and a list of beneficiaries were also prepared and kept with the PIA . Item wise annual action plans are mentioned below.

5.1.MASTER PLAN OF LIVELIHOOD SUPPORT SYSTEM**Karinkulam Watershed- Livelihood Consolidated Action Plan**

Sl. No.	Activity	Physical Quantity	Unit Cost	Beneficiary Contribution/ unit	Financial			
					IWMP	Beneficiary Contribution	Bank Loan	Total
1	Seed Money for JLGs							
1.1	Calf rearing, 2 nos.	10	20000		200000			200000
1.2	Goat rearing, 2nos.	35	6000		210000			210000
1.3	Back yard poultry, 10 nos	173	2500		432500			432500
1.4	Food Processing Unit	3	23000		69000			69000
1.5	Tailoring / Cloth Bag Unit	2	15000		30000			30000
1.6	Soap & Washing Powder Unit	1	10000		10000			10000
1.7	Pisciculture	1	30000		30000			30000
2	Grant in aid for JLGs							
2.1	Biofertilizer Unit	1	150000		85420	9687	54893	85420
2.2	Eco-friendly products	1	200000		128130	10780	61090	128130
2.3	Curry Powder Unit	1	200000		127130	10930	61940	127130
2.4	Milk Processing & Marketing Unit	1	150000		89920	9012	51068	89920
	GRAND TOTAL							1412100

6. INTERVENTION MAP OF KARINKULAM WATERSHED



Map11.Karinkulam watershed interventions

POOKKULAM ESTATE WATERSHED (14P54a)

1. INTRODUCTION

The Pookkulam estate watershed bearing the code number 14P54a situated in the village of Ayyappankoil of the Ayyappankoil Grama Panchayath in the block of Kattappana in Idukki district, extending to a total area of 757 ha. The watershed coordinate is 77°2'35.075"E 9°38'22.744"N to 77°4'29.717"E 9°40'29.866"N. The watershed shares its boundaries with Chenkarathodu, Nirmalagiri Estate on the east, Kavunthi, Kannikkallu, Bhajanamadam, Mlamala Kurishu & Karinkulam watershed on the west, Periyar on the south and Chekuthan mala, Catholic Church, Kavunthimala on the north. The watershed comprises of the wards 6, 7, 8, 9, 12, 11, 16 & a portions of ward no.1 of Kumali GP.

Major places in this watershed are Kavunthi, Pullumedu, Chekuthan mala, Nirmalagiri Estate, Sankaragiri, Bhajanamadam, Kannikkallu, Chenkara kolunthupura Jn., Paathimukku and, Shanthipalam

1.1. BOUNDARIES OF MICRO WATERSHED

Pookkulam Estate Watershed	North	Chekuthan mala, Catholic Church, Kavunthimala
	South	Periyar
	West	Kavunthi, Kannikkallu, Bhajanamadam, Mlamala Kurishu & Karinkulam watershed
	East	Chenkarathodu, Nirmalagiri Estate
	Geographical Coordinates	77°2'35.075"E 9°38'22.744"N to 77°4'29.717"E 9°40'29.866"N

1. FUNDING PATTERN OF WATERSHED

MASTER PLAN FOR 4 YEAR											
POOKKULAM WATERSHED											
TOTAL TREATABLE AREA - 757 Ha					TOTAL AMOUNT - 757 x 15000/ Ha = Rs.11355000/-						
YEAR	ADMINISTRATION	MONITORING	EVALUATION	ENTRY POINT ACTIVITY	INSTITUTION & CAPACITY BUILDING	DPR PREPERATION	NATURAL RESOURCE MANAGEMENT ACTIVITIES	LIVELIHOOD ACTIVITIES	PRODUCTION SYSTEM 7 MICRO ENTERPRISES	CONSOLIDATION PHASE	TOTAL IWMP PROJECT
FIRST	141937.5	22710	11355	454200	28387.5	113550	1271760	204390	227100		772140
%	1.25	0.2	0.1	4	0.25	1	11.2	1.8	2		6.8
SECOND	397425	28387.5	28387.5		227100		1907640	306585	340650		4371675
%	3.5	0.25	0.25		2		16.8	2.7	3		38.5
THIRD	397425	28387.5	28387.5		227100		1907640	306585	340650		4371675
%	3.5	0.25	0.25		2		16.8	2.7	3	0	38.5
FOURTH	198712.5	34065	45420		85162.5		1271760	204390	227100	340650	1839510
%	1.75	0.3	0.4		0.75		11.2	1.8	2	3	16.2
TOTAL	1135500	113550	113550	454200	567750	113550	6358800	1021950	1135500	340650	11355000
%	10	1	1	4	5	1	56	9	10	3	100

2. ENTRY POINT ACTIVITIES

TABLE: LIST OF ENTRY POINT ACTIVITIES.

Name Of Watershed	Panchayath	Name Of Work	Ward	Amount	Latitude	Longitude	Area benefited (Ha)/beneficiaries
Pookkulam estate (14 P 54a)	Ayyappankoil	1.Rainwater Harvesting Tank Govt.LPS Pullumedu	1	Rs. 87005/-	9 ⁰ 39'58.1"N	77 ⁰ 03' 34.2" E	Staff and Students of the Schools.
		2.Well Recharge In Govt. LPS Pullumedu		Rs. 16857/-	9 ⁰ 39'58.1"N	77 ⁰ 03' 34.2" E	
EPA TOTAL AMOUNT				4,54,200/-			

The above work under reference has been included in the list of EPA works for the Construction of Rain water harvesting tank at Govt. LPS Pullumedu in Ayyappankoil Grama Panchayath during the year 2013-14, under IWMP Kattappana Batch-4-Entry Point Activity works and hence this estimate is prepared. The amount allotted vide G.O cited above can satisfy the public demand .Provisions in this estimate includes construction of a Well recharge system. Detailed site investigations were conducted before deciding the nature of the structure. Foundation provided is decided by considering the soil conditions and all efforts were made to assure the safety of the structure, which is designed according to the site conditions and the public demand. The estimate is prepared based on the current schedule of rates.

3. NATURAL RESOURCE MANAGEMENT (NRM)

Natural resource management activities are such as afforestation, Horticulture, Soil & moisture conservation, vegetative and engineering measures and water harvesting structures (Ridge to valley approach). Item wise annual actions plans are mentioned below as well as the year wise financial tables The contribution to WDF shall be a minimum 10 % of the cost of NRM works executed on private land. In case of SC/ST, small and marginal farmers, the minimum contribution shall be 5 % of cost of NRM works executed on their land.

3.1 MASTER PLAN OF NATURAL RESOURCE MANAGEMENT

Pookkulam Watershed- NRM Consolidated Action Plan

Sl. No.	Activities	Unit	Unit Rate	Physical Units	Financial		
					IWMP	Convergence	Total
1	AGROFORESTRY	Nos.	40	4500	180000		180000
2	FRUIT PLANTS	Nos.	60	5000	300000		300000
3	FODDER GRASS CULTIVATION	Ha	6000	1.5	9000		9000
4	STONE PITCHED BUND	RM	143.52	1290	185140.8		185140.8
5	VERMI COMPOST	Nos.	30000	6	180000		180000
6	COMPOST PIT	Nos.	726	54	39204		39204
7	LIVE FENCING	RM	20	2498	49960		49960
8	BIOGAS PLANT (2m3)	Nos.	33730	12	404760		404760
9	RAIN WATER HARVESTING TANK (CAPACITY-5000LITRE)	Nos.	30000	50	1500000		1500000
10	WELL RECHARGE (GROUND WATER RECHARGE)	Nos.	11119	75	833925		833925
11	SOAK PITS	Nos.	5617	125	702125		702125
12	SILPAULIN PONDS	Nos.	27029	25	675725		675725
13	FARM PONDS (NEW)	Nos.	30000	8	240000		240000
14	FARM PONDS (RENOVATION)	Nos.	14500	13	188500		188500
15	OVERHEAD RESERVOIR WATERTANK (15000LITRES) AT NIRMALAGIRI	Nos.	370000	1	370000		370000
16	POND RENOVATION OF KANNIKALLU DRINKING WATER SCHEME	Nos.	27666	1	27666		27666
17	NIRMALAGIRI POND RENOVATION	Nos.	267261	1	267261		267261
18	KANNIKALLU WATER TANK	Nos.	93972	1	93972		93972
19	KAVUNTHI WATER TANK	Nos.	111557	1	111557		111557
ROUNDED FIGURE							4.2
TOTAL							6358795.8
GRAND TOTAL							6358800

4. PRODUCTION SYSTEM MANAGEMENT

.All the activities in the Production System management activities are included as per the proposals collected from FGDs and SHG/ JLG meetings conducted in the Project area, and a list of beneficiaries were also prepared and kept with the PIA. Item wise annual actions plans are mentioned below.

4.1 MASTER PLAN OF PRODUCTION SYSTEM MANAGEMENT

Pookkulam Watershed PSM Consolidated Action Plan

Sl. No.	Activities	Unit	Unit Rate	Physical Units	Financial		
					IWMP	Convergence	Total
1	VEGETABLE GARDEN (Seed And Organic manure)	Ha	37500	4.75	178125	AGRI DEPT(1 Ha)	178125
2	BANANA CULTIVATION (Tissue culture)	Ha	50000	8	400000	AGRI DEPT(2Ha)	400000
3	SPICES CULTIVATION (Ginger, Turmeric)	Ha	30000	2	60000		60000
4	TAPIOCA CULTIVATION	Ha	30000	4.1	123000		123000
5	BEEKEEPING	Nos	6000	13	78000		78000
6	MUSHROOM CULTIVATION	Nos.	30000	5	150000		150000
7	PEPPER AREA EXPANSION	Ha	60000	1.75	105000		105000
8	KUTTIMULLA	Ha	40000	1	40000		40000
	ROUNDED FIGURE						1375
	TOTAL						1134125
	GRAND TOTAL						1135500

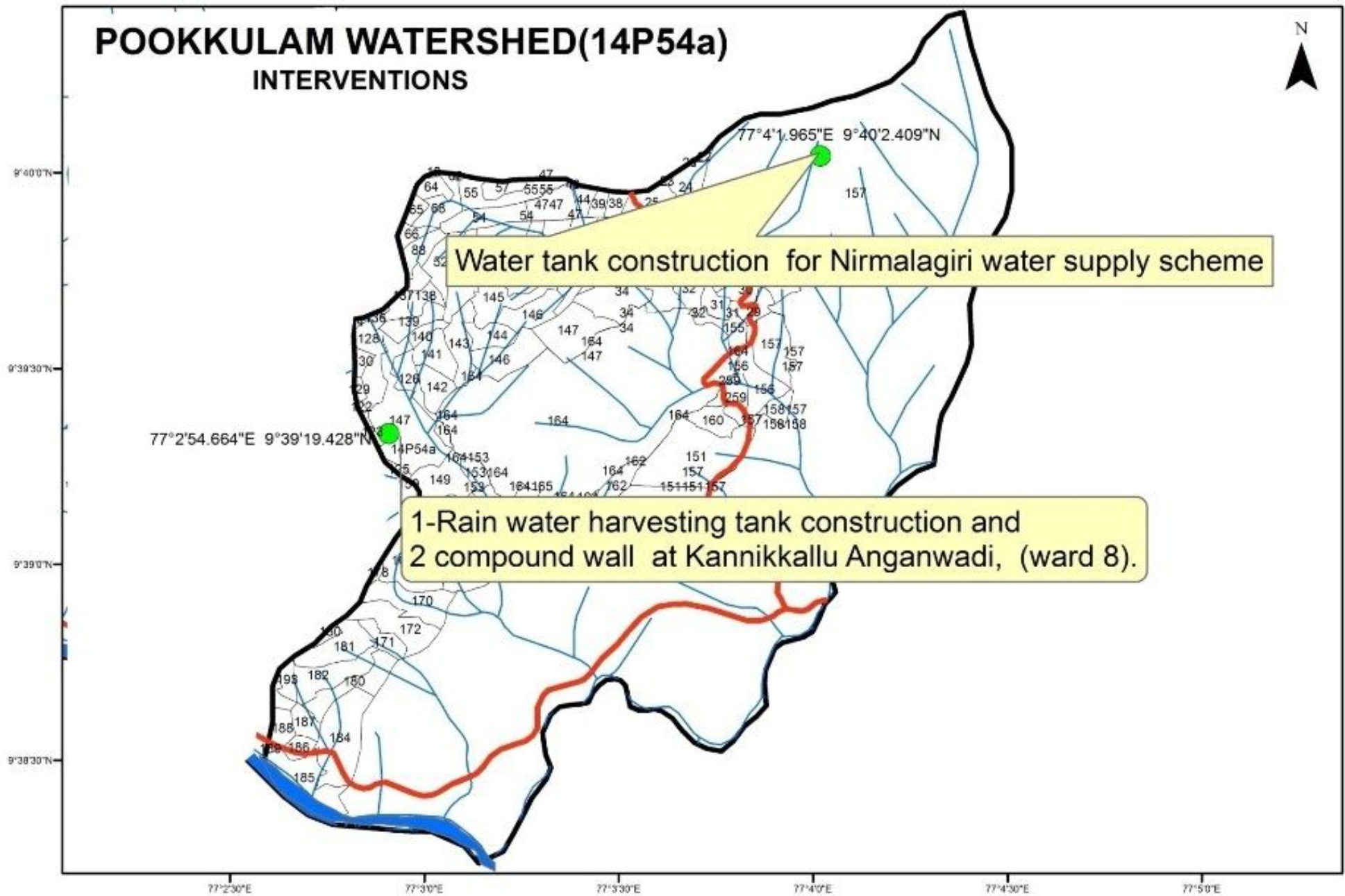
5. LIVELIHOOD SUPPORT SYSTEM

Livelihood support system activities are such as Goat rearing, Floriculture, , Dairy and Food processing units,etc, are included as per the proposals collected from FGDs and SHG/ JLG meetings conducted in the Project area, and a list of beneficiaries were also prepared and kept with the PIA . Item wise annual action plans are mentioned below.

5.1 MASTER PLAN OF LIVELIHOOD SUPPORT SYSTEM

Pookkulam Watershed -Livelihood Consolidated Action Plan

Sl. No.	Activity	Physical Quantity	Unit Cost	Beneficiary Contribution/unit	Financial			
					IWMP	Beneficiary Contribution	Bank Loan	Total
1	Seed Money for JLGs							
1.1	Calf rearing, 2 nos.	9	20000		180000			180000
1.2	Goat rearing, 2nos.	24	6000		144000			144000
1.3	Back yard poultry,10 nos	101	2500		252500			252500
1.4	Food Processing Unit	3	23000		69000			69000
1.5	Tailoring / Cloth Bag Unit	2	15000		30000			30000
1.6	Soap & Washing Powder Unit	1	10000		10000			10000
1.7	Weed Cutter	1	25000		25000			25000
2	Grant in aid for JLGs							
2.1	Milk Processing & Marketing Unit	1	150000		61390	13292	75318	61390
2.2	Eco-friendly products	1	200000		94085	15887	90028	94085
2.3	Biofertilizer Unit	1	150000		93585	8462	47953	93585
2.4	Paper Bags & glass making unit	1	100000		62390	5642	31968	62390
	TOTAL							1021950



HAILEYBURIA ESTATE WATERSHED (14P109a)

1. INTRODUCTION

The Haileyburia Estate watershed bearing the code number (14P109a) situated in the village of Elappara in the Grama Panchayath of Elappara in the Kattappana block in Idukki district extends to a total area of 303ha. The watershed located between 77°0'6.522"E 9°38'16.016"N to 77°1'21.222"E 9°39'31.806"N. The watershed shares its boundaries with Haileyburia Estate Tea factory, Sreekrishna Temple, LV Iyer smarakam in the east, Haileyburia Estate, 37 Puthuval Road, Moonnumukku thodu in the west, Haileyburia Tea Estate Bungalow on the south and Periyar, Karintharuvi River on the north. The watershed comprises of the wards 8,9 of the Panchayath. Major places in this watershed are Areekkam, Vallakkadavu Japan Kudivella paddhathi treatment plant, 37 Puthuval Kuthukallumotta, Haileyburia Tea Estate Bungalow, Haileyburia Tea Factory Jn., Sreekrishna Temple, LV Iyer smarakam Vallakkadavu, etc.

1.1. BOUNDARIES OF MICRO WATERSHED

Haileyburia Estate Watershed	North	Periyar, Karintharuvi River
	South	Haileyburia Tea Estate Bungalow
	West	Haileyburia Estate, 37 Puthuval Road, Moonnumukku thodu surroundings,
	East	Haileyburia Estate Tea factory, Sreekrishna Temple, LV Iyer smarakam.
	Geographical Coordinates'	77°0'6.522"E 9°38'16.016"N to 77°1'21.222"E 9°39'31.806"N

1. FUNDING PATTERN OF HAILEYBURIA ESTATEWATERSHED

TABLE 1.1 MASTERPLAN FOR 4 YEARS

MASTER PLAN FOR 4 YEAR											
HAILEYBURIA WATERSHED											
TOTAL TREATABLE AREA - 303 Ha					TOTAL AMOUNT - 303x 15000/ Ha = Rs.4545000/-						
YEAR	ADMINISTRATION	MONITORING	EVALUATION	ENTRY POINT ACTIVITY	INSTITUTION & CAPACITY BUILDING	DPR PREPERATION	NATURAL RESOURCE MANAGEMENT ACTIVITIES	LIVELIHOOD ACTIVITIES	PRODUCTION SYSTEM 7 MICRO ENTERPRISES	CONSOLIDATION PHASE	TOTAL IWMP PROJECT
FIRST	56812.5	9090	4545	181800	11362.5	45450	509040	81810	90900		309060
%	1.25	0.2	0.1	4	0.25	1	11.2	1.8	2		6.8
SECOND	159075	11362.5	11362.5		90900		763560	122715	136350		1749825
%	3.5	0.25	0.25		2		16.8	2.7	3		38.5
THIRD	159075	11362.5	11362.5		90900		763560	122715	136350		1749825
%	3.5	0.25	0.25		2		16.8	2.7	3	0	38.5
FOURTH	79537.5	13635	18180		34087.5		509040	81810	90900	136350	736290
%	1.75	0.3	0.4		0.75		11.2	1.8	2	3	16.2
TOTAL	454500	45450	45450	181800	227250	45450	2545200	409050	454500	136350	4545000
%	10	1	1	4	5	1	56	9	10	3	100

2. ENTRY POINT ACTIVITIES

ACTIVITY: CONSTRUCTION OF NEW POND AT HAILEYBURIA.

Name Of Watershed	Panchayath	Name Of Work	Ward	Amount	Latitude	Longitude	Area benefited (Ha)/beneficiaries
Haileyburia Estate	Elappara	Construction of Rain shelter and vegetable cultivation at Haileyburia school		221500			*Benefitted area 15 ha
		2.Renovation of public well and construction of check Dam Erupathu puthuvel, Elappara Grama Panchayath		238500			*Benefitted to 30 families

3. NATURAL RESOURCE MANAGEMENT (NRM)

Natural resource management activities included in this Project are afforestation, Horticulture, Soil & moisture conservation, vegetative and engineering measures and water harvesting structures. Item wise annual actions plans are mentioned below as well as the year wise financial tables. The contribution to WDF shall be a minimum 10 % of the cost of NRM works executed on private land. In case of SC/ST, small and marginal farmers, the minimum contribution shall be 5 % of cost of NRM works executed on their land.

3.1 MASTER PLAN OF NATURAL RESOURCE MANAGEMENT

Haileyburia Watershed-NRM Consolidated Action Plan

Sl. No.	Activities	Unit	Unit Rate	Physical Units	Financial		
					IWMP	Convergence	Total
1	AGROFORESTRY	Nos.	40	1500	40		60000
2	FRUIT PLANTS	Nos.	60	1200	60		72000
3	FODDER GRASS CULTIVATION	Ha	6000	1.5	6000		9000
4	STONE PITCHED BUND (AT KUTHUKALLUMOTTA, 20 PUTHUVAL, ARUVIKKARA AREAS)	RM	143.52	2010	143.52		288475.2
5	COMPOST PIT	Nos.	726	20	726		14520
6	LIVE FENCING	RM	20	777	20		15540
7	BIOGAS PLANT	Nos.	33730	6	33730		202380
8	VERMI COMPOSTING	Nos.	30000	4	30000		120000
9	FARM PONDS NEW	Nos.	30000	2	30000		60000
10	RAIN WATER HARVESTING TANK (CAPACITY-5000LITRE)	Nos.	30000	20	30000		600000
11	WELL RECHARGE (GROUND WATER RECHARGE)	Nos.	11119	30	11119		333570
12	SILPAULIN TANKS	Nos.	27029	12	27029		324348
13	SOAK PITS	Nos.	5617	30	5617		168510
14	FARM PONDS(RENOVATION)	Nos.	14500	5	14500		72500
15	POND RENOVATION AT JOSEPH PARAKKAL	Nos.	102890	1	102890		102890
16	POND RENOVATION AT REJI MATHEW KOMALAYIL	Nos.	101466	1	101466		101466
	ROUNDED FIGURE						0.8
	TOTAL						2545199.2
	GRAND TOTAL						2545200

4. PRODUCTION SYSTEM MANAGEMENT

All the activities in the Production System management activities are included as per the proposals collected from FGDs and SHG/ JLG meetings conducted in the Project area, and a list of beneficiaries were also prepared and kept with the PIA. Item wise annual actions plans are mentioned below.

4.1 MASTER PLAN OF PRODUCTION SYSTEM MANAGEMENT

Haileyburia Watershed PSM Consolidated Action Plan

Sl. No.	Activities	Unit	Unit Rate	Physical Units	Financial		
					IWMP	Convergence	Total
1	VEGETABLE GARDEN (Seed And Organic manure)	Ha	37500	3	112500	AGRI DEPT(1 Ha)	112500
2	BANANA CULTIVATION (Tissue culture)	Ha	50000	2.5	125000		125000
3	SPICES CULTIVATION (Ginger, Turmeric)	Ha	30000	1.5	45000		45000
4	TAPIOCA CULTIVATION	Ha	30000	2.5	75000		75000
5	BEEKEEPING	Nos	6000	6	36000		36000
6	MUSHROOM CULTIVATION	Nos.	30000	1	30000		30000
7	PEPPER AREA EXPANSION	Ha	60000	0.5	30000		30000
	ROUNDED FIGURE						1000
	TOTAL						453500
	GRAND TOTAL						454500

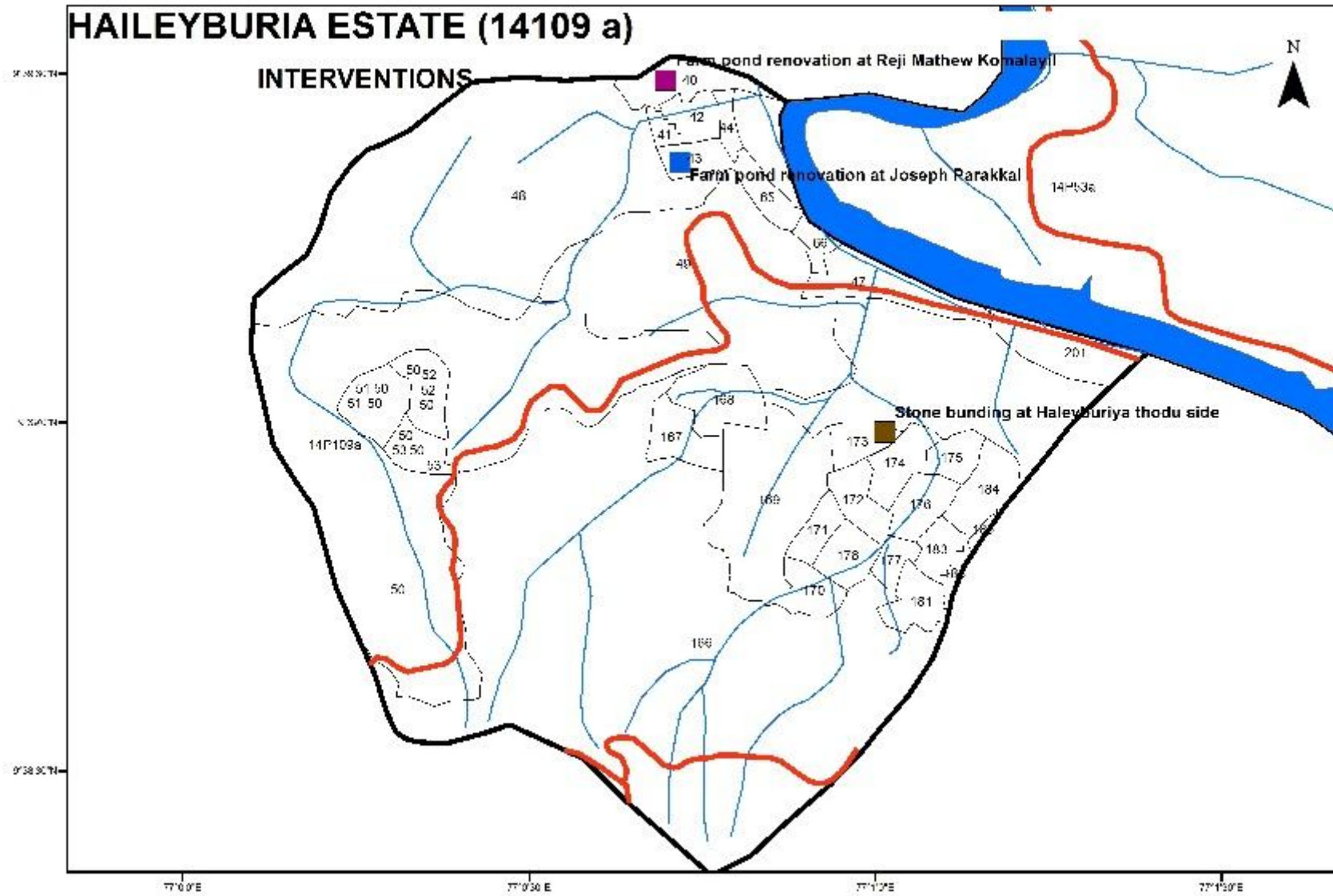
5. LIVELIHOOD SUPPORT SYSTEM

During the first year of IWMP mainly concentrating with DPR preparation and Entry point activities. Livelihood support system activities are starting from second year such as Goat rearing, Coconut climber, Dairy and Food processing unit . Item wise annual actions plans are mentioned below.

5.1 MASTER PLAN OF LIVELIHOOD SUPPORT SYSTEM

Haileyburia Watershed- Livelihood Consolidated Action Plan

Sl. No.	Activity	Physical Quantity	Unit Cost	Beneficiary Contribution/unit	Financial			
					IWMP	Beneficiary Contribution	Bank Loan	Total
1	Seed Money for JLGs							
1.1	Calf rearing, 2 nos.	2	20000		40000			40000
1.2	Goat rearing, 2nos.	4	6000		24000			24000
1.3	Back yard poultry, 10 nos	77	2500		192500			192500
1.4	Food Processing Unit	1	23000		23000			23000
2	Grant in aid for JLGs							
	Organic Vegetable Cultivation	1	50000		26810	3478	19712	26810
2.2	Cloth Bag Unit	1	50000		38715	1693	9592	38715
2.3	Milk marketing Unit	1	100000		37215	2.1	53367	37215
2.4	Ready made Garment Unit	1	50000		26810	3479	19711	26810
	TOTAL							409050



VALAKODE WATERSHED (14P110 i)

1. INTRODUCTION

The Valakode watershed bearing the code number (14P110i) situated in the village of vagamon in the Grama Panchayath of Upputhara in the Kattappana block in Idukki district extends to a total area of 1021ha. The watershed lie down between 76°57'0.961"E 9°41'8.444"N TO 76°59'16.826"E 9°43'50.997"N. The watershed shares its boundaries with M C Kavala, Omegapadi, Mathaippara, & Cheenthalar watershed in the east, Kuvalettam, Pulinkatta, Ummen kada Jn., Pasuppara Estate Road in the west, Pasuppara, Cheenthalar on the south and Valakode on the north. The watershed comprises of the wards 1, 8, 9, 10 & a little portion of ward no 1, 8, 9, 10 & a little portion of ward no. 7. of the panchayath. Major land marks in this watershed are Mathaippara Marthoma Church Jn., Omegappadi, Shalom church, Valakode Jn., Valakode Govt. Higher Secondary School, Valakode St. George church, PHC Valakode, Kuvalettam-Kallekkulam Road, Kuvalettam-Forest Road, Mukalelpadi Pulinkatta Jn., Ummenkada-Project Road Jn., Pasuppara-AVT Estate Road, Pasuppara bridge, Aalampalli Estate etc.

1.1. BOUNDARIES OF MICRO WATERSHED

Table.1.1 Boundaries of Micro Watershed

Valakode Watershed	North	Valakode
	South	Pasuppara, Cheenthalar
	West	, Kuvalettam, Pulinkatta, Ummen kada Jn., Pasuppara Estate Road
	East	M C Kavala, Omegapadi, Mathaippara, & Cheenthalar watershed
	Geographical Coordinates'	76°57'0.961"E 9°41'8.444"N TO 76°59'16.826"E 9°43'50.997"N

TABLE 1.1 VALAKODE WATERSHED- MASTER PLAN FOR 4 YEARS

VALAKODE WATERSHED -MASTER PLAN FOR 4 YEARS											
TOTAL TREATABLE AREA - 1021 Ha					TOTAL AMOUNT - 1021 x 15000/ Ha = Rs.15315000/-						
YEAR	ADMINISTR ATION	MONITO RING	EVALUATIO N	ENTRY POINT ACTIVITY	INSTITUTION & CAPACITY BUILDING	DPR PREPERATI ON	NATURAL RESOURCE MANAGEMENT ACTIVITIES	LIVELIHOOD ACTIVITIES	PRODUCTION SYSTEM 7 MICRO ENTERPRISES	CONSOLIDA TION PHASE	TOTAL IWMP PROJECT
FIRST	191437.5	30630	15315	612600	38287.5	153150	1715280	275670	306300		1041420
%	1.25	0.2	0.1	4	0.25	1	11.2	1.8	2		6.8
SECOND	536025	38287.5	38287.5		306300		2572920	413505	459450		5896275
%	3.5	0.25	0.25		2		16.8	2.7	3		38.5
THIRD	536025	38287.5	38287.5		306300		2572920	413505	459450		5896275
%	3.5	0.25	0.25		2		16.8	2.7	3	0	38.5
FOURTH	268012.5	45945	61260		114862.5		1715280	275670	306300	459450	2481030
%	1.75	0.3	0.4		0.75		11.2	1.8	2	3	16.2
TOTAL	1531500	153150	153150	612600	765750	153150	8576400	1378350	1531500	459450	15315000
%	10	1	1	4	5	1	56	9	10	3	100

2. ENTRY POINT ACTIVITIES

Table.2.1 Entry Point Activities

ACTIVITY: RENOVATION OF POND & RENOVATION OF WATERSUPPLY AT CHETTIPPATHAL.

Name Of Watershed	Panchayath	Name Of Work	Ward	Amount	Latitude	Longitude	Area benefited (Ha)/beneficiaries
Valakode(14P110i)	Upputhara	Pond Renovation& water Supply Renovation at Chettipathal		Rs. 502490/-	9 ^o 42' 21.8"N	76 ^o 59' 05.9" E	*Benefitted area 10 ha *Benefitted to 35 families
EPA TOTAL AMOUNT	612600/-						

The above work under reference has been included in the list of EPA works for the Renovation of pond and Renovation of Water supply scheme at Chettippathal in Upputhara Grama Panchayath in the year 2013-14 vide under IWMP Kattappana Batch- 4-Entry Point Activity works and hence this estimate is prepared. The site is situated near Mathaippara- Aanappallam road in Upputhara Grama Panchayath. The amount allotted vide G.O cited above can satisfy the public demand .Provisions in this estimate includes construction of Side protection on both sides .Detailed site investigations were conducted before deciding the nature of the structure. Foundation provided is decided by considering the soil conditions and all efforts were made to assure the safety of the structure, which is designed according to the site conditions and the public demand .The estimate is prepared based on the current schedule of rates without C.P, and with provision for taxes that were applicable to Beneficiary Committee.

3. NATURAL RESOURCE MANAGEMENT (NRM)

Natural resource management activities are such as afforestation, Horticulture, Soil & moisture conservation, vegetative and engineering measures and water harvesting structures (Ridge to valley approach). Item wise annual actions plans are mentioned below as well as the year wise financial tables. The contribution to WDF shall be a minimum 10 % of the cost of NRM works executed on private land. In case of SC/ST, small and marginal farmers, the minimum contribution shall be 5 % of cost of NRM works executed on their land.

TABLE 3.1 MASTER PLAN OF NATURAL RESOURCE MANAGEMENT

Valakode Watershed NRM Consolidated Action Plan

Sl. No.	Activities	Unit	Unit Rate	Physical Units	Financial		
					IWMP	Convergence	Total
1	AGROFORESTRY	NOS.	40	5500	220000		220000
2	FRUIT PLANTS	NOS.	60	6000	360000		360000
3	FODDER GRASS CULTIVATION	Ha	6000	3.5	21000		21000
4	SOAK PIT	NOS.	5617	75	421275		421275
5	Stone Pitched Bund(At Valakode areas).	RM	143.52	3650	523848		523848
6	Vermicomposting	NOS.	30000	30	900000		900000
7	COMPOST PIT	NOS.	726	73	52998		52998
8	BIOGAS PLANT (2m3)	NOS.	33730	20	674600		674600
9	LIVE FENCING	RM.	20	7524	150480		150480
10	WELL RECHARGE (GROUND WATER RECHARGE)	NOS.	11119	85	945115		945115
11	SILPAULIN TANKS	NOS.	27029	20	540580		540580
12	FARM PONDS	NOS.	30000	22	660000		660000
13	FARM POND / WELL RENOVATION	NOS.	14500	25	362500		362500
14	RAIN WATER HARVESTING TANK (CAPACITY-5000LITRE)	NOS.	30000	85	2550000		2550000
15	VARIKKAPLAKKAL POND RENOVATION	NOS.	13500	1	13500		13500
16	KANISSERIL POND RENOVATION	NOS.	42000	1	42000		42000
17	KUMARIKULAM POND(RENOVATION)	NOS.	13500	1	13500		13500
18	BIO FENCING AT PULINKATTA-1500M	M		1	125000		125000
	ROUNDED FIGURE						4
	TOTAL						8576396
	GRAND TOTAL						8576400

4. PRODUCTION SYSTEM MANAGEMENT

All the activities in the Production System management activities are included as per the proposals collected from FGDs and SHG/ JLG meetings conducted in the Project area, and a list of beneficiaries were also prepared and kept with the PIA. Item wise annual actions plans are mentioned below.

TABLE 4.1 MASTER PLAN OF PRODUCTION SYSTEM MANAGEMENT**Valakode Watershed- PSM Consolidated Action Plan**

Sl. No.	Activities	Unit	Unit Rate	Physical Units	Financial		
					IWMP	Convergence	Total
1	VEGETABLE GARDEN (Seed And Organic manure)	Ha	37500	6	225000	AGRI DEPT(1 Ha)	225000
2	BANANA CULTIVATION (Tissue culture)	Ha	50000	9.5	475000	AGRI DEPT(1 Ha)	475000
3	SPICES CULTIVATION (Ginger, Turmeric)	Ha	30000	4.5	135000		135000
4	TAPIOCA CULTIVATION	Ha	30000	6.5	195000		195000
5	BEEKEEPING	Nos	6000	16	96000		96000
6	MUSHROOM CULTIVATION	Nos.	30000	8	240000		240000
7	PEPPER AREA EXPANSION	Ha	60000	2.75	165000		165000
	ROUNDED FIGURE						500
	TOTAL						1531000
	GRAND TOTAL						1531500

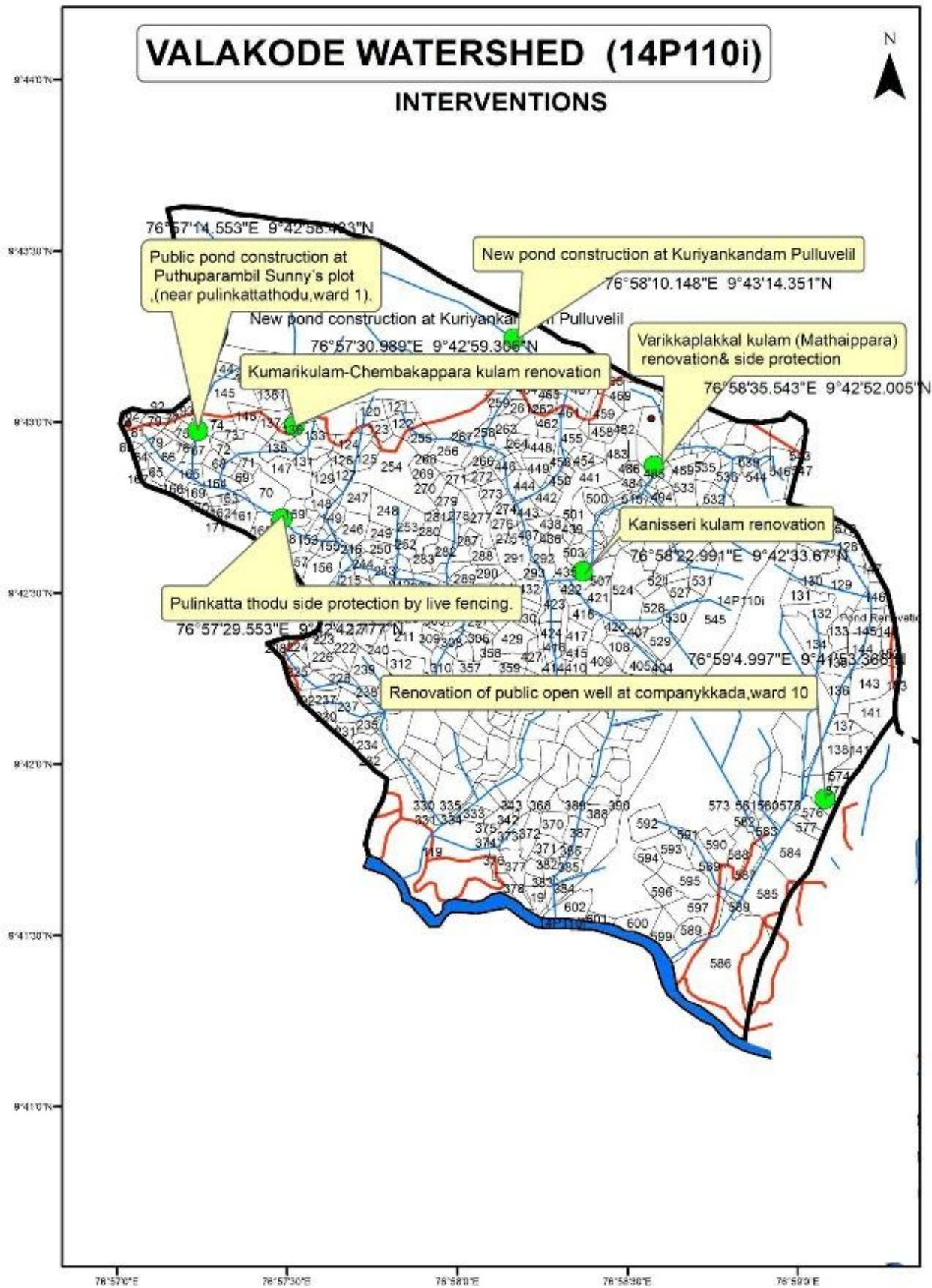
5. LIVELIHOOD SUPPORT SYSTEM

During the first year of IWMP mainly concentrating with DPR preparation and Entry point activities. Livelihood support system activities are starting from second year such as Goat rearing, Coconut climber, Dairy and Food processing unit . Item wise annual actions plans are mentioned below.

5.1 MASTER PLAN OF LIVELIHOOD SUPPORT SYSTEM**Valakode Watershed - Livelihood Consolidated Action Plan**

Sl. No.	Activity	Physical Quantity	Unit Cost	Beneficiary Contribution/unit	Financial			
					IWMP	Beneficiary Contribution	Bank Loan	Total
1	Seed Money for JLGs							
1.1	Calf rearing, 2 nos.	10	20000		200000			200000
1.2	Goat rearing, 2nos.	33	6000		198000			198000
1.3	Back yard poultry, 10 nos	169	2500		422500			422500
1.4	Food Processing Unit	3	23000		69000			69000
1.5	Tailoring / Cloth Bag Unit	2	15000		30000			30000
1.6	Soap & Washing Powder Unit	1	10000		10000			10000
1.7	Pisciculture	1	30000		30000			30000
2	Grant in aid for JLGs							
2.1	Biofertilizer Unit	1	150000		84670	9800	55530	84670
2.2	Eco-friendly products	1	200000		126505	11024	62471	126505
2.3	Curry Powder Unit	1	200000		124505	11324	64171	124505
2.4	Milk Processing & Marketing Unit	1	150000		83170	10025	56805	83170
	TOTAL							1378350

6. INTERVENTION MAP OF VALAKODE WATERSHED



CHEENTHALAR WATERSHED

(14P110 j)

1. INTRODUCTION

The Cheenthalar watershed bearing the code number (14P110j) situated in the village of Upputhara in the Grama Panchayath of Upputhara in the Kattappana block in Idukki district extends to a total area of 821ha. The watershed lie down between 76°58'49.772"E 9°40'10.499"N TO 77°0'46.35"E 9°42'25.574"N. The watershed shares its boundaries with Peerumedu Tea estate, Charukallu, Karintharuvi 2nd Division Estate in the east, M C Kavala, Aalampalli mala, Aalampalli Estate in the west, Cheenthalar, Karintharuvi puzha on the south and PC Kavala, Lone tree Tea Estate Factory, Post office Jn., Sooryakanthy kavala, MC Kavala, on the north. The watershed comprises of the wards 7, 10, 11, 16 & a little portions of ward no.13&14 of the Panchayath. Major landmarks in this watershed are Lone tree Tea factory, Aavulmesthiri layam ,Peerumedu Tea company, Lone tree busstop,Sooryakanthikavala,PC kavala,MC kavala,Kaverimala,Aalampalli tea factory Jn., Karintharuvi puzha,Churakkamotta,Kollanpadi,Charukallu,23 layam ,Lonetree estate,CSI Church 23 layam etc

1.1. BOUNDARIES OF MICRO WATERSHED

Cheenthalar Watershed	North	PC Kavala, Lone tree Tea Estate Factory, Post office Jn., Sooryakanthy kavala, MC Kavala.
	South	Cheenthalar, Karuntharuvi puzha
	West	M C Kavala, Aalampalli mala, Aalampalli Estate
	East	Peerumedu Tea estate, Charukallu, Karintharuvi 2 nd Division Estate.
	Geographical Coordinates'	76°58'49.772"E 9°40'10.499"N TO 77°0'46.35"E 9°42'25.574"N

1. FUNDING PATTERN OF CHEENTHALAR WATERSHED

TABLE 1.1 FUNDING PATTERN

NAME OF WATERSHED	TREATABLE AREA (Ha)	EPA AMOUNT (4%)	NRM (56%)	PSM (10%)	LSS (9%)	ADMINISTRATION COST (10%)	MONITORING (1%)	EVALUATION (1%)	INSTITUTION & CAPACITY BUILDING (5%)	DPR (1%)	CONSOLIDATION PHASE (3%)	TOTAL AMOUNT
CHEENTHALAR	821	492600	6896400	1231500	1108350	1231500	123150	123150	615750	123150	369450	12315000

TABLE 1.2 MASTERPLAN FOR 4 YEARS.

MASTER PLAN FOR 4 YEAR											
CHEENTHALAR WATERSHED											
TOTAL TREATABLE AREA - 821 Ha					TOTAL AMOUNT - 821x 15000/ Ha = Rs.12315000/-						
YEAR	ADMINISTRATION	MONITORING	EVALUATION	ENTRY POINT ACTIVITY	INSTITUTION & CAPACITY BUILDING	DPR PREPERATION	NATURAL RESOURCE MANAGEMENT ACTIVITIES	LIVELIHOOD ACTIVITIES	PRODUCTION SYSTEM 7 MICRO ENTERPRISES	CONSOLIDATION PHASE	TOTAL IWMP PROJECT
FIRST	153937.5	24630	12315	492600	30787.5	123150	1379280	221670	246300		837420
%	1.25	0.2	0.1	4	0.25	1	11.2	1.8	2		6.8
SECOND	431025	30787.5	30787.5		246300		2068920	332505	369450		4741275
%	3.5	0.25	0.25		2		16.8	2.7	3		38.5
THIRD	431025	30787.5	30787.5		246300		2068920	332505	369450		4741275
%	3.5	0.25	0.25		2		16.8	2.7	3	0	38.5
FOURTH	215512.5	36945	49260		92362.5		1379280	221670	246300	369450	1995030
%	1.75	0.3	0.4		0.75		11.2	1.8	2	3	16.2
TOTAL	1231500	123150	123150	492600	615750	123150	6896400	1108350	1231500	369450	12315000
%	10	1	1	4	5	1	56	9	10	3	100

2. ENTRY POINT ACTIVITIES

ACTIVITIES: 1.CONSTRUCTION OF RAIN WATERHARVESTING TANK AT GOVT.LPS PUTHUKKADA

The above work under reference has been included in the list of EPA works for the Construction of Rain water harvesting tank at G L P S Puthukkada in Upputhara Grama Panchayath in the year 2013-14 vide under IWMP Kattappana Batch-4-Entry Point Activity works and hence this estimate is prepared. The site is situated in ward 11 in Upputhara Grama Panchayath .This work will help to enable to supply water necessary for the students and staff of this school. The amount allotted vide G.O cited above can satisfy the public demand. Detailed site investigations were conducted before deciding the nature of the structure and all efforts were made to assure the safety of the structure, which is designed according to the site conditions and the public demand. The estimate is prepared based on the current schedule of rates.

Name Of Watershed	Panchayath	Name Of Work	Ward	Amount	Latitude	Longitude	Area benefited (Ha)/beneficiaries
Cheenthalar(14P110j)	Upputhara	1.Rainwater Harvesting Tank Govt.LPS Puthukkada		Rs. 68864/-	90 41'00.9"N	760 59' 49.9" E	*Benefitted area 15 ha
EPA TOTAL AMOUNT				4,92,600/-			

3. NATURAL RESOURCE MANAGEMENT (NRM)

Natural resource management activities are such as afforestation, Horticulture, Soil & moisture conservation, vegetative and engineering structure and water harvesting structures. Item wise annual action plans are mentioned below as well as the year wise financial tables. The contribution to WDF shall be a minimum 10 % of the cost of NRM works executed on private land. In case of SC/ST, small and marginal farmers, the minimum contribution shall be 5 % of cost of NRM works executed on their land.

3.1 MASTER PLAN OF NATURAL RESOURCE MANAGEMENT

Cheenthalar Watershed NRM Consolidated Action Plan

Sl. No.	Activities	Unit	Unit Rate	Physical Units	Financial		
					IWMP	Convergence	Total
1	AGROFORESTRY	Nos.	40	3500	140000		140000
2	FRUIT PLANTS	Nos.	60	4500	270000		270000
3	FODDER GRASS CULTIVATION	Ha	6000	2	12000		12000
4	STONE PITCHED BUND AT AANAPPALLAM AREA	RM	143.52	3500	502320		502320
5	COMPOST PIT	Nos.	726	50	36300		36300
6	LIVE FENCING	Nos.	20	1768	35360		35360
7	BIOGAS PLANT (2m3)	Nos.	33730	15	505950		505950
8	VERMI COMPOST	Nos.	30000	12	360000		360000
9	SOAK PITS	Nos.	5617	75	421275		421275
10	SILPAULIN PONDS	Nos.	27029	20	540580		540580
11	WELL RECHARGE (GROUND WATER RECHARGE)	Nos.	11119	66	733854		733854
12	RAIN WATER HARVESTING TANK FOR INDIVIDUALS(CAPACITY-5000LITRE)	Nos.	30000	30	900000		900000
13	FARM PONDS	Nos.	30000	8	240000		240000
14	FARM PONDS RENOVATION	Nos.	14500	16	232000		232000
15	KARIPPERA IRRIGATION SCHEME	Nos.	1338952	1	1338952		1338952
16	SOORYAKANTHIKAVALA CHECKDAM	No s	110125	1	110125		110125
17	RAIN WATER HARVESTIG TANK AT SOORYAKANTHIKAVALA, (ANDROSE GNANAVILAS) FOR 10 FAMILIES-15000LITER	Nos	63550	1	63550		63550
18	RAIN WATER HARVESTIG TANK AT SOORYAKANTHIKAVALA, (CHINNAPPU HARIHARAPURAM) FOR 10 FAMILIES-15000LITER	Nos.	71140	1	71140		71140

19	RAIN WATER HARVESTIG TANK AT SOORYAKANTHIKAVALA, 3rd DIVISION(CHACKOCHANPADI) -25000LITER	Nos.	128163	1	128163		128163
20	RAIN WATER HARVESTIG TANK AT SOORYAKANTHIKAVALA, 3rd DIVISION(COMMUNITY HALL) -10000LITER	Nos.	62035	1	62035		62035
21	RAIN WATER HARVESTIG TANK AT CHEENTHALAR ,3rd DIVISION ,MUKKALAEKKAR(PONNOOS PODIVILAYIL) -10000LITER	Nos	63550	1	63550		63550
22	RAIN WATER HARVESTIG TANK AT CHEENTHALAR ,3rd DIVISION ,MUKKALAEKKAR(SUNNY ASARIKKUDIYIL) -10000LITER(FOR 4 FAMILIES)	Nos.	67200	1	67200		67200
23	RAIN WATER HARVESTIG TANK AT CSI CHURCH, CHEENTHALAR -10000LITER	Nos	62035	1	62035		62035
ROUNDED FIGURE							11
TOTAL							6896389
GRAND TOTAL							6896400

4. PRODUCTION SYSTEM MANAGEMENT

All the activities in the Production System management activities are included as per the proposals collected from FGDs and SHG/ JLG meetings conducted in the Project area, and a separate list of beneficiaries were also prepared and kept with the PIA. Item wise annual actions plans are mentioned below.

4.1 MASTER PLAN OF PRODUCTION SYSTEM MANAGEMENT

Cheenthalar Watershed PSM-Consolidated Action Plan

Sl. No.	Activities	Unit	Unit Rate	Physical Units	Financial		
					IWMP	Convergence	Total
1	VEGETABLE GARDEN (Seed And Organic manure)	Ha	37500	6	225000		225000
2	BANANA CULTIVATION (Tissue culture)	Ha	50000	6.5	325000		325000
3	SPICES CULTIVATION (Ginger, Turmeric)	Ha	30000	2.5	75000		75000
4	TAPIOCA CULTIVATION	Ha	30000	4.5	135000		135000
5	BEEKEEPING	Nos	6000	11	66000		66000
6	MUSHROOM CULTIVATION	Nos.	30000	10	300000		300000
7	PEPPER AREA EXPANSION	Ha	60000	1.75	105000		105000
	ROUNDED FIGURE						500
	TOTAL						1231000
	GRAND TOTAL						1231500

5. LIVELIHOOD SUPPORT SYSTEM

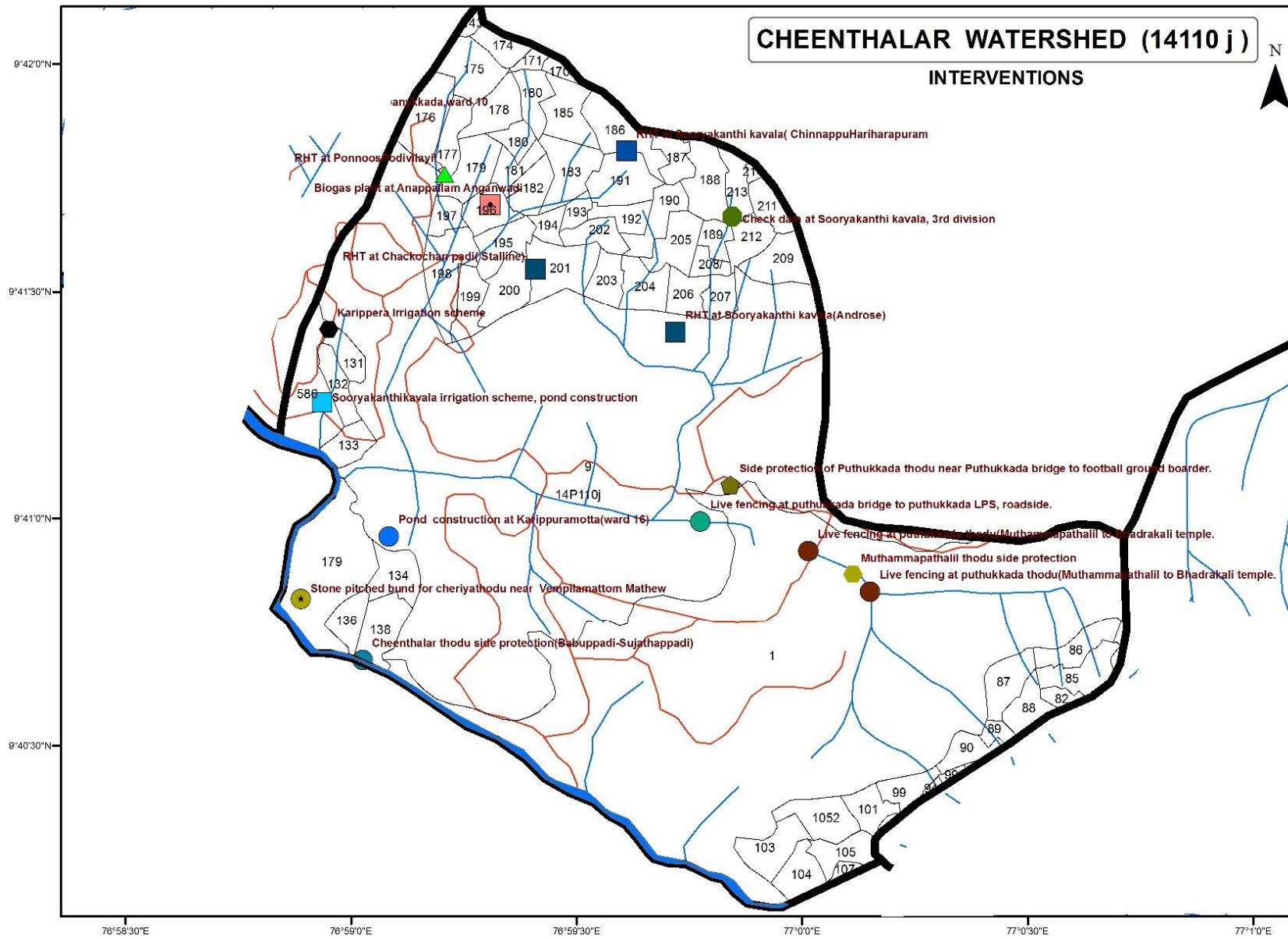
Livelihood support system activities are such as Goat rearing, Floriculture, , Dairy and Food processing units, etc., are included as per the proposals collected from FGDs and SHG/ JLG meetings conducted in the Project area, and a list of beneficiaries were also prepared and kept with the PIA . Item wise annual action plans are mentioned below.

5.1 MASTER PLAN OF LIVELIHOOD SUPPORT SYSTEM

Cheenthalar Watershed Livelihood Consolidated Action Plan

Sl. No.	Activity	Physical Quantity	Unit Cost	Beneficiary Contribution/unit	Financial			
					IWMP	Beneficiary Contribution	Bank Loan	Total
1	Seed Money for JLGs							
1.1	Calf rearing, 2 nos.	10	20000		200000			200000
1.2	Goat rearing, 2nos.	30	6000		180000			180000
1.3	Back yard poultry, 10 nos	104	2500		260000			260000
1.4	Food Processing Unit	3	23000		69000			69000
1.5	Tailoring / Cloth Bag Unit	2	15000		30000			30000
1.6	Soap & Washing Powder Unit	1	10000		10000			10000
1.7	Weed Cutter	1	25000		25000			25000
2	Grant in aid for JLGs							
2.1	Milk Processing & Marketing Unit	1	150000		66670	12500	70830	66670
2.2	Eco-friendly products	2	200000		100005	14999	84996	200010
2.3	Paper Bags & glass making unit	1	100000		67670	4850	27480	67670
	TOTAL							1108350

INTERVENTION MAP OF CHEENTHALAR WATERSHED



CHAPPATH WATERSHED

(14P111a)

1. INTRODUCTION

The Chappath watershed bearing the code number (14P111a) situated in the village of Upputhara in the Grama Panchayath of Upputhara in the Kattappana block in Idukki district extends to a total area of 303ha. The watershed lie down between 77°0'9.309"E 9°39'43.657"N TO 77°1'45.025"E 9°41'41.141".The watershed shares its boundaries with Periyar in the east, Charukallu, Peerumedu Tea estate u in the west, 6th Mile bus stop Jn., 27 puthuval, Karuntharuvi Estate on the south and Upputhara Jumamasjid, Pathekkar, Lone tree Tea Estate on the north. The watershed comprises of the wards 12, 13&14(partially) of the Panchayath. Major places in this watershed are Upputhara Jumamasjid, Lontappanpadi, Porikanni, Shyamalapadi, Kadambayilpadi, Chappath, 6thmile bus stop Jn., 27Puthuval, Aanandanpadi, Charukallu, Velikkakathpadi, Lonetree,St.Philominas shesham Church Lone tree ,Ration shop Jn., Pathekkar etc.,

2. BOUNDARIES OF MICRO WATERSHED

Chappath Watershed	North	Upputhara Jumamasjid, Pathekkar, Lone tree Tea Estate
	South	6th Mile bus stop Jn., 27 Puthuval, Karuntharuvi Estate
	West	Charukallu, Peerumedu Tea estate
	East	Periyar
	Geographical Coordinates'	77°0'9.309"E 9°39'43.657"N TO 77°1'45.025"E 9°41'41.141"

1. FUNDING PATTERN OF CHAPPATH WATERSHED

TABLE 1.1 FUNDING MASTER PLAN FOR FOUR YEARS

MASTER PLAN FOR 4 YEAR											
CHAPPATH WATERSHED											
TOTAL TREATABLE AREA - 517 Ha					TOTAL AMOUNT - 517 x 15000/ Ha = Rs.7755000/-						
YEAR	ADMINISTRATION	MONITORING	EVALUATION	ENTRY POINT ACTIVITY	INSTITUTION & CAPACITY BUILDING	DPR PREPERATION	NATURAL RESOURCE MANAGEMENT ACTIVITIES	LIVELIHOOD ACTIVITIES	PRODUCTION SYSTEM 7 MICRO ENTERPRISES	CONSOLIDATION PHASE	TOTAL IWMP PROJECT
FIRST	96937.5	15510	7755	310200	19387.5	77550	868560	139590	155100		527340
%	1.25	0.2	0.1	4	0.25	1	11.2	1.8	2		6.8
SECOND	271425	19387.5	19387.5		155100		1302840	209385	232650		2985675
%	3.5	0.25	0.25		2		16.8	2.7	3		38.5
THIRD	271425	19387.5	19387.5		155100		1302840	209385	232650		2985675
%	3.5	0.25	0.25		2		16.8	2.7	3	0	38.5
FOURTH	135712.5	23265	31020		58162.5		868560	139590	155100	232650	1256310
%	1.75	0.3	0.4		0.75		11.2	1.8	2	3	16.2
TOTAL	775500	77550	77550	310200	387750	77550	4342800	697950	775500	232650	7755000
%	10	1	1	4	5	1	56	9	10	3	100

2.ENTRY POINT ACTIVIITY:

Name Of Watershed	Panchayath	Name Of Work	Ward	Amount	Latitude	Longitude	Area benefited (Ha)/beneficiaries
Chappath (14P111a)	Upputhara	Renovation of water Tank Porikanni		15120			
EPA TOTAL AMOUNT				310200/-			

3. NATURAL RESOURCE MANAGEMENT (NRM)

Natural resource management activities are such as afforestation, Horticulture, Soil & moisture conservation, vegetative and engineering structure and water harvesting structures. Item wise annual action plans are mentioned below as well as the year wise financial tables. The contribution to WDF shall be a minimum 10 % of the cost of NRM works executed on private land. In case of SC/ST, small and marginal farmers, the minimum contribution shall be 5 % of cost of NRM works executed on their land.

TABLE 3.1 MASTER PLAN OF NATURAL RESOURCE MANAGEMENT**Chappath Watershed NRM Consolidated Action Plan**

Sl. No.	Activities	Unit	Unit Rate	Physical Units	Financial		
					IWMP	Convergence	Total
1	AGROFORESTRY	Nos	40	2500	100000		100000
2	FRUIT PLANTS	Nos	60	3000	180000		180000
3	FODDER GRASS CULTIVATION	Ha	6000	1.5	9000		9000
4	STONE PITCHED BUND	RM	143.52	2500	358800		358800
5	COMPOST PIT	Nos	726	65	47190		47190
6	LIVE FENCING	RM	20	3023	60460		60460
7	VERMI COMPOST	Nos	30000	5	150000		150000
8	BIOGAS PLANT (2m3)	Nos	33730	3	101190		101190
9	SILPAULIN PONDS	Nos	27020	10	270200		270200
10	WELL RECHARGE(GROUND WATER RECHARGE)	Nos	11119	75	833925		833925
11	SOAK PITS	Nos	5617	45	252765		252765
12	FARM PONDS	Nos	30000	8	240000		240000
13	RAIN WATER HARVESTING TANK FOR INDIVIDUALS (CAPACITY-5000LITRE)	Nos	30000	25	750000		750000
14	FARM PONDS RENOVATION	Nos	14500	10	145000		145000
15	SIDE PROTECTION OF OOLEN THODU(NEAR AAYILIMALIKULAM)	Nos	65000	1	65000		65000
16	AAYILIMALI POND RENOVATION	Nos	13500	1	13500		13500
17	RETAINING WALL OF PATHEKKAR ANGANWADI- SIDE PROTECTION	Nos	40000	1	40000		40000
18	RAIN WATER HARVESTING TANK AT VANIYAPPURA ANGANWADI ,NEAR RATIONKADAPPADI(15000 LITTER)	Nos	127431	1	127431		127431
19	KADAMBAYIL PADI POND RENOVATION AT K.J. JOSEPH KADAMBAYIL	Nos	34243	1	34243		34243
20	PORIKANNI RATION KADAPPADI POND RENOVATION (DESILTATION)	Nos	14648	1	14648		14648
21	POND RENOVATION AT KARINTHARUVI 6 th MILE , 5 th BLOCK (ESTATE)	Nos	265907	1	265907		265907
22	NEW POND CONSTRUCTION AT ELAKKANAM ,KARINTHARUVI (NEAR SAADHU)	Nos	182437	1	182437		182437
23	POND RENOVATION AT KARINTHARUVI 6 th MILE, JOSEPH KANDATHIL PARAMBIL, FOR 5 FAMILIES.	Nos	101104	1	101104		101104
ROUNDED FIGURE							0
TOTAL							4342800
GRAND TOTAL							4342800

4. PRODUCTION SYSTEM MANAGEMENT

All the activities in the Production System management activities are included as per the proposals collected from FGDs and SHG/ JLG meetings conducted in the Project area, and a separate list of beneficiaries were also prepared and kept with the PIA. Item wise annual actions plans are mentioned below.

TABLE 4.1 MASTER PLAN OF PSM

Chappath Watershed PSM -Consolidated Action Plan

Sl. No.	Activities	Unit	Unit Rate	Physical Units	Financial		
					IWMP	Convergence	Total
1	VEGETABLE GARDEN (Seed And Organic manure)	Ha	37500	4	150000		150000
2	BANANA CULTIVATION (Tissue culture)	Ha	50000	5	250000		250000
3	SPICES CULTIVATION (Ginger, Turmeric)	Ha	30000	1	30000		30000
4	TAPIOCA CULTIVATION	Ha	30000	3.5	105000		105000
5	BEEKEEPING	Nos	6000	5	30000		30000
6	MUSHROOM CULTIVATION	Nos.	30000	3	90000		90000
7	PEPPER AREA EXPANSION	Ha	60000	2	120000		120000
	ROUNDED FIGURE						500
	TOTAL						775000
	GRAND TOTAL						775500

5. LIVELIHOOD SUPPORT SYSTEM

The activities proposed under the livelihood action plan below are meant for improving livelihood of the poor and marginalized people in the project area. It is proposed to earmark 9 percent of the total allotted amount for the activities under this plan. Major portion of this component (70%) is suggested to give the SHGs working in the project area as revolving funds for improving their livelihood improvement/ Income generation activities. For each SHGs in the project area, will give revolving funds of Rs.25, 000/- per SHG during the project period. The beneficiary SHGs will be selected mainly on the basis of criteria currently used to rate the SHGs. If any change in the criteria is required with regard to the selection of beneficiary SHGs, same will be decided at

the time of selection considering the suitable factors and according to State level policies. Livelihood support system activities are such as Goat rearing, Floriculture, , Dairy and Food processing units, etc., are included as per the proposals collected from FGDs and SHG/ JLG meetings conducted in the Project area, and a list of beneficiaries were also prepared and kept with the PIA . Item wise annual action plans are mentioned below

Chappath Watershed- Livelihood Consolidated Action Plan

Sl. No.	Activity	Physical Quantity	Unit Cost	Beneficiary Contribution/unit	Financial			
					IWMP	Beneficiary Contribution	Bank Loan	Total
1	Seed Money for JLGs							
1.1	Calf rearing, 2 nos.	6	20000		120000			120000
1.2	Goat rearing, 2nos.	13	6000		78000			78000
1.3	Back yard poultry, 10 nos	85	2500		212500			212500
1.4	Food Processing Unit	2	23000		46000			46000
1.5	Weed Cutter	1	25000		25000			25000
2	Grant in aid for JLGs							
2.1	Cloth Bag Unit	1	50000		43590	962	5448	43590
2.2	Milk Processing & Marketing Unit	1	150000		63885	12917	73198	63885
2.3	Paper Bags & glass making unit	1	100000		64885	5267	29848	64885
2.4	Candle Manufacturing Unit	1	50000		44090	887	5023	44090
	TOTAL							697950

PART – III

1. EXPECTED OUTCOMES

Projects under IWMP are a multi-disciplinary which include Natural Resource Management, Production System, Micro enterprises and Livelihood activities. The project conceives to bring in holistic and sustainable development in the concerned areas. This programme mainly focus on activities which create employment opportunities, enhance income, decrease migration, increase productivity, which would ensure sustainable livelihood opportunities for the community. The expected outcomes are given in the table below.

INTERVENTIONS	ACTIVITIES	OUTCOMES
1. WATERSHED DEVELOPMENT WORKS A. LAND DEVELOPMENT	Adoption of suitable land development works like, <u>AFFORESTATION</u> <u>HORTICULTURE</u> <u>AGRICULTURE</u> Vegetable Garden - 39 Ha Banana Cultivation - 35 Ha Spices Cultivation - 26 Ha Tuber Crops - 21.25 Ha Fodder Grass Cultivation - 14.5Ha Mixed Crop - 21.75 Ha	Organic crop production from an extent of about 97.2 ha of the watershed area can be enhanced substantially. Soil erosion is significantly reduced as tree plantations prevent run off after heavy rains. In addition, trees bring soils together which prevents soil erosion in the project area. Water infiltration is increased, and runoff and erosion are consequently decreased. Compaction is reduced so roots can freely explore the soil for nutrients and water, increasing yields in the area. creates 1120 man labour days every year.
B. SOIL AND MOISTURE CONSERVATION	Adoption of suitable soil and moisture conservation measures like , Stone Pitched Bund - 7959m Contour Terracing - 1Ha Centripetal Terracing - 13 Ha Live Fencing – 19359 M	Rain water will be conserved to recharge Ground Water Level. Valuable Top Soil source in about 1104 ha of land will be protected from soil erosion. Strengthen outer bunds by planting fodder grass along the slope facing eras and reduce the soil erosion. Employment for around 860 landless or asset less poor every year .
C. VEGETATIVE AND ENGINEERIG STRUCTURE	Streams Side Protection –2519 M Pond side protection – 4 Nos	Water conservation in about 1012 ha of the project area, control soil erosion and Problem of drinking water in the watershed area gets substantially solved.
D. WATER HARVESTING STRUCTURE	Well Recharge – 291 Nos Public pond Renovation – 3 Nos Pond Construction – 3 Nos Water Absorption Pit – 2500 Nos	Water conservation in about 1012 ha of the project area. Problem of drinking water in the watershed area gets substantially solved.112 M3 of rain water will be additionally collected in the project area. Depth to WT to be reduced by 1m in Mid lands and 1-1.5 m in High lands.

2. PRODUCTION SYSTEM AND MICRO ENTERPRISES	Beekeeping - 61 Unit Pisciculture - 27 Unit Vermicomposting – 141 Unit Biogas Plant – 45 Unit Floriculture - 15 unit Mushroom Cultivation – 59Unit Weed cutter-3nos. Dairy – 50 unit	By supplying 14286 nos poultry for 2381 families in the project area. Egg production in backyard system is a cheap and easy alternative to commercial egger farms which can augment the production and reduce the dependency on other states for our food. Promotion of non -conventional energy for daily cooking needs. Employment for around 230 land less or asset less poor every year
3.LIVELIHOOD ACTIVITIES	Goat Rearing - 231 unit Poultry - 19394nos.	To empower land less, asset less poor people. 25% Increase in milk production. 95 SHGs will get aid for strengthening their livelihood activities in every year. Generate employment opportunities for minimum 100 people every year.

2. WATERSHED DEVELOPMENT FUND (WDF)

One of the mandatory conditions for the selection of villages for watershed projects is people's contribution towards the Watershed Development Fund (WDF). 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. These contributions would be acceptable either in cash at the time of execution of works or voluntary labour. 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 will be distinct from the Watershed Committee (WC) bank account. Income earned from the assets created under the project on common property resources shall be credited to WDF.

3. EXIT PROTOCOL

While preparing the detailed project report, the Gramasabha /Grama Panchayath, under the technical guidance of WDT, shall evolve proper Exit Protocol for the watershed development project. The Exit Protocol shall specify a mechanism for maintenance of assets created, augmentation including levy and collection of user charges, utilization of the Watershed Development Fund etc. Mechanism for equitable distribution and sustainability of benefits accrued under the watershed development project should also be clearly spelt out in the Exit Protocol. While approving the Action Plan for the watershed, the ZP/ DRDA shall ensure that the detailed mechanism for such Exit Protocol forms part of the Action Plan/Treatment Plan.

4. PROJECT SUMMARY AND CONCLUSION

The Watershed cluster is located in Kattappana Block of the Idukki District. Upputhara, Elappara, Ayyappankoil and Kumali areas included in the watershed. The cluster is comprised of 6 micro watershed namely Cheenthalar, Valakode, Chappath, Karinkulam, Pookkulam and Haileyburia of Kattappana Block is part of the Western Ghats, which is recently declared as a world heritage site by IUCN. Total area of the watershed is 4465 hectares. There are 3523 households in the project area and the total population is 11704. The total project cost is 669.75 lakhs. State Department of Rural Development is the nodal department for the implementation of IWMP in Kerala. 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 approving the DPR at the district level. A District Level Coordination Committee-DLCC- has been constituted to facilitate integration of technology as required under

IWMP. A Watershed Cell Cum Data Centre (WCDC) is working under the Project Manager (PD, PAU) at the district level to assist the DLCC in the matter. The Kattappana Block Panchayath is the Programme Implementing Agency (PIA) of the project. A Block Level Coordination Committee (BLCC) has been formed for ensuring the coordination of line technologies and for the timely implementation of the project and to provide help to the PIA in technical and administrative matters related to the project. A separate Watershed Development Team (WDT) has been formed under the PIA. SEID is the Technical Support Organization (TSO).

Preparation of the DPR involved village level meetings and participatory discussions with people, elected representatives, officials and other stakeholders. A situational analysis was undertaken using secondary data and information collected from different sources. A Logical Framework Analysis was done at the project level for identifying the important problems (through problem tree analysis) as well as for the purpose of assessing the present situation. 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 of in the preparation of DPR. GIS Software was used for the preparation of maps. In depth interviews with officials, farmers, labourers, entrepreneurs of micro-enterprises etc. were also undertaken. Field level verification of the identified interventions was undertaken by the DPR preparation team. Most of the micro watersheds in the project area share common problems because of the similarities existing among the micro watersheds. The interventions proposed for the area covered under this project of IWMP are expected to help in restoring the ecological balance of the project area, in conserving the natural resources and in improving the livelihood opportunities of the people.