

Integrated Watershed Management Programme (IWMP)
Erattupetta Block Panchayath, Kottayam Dist.

Batch - V



DETAILED PROJECT REPORT

Prepared by

SUSTHIRA

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(Technical Support Organization)

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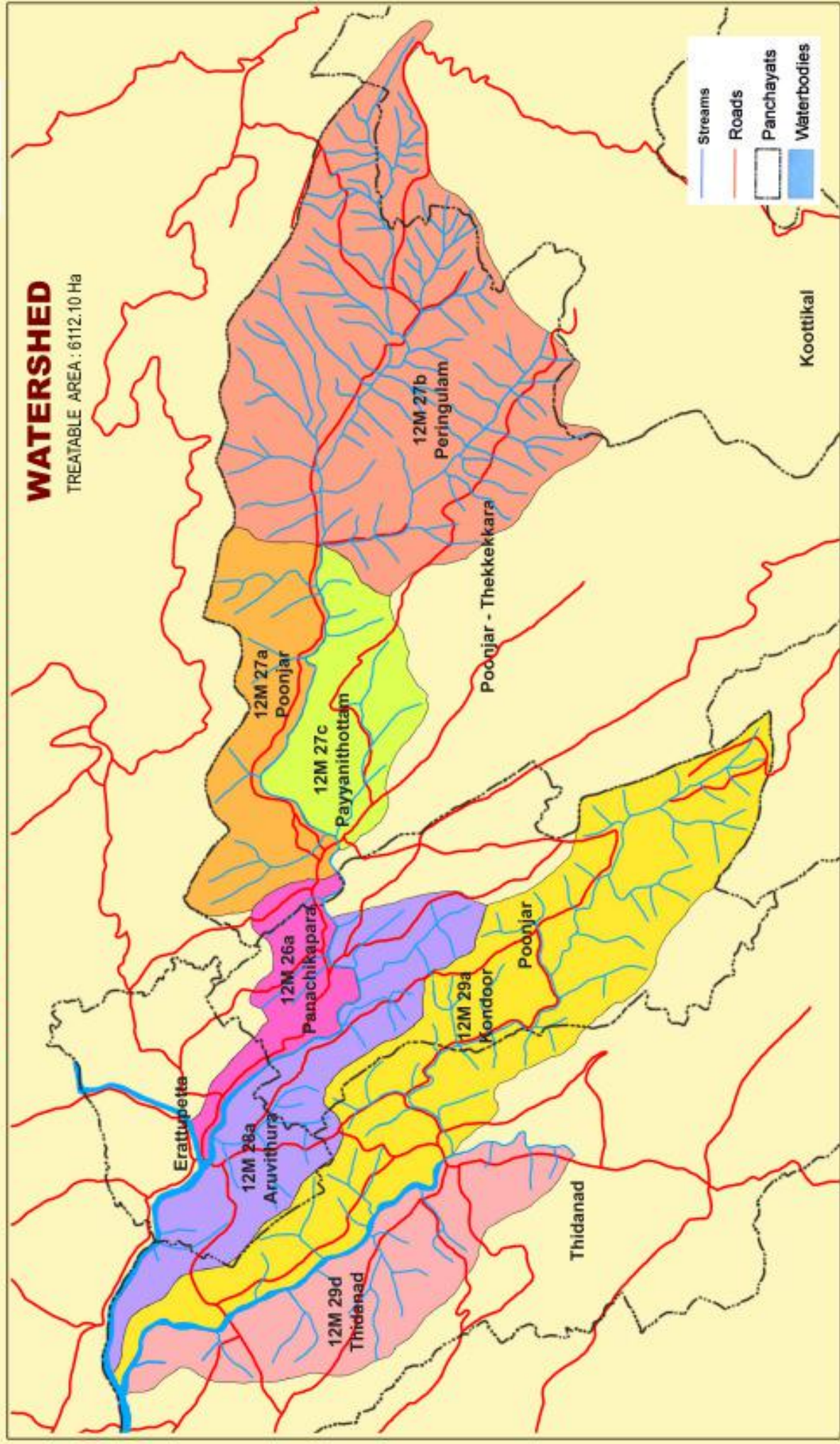


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INTEGRATED WATERSHED MANAGEMENT PROGRAMME

ERATTUPETTA BLOCK PANCHAYATH - KOTTAYAM DT.



Source: PPR - Prepared by Land Use Board
Prepared by: SUSTHIRA - Centre for Sustainable Development Studies and Action

LOCATION



KERALA KOTTAYAM DISTRICT

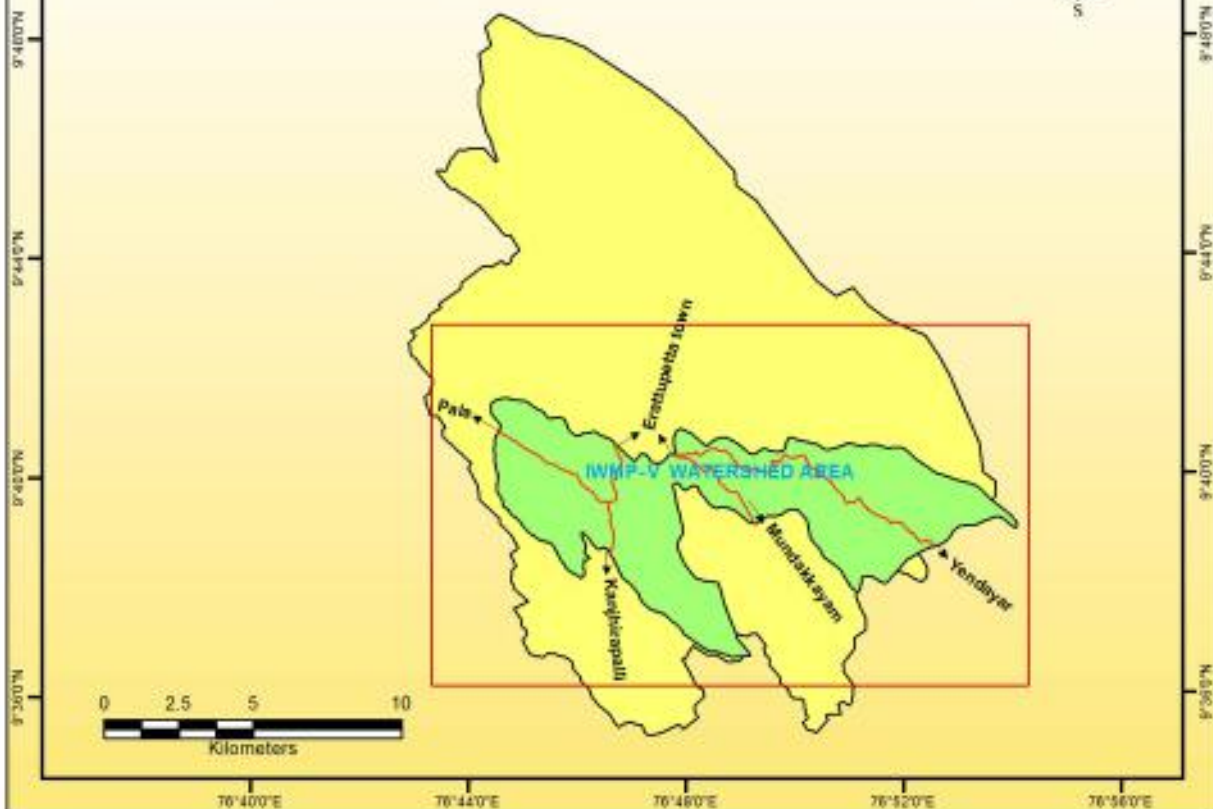


KOTTAYAM - ERATTUPETTA BLOCK



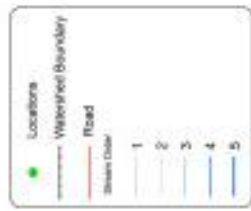
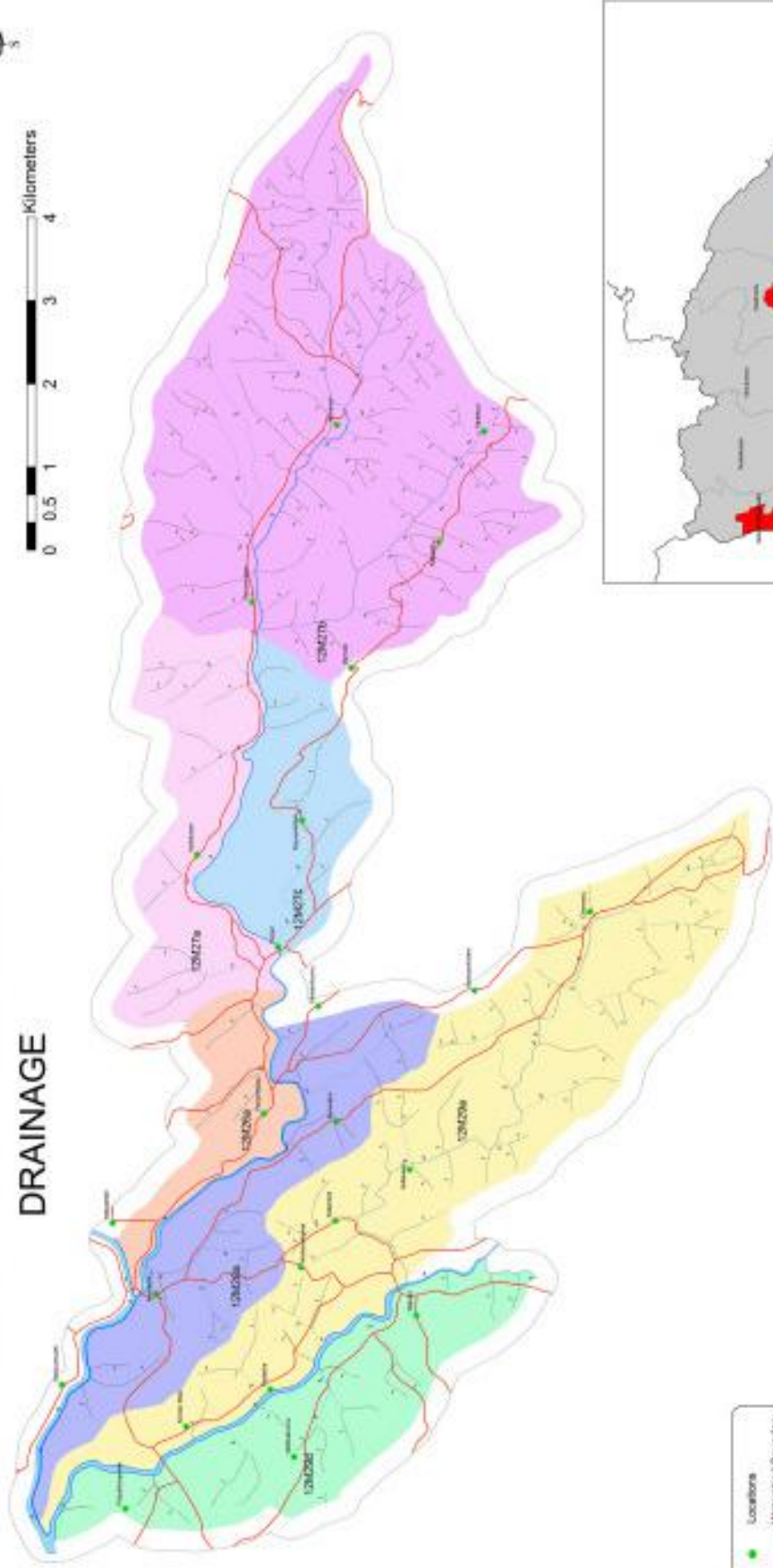
76°40'0"E 76°44'0"E 76°48'0"E 76°52'0"E 76°56'0"E

ERATTUPETTA IWMP- WATERSHED AREA

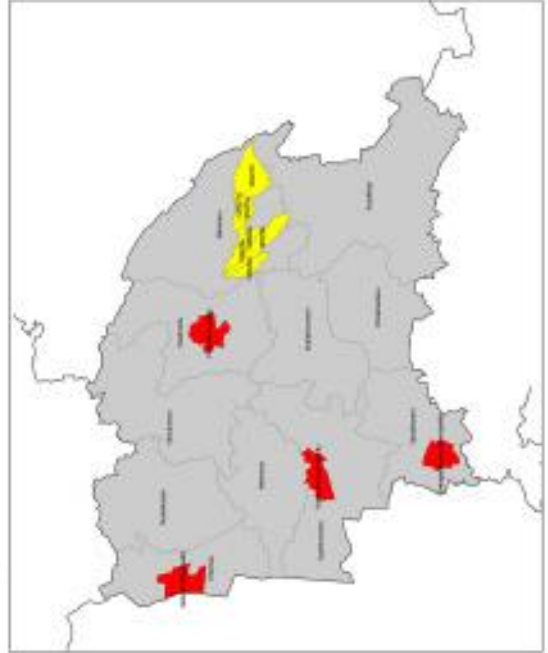


INTEGRATED WATERSHED MANAGEMENT PROGRAMME (IWMP - 5) ERATTUPETTA BLOCK PANCHAYATH

DRAINAGE



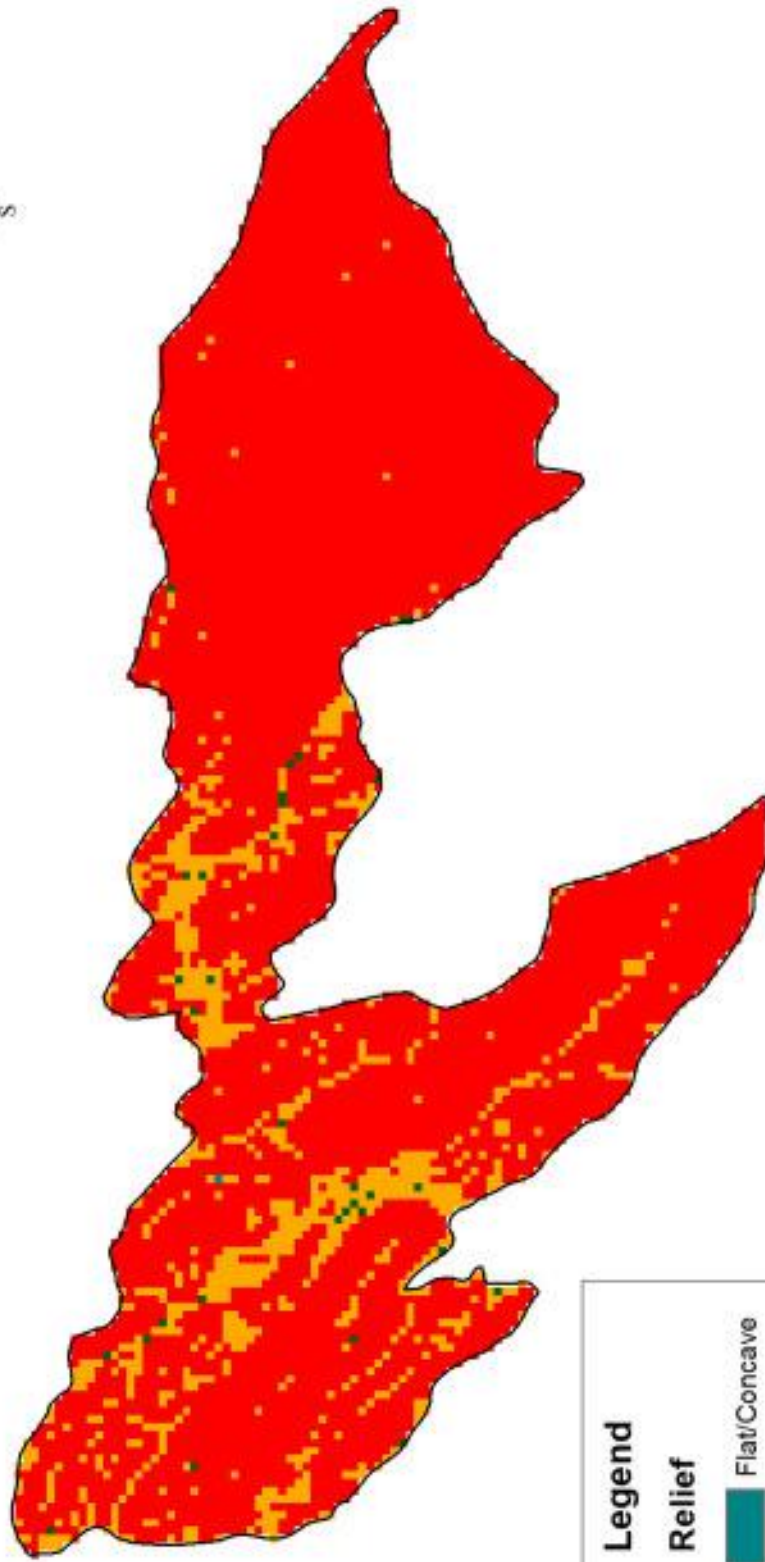
Drainage Pattern: Dendritic Type



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Source: Kerala State Landuse Board

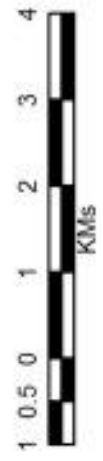
INTEGRATED WATERSHED MANAGEMENT PROGRAMME (IWMP - 5) ERATTUPETTA BLOCK PANCHAYATH

RELIEF



Legend

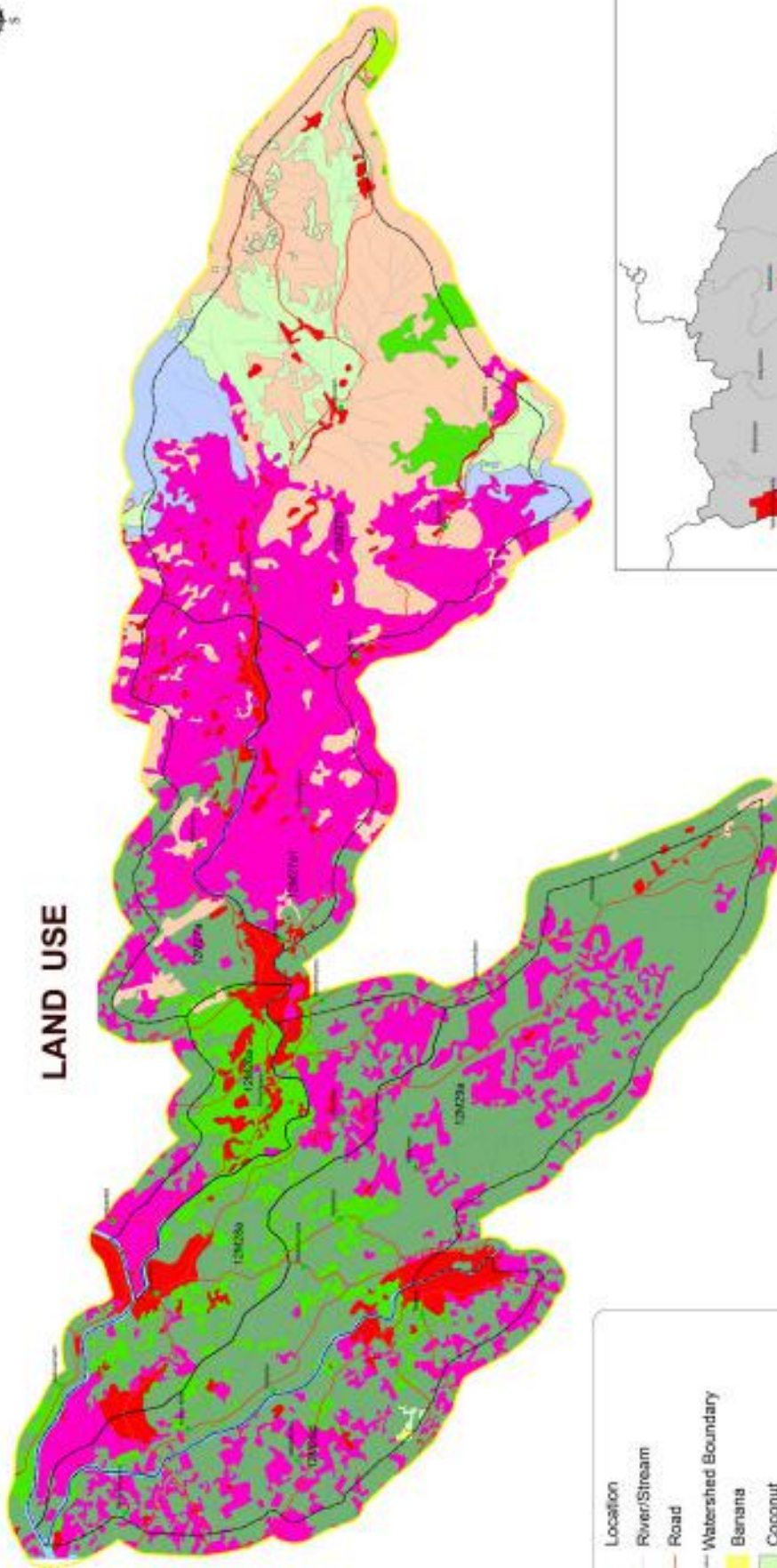
Relief	Color
Flat/Concave	Teal
Sub Normal	Green
Normal	Yellow
Excessive	Red



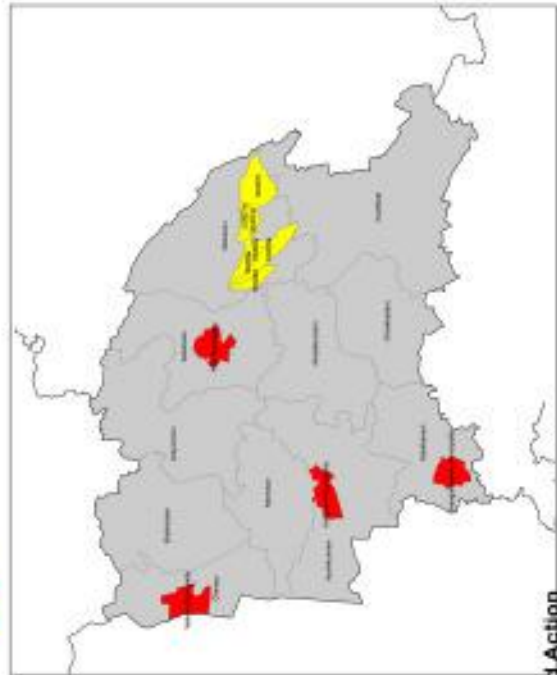
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Source: Kerala State Landuse Board

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LAND USE



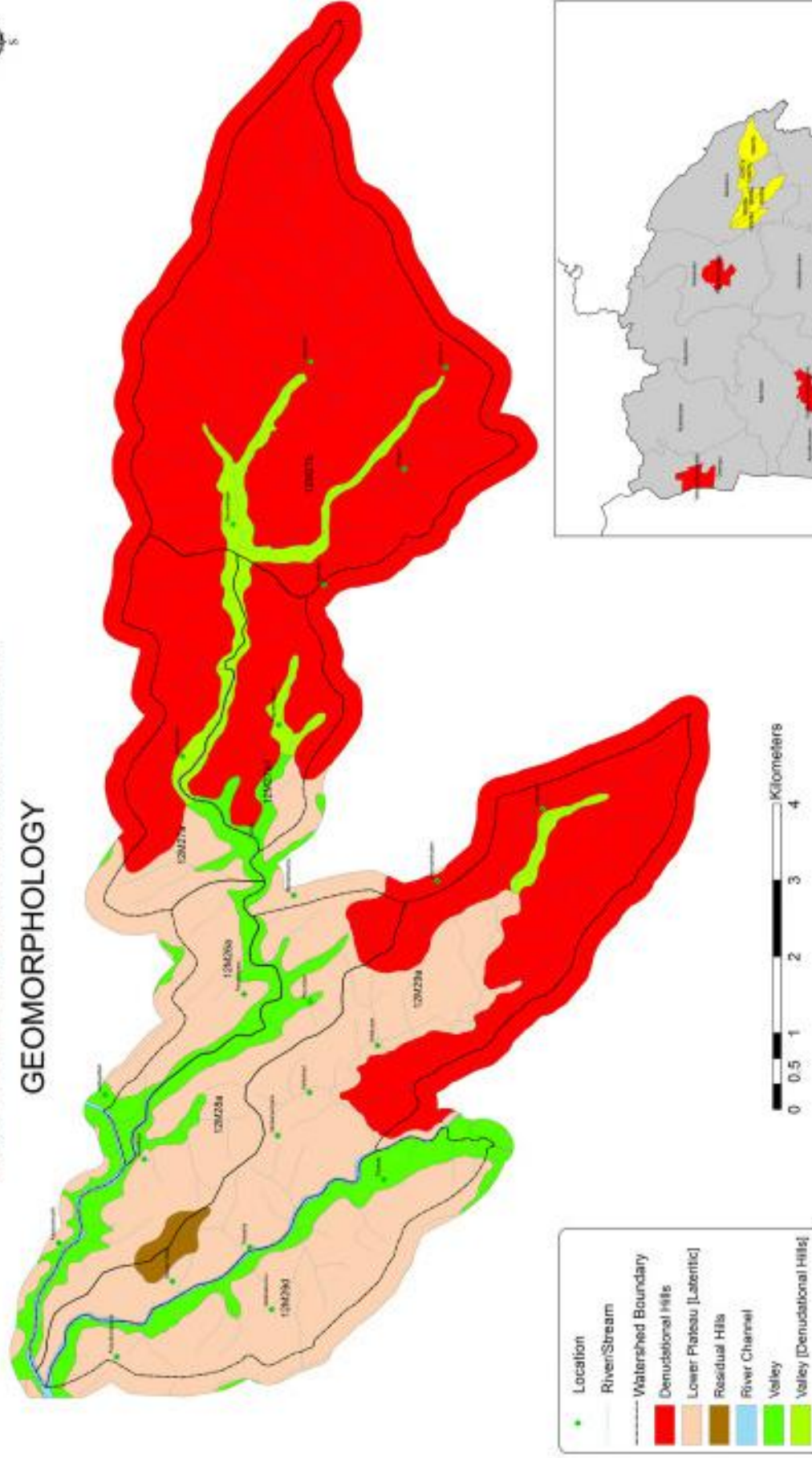
- Location
- River/Stream
- Road
- Watershed Boundary
- Banana
- Coconut
- Coconut dominant mixed crop
- Dense grass land
- Land with scrub
- Mixed built-up area
- Mixed crop
- Perennial crop
- Residential
- Rubber
- Tea



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 Source: Kerala State Landuse Board

INTEGRATED WATERSHED MANAGEMENT PROGRAMME (IWMP - 5) ERATTUPETTA BLOCK PANCHAYATH

GEOMORPHOLOGY



Prepared by: **SUSTHIRA Centre for Sustainable Development Studies and Action**
Source: Kerala State Landuse Board

76°45'0"E

76°48'0"E

76°51'0"E

76°54'0"E

INTEGRATED WATERSHED MANAGEMENT PROGRAMME (IWMP)

ERATTUPETTA BLOCK PANCHAYATH

GEOLOGY MAP



9°42'0"N

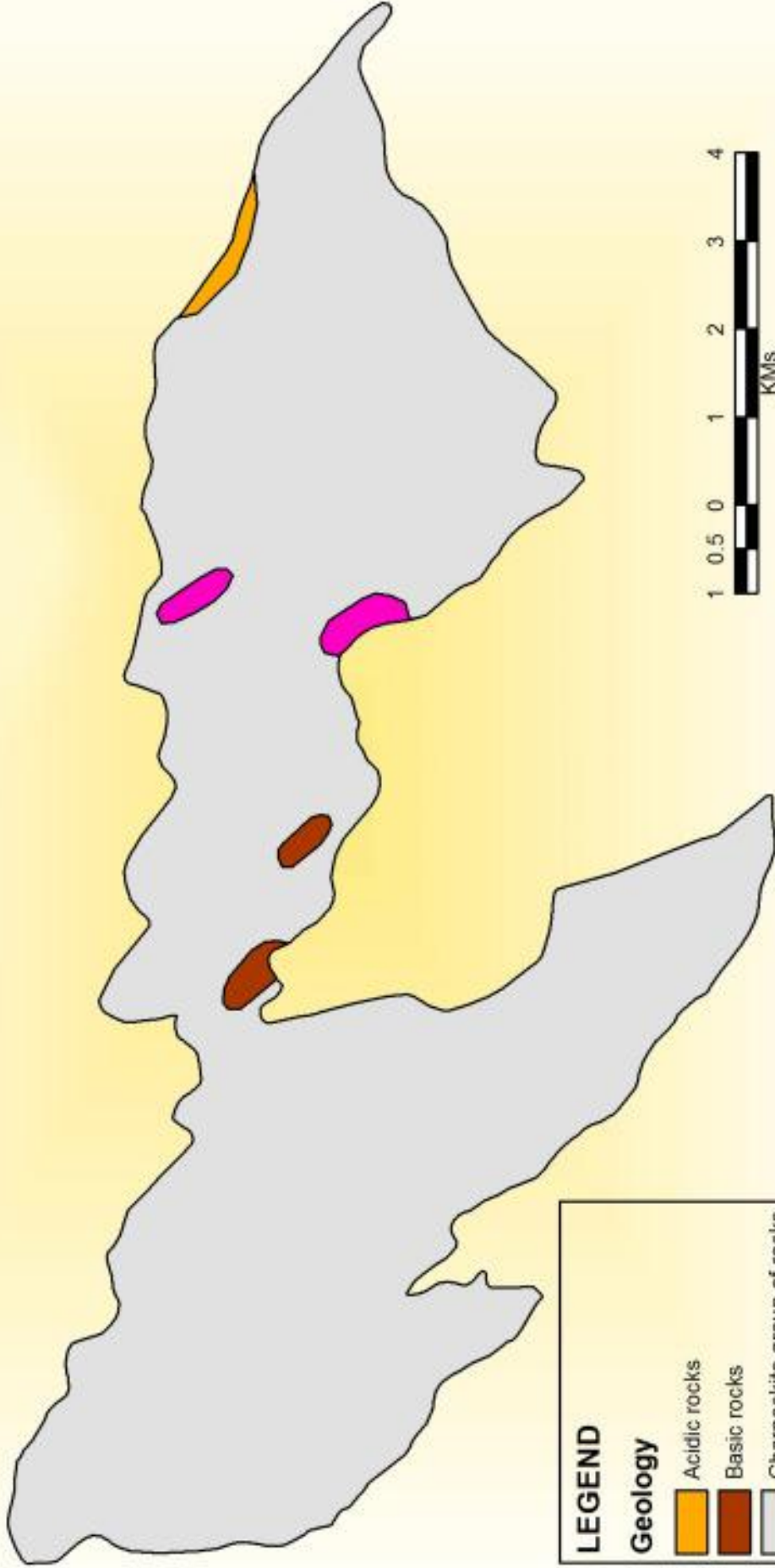
9°39'0"N

76°45'0"E

76°48'0"E





76°51'0"E

76°54'0"E



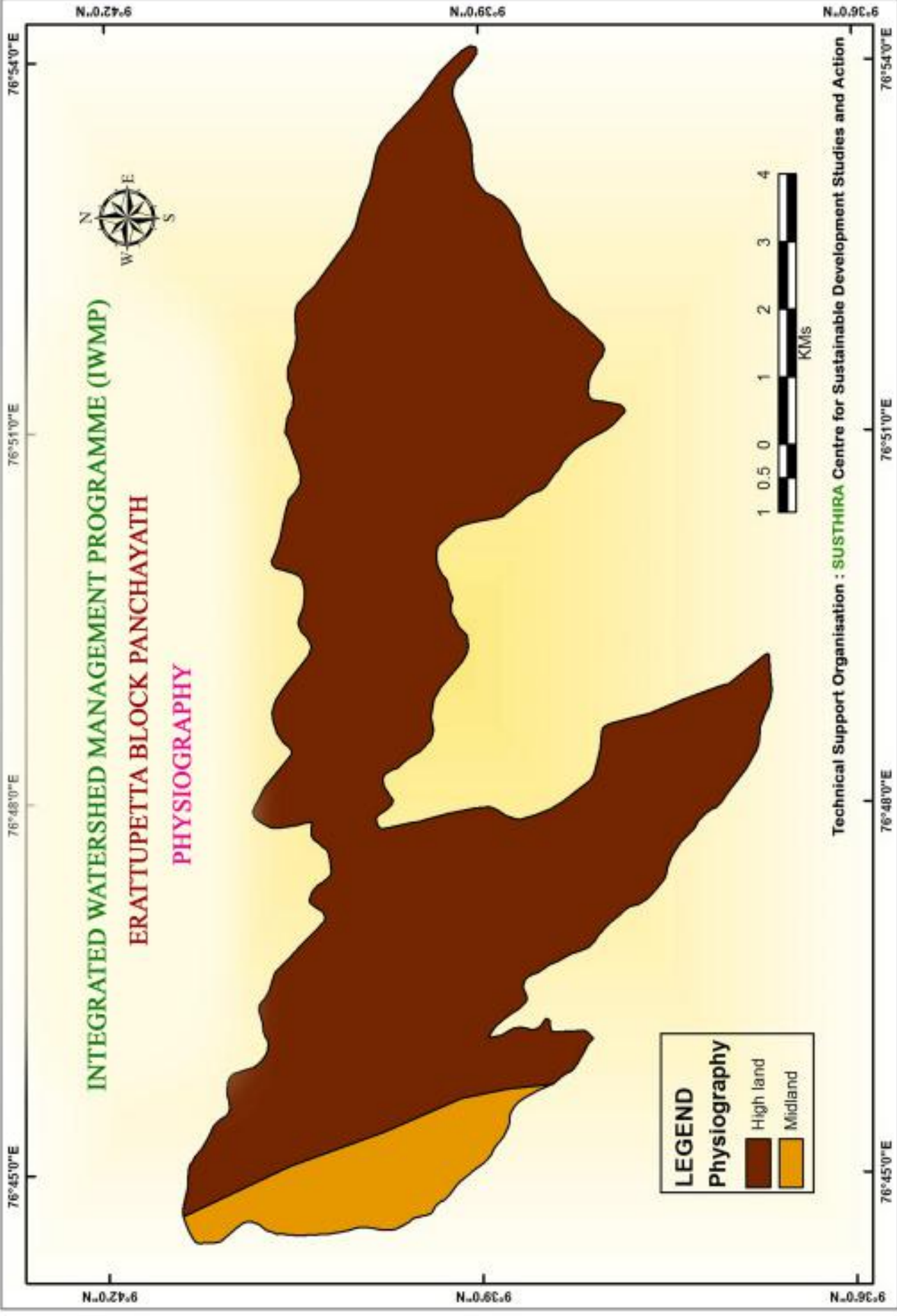
LEGEND

Geology

-  Acidic rocks
-  Basic rocks
-  Charnockite group of rocks
-  Khondalite group of rocks



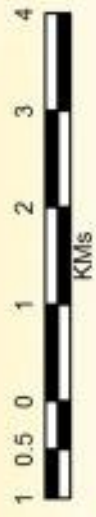
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INTEGRATED WATERSHED MANAGEMENT PROGRAMME (IWMP)
ERATTUPETTA BLOCK PANCHAYATH
PHYSIOGRAPHY

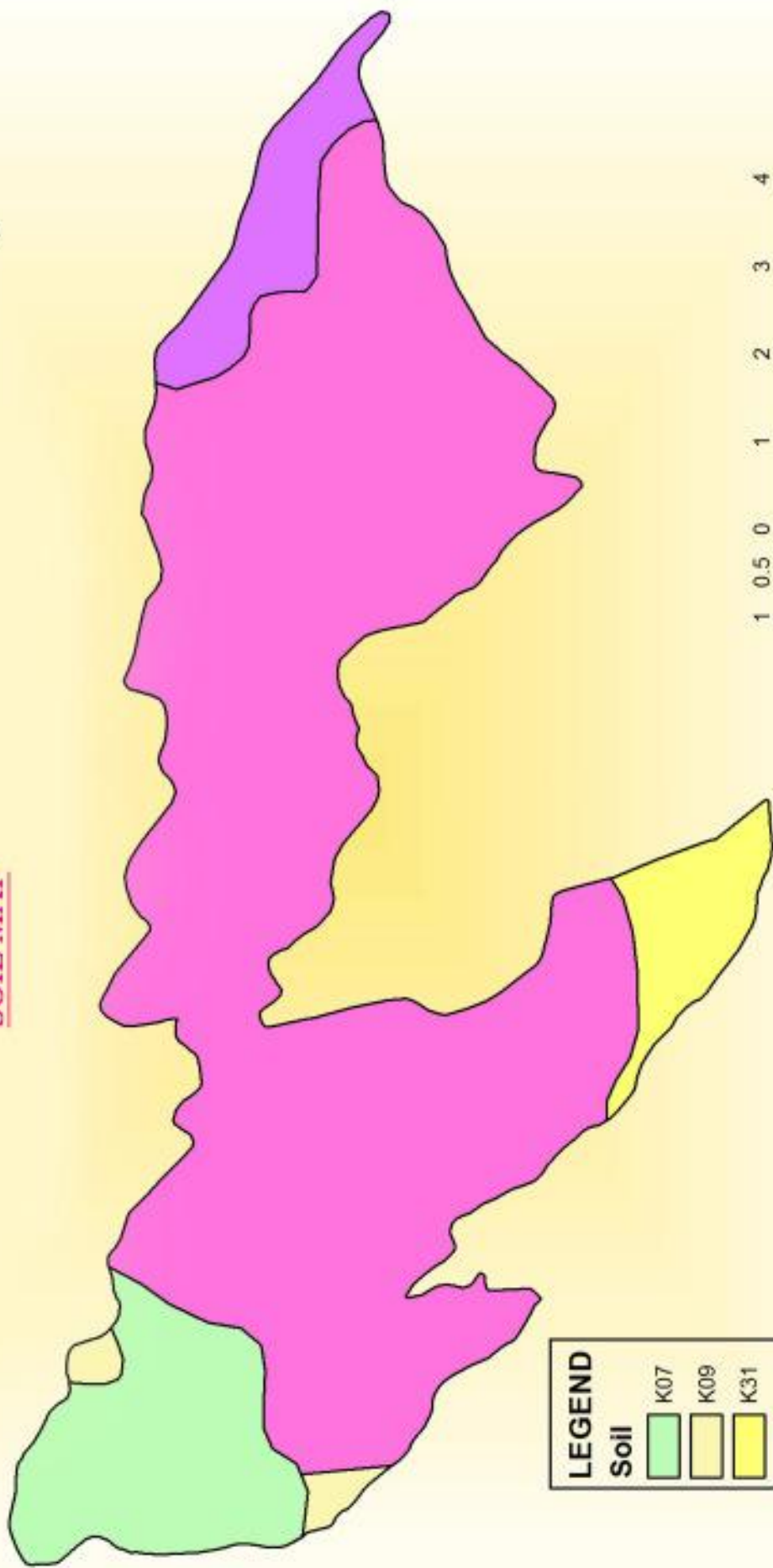
LEGEND
Physiography

	High land
	Midland



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INTEGRATED WATERSHED MANAGEMENT PROGRAMME (IWMP)
ERATTUPETTA BLOCK PANCHAYATH
SOIL MAP



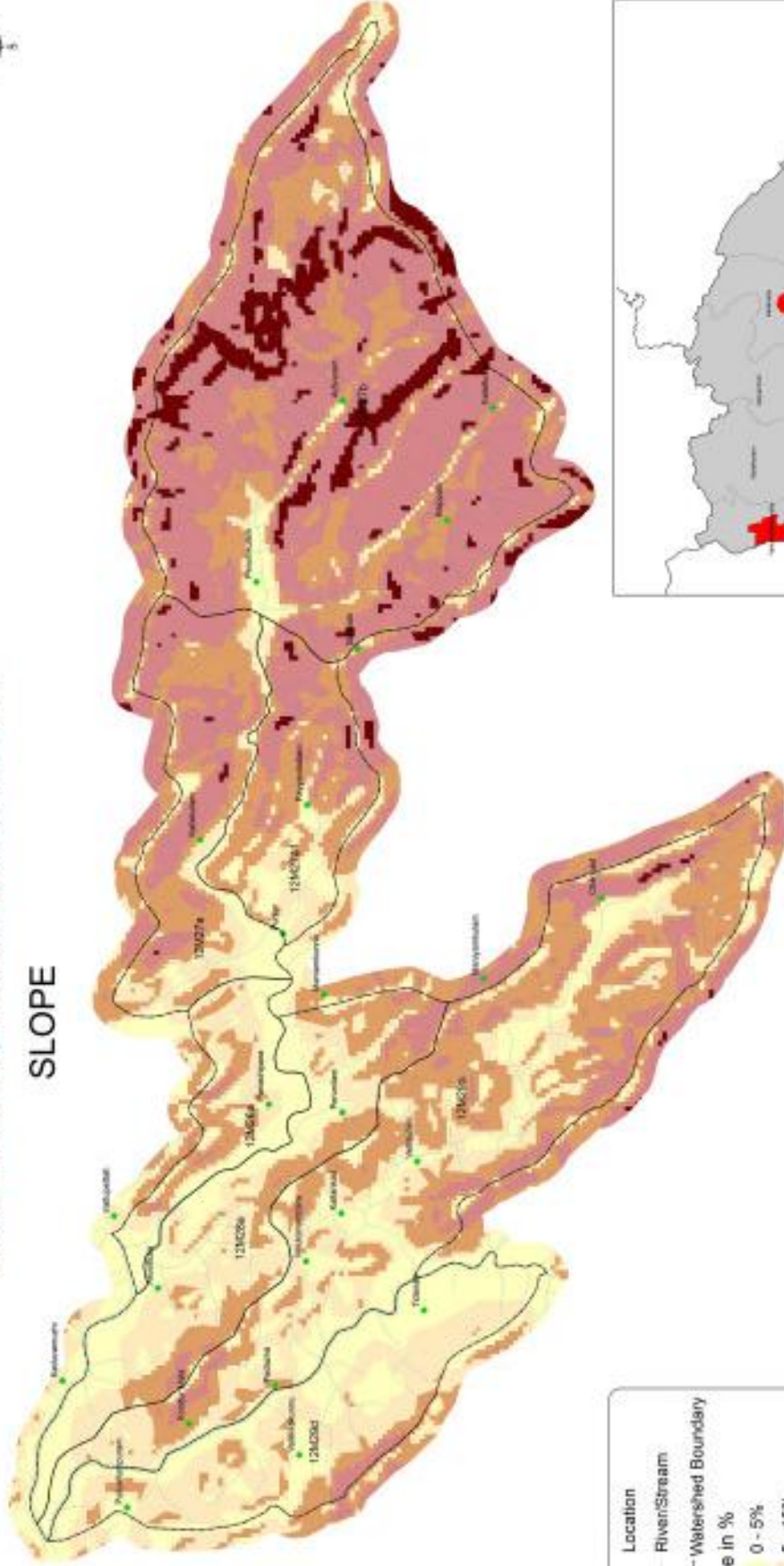
LEGEND	
Soil	
K07	
K09	
K31	
K36	
K38	



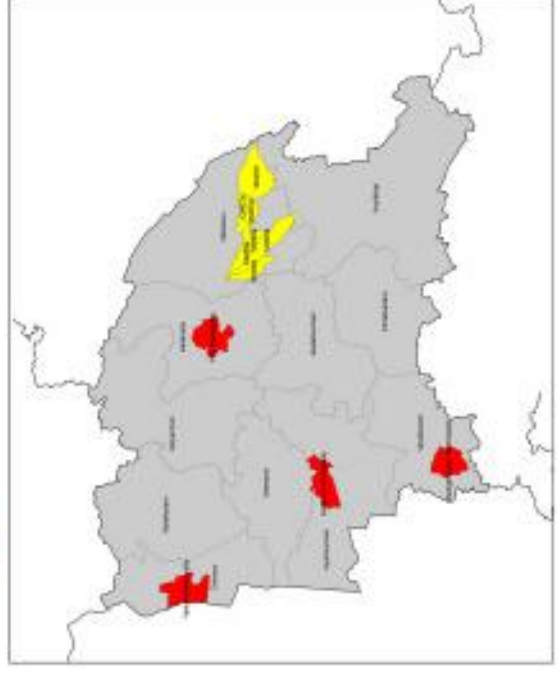
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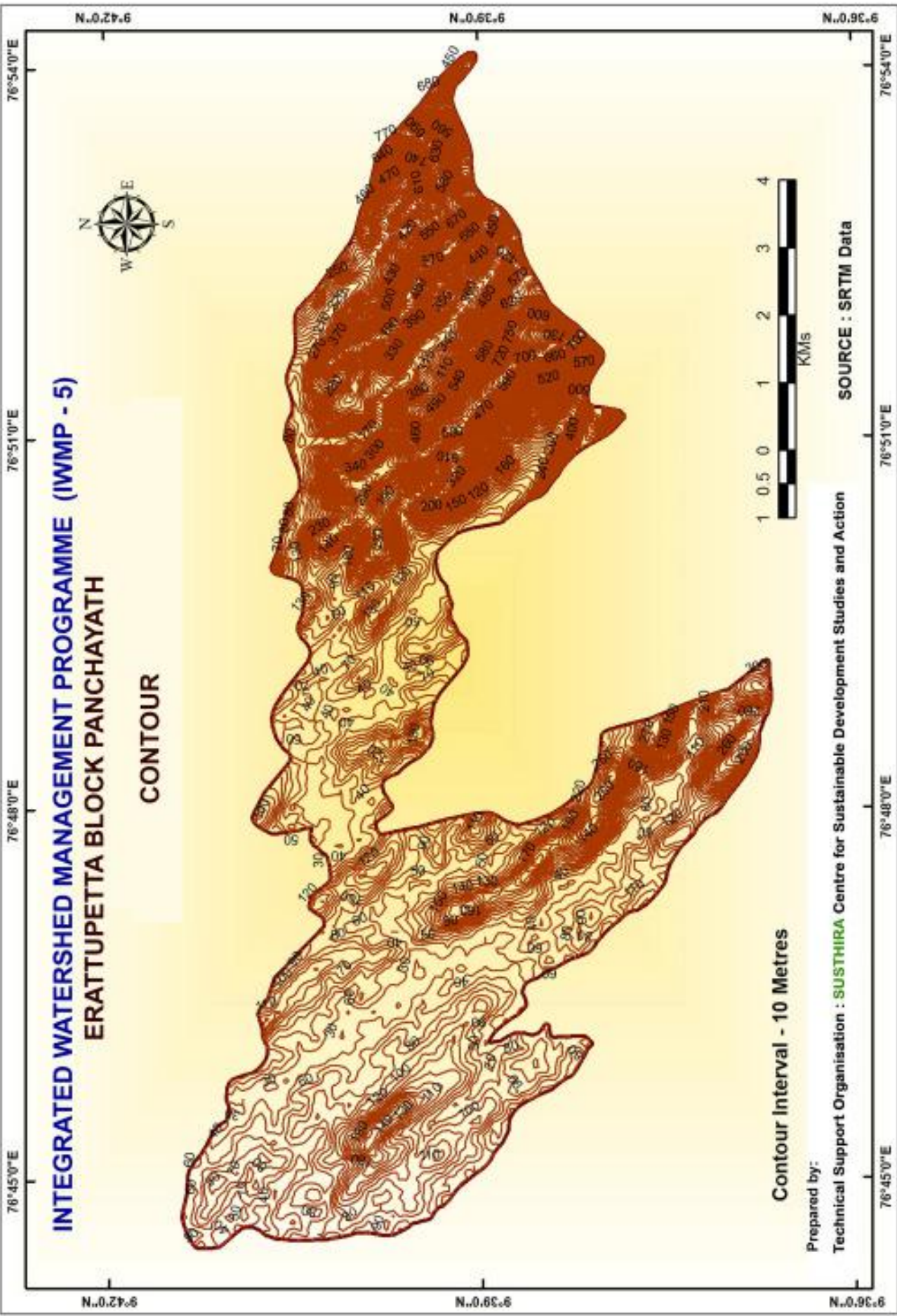
SLOPE



● Location
— River/Stream
- - - Watershed Boundary
Slope in %
 0 - 5%
 5 - 15%
 15 - 35%
 35 - 70%
 > 70%



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 Source: Kerala State Landuse Board



**INTEGRATED WATERSHED MANAGEMENT PROGRAMME (IWMP - 5)
ERATTUPETTA BLOCK PANCHAYATH**

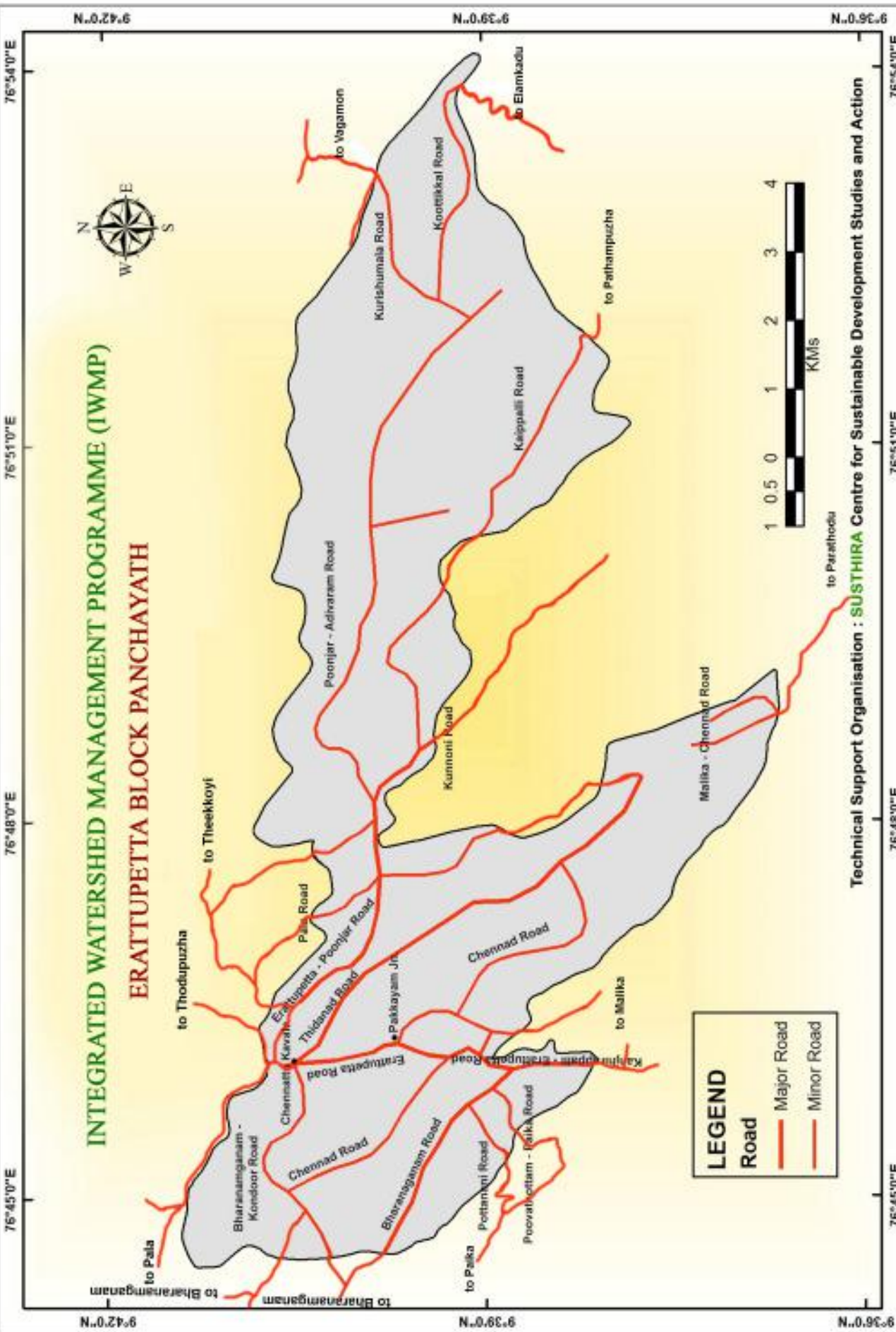
CONTOUR

Contour Interval - 10 Metres

Prepared by:
Technical Support Organisation : **SUSTHIRA** Centre for Sustainable Development Studies and Action
SOURCE : SRTM Data



**INTEGRATED WATERSHED MANAGEMENT PROGRAMME (IWMP)
ERATTUPETTA BLOCK PANCHAYATH**



LEGEND

Road		Major Road
		Minor Road

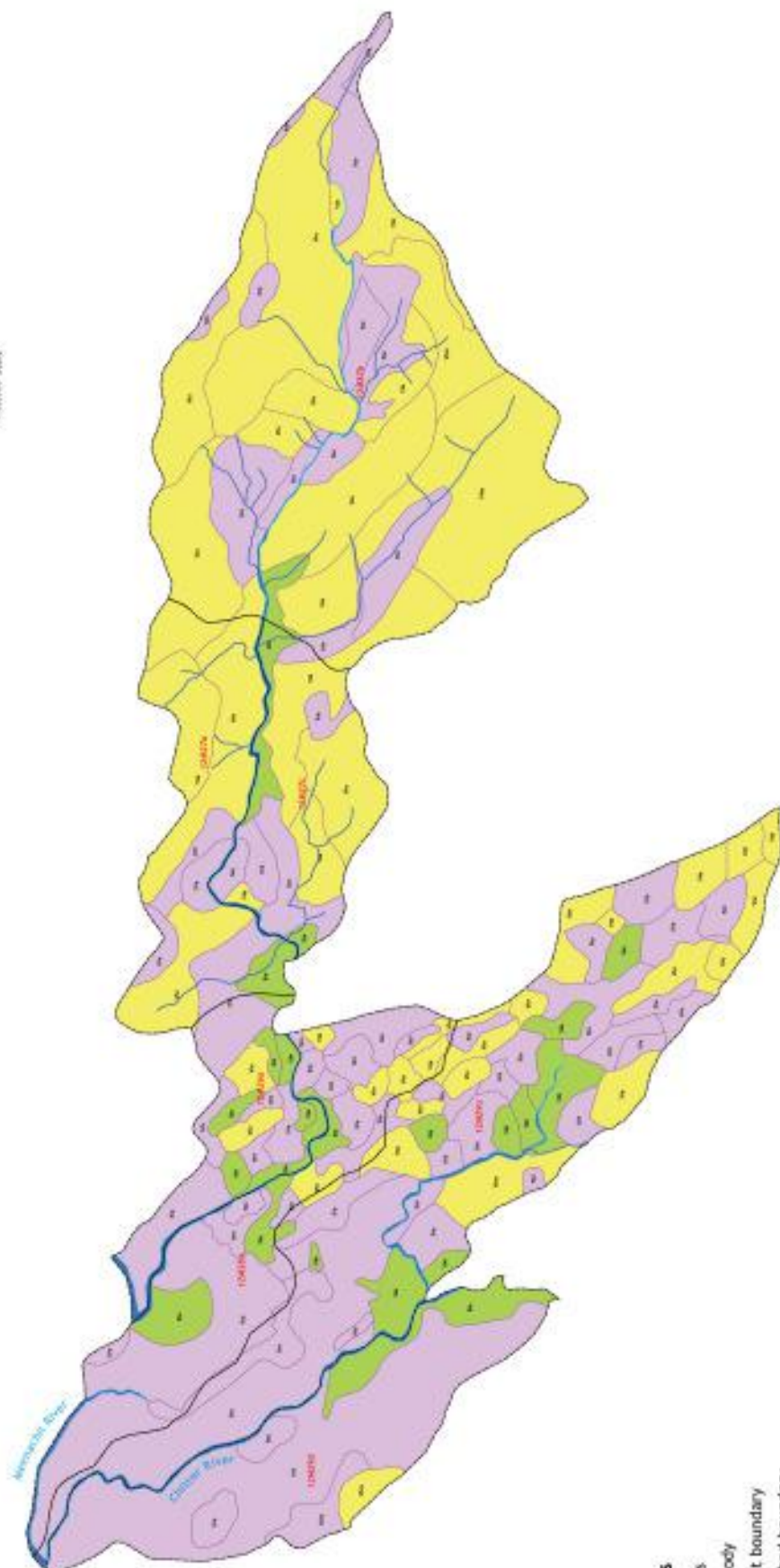
Technical Support Organisation : **SUSTHIRA** Centre for Sustainable Development Studies and Action

IWMP

LAND CAPABILITY CLASS OF SELECTED WATERSHEDS

BLOCK : ERATTUPETTAH

DISTRICT : KOTTAYAM



References

- Streams
- Waterbody
- Soil unit boundary
- Watershed boundary

Legend

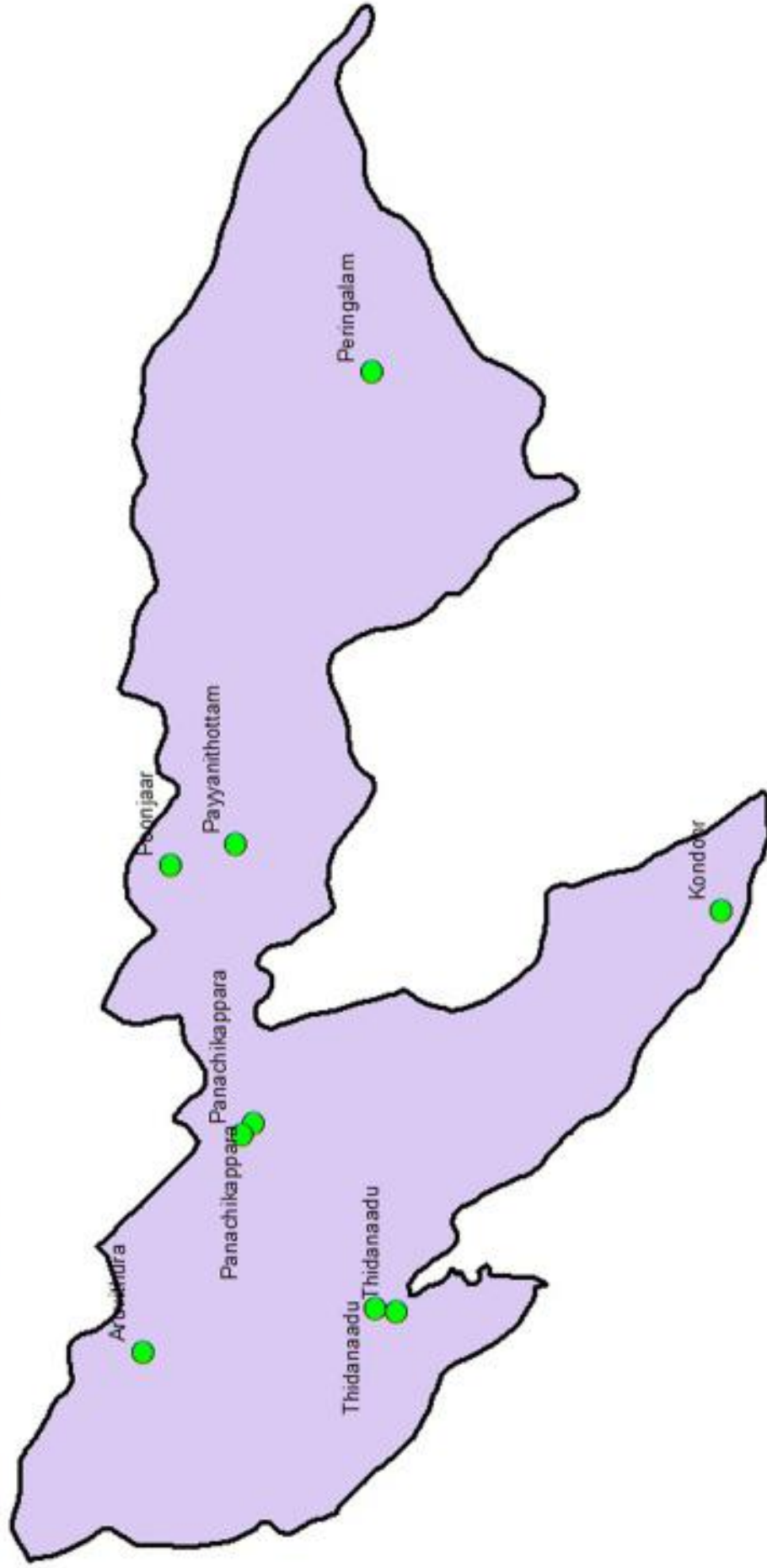
- #### Land Capability Class
- III - Moderately good cultivable land
 - IV - Fairly good cultivable land suited for occasional or limited cultivation
 - V - Well suited for grazing or forestry. Suited for plantation crops, which require minimum tillage

LCC Sub Class

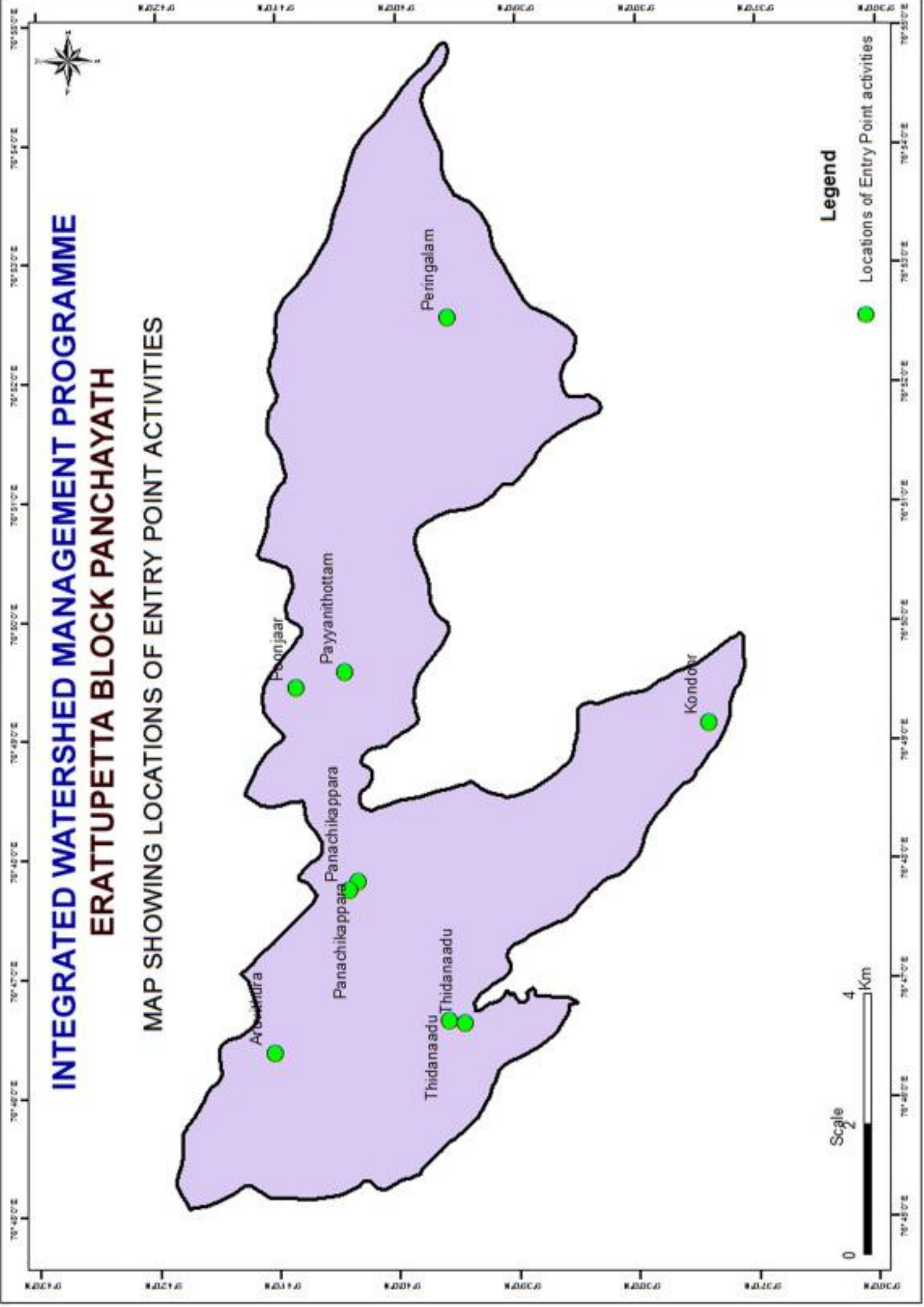
- #### Limitations
- e - Erosion
 - s - Soil

INTEGRATED WATERSHED MANAGEMENT PROGRAMME ERATTUPETTA BLOCK PANCHAYATH

MAP SHOWING LOCATIONS OF ENTRY POINT ACTIVITIES



Legend
● Locations of Entry Point activities





BASIC INFORMATION

State	-	Kerala
District	-	Kottayam
Thaluk	-	Meenachil
Block Panchayat	-	Erattupetta ,Kanjirapally
Project Implementing Agency	-	Erattupetta Block Panchayath.
Technical support organization	-	Susthira

Gramapanchayths Covered

1. Poonjar
2. Poojar Thekekkara
3. Erattupetta
4. Thidanadu
5. Kuttikal
6. Parathodu
7. Theekoyi

Total area	-	6112.10
No .of micro watershed	-	7
Total IWMP Project Fund	-	91681500
Per Hectre	-	Rs.15000/-
Project Name	-	IWMP-5(2013-14)

Watersheds

SL No.	Watershed Name	Code	Area(Hectre)	Project Cost
1.	Panachikappara	12 M 26 a	269.27	4039050
2.	Poonjar	12 M 27 a	542.26	8133900
3.	Peringulam	12 M 27 b	1973.38	29599950
4.	Payyanithottam	12 M 27 c	433.22	6498300
5.	Aruvithura	12 M 28 a	709.14	10637100
6.	Kondoor	12 M 29 a	1499.88	22497450
7.	Thidanadu	12 M 29 d	684.95	10274250



IWMP (BATCH -5) - ERATTUPETA BLOCK PANCHAYATH -MASTER PLAN

Instal- ment	IEC	EPA	Dev.work	LAP	PSM	Monitari ng	Evaluation	DPR	Adminis- tration	Flexi Fund	Consolid ation	Total
	4.50%	3.60%	50.40%	8.10%	9%	0.90%	0.90%	0.90%	9%	10%	2.70%	100%
1st year	1375200	3300480	8801280	0		183360	183360	825120	1833600	1833600		18336000
%	1.5	3.6	9.6			0.2	0.2	0.9	2	2		20
2nd year	916800		13752000	3758880	4125600	183360	183360		2292000	2292000		27504000
%	1		15	4.1	4.5	0.2	0.2		2.5	2.5		30
3rd year	916800		13752000	3667200	4125600	275040	183360		2292000	2292000		27504000
%	1		15	4	4.5	0.3	0.2		2.5	2.5		30
4th year	916800		9901440			183360	275040		1833600	2750400	2475360	18336000
%	1		10.8			0.2	0.3		2	3	2.7	20
Total	4125600	3300480	46206720	7426080	8251200	825120	825120	825120	8251200	9168000	2475360	91680000
%	4.5	3.6	50.4	8.1	9	0.9	0.9	0.9	9	10	2.7	100



ACTION PLAN AT A GLANCE

Sl No.	Watershed	Code	Total Cost	Area	EPA	NRM	PSM	LHS	Total
1.	Aruvithura	12M28a	10637100	709.14	382935	5361099	957338	861606	7562978
2.	Peringulam	12M27b	29599950	1973.38	1065598	14918375	2663996	2397596	21045565
3.	Thidanadu	12M29d	10274250	684.95	369873	5178222	924682	832214	7304991
4.	Panachikapara	12m26a	4039050	269.27	145406	2035681	363514	327163	2871764
5.	Kondoor	12M29a	22497450	1499.88	809908	11338715	2024770	1822293	15995686
6.	Payyanithottam	12M27c	6498300	433.22	233939	3275143	584848	526362	4620292
7.	Poonjaar	12M27a	8133900	542.26	292820	4099486	732052	658846	5783204
Total			91680000	6112.1	3300479	46206721	8251200	7426080	65184480

INTEGRATED WATERSHED MANAGEMENT PROGRAMME ERATTUPETTA BLOCK PANCHAYATH IWMP BATCH -V

Introduction

Our earth is the abode of life .Only on earth we can find the phenomenon of life. The reason for life on earth is the presence of water in it. All known forms of life depend on water for their existence. Water is an essential element for life. The origin of life seems to be strongly connected to the presence of water.Everything came into existence from water. As life cannot exist without water so it has been called as "father of the world" in “Sri Guru Granth Sahib”. Water is the major component of the universe which is also known as the creator and destroyer. So it is very important to know the value of water sources and to protect it.

Watershed management is one of the important programmes in order to protect the natural resources. Watershed is the basic –building block for land and water planning. Watershed management directly promotes the development of agriculture and allied sectors for the betterment of the society and also preservation of the hydrological, biological and chemical functions of ecosystems. Integrated watershed management is an important activity for the development of rural community. It not only helps to restore the quality of life of people but also enriches the land ,vegetation and helps to retain soil moisture in a sustainable manner.

Evolutionary Stages of Watershed Development Programme

The development of India started with the establishment of Five Year Plans. The First Five- Year Plan mainly focused on production system, individual/family development, improvement in the basic needs and supported agricultural

production and it also launched the industrialization of the country. After that from sixth year plan onwards they focused on forest development, to establish growth in areas of increasing economic productivity, production of food grains, and generating employment. In seventh five year plan, they gave importance to the protection of natural resources like soil and water and developed many large projects like river valley projects. In Kerala, the projects like “kuntha project” “kabaniproject” (river valley projects) were started on the basis of watersheds . It is through the establishment of Western Ghat Development Programme in 1974, that Watershed Project Implementation scientifically was started. In 1991-92, the two projects NWDpra and IWDP got established for the development of rural area. The Hariyali project implementation started in 2003 and is on its final stage . Some of the watershed projects were also established by the funding agencies like CAPART and NABARD.



Watersheds and Their Basic Principles

What is a watershed?

A watershed, also called a drainage basin or catchment area, is defined as an area in which all water flowing into it goes to a common outlet. People and livestock are the integral part of watershed and their activities affect the productive status of watersheds and



vice versa. From the hydrological point of view, the different phases of hydrological cycle in a watershed are dependent on the various natural features and human activities. Watershed is not simply the hydrological unit but also sociopolitical-ecological entity which plays crucial role in determining food, social, and economical security and provides life support services to rural people.

Resource Trinity

The basic building blocks of watershed are the trinity resources of nature, soil water and biomass. These resources control the origin and growth of life and its death. These three components play a great role for the stability of the nature.

Watershed development

By focusing on the development, SUSTHIRA plays a great role in the conservation and protection of the trinity resources and enrichment of the trinity resources in the watershed .And also



it aims to the improvement of the life of the people of the community and its surroundings and increase the income production unit.

Watershed management

Watershed management is the study of the relevant characteristics of a watershed aimed at the sustainable distribution of its resources and the process of creating and implementing plans, programs, and projects to sustain and enhance watershed functions that affect the plant, animal, and human communities within a watershed boundary. Watershed management is the process of creating awareness about the need of the protection and conservation of water, soil and biomass among the people of that particular watershed area.



OBJECTIVES

- Conservation of soil, water and biomass and utilization of them in a proper way.
- Rejuvenation of natural resources.
- Ensure water security.
- Promotion of Sustainable agriculture.
- Exploration of water sources.
- Improve the life style of the people.
- Improve irrigation facilities.
- Improve agriculture Production
- Waste land development
- Conservation of herbal plants.
- Rain water harvesting
- Live stock development programme.
- Ensuring employment opportunities.
- Improve the knowledge of the people
- Encouraging low cost modern technologies for sustainable development.
- Developing new ideas



Peculiarities of watershed

1. It is a geographical unit with natural boundaries.
2. It is a unit of Sustainable development .
3. It is based on natural resources such as soil, water and biomass.

Geographical levels of watershed

1. Top most level(ridge)

Top most level is an area of the ridge and adjoining areas .Development programmes should be started from this peak. Not only that, this level will decide the boundary of the watershed.

2. Middle Reach

It is the place where most of the water distribution takes place .Its an area between the ridge and valley.

3. Lower Reach

It is the place which includes all valley areas.

4. Boundary line

It is line which denotes the boundary of the watershed. The large and small hills will determine the boundary of the watershed. The ridges of these hills together will be the watershed boundary or watershed boundary line.

5. Tributaries

The water flows to the main stream from all parts of the watershed through many small streams .The number of small streams will vary accordingly to the size of the watershed and geographical features.

6. Main stream



Every Watershed will have a main stream formed by joining many small streams. The largest stream flowing through the watershed will be the main stream of that watershed. Meenachilar River is the main stream in this watershed area.

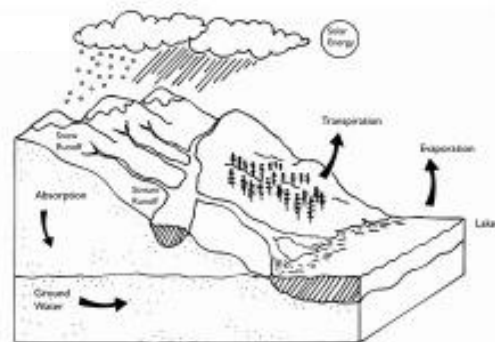
7. Outlet point

Outlet is the place where the main stream joining with another big stream or river.

Watershed – classification

Watersheds are classified based on the size of the catchment area.

- Macro watershed - Above 50000 Ha
- Sub watershed - 10000Ha-50000Ha
- Milli watershed - 1000 Ha-10000 Ha
- Micro watershed - 100 Ha- 1000 Ha
- Mini watershed - 1 Ha - 100 Ha



Basic principals

The planning and implementation of watershed certain principles.

➤ Sustainability

The success behind watershed projects is based on the stability of the results coming through the development programmes. It ultimately focuses on the long term and short term conservation of natural resources. It is related to the conservation of ecosystem and primary productivity of the watershed.

➤ Equity

Natural resources are the basis for watershed development programme. Instead of distributing natural resources equally to the watershed people, the watershed programme ensures the availability of resources for daily life to each and every family of the community. Equity means the empowerment



of poor people. Watershed programme mainly considers the people like landless, women and Sc/ St.

➤ **Participation**

A watershed project must need people's participation, in its planning stage and implementation stage. Through this participatory approach the project should be transparent to all. It is clear that the watershed development cannot be done in isolation. It is watershed plus approach which takes care of holistic development. Therefore, the entire watershed community is to be involved for the integrated development of watershed and the assets created in such an effort are to also be maintained through the people of the watershed community in order to ensure sustainability. People's participation also ensures conservation and development of Common Property Resources. Besides when people decide what they have to do their stake in development become more pronounced leading to their intense involvement. This involvement in decision making is the key to success which brings sustainable development. Hence people's participation is the approach for the purpose.



Introduction

It is a central government project. Integrated watershed management is an important activity for the development of rural community. It not only helps restore the quality of life of people but also enriches the land, vegetation and helps retain soil moisture in a sustainable manner.

Objectives

- Restoring and rehabilitating the degraded lands of the targeted ecosystems through the effective use of soil and water resources and improve livestock production.
- Enhancing the efficiency and effectiveness of rainwater and runoff use, improve vegetative cover and reduce soil erosion through better rainwater management.
- Improving the capacity of communities to manage common natural resources.
- Spreading the use of water harvesting structures as a sustainable and renewable water resource to help in ecosystem restoration and maintain the land and livestock productivity.
- Increasing the productivity of natural vegetation and shrubs in order to meet feed demand for livestock animal in the watershed areas and increase the income of the participating livestock owners.



- Disseminating appropriate water harvesting techniques for restoration of water table, risk management and drought mitigation.
- Improve –soil-moisture.
- Reduce–soil loss.
- Rejuvenate and protect the water sources.

The approach

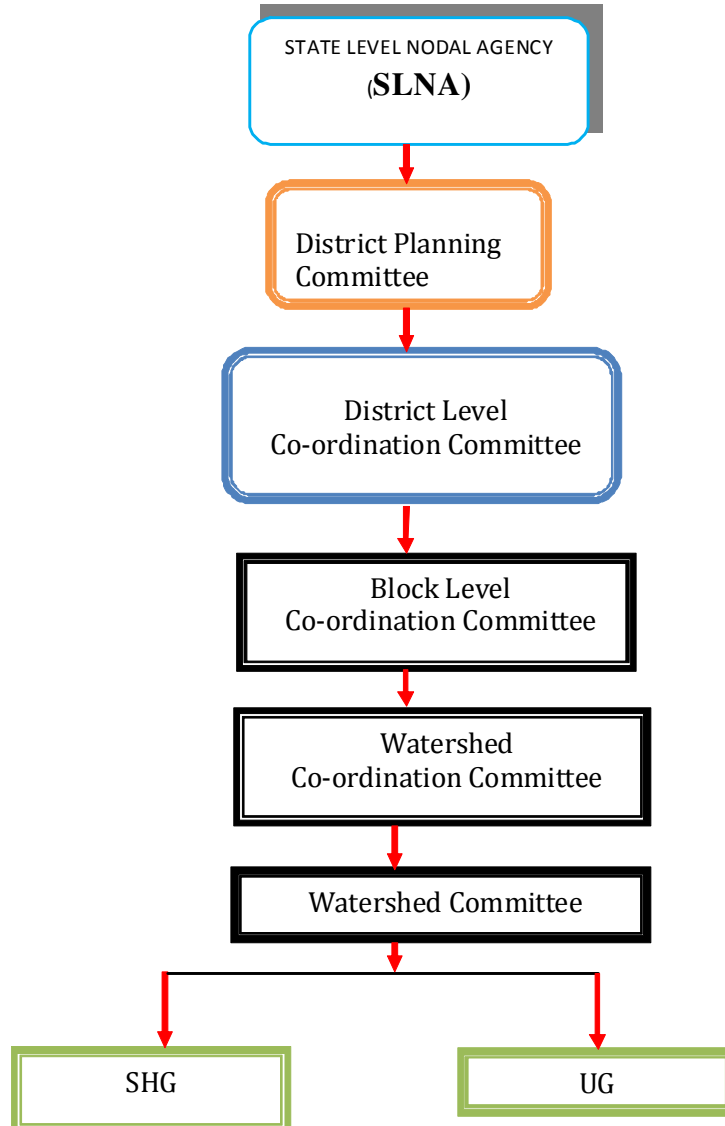
- *The integrated relation between the components like planning, implementation, monitoring and protection of common properties is sustained.*
- *Income and employment opportunities are created through scientifically sustained and eco-friendly development of natural resources*
- *Exclusive participation of the community*
- *Making use of the indigenous knowledge and practices blending with modern scientific and technological inputs*
- *Natural resource management through cost effective bio technological engineering methods*
- *A new perspective of Integrated development by making use of the possibilities of converging different development projects*
- *Generating inter-relation between individuals and organizations within the Grama Panchayat.*
- *Practicing a development approach based on equality among all categories – the poor and marginalized, the landless, the farmers, farm labourers, etc.- of the population*
- *Transparency in all initiatives and development interventions*
- *Community participation in all phases of the project implementation*
- *Leadership with Panchayati Raj Institutions in the project area*
- *Local economic development and food security*



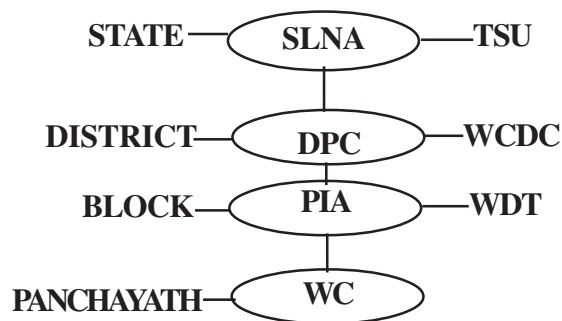
- *Project implementation with emphasis on local developmental needs without compromising the watershed approach.*
- *An implementation framework that reflects the benefits and results of the project.*
- *Regenerating and protecting the abandoned/destroyed/dried up water sources.*
- *Creating no-wasteland Panchayats by converting all the cultivable waste lands suitable for agriculture.*
- *Forming and facilitating federations of neighbourhood clusters, Kudumbasree units and watershed committees and channelize the planning, implementation and monitoring of the project through these federations.*
- *Forming a core group which can acquire technical knowhow on watershed management strategies through capacity building in each project area and entrust the responsibility of project implementation and management with them.*
- *Forming Watershed/Ward level labour groups capable of taking up natural resource management and production sector management interventions.*
- *Improving the agriculture production and productivity by converging the projects of agriculture department and ensuring poverty alleviation and income generation activities by converging NRLM schemes. This ensures food security for all.*
- *The seedlings plants that are generated as part of watershed management in the GP distributed to the public through civil society organizations in the Grama Panchayat*
- *Empowering the grass root level Civil Society Organizations to ensure continuity and sustainability of the process that has been initiated in the project area and to ensure protection and sustainable management of the assets created as part of the project. The empowered civil society organizational systems will continue the development processes.*
- *Helping the watershed committees and the neighborhood clusters to grow as social institutions for the protection and management of natural resources.*



Administrative Setup

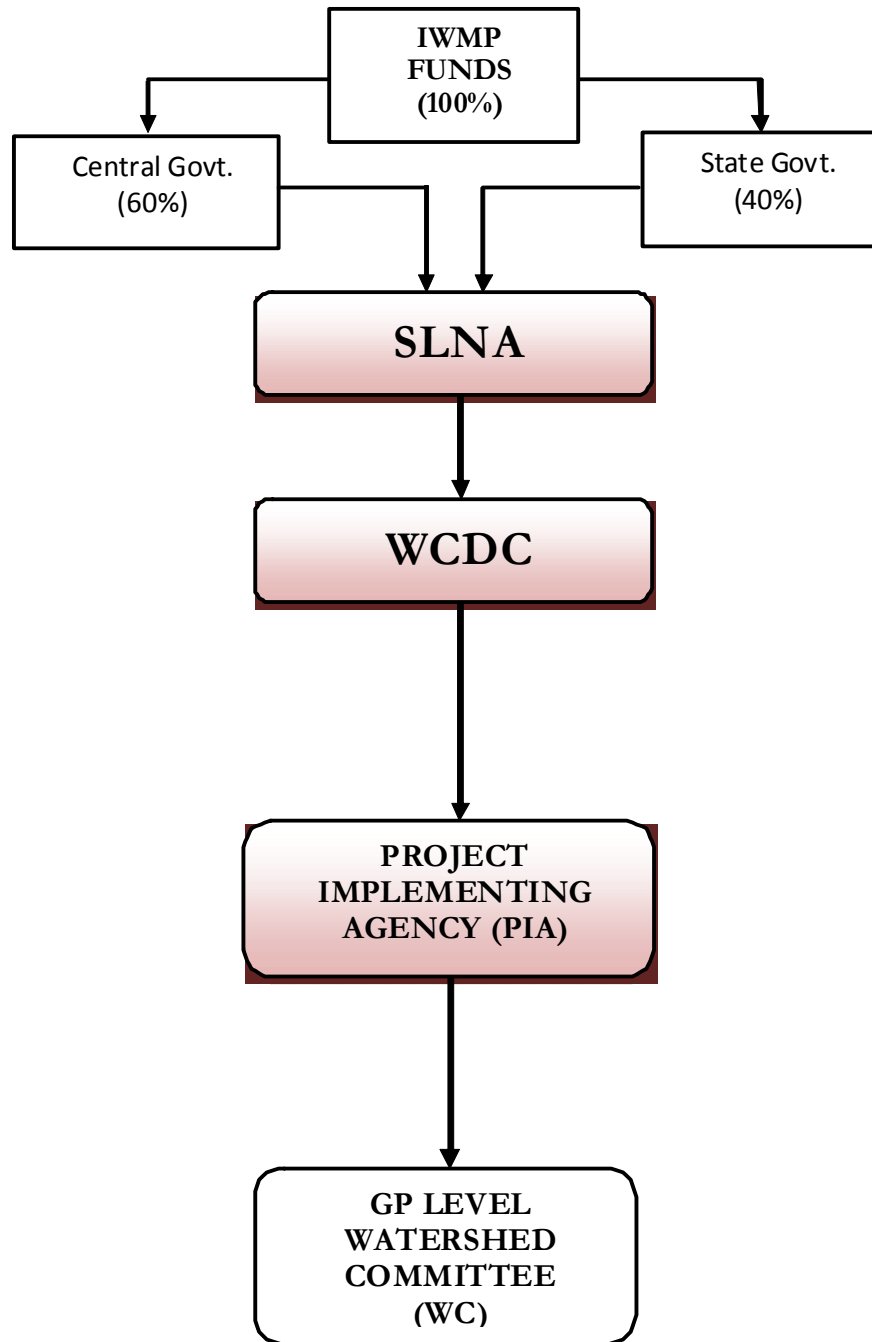


TECHNICAL SETUP





FLOW CHART SHOWING FUND FLOW





Fund Distribution

SL.NO	STAGES	PERCENTAGE (cost)
1.	Governance Expenditure	9
2.	Monitoring	0.9
3.	Evaluation	0.9
Initial Stage		
4.	Entry Point Activities	3.6
5.	Capacity Building and Institutional setup.	4.5
6.	Preparation of Detailed Project Report	0.9
Implementing Stage		
7.	Watershed Development Activities	50.4
8.	Livelihood Activities	8.1
9.	Production System and Micro Enterprises	9
Final Stage		
10.	Post Project Activities	2.7
11.	Flexi Fund	10
TOTAL		100



PART - II

PROJECT IMPLEMENTING AGENCY

The project area spreads over the Erattupetta and Kanjirapally Block Panchayaths. Only a small part of Kanjirapally Block Panchayath includes in the project area. Therefore Erattupetta Block Panchayath is the Project Implementing Agency. Information related to the Project Implementing Agency is given below.

**ERATTUPETTA BLOCK PANCHAYATH
DETAILS**

Erattupetta block Panchayath is situated to the north east side of Kottayam district. It is also situated near to Idduki district.

Other details

State	:	Kerala
District	:	Kottayam
Thaluk	:	Meenachil
Including grama panchayath	:	9
Parliament constituency	:	Pathnamthitta , Kottayam
Assembly Constituency	:	Poonjar , Pala
Area	:	282.51 Sq.Kms

Boundaries

North	:	Elamdesham Block Panchayath
East	:	Azhutha Block Panchayath and Idukki Block Panchayth
West	:	Lalam Block Panchayath
South	:	Kanjirappaly Block Panchayath,Pappady Block Panchayth



Covering Gramapanchayath and Geographical Areas

No.	Gramapanchayath	Area (KM)	Level
1.	Thidanadu	39.01	I
2.	Poonjar	37.72	II
3.	Melukavu	34.13	III
4.	Thalanadu	34.02	IV
5.	Thekoyee	33.56	V
6.	Munnilavu	29.11	VI
7.	Poonjar Thekkekkara	28-.52	VII
8.	Thalappalam	16.19	VIII
9.	Erattupetta	15.91	IX



Population

SI No.	Gramapanchayath	2001 Census			2011 Census			Deviation
		Male	Female	Total	Male	Female	Total	
1.	Erattupetta Block	63968	63384	127352	66102	66041	132143	4791
2.	Erattupetta Gramapanchayath	12783	12320	25103	15062	14643	29705	4602
3.	Melukavu Gramapanchayath	5573	5824	11397	5653	5823	1476	79
4.	Munnilavu Gramapanchayath	4556	4509	9065	4438	4293	8731	334
5.	Poonjhar Gramapanchayath	6125	6135	12260	6219	6430	12649	389
6.	Poonjhar Thekkekkara Gramapanchayath	9390	9233	18623	8770	8818	17588	1035
7.	Theekoyi Gramapanchayath	5467	5480	10947	5490	5362	10852	95
8.	Thalanadu Gramapanchayath	3675	3662	7337	3486	3543	7029	308
9.	Thalappalam Gramapanchayath	6421	6319	12740	6631	6723	13361	621
10.	Thidanadu Gramapanchayath	9978	9902	19880	10346	10406	20752	872

Source : 2001, 2011 Census Report



Population Density

Sl No.	Gramapanchayath	Area (.....)	Population Density		Deviation (No.)
			2001	2011	
1.	Erattupetta Block	268.17	475	493	18
2.	Erattupetta Panchayath	15.91	1578	1867	-289
3.	Melukavu	34.13	334	336	-2
4.	Munnilavu	29.11	311	300	-11
5.	Poonjar	37.72	325	335	10
6.	Poonjar Thekkekkara	28.52	653	617	-36
7.	Theekkoyi	33.56	326	323	-3
8.	Thalanadu	34.02	216	206	-10
9.	Thalappalam	16.19	787	825	38
10.	Thidanadu	39.01	510	532	22

Erattupetta Panchayath is the most population density area. The density of the same is 1578. But comparing to the 2001 census, 289 people decreased. The least population density area is Thidanadu Grama Panchayath and here also a decrease in 10 people is seen when compared to the 2001 census.



Gender Ratio



Sl No.	Gramapanchayath	2001 Census	2011 Census	Deviation
1.	Erattupetta Block	991	999	8
2.	Erattupetta Panchayath	964	972	8
3.	Melukavu Panchayath	1045	1030	-15
4.	Munnilavu Panchayath	990	967	-23
5.	Poojhar Panchayath	1002	1034	32
6.	Poonjar Thekkekkara Panchayath	983	1005	22
7.	Theekkoyi Panchayath	1002	976	-26
8.	Thalanadu Panchayath	996	1016	20
9.	Thalappalam Panchayath	984	1014	30
10.	Thidanadu Panchayath	992	1006	14

Poonjar Grama Panchayath is having the maximum gender ratio . An increase of 32 people is seen while comparing to the 2001 census. The least Gender Ratio is observed in Munnilavu Grama Panchayath and Erattupetta Grama Panchayath.



Household Facility

Sl No.	Gramapanchayath	2001 Census	2011 Census	Deviation
1.	Erattupetta Block	27090	30993	3903
2.	Erattupetta Panchayath	4769	6486	1717
3.	Melukavu Panchayath	2495	2827	332
4.	Munnilavu Panchayath	2065	2126	61
5.	Poojhar Panchayath	2659	3022	363
6.	Poonjar Thekkekkara Panchayath	4112	4258	146
7.	Theekkoyi Panchayath	2351	2533	182
8.	Thalanadu Panchayath	1637	1706	69
9.	Thalappalam Panchayath	2751	3125	374
10.	Thalappalam Panchayath	4251	4910	659



SC/ST - Population Details

Sl No.	Gramapanchayath	SC			ST		
		Female	Male	Total	Female	Male	Total
1.	Erattupetta Block	2347	2310	4657	3978	4108	8086
2.	Erattupetta Gramapanchayath	121	106	227	76	90	166
3.	Melukavu Gramapanchayath	199	213	412	1483	1477	2960
4.	Munnilavu Gramapanchayath	143	149	292	1287	1367	2654
5.	Poonjhar Gramapanchayath	236	219	455	41	41	82
6.	Poonjhar Thekkekkara Gramapanchayath	449	402	851	272	289	561
7.	Theekoyi Gramapanchayath	185	221	406	183	181	364
8.	Thalanadu Gramapanchayath	166	154	320	522	541	1063
9.	Thalappalam Gramapanchayath	314	328	642	52	47	99
- 10.	Thidanadu Gramapanchayath	534	518	1052	62	75	137



Selection Criteria

Criteria and weightage for selection of watershed

Sl. No.	Criteria	Maximum score	Ranges & scores		
			Above 80 % (10)	80 to 50 % (7.5)	50 to 20 % (5)
i	Poverty index (% of poor to population)	10	Above 80 % (10)	80 to 50 % (7.5)	50 to 20 % (5)
ii	% of SC/ ST population	10	More than 40 % (10)	20 to 40 % (5)	Less than 20 % (3)
iii	Actual wages	5	Actual wages are significantly lower than minimum wages (5)	50 to 80 % (5)	Less than 50 % (3)
iv	% of small and marginal farmers	10	More than 80 % (10)	Critical (3)	Sub critical (2)
v	Ground water status	5	Over exploited (5)	-33.3 to -66.6 (10)	0 to -33.2 (0)
vi	Moisture index/ DPAP/ DDP Block	15	-66.7 & below (15)	80 to 90 % (10)	70 to 80% (5)
vii	Area under rain-fed agriculture	15	More than 90 % (15)	Problematic village (7.5)	Partially covered (5)
viii	Drinking water	10	No source (10)	Medium – 10 to 20 % (10)	Low- less than 10 % of TGA (5)
ix	Degraded land	15	High – above 20 % (15)	Lands with moderate production & where productivity can be enhanced with reasonable efforts (10)	Lands with high production & where productivity can be marginally enhanced with reasonable efforts (5)
x	Productivity potential of the land	15	Lands with low production & where productivity can be significantly enhanced with reasonable efforts (15)	Contiguous to previously treated watershed & contiguity within the micro-watersheds in the project (10)	Neither contiguous to previously treated watershed nor contiguity within the micro-watersheds in the project (0)
xi	Contiguity to another watershed that has already been developed/ treated	10	Contiguous to previously treated watershed & contiguity within the micro-watersheds in the project (10)	Above 6 micro-watersheds in cluster (15)	2 to 4 micro-watersheds in cluster (5)
xii	Cluster approach in the plains (more than one contiguous micro-watersheds in the project)	15	Above 5 micro-watersheds in cluster (15)	Above 5 micro-watersheds in cluster (15)	2 to 3 micro-watersheds in cluster (5)
	Cluster approach in the hills (more than one contiguous micro-watersheds in the project)				Fully covered (0)

Part - III Project Area

The project area spreads over Erattupetta Block Panchayath including Poonjar, Erattupetta, Poonjarthekekkara, Kuttikal, Thidanadu, Thikoyi and Thalanadu Grama Panchayath.

Most of the project area spread over Poonjar Thekkekkara, Thidanadu and Poonjar Grama Panchayath. Only 10.8 Ha in Parathodu Grama Panchayath, 52.17Ha in Theekoyi Grama Panchayath and 172.78Ha in Koottikkal Grama Panchayath are included in the project area.

Geographical Area based on Grama Panchayath

Sl No.	Gramapanchayath	Area (Hector)
1.	Poonjar Thekkekkara	2766.65
2.	Poonjhar	1392.74
3.	Thidanadu	1371.54
4.	Erattupetta	344.52
5.	Koottikkal	172.78
6.	Theekoyi	52.17
7.	Parathodu	10.8

Brief History

Erattupetta is one of the block Panchayaths that lies close to Western Ghats. This is in Kottayam District adjacent to Idukki. The total geographic area of the block Panchayat is 282.5 Sq. Kms. The area is composed of small hills, hillrocks, rocky areas and valleys. Around 10% of the total geographic area is rocks and grasslands.

The Peermade hills separate the block Panchayath from Idukki District. Erattupetta Block Panchayat include nine Grama Panchayath out of which five are in highland agro-climatic zone. The main water source in the Block Panchayath is Meenachil River. Meenachil is enriched by three major tributaries - Kadapuzhayaar ,Thikkoyiyaar, Poonjar. All these are originating from the Peermade Hills.

Historians say that there was a rich heritage and culture for Erattupetta through thousands of years Before Christ. Meenachil river had been the only waterway from the eastern end to the Arabian Sea. There are information about this place even in Ramayana and Mahabharatha. The people established foreign relations in BC. Erattupetta is one of best green areas in Kerala and the climate is comfortable with warm and cool atmosphere.

The administrative centre of the old Poonjar Parish is situated here. The Missionaries from abroad reached here in 19th century and held a pioneer role to raise the social situation and improve the educational standards of the indigenous communities. The Theekkoyi Estate is established by the foreigners and the labourers were from Tamil Nadu. The successors of the labourers can be seen even now in Erattupetta.

The independence strikes under Shri. Joseph Thelliyil and the Poonjaar farmers attracted the people and they joined in the mass movement thereafter for their rights and privileges. Perhaps these mass movements played an important role among the people in bringing about socio-economic



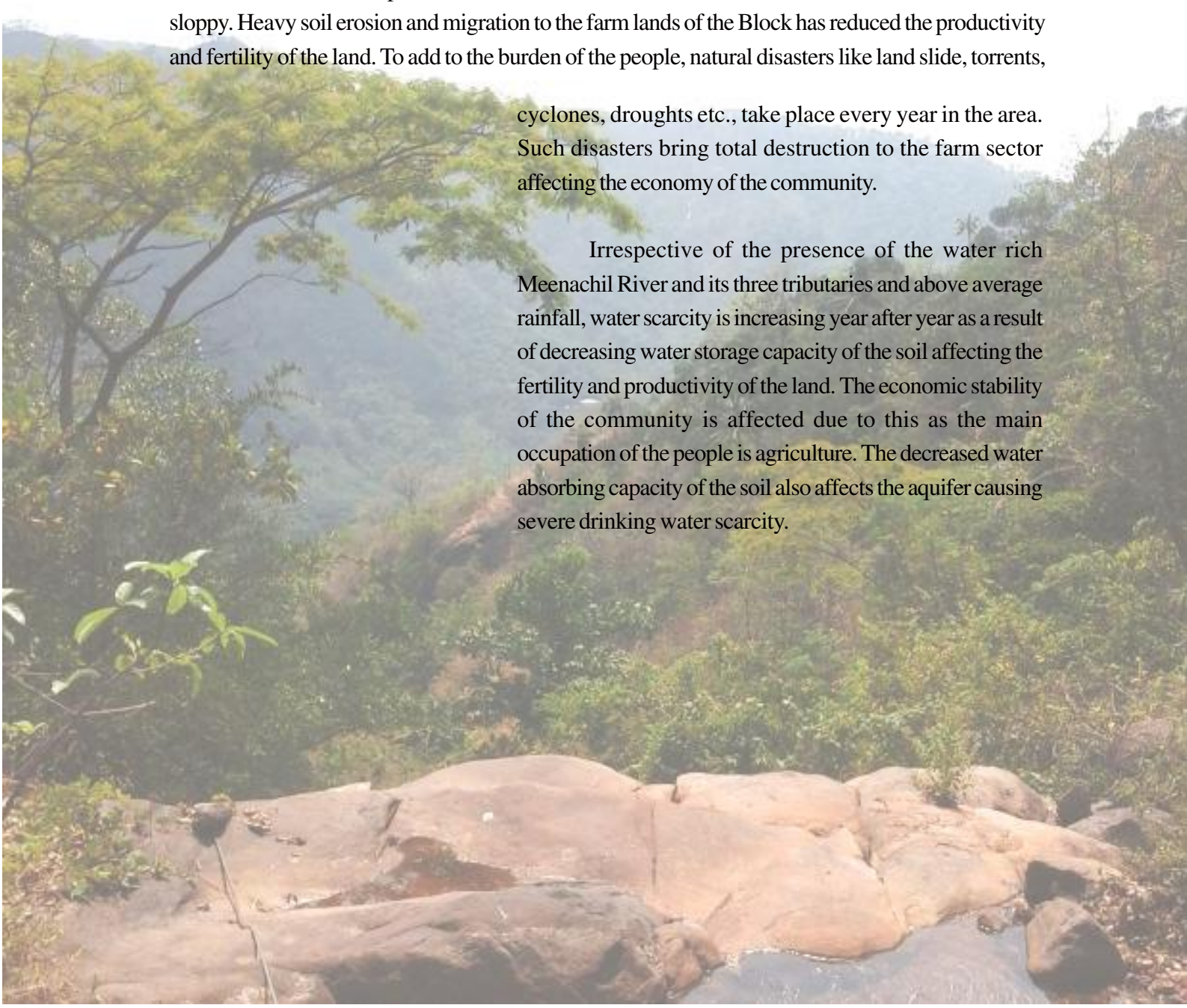
change in the community. In olden days, the people of Erattupetta had established commercial relationship with the traders and trade centres in Tamil Nadu. Educational institutions started functioning in Erattupetta in the beginning of 20th century. However, the culture that sustained here is that suit to the '*agri-culture*'

Around 90% of the total population of Erattupetta is either farmers or farm labourers. The conducive factors for this situation are the regular rainfall above state average and the fertile soil. Around 65% of the land occupants in the block are either small or marginal farmers. Rubber is the main crop and other cash crops are coconut, arecanut, pepper and nutmeg.

It is observed that the soil texture has been changed due to indiscriminate application of chemical fertilizers and pesticides in the farm land. Around half of the total land available is 30% sloppy. Heavy soil erosion and migration to the farm lands of the Block has reduced the productivity and fertility of the land. To add to the burden of the people, natural disasters like land slide, torrents,

cyclones, droughts etc., take place every year in the area. Such disasters bring total destruction to the farm sector affecting the economy of the community.

Irrespective of the presence of the water rich Meenachil River and its three tributaries and above average rainfall, water scarcity is increasing year after year as a result of decreasing water storage capacity of the soil affecting the fertility and productivity of the land. The economic stability of the community is affected due to this as the main occupation of the people is agriculture. The decreased water absorbing capacity of the soil also affects the aquifer causing severe drinking water scarcity.





Area

Erattupetta is situated 42 Kms away from the district headquarters of Kottayam District. It is reachable by road via Pala and Bharanangaanam. It is also reachable via Ponkunnam and Kanjirappally. Geographically Erattupetta is situated between altitude 9° 36' 36" and 9° 41' 30" N and longitude 76° 36' 36" E and 76° 54' 9" N

Basic details

State	:	Kerala
District	:	Kottayam
Thaluk	:	Meenachil
Block panchayath	:	Erattupetta ,Kanjirapally

Including Villages

Sl No.	Village	Code Number
1.	Poonjhar	00097400
2.	Erattupetta	-
3.	Theekoyi	00095900
4.	Koottikkal	00102700
5.	Poonjhar Thekkekkara	00097300
6.	Kondoor	00097200
7.	Mundakkayam	001028000

source: PPR (IWMP)

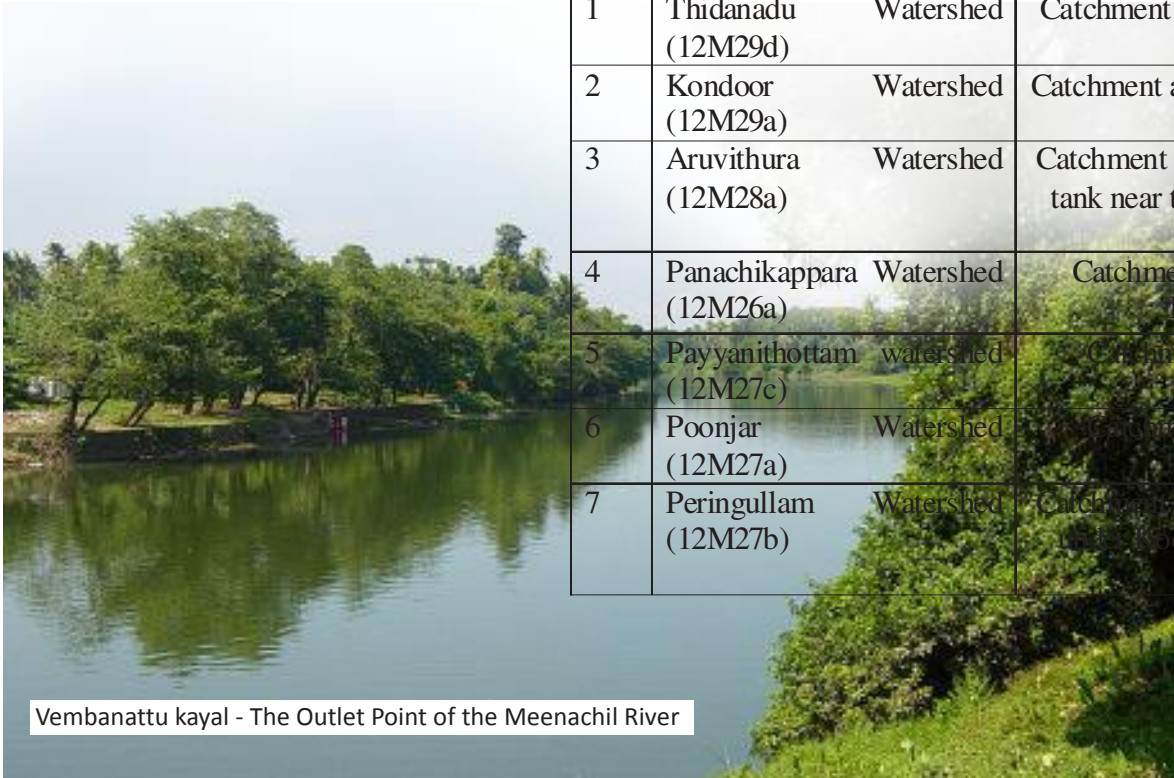
Other details

Total Area	:	6112.10 Ha
Total watersheds	:	7
Total IWMP fund	:	91680000.00
Project Name	:	IWMP-V(2013-14)



Catchment Area of the watershed

Total area	:	1272 Sq Km
State	:	Kerala
District	:	Kottayam
Originated From	:	Kudamurutimala
Height	:	1195 m
Length	:	78 Km
Average Rain Fall	:	3000m



Vembanattu kayal - The Outlet Point of the Meenachil River

Sl No	Micro Watershed	Catchment
1	Thidanadu Watershed (12M29d)	Catchment area of Chittar petrol pump to
2	Kondoor Watershed (12M29a)	Catchment area of Pannikka pump to Chitto
3	Aruvithura Watershed (12M28a)	Catchment area of Meenach tank near to Maniyamkula above Chi
4	Panachikappara Watershed (12M26a)	Catchment area of Meer Erattupetta Anka
5	Payyanithottam watershed (12M27c)	Catchment area of Meer Peringulam to
6	Poonjar Watershed (12M27a)	Catchment area of Meer Peringulam
7	Peringullam Watershed (12M27b)	Catchment area of Meenach and Bottickal Gramap Meenac

Meenachil River





Physiography

The physiographic condition of a region refers to the sculptures on the natural landscape and ongoing changes by several natural processes of geomorphic agents like water, glacier, wind etc. Many of these agents are controlled by the prevalent climatic conditions of the region and the internal dynamic functional mechanism of the earth system. The physiographic position of an area is based on the range in elevation of that particular area .

< 20 m below MSL	-	Low Land
20 – 100 m	-	Mid Land
100 – 300 m	-	Mid Upland
300 – 600 m	-	Upland
500 – 1200 m	-	High land
>1200 m	-	Mountainous Region

SI No.	Micro Watershed Name	Physiographic Position
1.	Panachikapara(12M26a)	Mid land, Mid upland
2.	Poonjar (12M27a)	Mid land, Mid upland, Upland, Highland
3.	Peringulam(12M27b)	Mid land, Mid upland, Upland, Highland, Mountainous Region
4.	Payyanithottam(12M27c)	Mid land, Mid upland, Upland, Highland
5.	Aruvithura(12M28a)	Low land, Mid land, Mid upland
6.	Kondoor(12M29a)	Mid land, Mid upland, Upland, Highland
7.	Thidanadu(12M29d)	Low land, Mid land, Mid upland, Upland



Relief

It refers to the rate of the runoff ,ie,Normal ,Subnormal, Excessive and Flat or concave .

Normal -Sloping uplands with medium runoff.

Subnormal -Lands with slow to very slow runoff.

Excessive - Hills with Rapid to very Rapid runoff.

Flat or Concave - Flat or Depressed low lands with very slow run off or nil.

Drainage System

This area is rich in drainage system. Several small and large streams are here. Direction of water flow is east to west. Main drainage is originated from the hills near Wagamon highland. This hilly area is also the origin of river Meenachil. There are three tributaries of Meenachil River. They are Poonjar, Thikoyil and Chittar.

Features of Drainage Sysytem

There are 197 First order streams ,53 Second order streams ,9 Third order streams and 2 Forth order streams in the project area. Following are the tables showing the features of the Drainage system with its total lentgh and its density and also the total numbers of streams .

Order of streams	Number	Length in Km
First order	197	104.75
Second Order	53	28.88
Third order	9	17.96
Forth order	2	21.59
Total	261	173.18



Name of the watershed	Shape	Pattern	Total Length	Total area (km ²)	First Order		Second Order		Third Order		Forth Order		Drainage Density
					No	Length (Km)	No	Length (Km)	No	Length (Km)	No	Length (Km)	
12M29d	Elongated	Dentritic	16.87	6.64	18	8.76	06	3.64	02	0.29	01	4.178	2.54
12M29a	Elongated	Dentritic	38.69	15.01	47	22.67	13	7.24	01	8.78	-	-	2.58
12M28a	Elongated	Dentritic	22.06	7.06	22	10.42	05	2.65	01	0.82	01	8.17	3.12
12M26a	Elongated	Dentritic	2.84	2.75	03	2.84	-	-	-	-	-	-	1.03
12M27a	Elongated	Dentritic	9.11	5.39	11	6.53	05	2.58	-	-	-	-	1.69
12M27c	Elongated	Dentritic	12.38	4.29	08	4.45	01	1.96	-	-	01a	5.97	2.89
12M27b	Circular	Dentritic	71.22	19.79	88	49.08	23	10.81	05	8.07	01a	3.26	3.6



Elevation

Most of the places in the project area are situated above 30msl and below 1200msl . The Peringulam watershed is seen at the top most level. The Highest point in this project area is Kurishumala (1195m) and the lowest point is Chittatumuni (32m). Following are the details of Geographic position of different area.

SL No.	Height (M)	Area (Ha)
1.	30 - 60	1847.18
2.	60 - 100	1212.21
3.	100 - 200	988.27
4.	200 - 600	1452
5.	600 - 1000	459.37
6.	> 1000	153.07
Total		6112.10

Slope

The major portion of the watershed area is in between 5 % to 70 % in slope .Above 70 % slope area is comparatively less. Likewise steep slope areas of the watersheds are seen in Peringulam .



Details of land slope in project area are mentioned below

SL No.	Slope	Geographical Area (Ha.)
1.	0 - 5 %	1105.72
2.	5 - 15 %	1293.72
3.	15 - 35 %	1840.77
4.	35 - 70 %	1598.32
5.	> 70 %	273.57
Total		6112.10

Streams

- ❖ Muttam thodu
- ❖ Vellor marithodu
- ❖ Pannikadan thodu
- ❖ Kaapinparambil thodu
- ❖ Stream originating from Puthiyankal Parambil house.
- ❖ Aaraattukadavu
- ❖ Chittar
- ❖ Muveri thodu
- ❖ Puthiyidathu thodu.
- ❖ Vandanplavu – Payyanithottam - Poonjarthodu
- ❖ Anamthanam - payanithottam – poonjarthodu
- ❖ Pottathanikadavu thodu
- ❖ Cholampuram thodu
- ❖ Konnakkamalathodu
- ❖ Kulathikunnu Thodu
- ❖ Vettikal thodu
- ❖ Ayikarathodu
- ❖ Thalikathodu
- ❖ Chemmanapally vaathil mulaplakal thodu
- ❖ Pullupara – vazhayil thodu
- ❖ Mandapathipara – aalathuvaathil – mandalathukadavu thodu
- ❖ Kosar thodu





Climate

Rain

Average rain fall in this project area is 3287 mm. The highest rain fall (4216.6 mm) was recieved in 2006. The lowest rainfall (2163mm) was recieved in 2012.



Annual rain fall features

1395 rainy days are noted in the last ten years. 65.10 % rainfall is recieved from the south west monsoon season, 19 % rainfall from North East monsoon and the balance from summer rain.

Year	Rainy Days	Rain Fall
2005	130	3266.6
2006	150	4216.6
2007	154	3812.1
2008	139	2514.2
2009	133	3073.2
2010	163	3055.9
2011	121	3174.2
2012	104	2163
2013	155	3943.5
2014	146	3653.2

Source: Regional Agriculture centre - Kozha



Rain Fall - 2005 - 2014



2005

SI No.	Month	Rain fall (mm)	No. of Rainy days
1.	January	-	-
2.	February	-	-
3.	March	9.4	1
4.	April	241.8	14
5.	May	67.4	4
6.	June	698.6	23
7.	July	740.9	29
8.	August	388.8	17
9.	September	509.1	17
10.	October	352.4	12
11.	November	214.6	10
12.	December	48.6	3
	Total	3271.6	130

2006

SI No.	Month	Rain fall (mm)	No. of Rainy days
1.	January	-33.8	2
2.	February	-	-
3.	March	108.8	6
4.	April	141.6	4
5.	May	521	16
6.	June	685.6	15
7.	July	609.6	25
8.	August	579.4	18
9.	September	718.6	20
10.	October	534.8	24
11.	November	286.4	20
12.	December	-	-
	Total	4219.6	150

Source: Regional Agriculture centre - Kozha



2007

SI No.	Month	Rain fall (mm)	No. of Rainy days
1.	January	-	-
2.	February	-	-
3.	March	3	1
4.	April	212.4	13
5.	May	304.2	13
6.	June	721.2	22
7.	July	1058.9	29
8.	August	361	14
9.	September	541	27
10.	October	346	24
11.	November	233	9
12.	December	31.4	2
	Total	3812.1	154

2008

SI No.	Month	Rain fall (mm)	No. of Rainy days
1.	January	-	-
2.	February	85.2	6
3.	March	267.9	13
4.	April	204.2	13
5.	May	12	2
6.	June	315.4	26
7.	July	749.5	24
8.	August	244.5	21
9.	September	277	13
10.	October	251	12
11.	November	59	6
12.	December	48.5	3
	Total	2514.2	139

Source: Regional Agriculture centre - Kozha



2009

SI No.	Month	Rain fall (mm)	No. of Rainy days
1.	January	-20.5	1
2.	February	18.5	2
3.	March	33	6
4.	April	70	8
5.	May	200	15
6.	June	837	24
7.	July	800.4	28
8.	August	571.4	16
9.	September	290.9	16
10.	October	125	9
11.	November	60	3
12.	December	46.5	5
	Total	3073.2	133

2010

SI No.	Month	Rain fall (mm)	No. of Rainy days
1.	January	-	-
2.	February	-	-
3.	March	44.5	4
4.	April	152	14
5.	May	341.1	16
6.	June	699.1	25
7.	July	90.8	12
8.	August	344.1	24
9.	September	388.7	22
10.	October	482.2	23
11.	November	456.8	18
12.	December	56.6	5
	Total	3055.9	163

Source: Regional Agriculture centre - Kozha



2011

SI No.	Month	Rain fall (mm)	No. of Rainy days
1.	January	-	-
2.	February	46.2	3
3.	March	45	2
4.	April	179.6	16
5.	May	252	5
6.	June	737.2	26
7.	July	534.4	26
8.	August	576	24
9.	September	440.2	17
10.	October	116.6	12
11.	November	150	12
12.	December	98	4
	Total	3175.2	147

2012

SI No.	Month	Rain fall (mm)	No. of Rainy days
1.	January	6.6	1
2.	February	-	-
3.	March	-	-
4.	April	-	-
5.	May	68.8	5
6.	June	316.6	19
7.	July	56	3
8.	August	500.2	21
9.	September	236.6	14
10.	October	306.4	15
11.	November	162.8	6
12.	December	-	-
	Total	1654	84

Source: Regional Agriculture centre - Kozha



2013

SI No.	Month	Rain fall (mm)	No. of Rainy days
1.	January	-	-
2.	February	10.4	2
3.	March	44	2
4.	April	123	7
5.	May	162.2	12
6.	June	1403.8	29
7.	July	897.6	28
8.	August	365.6	20
9.	September	335	23
10.	October	320	16
11.	November	205.1	12
12.	December	76.8	4
	Total	3943.5	155

2014

SI No.	Month	Rain fall (mm)	No. of Rainy days
1.	January	-12	1
2.	February	12.8	3
3.	March	22.8	2
4.	April	117.4	7
5.	May	206.4	8
6.	June	528	22
7.	July	609.8	24
8.	August	874	23
9.	September	292.6	17
10.	October	483	26
11.	November	217.8	10
12.	December	276.6	3
	Total	3653.2	146

Source: Regional Agriculture centre - Kozha



Drought and flood

Drought months are January , February , March and April . 70 % of watershed area is affected by acute drought. Most drought affected watershed is Peringulam. Lowest places are affected by flood in monsoon months.



Temperature

March to May are the months with highest temperature. And the lowest temperature will be at the months of November, december and january . The maximum temperature is 30°C .The annual average temperature is 27.3°C (source :CGWD Ground Water Booklet of kottayam District)



Humidity

Humidity value in morning hours is 79 % in evening it is 76 %.

Geology

Geologically the project area is under the category of Archean crystalline rocks . 97.15 % of rocks is under the group of charnochite . In 1.2 % project area are having khondallite group rocks . Considering the whole block Panchayath ,the metamorphic rock is major rock type.



Geomorphology

Major portion of the Project area falls in highland agroclimatic zone. It is in the catchment area of Meenachil river. The project area forms parts of the GramaPanchayaths, viz., Poonjarthekkekara , Poonjar , Thidanadu ,Erattupetta of Erattupetta Block and Kuttikal GramaPanchayath of Kanjirappally Block .The Peringalam ,Payyanithottam , Poonjar , Panachikapara , Aruvithura , Koondor , Thidanadu watersheds are the ones in which project implementation has to be made.

The total project area is 6112.16 hectares. In which 529.12 Hectares constitute valleys , 163.46 Hectares are denudation valleys. The geomorphological units of denudation mountain/hills and Lower plateaus constitute an area of 3149.95 Hectares, and 2095.85 Hectares respectively. The residual mountains cover an area of 55.67 Hectares, which are found in Aruvithura and Kondoor watersheds (fig & Table). The total area of each of the watersheds in which the project has to be implemented and the area of various geomorphological units delineated (fig.) in each of the watersheds are provided in the Table given below.

Table Areal and Geomorphie details of micro watersheds.

Sl. No.	Name of watershed	Total area of watershed	Denudational hills (Area in Hectares)	Lower Plateau (Lateritic) (Area in Hectares)	Residual hills (Area in Hectares)	Valley of Denudational Hills (Area in Hectares)	Valley (Area in Hectares)
1.	Peringalam(12M27b)	1973.38	119.08			1854.30	
2.	Payyanithottam(12M27c)	433.288	277.28	52		52	52
3.	Poonjar(12M27a)	542.26		108.46		54.22	36.15
4.	Panachikkappara(12M26a)	269.27		184.13			85.14
5.	Aruvithura(12M28a)	709.14		527.32	18.18	163.64	
6.	Kondoor(12M29a)	1499.88	674.94	731.19	37.47	56.24	
7.	Thidanadu(12M29d)	684.95		491.75			193.19



Geomorphology - Category Based Details (Ha)

Sl No.	Watershed	Denudational Mountains	Residual Mountains	Lower Plateau	Valley of Denudational Mountains	Valley
1.	Perigulam(12M27b)	1854.30	-	-	-	119.08
2.	Payyanithottam(12M27c)	277.28	-	52	52	52
3.	Poonjar (12M27a)	343.43	-	108.46	54.22	36.15
4.	Panachikappara(12M26a)	-	-	185.13	-	84.14
5.	Aruvithura(12M28a)	-	18.18	527.32	-	163.64
6.	Kondoor(12M29a)	674.94	37.49	731.19	56.24	-
7.	Thidanadu(12M29d)	-	-	491.75	-	193.19
	Total	3149.95	55.67	2095.85	162.46	529.12

Source :Land use Board

Technical Support Organisation: - SUSTHIRA
[Centre for Sustainable Development Studies and Action]



The water level of the project area is reducing day by day. For the last 15 years water level of well in most of the places in the project area is decreased from 2m to 3.5m. The average water level of ponds becomes 6 cm in the month of May.

Following are the values of annual groundwater recharging of various blocks in Kottayam District .

SL. No.	Block Panchayath	Ground Water Recharging (Million Cubic Metre - MCM)
1.	Vaikkam	49.15
2.	Kadumthuruthy	52.48
3.	Uzhavoor	52.51
4.	Lalam	37.33
5.	Erattupetta	32.20
6.	Pallam	77.14
7.	Pampadi	46.23
8.	Ettumannur	50.15
9.	Kanjhirappalli	42.50
10.	Madappalli	44.04
11.	Vazhoor	36.73

Source: Ground water information booklet (GWB - Kottayam)



WATER AVAILABILITY IN DIFFERENT WATERSHEDS

SI No.	Watershed	Available Months	Scarcity days
1.	Panachikappara(12M26a)	7	150
2.	Poonjar (12M27a)	8	120
3.	Perigulam(12M27b)	7	150
4.	Payyanithottam(12M27c)	8	120
5.	Aruvithura(12M28c)	9	90
6.	Kondoor(12M29a)	8	120
7.	Thidanadu(12M29d)	9	90

Peringulam watershed is facing the severe water scarcity. This type of water scarcity is also seen in the top region of Kondoor watershed and Payanithottam watershed.

The water availability of streams in different watersheds are given below:

SI No.	Watershed	Water Availability
1.	Perigulam(12M27b)	June - January
2.	Poonjar (12M27a)	June - February
3.	Payyanithottam(12M27c)	June - March
4.	Panachikappara(12M26a)	June - January
5.	Kondoor(12M29a)	June - March
6.	Aruvithura(12M28a)	June - April
7.	Thidanadu(12M29d)	June - March

The streams which shows water availability till May will be the main streams of the watershed. Only one or two main streams will not get dried off, all the others do. By the end of the month December, the water availability of the sub streams decreases.



The average depth of the wells present in the watershed area.



Sl No.	Watershed	Upland (m)	Midland (m)	Lowland (m)
1.	Perigulam(12M27b)	8	6	4.5
2.	Poonjar (12M27a)	8	5.50	4.5
3.	Payyanithottam(12M27c)	8	6	4.5
4.	Panachikappara(12M26a)	10	6	4
5.	Aruvithura(12M28a)	12	10	6
6.	Kondoor(12M29a)	6	5	4
7.	Thidanadu(12M29d)	7.5	6	4



The Average Depth of the Ponds

Sl No.	Watershed	Depth (M)
1.	Perigulam(12M27b)	3.25
2.	Poonjar (12M27a)	3
3.	Payyanithottam(12M27c)	3
4.	Panachikappara(12M26a)	8
5.	Aruvithura(12M28a)	8
6.	Kondoor(12M29a)	5
7.	Thidanadu(12M29d)	5



The ground water level of various watershed

Sl No.	Watershed	After Rain		Before Rain	
		Well (m)	Pond (m)	Well (m)	Pond (m)
1.	Perigulam(12M27b)	5	1.7	1.5	0.5
2.	Poonjar (12M27a)	5.5	1.7	1.5	0.25
3.	Payyanithottam(12M27c)	5	1.5	1.5	0.25
4.	Panachikappara(12M26a)	9.25	7	2	1.5
5.	Aruvithura(12M28a)	9	7	2.5	1.5
6.	Kondoor(12M29a)	4	1.4	1.5	1
7.	Thidanadu(12M29d)	5	3.5	1.5	1.5

Water Supply and Irrigation

The project area is having around 21.24 km river side. Water supply from the streams are comparatively less in this project area. As the availability of water decreased, the people turned to rubber plantation where the need of water is less compared to other crops. For irrigation people mostly depends upon rivers.

Water supply and Irrigation Schemes in the Project Area.

- 1) VCB (Vertical Cross Bar) in Erattupetta.
- 2) Public pond in Grama Panchayath.
- 3) Vaalplakkal Drinking Water Project
- 4) Chinnam Drinking Water Project
- 5) Peringulam Drinking Water Project.
- 6) Nellikkalchaal Thannippara Drinking Water Project.
- 7) Adaikkappara Drinking Water Project.
- 8) Kanjiramattam Drinking Water Project.



SOCIO-ECONOMIC DETAILS

Population

The total population of the project area is 35528. Out of these 16874 are females and 16654 are males .details regarding the population are mentioned below:

Total family	:	8611
BPL	:	3506
APL	:	5106
Total Population	:	33528
No of males	:	16654
No of females	:	16874
Scheduled caste family	:	144
Scheduled tribe family	:	91



POPULATION DATA OF MICRO WATERSHEDS

SL No	WATERSHED NAME	WATERSHED CODE	TOTAL FAMILY	TOTAL POPULATION	MALE/FEMALE	SC FAMILIES	ST FAMILIES	APL FAMILIES	BPL FAMILIES
1	Aruvithura	12M 28a	2318	9523	M- 4702	16	5	1562	756
					F - 4821				
2	Peringalam	12M 27b	949	3136	M- 1661	9	50	620	329
					F- 1475				
3	Thidanadu	12M 29d	832	3155	M- 1510	28	1	522	310
					F- 1645				
4	Panachikappara	12M 26a	1766	6972	M- 3460	27	4	1051	72
					F- 3512				
5	Kondoor	12M 29a	1486	6344	M- 3126	29	2	707	779
					F- 3218				
6	Payyanithottam	12M 27c	582	1834	M- 923	19	0	274	308
					F- 911				
7	Poonjar	12M 27a	668	2564	M- 1272	18	29	369	299
					F - 1292				
Total			8601	33528	M- 16654	146	91	5105	2853
					F- 16874				



Population Density

The population density of Kerala is 859, district is 896 and the block panchayath is 460 .The population density of the project area is 549.it is comparatively higher then the block panchayath. Among this panichipara watershed is having the highest population density of 2585 .

Sl No.	Watershed	Population Density
1.	Panachikappara(12M26a)	2585
2.	Aruvithura(12M28a)	1342
3.	Poonjar (12M27a)	472
4.	Thidanadu(12M29d)	460
5.	Payyanithottam(12M27c)	423
6.	Kondoor(12M29d)	422
7.	Perigulam(12M27b)	158

Education facilities

In the feild of Education , Kottayam district place the top most level . .All the facilities related to educational system are also present in the Kottayam district.Many educational institutions are present in the project area .Following are some of the Educational Institutions of the project area .





Sl. no	Name of the institution	Sector
1	Govt L P School ,kaippally	Govt
2	Holy Spirit Public School, Payyanithottam	Pvt
3	St . Antonys H.S.S ,Poonjar	Pvt
4	St .Antonys L.P School	Pvt
5	Holy Spirit K G School	Pvt
6	IHRD Engineering College ,Poonjar	Govt
7	SNPA Arts And Science College ,Poonjar	Pvt
8	Govt .Muslim L P School,Erattupetta	Govt
9	Misthagul Ulum Arbic School	Pvt
10	Govt . V H S S ,Thidanadu	Govt
11	St .Joseph L P School ,Maniyumkulam	Pvt
12	Govt . L P School, Panichippara	Govt
13	SMV Govt H S S ,panachippara	Pvt
14	<i>Centre for Sustainable Development Studies and Action</i> St.Mary's Goreniy Highschool ,Chennadu	Pvt
15	Nimala L P School ,Chennadu	Pvt
16	St . Mary's L P School ,Aruvithura	Pvt
17	St.George L P School,Vevilkanampara	Pvt



Health Sector

Following are the medical institutions in the project area .

- ❖ P.H.C Thidanadu Ambalam
- ❖ Govt. Ayurveda Dispensary
- ❖ Govt .Homeo Dispensary
- ❖ P.M.C Hospital ,Erattupetta
- ❖ Medicare Hospital Erattupetta
- ❖ P.H.C Aruvithura
- ❖ P.H.C chennadu ,Kondoor
- ❖ P.H.C panachippara
- ❖ Jijo hospital Poonjar
- ❖ Govt Homeo Dispensary Poonjar
- ❖ Govt Ayurvedic Dispensary Poonjar
- ❖ Mukalel Homeo Clinic Peringalam
- ❖ Chembukulam Ayurvedic Dispensary
- ❖ Govt Ayurvedic Hospital Panachippara
- ❖ PMC Hospital Erattupetta





Credit Facilities

Some of the important banks in the project area are given below:

Sl.no	Name of bank	Wa
1	State Bank of India ,Thidanadu	Kondoo
2	South Indian Bank ,Panichippara	Panachi
3	Meenachil East Co-operative bank.	Panichi
4	Central Bank Poonjar	Poonjar
5	Federal Bank Poonjar	Poonjar
6	Meenachil East Co-operative Urban Bank	Poonjar
7	Poonjar Service Sahakarana Bank	Poonjar
8	Muthoot Bank (3)	Poonjar
9	Meenachil Service Shakarana Bank	Peringu
10	Thidanadu Service Sahakarana Bank	Thidan
11	<i>Technical Support Organisation: - SUSTHIRA</i> <i>(State bank of India Department of Studies and Action)</i>	Panichi
12	State bank of India ,Erattupetta	Panichi
13	Federal Bank Erattupetta	Panichi



Market Facilities

Market facilities are not that much in this project area. The main market places are Erattupetta town in Panichippara watershed and Poonjar town in Poonjar watershed. Other watershed people depend on the following market places.

Sl no	Watershed	Market	Distance
1	Thidanadu	Erattupetta Kanjirapally	10-15 Km
2	Kondoor	Erattupetta	03-06 Km
3	Aruvithura	Erattupetta	0.5-04 Km
4	Payyanithottam	Poonjar	04-06 Km
5	Peringulam	Poonjar	07-10 km

Land Holding Details

Most of the family in the project area have land in between 5cent to 50 cent.

Sl.no	Area	Families
1	0-5cent	1698
2	05-50cent	3882
3	50-100cent	873
4	100-250cent	594
5	250-500cent	416
6	>500cent	162



Transportation Facilities

This project area has transportation facilities to all the directions of the area. Tarred roads are the most but some area is still not having tarred roads. The main problem regarding the roads are that the breadth of the road is less which leads to accidents. Following are the roads in the project area.

Main Roads in the Project Area

- Kanjirappaly Erattupetta Road
- Thidanadu Bharanaghanam Road
- Thidanadu Ambalam Road
- Poovanthodu Aruvithura Road
- Thidanadu Madamala Road
- Chittattinkara Wagathanam Road
- Kondoor Amballam Road
- Manjakkal Road
- Aruvithura Bharanaghanm Road
- Thidanadu Veyilkanampara Road
- Thidanadu Puthuvadikunnu Road
- Thidanadu Vettikullam Road
- Thidanadu Chennadu Road
- Erattupetta Block Padi road
- Erattupetta College Road
- Erattupetta Pala Road
- Erattupetta Poonjar Road
- Erattupetta Thikoyi Road
- Erattupetta market Road
- Vanchakkal Road
- Ettupankkil Road





- Erattupetta - Chennad Road
- Thaipparambu Colony Road
- Mutharamkunnu Road
- Javan - Mantha Road
- Chennad - Vettikkal Road
- Chirappara Road
- College - Kondoor Temple Road
- Mandapathilppara Road
- Nellikkachan - Thannippara Road
- Chemmarappalli Paramada Road
- Mattkkadu Road
- Veliyepallikkandam - Nellikkachal Road
- Puthiyaniyakkal - Shappumpadi Road
- Muzhiyangal Arayathinal Colony Road
- Panachikappara Maniyamkunnu Road
- Thannippara Maniyamkunnu Road
- Thannippara - Vagaman Road
- Poonjar - Peringulam Road
- Poonjar - Cherimala Road
- Poonjar - Charaikkunnu Road
- Kallekkulam - Kulathingal - Mavad Road
- Killekkulam - Neelolmala Road (Mud Road)
- Kallekkulam - OV. Varky Road (Mud Road)
- Vettipparambu Road
- Peringulam - Chinnam - Mavadi Road
- Vandanplavu - Edamala Road
- Payyanithottam - Anathanam Road
- Peringulam - Pachikkar Road
- Peringulam - Temple Road





- Kudamuratti - Erakkara Road
- Poonjar - Peringulam - Kaippalli Endayar Road
- Adivaram - Mannungan Road
- Adivram - Muthukunnam Temple Road
- Adivaram - Pachikkan Road
- Adivaram - 4 Cent Colony A Road
- Adivaram - Kunnadu Road
- Adivaram - Kurishumala Road
- Adivaram - Purakkad Road
- Kaippalli - Kaplangadu - Kundanara Road
- Kaippalli Temple Road
- Kaippalli - Muttam - Mannungal Road
- Kaippalli - Kalatha Road
- Kaippalli - Chattambi - Chunnambukallu Road (Mud Road)
- Kaippalli - Kaplangadu - ST Colony Road
- Parappanthara - Manguzhi Temple Road
- Poonjar - Vathampuzha Road
- Kulathumgal - Nathanan Colony Road
- Poonjar - Pallikkunnel Temple Road

RECREATIONAL FACILITIES

Many clubs and libraries are present in the project area for recreation. Main activities are focussed in the areas of Arts ,Sports ,Social services and Charity.

Recreational Centres

1. K K Thomas Memorial Library ,Adivaram - Peringulam Watreshed
- 2.V-One Arts &Sports Club Kalekulam - Poonjar watershed
- 3.Erattupetta Block Panchayath Cultural Nilayam - Poonjar Watershed .



Part - V



Agriculture



Erattupetta is exclusively an agriculture area where cash crops and spices are widely cultivated. However, cash crops come first. Out of the total available agriculture land, 95% are occupied by cash crops and spices. Food crops are cultivated only in the remaining 5% of the land. Rubber (85%) constitutes the main crop and presently 2101.39 hectares of land is occupied by rubber. The production of rubber per hectare is 1514 Kgs. Coconut occupies around 347 hectares and the production is 5209 kgs per Hectre . Plantain cultivation is in 94 hectares out of which 70 hectare is occupied by banana. The production of banana is 12000 Kgs per hectare. 170.7 hectares is cultivated with spices and vegetables like pepper, coffee, cocoa, ginger, Clove, turmeric, cauliflower, tomato, sweet potato, cabbage, tapioca, yam and nutmeg.

The crop production and production is illustrated in the table given below:

Item	Area (Hectre)	Production (Kg)	Production (Kg/Ha)
Rubber	4887.35	7399447	1514
Coconut Tree	347.96	1812523.64	5209
Platain	24	204008	8500
Banana	70	840000	12000
Pepper	52	29120	560
Coffee	8	6400	800
Cocoa	26	36400	1400
Ginger	5.5	35750	6500
Gramboo	1	600	600
Turmeric	4	13600	3400
Cauliflower	0.2	560	2800
Tomato	0.5	2125	4250
Sweet Potato	2	13000	6500
Cabbage	0.5	1600	3200
Tapioca	60	2160000	36000
Elephat Foot	5	67500	13500
Nutmug	6	4500	750

Source: A.D. Office, Kanjirappalli



Part - VI

COMMUNITY BASED ORGANIZATIONS



Many Community based organizations are present in the project area. Many active organizations such as Kudumbasree, Janasri and other groups based on different organizations are present in the project area. Following are some of the major organizations present in the project area.

Sl. No	Groups	Numbers
1	SHG	78
2	USER groups	Under Formation
3	Federation	Under Formation

INCOME GENERATING ACTIVITIES

Many activities such as pickle production units, food item production units, cow rearing units, goat rearing units are organized by kudumbasree and other organizations. The main source for income are coming from the shops present in Erattupetta and Poonjar Town. People give more importance to the livestock activities such as cow rearing, goat rearing, bee keeping, and backyard system of poultry.

Part - VII

ANIMAL HUSBANDRY



Observations and study of statistics disclosed that people in Erattupetta block panchayat are interestingly taking up animal husbandry as one of the subsidiary income source as well as supplementing venture that foster their agriculture. The details of Livestock population in the watershed area is given below.

Sl.No	Particulars	Numbers
1	Cattle (male)	1111
2	Cattle (Female)	10880
3	Goat	8004
4	Fowl (indigenous Variety)	84329
5	Fowl (Hybrid Variety)	26354
6	Duck	992

Following are the details of the activities done in different watersheds under Erattupetta Block Panchayath.



Sl No.	Watershed	Cow	Buffalo	Buffalo Male	Goat	Poultry	Duck	ഘോട	Pig	Rabbit	Fish	Dog	Cat
1.	Aruvithura	133	0	0	265	1376	77	55	6	34	310	247	370
2.	Kondoor	236	2	5	371	1788	43	90	16	89	592	348	367
3.	Panachikappara	15	0	0	33	660	10	65	1	38	327	53	29
4.	Payyanthottam	36	0	11	164	343	18	0	13	40	0	33	24
5.	Perigulam	139	0	1	492	1526	15	0	30	52	535	100	142
6.	Poonjhar	28	0	0	70	543	8	6	6	40	260	81	57
7.	Thidanadu	91	0	0	118	788	56	308	37	25	427	299	84
	9Total	678	2	17	1513	7024	227	524	109	318	2451	1161	1043



Milk production

An average of 4068 liters milk is produced in the project area. Only 30.58% of milk is available to the total population (33528) of project area. The production of milk is very less in this area. The number of milma society is very less in number in the project area for the distribution of the products. The main Milma Society in the project area are Panichippara Milma Society, Malanadu Milma Society and Kanjirappally Milma Society

Part - VIII

Soil Type



Different types of soils are present in the project area. Following are the details of different types of soil type present in the watershed area.

Sl. No	Name Of The Watreshed	Soil type code – area (Hactre)				
		K-07	K-09	K-13	K-31	K-38
1	Panichikapara	9.3	0	0	259.97	0
2	Kondoor	214.27	0	274.26	1011.35	0
3	Peringalam	0	0	0	1669.	303.58
4	Thidanadu	290.87	46.92	0	347.16	0
5	Poonjar	0	0	0	542.26	0
6	Anuvithura	198.55	37.83	0	472.76	0
7	Payyanithottam	0	0	0	433.22	0



Different Types of Soil and its Classification

Soil Code	Description of Major Soil	Major S
K-07	<p>Very deep, well drained, gravelly clay soils on gently sloping coastal laterites, with moderate erosion;</p> <p>Associated with very deep, well drained, gravelly clay soils with moderate surface gravelliness.</p>	<p>Clayey – ske Kaolintic, T Kandiustult</p> <p>Clayey-skele Kaolintic, T Kanhaplust</p>
K-09	<p>Very deep, well drained, gravelly clay soils with moderate surface gravelliness on moderately steeply sloping laterite mounds, with moderate erosion;</p> <p>Associated with deep, well drained, gravelly clay soils on gentle slopes.</p>	<p>Clayey – ske Kaolintic, O Humitropep</p> <p>Clayey-skele Kaolintic, U Haplohumu</p>
K-31	<p>Very deep, well drained, gravelly loam soils on steeply sloping medium hills with thick vegetation; with moderate erosion;</p> <p>Associated with very deep, well drained, clayey soils on moderate slopes.</p>	<p>Fine-loamy, Ustic Humit</p> <p>Clayey, Mix Ustic Paleh</p>
K-36	<p><i>Technical Support Organization: - SUSTHRA (Centre for Sustainable Development Studies and Action)</i> Very deep, well drained, clayey soils on moderately steeply sloping high hills with thick vegetation, with moderate erosion;</p> <p>Associated with deep, well drained, gravelly loam soils on gentle slopes.</p>	<p>Clayey, Mix Ustic Haplohumu</p> <p>Fine-loamy, Oxic</p>

source :Land Use Board



Part - IX

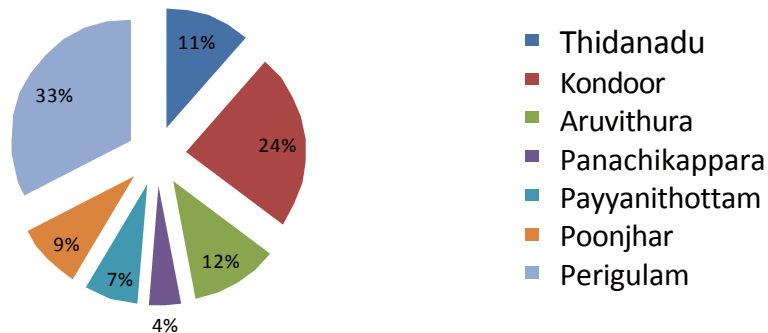
MICRO WATRESHEDS

As a part of the project ,the development programme is done in the following seven mico watersheds.

Watersheds

Sl No.	Watershed Name	Code	Area	Project Cost
1.	Thidanadu	12M29d	684.95	10274250
2.	Kondoor	12M29a	1449.88	22497450
3.	Aruvithura	12M28a	709.14	10637100
4.	Panachikappara	12M26a	269.27	4039050
5.	Payyanothottam	12M27c	433.22	6498300
6.	Poonjhar	12M27a	542.26	8133900
7.	Perigulam	12M27b	1973.38	29599950
	Total		6112.10	91680000

Area





(b)

Geographical position of watershed

THIDANADU WATERSHED

Watershed code : 12M 29d
Longitude : 76° 44' 10" East - 76° 46' 20" East
Latitude : 9° 38' 10" North - 9° 42' 20" North

KOONDOR WATERSHED

Watershed code : 12M 29a
Longitude : 76° 44' 20" East - 76° 49' 18" East
Latitude : 9° 36' 36" North - 9° 41' 25" North

ARUVITHURA WATERSHED

Watershed code : 12M 28a
Longitude : 76° 44' 30" East - 76° 47' 58" East
Latitude : 9° 38' 35" North - 9° 41' 30" North

PANICHIKAPARA WATERSHED

Watershed code : 12M 26a
Longitude : 76° 46' 4" East - 76° 48' 5" East
Latitude : 9° 39' 35" North - 9° 40' 40" North

PAYYANITHOTTAM WATERSHED

Watershed code : 12M 27c
Longitude : 76° 48' 20" East - 76° 50' 27" East
Latitude : 9° 39' 7" North - 9° 40' 20" North

POONJAR WATERSHED

Watershed code : 12M27a
Longitude : 76° 47' 45" East - 76° 50' 35" East
Latitude : 9° 39' 42" North - 9° 40' 50" North

PERINGALUM WATERSHED

Watershed code : 12M 27b
Longitude : 76° 50' 5" East - 76° 54' 9" East
Latitude : 9° 37' 47" North - 9° 40' 32" North



(b) Other Details

Sl No.	Watershed Name	Gramapanchayat	Ward	Block
1.	Thidanadu	Thidanadu	2,5,6,11,12,13,14	Erattupetta
2.	Kondoor	Thidanadu Erattupetta Poonjar Parathodu	2,3,4,13 17 1,10,11,12,13 1,2	Erattupetta " Kanjirappally
3.	Aruvithura	Thidanadu Erattupetta Poonjar	2,3,4 13,14,15,16,17 1,7,8,13	Erattupetta " "
4.	Panachikappara	Erattupetta Poonjar Poonjar Thekkekkara	10,11,12 2,3,4,5,6 1	Erattupetta " "
5.	Payyanithottam	Poonjar Thekkekkara Theekkoyi	6,7,13,14	Erattupetta
6.	Poonjar	Poonjar Thekkekkara	1,2,3	Erattupetta
7.	Perigulam	Poonjar Thekkekkara Koottikkal Theekkoyi	3,4,5,6,7 6 7,8	Erattupetta Kanjhirappalli Erattupetta



Part - X

PROJECT PLANNING

For the implementation of the project many methodologies are adopted. Following are some of the important methodologies .



10	Finding the project activities	On the basis of PRA and other tools ,activities to be implemented in the project area are noted
11	Transect Walk	A transect walk is a systematic walk along a defined path (transect) across the community/project area together with the local people to study present land status ,soil type ,present land use pattern ,crop yield ,present problems and suggestive measures .
12	Conducting one day workshop	In order to make awareness about the livelihood plans ,micro enterprises plan and other income generating programmes to the watershed people .
13	Water level measurement	Water level in selected wells and ponds were measured.
14	Photo documentation	Photo documentation is done regarding the problems analyzed in the project area.
15	Expert advice	Took advice from WCDC and other block level experts
16	Awareness Training Programme	Many awareness Training programme are conducted by the project Implementing Agency .
17	Formation of watershed committee	Watershed committees are formed in all the watershed taken for treatment under IWMP.
18	Information Education And Communication Programme	Information Education And Communication Programme are conducted.
19	Draft Report Presentation	Draft report presentation was done before the Block Panchaytah,Grama Panchayath board members ,block co-ordination committee and watershed committee.

Block Level Project Inauguration



Panchayath Level Workshop



Workshop conducted in Poonjar Thekkekkara Gramapanchayath



Workshop conducted in Thidanadu Gramapanchayath

BLOCK LEVEL EVALUATION CAMP



SURVEY TEAM - TRAINING PROGRAMME



BOUNDARY DELINEATION



Boundary Delineation in Kondoor Watershed through Transect Walk

BOUNDARY DELINEATION



Boundary Delineation in Peringala Watershed



Main Stream in Payyanithottam Watershed

BOUNDARY DELINEATION



Boundary delineation through Transect Walk in Aruvithura watershed



Boundary delineation through Transect Walk in Panachikappara watershed



Boundary delineation through Transect Walk in Poonjar watershed



Boundary delineation through Transect Walk in Thidanadu watershed

PARTICIPATORY RURAL APPRAISAL



PRA in Aruvithura Watershed



PRA in Panachikappara Watershed



PRA in Peringulam Watershed

PARICIPATORY RURAL APPRAISAL



PRA in Kondoor Watershed



PRA in Poonjar Watershed



PRA in Thidanadu Watershed



Project Management and Institutionalization

Project management and organization structure at different level as shown below:

1. State Level:

The State Department for Rural Development is the implementing agency at State Level. However to guide and direct the District, Block and Grama Panchayat level implementation of the project, a State Level Nodal Agency (SLNA) is formed and institutionalized. The Commissioner of Agriculture Production shall be the Chairman of SLNA and the Principal Secretary to the Government for Local Self Government Department (LSGD) shall be the co-chairman. The chief executive officer of SLNA shall be the Commissioner of Rural Development.

2. IWMP – Technical Support Unit

In order to assist SLNA and to provide them with technical support and guidance in technical matters and management patterns, and for evaluate the progress of the works done, a Technical Support Unit is established.

3. District Level

The District Planning Committee (DPC) holds the sole authority of planning and implementation of the project at district level. District Level Coordination Committee (DLCC) shall be formed to supplement DPC in their activities. The District Level Coordination Committee shall be chaired by the District Panchayat president and the district collector shall be the member secretary. The Technical coordinator of this committee shall be the Principle Agriculture Officer and the Project Manager shall be the Project Director of Poverty Alleviation unit. At the district level there is the Watershed Cell Cum Data Centre (WCDC) which will oversee the implementation of watershed programme in each district.



a. Arrangements at Block Level

Block Panchayat holds the sole authority of project implementation and is called the Project Implementation Agency (PIA). If the project area comes under more than one block, that Block which includes major part of the watershed area shall be PIA.

b. Block Level Coordination Committee (BLCC)

The PIA shall form a block level coordination committee to help them to proceed with the IWMP activities in a most effective manner and to arrange administrative and technical support.

c. Watershed Development Team (WDT)

This is constituted with technically qualified personnel selected at district level to extend technical assistance to the PIA. One among such personnel should be a female.

d. Block Level Watershed Development Society (BLWDS)

Block Level Watershed Development Societies (BLWDS) shall be formed including all the watershed development societies and functionalized in the watershed area formed for implementing the livelihood development programmes in each watershed area. The BLWDS will have a General Body as well as an Executive Committee. This executive committee will see to the day-to-day affairs of the society.

d.1. The General Body

The general body consists of the nine elected members from each Watershed Development Societies (WDS) in the IWMP project area

d.2. The Executive Committee

The nine member Executive Committee shall be formed by electing members from the General Body. Among the nine members there should be female members not less than five and SC/ST representative not less than two. The following office bearers shall be elected from among the executive committee members:



1. BLWDS President
2. BLWDS Vice President
3. BLWDS Secretary

One among these should be female and one should be from SC/St communities. The Block Panchayat Secretary, Women welfare extension officer at Block level and Social Mobilizer from the WDT shall be the Ex-officio members in the Executive Committee

4. Block Level Technical Committee and Livelihood Activities

A technical committee shall be formed with the Block Panchayat Secretary as Chairperson, Jt. Block Development Officer and General Extension Officer as members. This committee should scrutinize the application received from the groups and examine against its technical feasibility.

5. Activities of organizations at GP Level

In practical, the watershed activities are being implemented in the GP areas. In order to ensure time bound implementation of the activities and to ensure effective monitoring GP Level Watershed Committee need to be formed and activated. In case of the watershed comes under two or more GPs, separate watershed committees should be formed for each GPs.

6.a. Watershed Committees (WC)

The responsibility of implementing watershed programme is vested in the Watershed Committee formed with the members elected from each Grama Sabha. In this committee there should be a minimum of ten members. Out of this ten, six are representatives of Self Help Groups/ User Groups and representative of SC/ST, women and the landless. The concerned ward member, WDT representative and TSO representative shall also be members of this watershed committee. The Chairman of the WC shall be the GP President and the Secretary shall be the Village Extension Officer (VEO) of the concerned GPs.

6.b. Watershed Grama Sabha.

Watershed Grama Sabha is one of the important activity to be taken into consideration in the implementation of watershed activities. Watershed Grama Sabha includes all the families in a



particular watershed and it is organised in order to get the project activities approval, selection of beneficiaries on a poverty basis, to evaluate the project activities implemented and to conduct social auditing. The responsibility for organising Grama Sabha is with the concerned conveners.

6.c. Self Help Groups (SHGs)

Self Help Groups are formed under the auspice of WDT. When forming such groups, the WDT should have an inclusive approach. People with similar mentality and behavioral pattern like small and marginal farmers, landless, farm laborers, women, SC/ST etc shall be included in SHGs. SHGs can be graded and provided with revolving fund based on rank they secure in ranking.

6.d. User Groups (UGs)

User groups are formed with those who have land in the project area and those who are the direct beneficiaries as members. The responsibility of forming and facilitating the UGs is with the Watershed Committees (WCs).

6.e. Formation of Joint Liability Groups (JLG)

To take up and implement the livelihood activities planned as part of IWMP joint liability groups are to be formed and activated. There should be 5 to 10 members each in a JLG. The members of a joint liability group should be with same livelihood activity either from single SHGs/NHGs from the same area or from SHGs/NHGs from different areas. JLGs can be formed exclusively for women and exclusively for men. JLGs for mixed groups are also possible. While forming the JLGs, it should be borne in mind that only one member of the family can be included in a single JLG. The JLGs should register with the WCs and a consolidated register of the JLGs should be kept with the Block Panchayat. There should be a president and Secretary for each JLG and if there is any one from the SC/ST communities in the JLG, one among the president or the secretary should be from those communities. If the JLG is a mixed one, one among the office bearers should be a woman. It should be ensured that the office bearers belong to BPL families.

6.f. Watershed Development Society (WDS)

As in the case of Block Level Watershed Development Societies, Grama Panchayat Level WDS also need to be formed and promoted. The structure at GP level should be as follows: If there are at least ten JLGs in the watershed, WDS can be formed with the existing JLGs. If the number of



JLGs is less than ten, WDS can be formed by adopting JLGs from the neighbouring watersheds. There will be General Body and Executive Committee for the GP Level WDS.

6.f.1. General Body

The General body comprises all the three member executive committees of the JLGs formed and promoted in a watershed.

6.f.2. Executive Committee

A nine member executive shall be elected from the General Body of the WDS. In such elections members not less than five should be women and adequate representation (not less than two) should be ensured for SC/ST communities. From among the executive members there should be three office bearers as follows:

1. WDS President
2. WDS Vice President
3. WDS Secretary

One among these should be female and one should be from SC/St communities. Besides, all these three should be from BPL Families.

Selection of Beneficiaries

Selection of the beneficiaries for individual schemes is done in the Grama Sabha specially convened for the purpose. The project activities are detailed and explained once again in such Grama Sabhas and application forms are distributed during the Grama Sabha meeting. The received applications are consolidated and a shortlist is being prepared by the WDT in consultation with the conveners and once again the list is presented in the Grama Sabha and finalized. This list is given to the Governing Council of the Grama Panchayat for final approval.

Implementation

The implementation of each activity will be under the close and direct supervision of the watershed Committees (WCs). The WDT will provide technical assistance wherever necessary. Valuation procedure will also be completed as per government proceedings by the WDT. If a change in location is needed it should be recognized and approved by the WC and the change should be recorded in the minute's book of the WC.



Project Management

IWMP is being implemented in three phases. The duration of the IWMP project shall be from 3 to five years.

Phase I

Planning is done in this phase. The main activities in this phase are formation of systems and structures like Self help Groups (SHGs), User Groups (UGs), Watershed Committees (WCs) etc and organizing and conducting capacity building trainings for these structures. Moreover, preparation of the Detailed Project Report (DPR) is also should be done in this phase. Entry Point Activities (EPA) are to be implemented in this phase, as EPAs are planned and implemented to attract the people towards the IWMP implementation and to assure people that an integrated development intervention is coming up following the EPA.

Phase – II

Implementation will be done according to the annual action plan prepared in the DPR, which subject to the institutions established for the implementation and monitoring and evaluation will also be conducted simultaneously by internal and external agencies

Phase III

Besides arrangement of a mechanism that ensures sustainability and continuity of the schemes that implemented in the watershed. Preparation of completion reports, documentation and evaluation of the project are the main tasks to be carried out in the third phase.

Prioritization of Activities

The Watershed Committee shall prioritize the activities to be implemented on the basis of the climatic conditions. The implementation shall be carried out as per the schedule prepared by the Watershed Committee

Monitoring

The monitoring shall be a joint effort of WDT, Panchayat Level Coordination Committee and Block level Coordination committee. Modern survey software and other help lines shall also be made use of.

MAJOR PROBLEMS IN THE PROJECT AREA



By the end of January, water flow comparatively reduces



Different water sources in Aruvithura Watershed

VARIOUS SITUATIONS



The waterflow is blocked due to waste filling



Crop Disease

Soil Erosion



Plastic waste in river

VARIOUS SITUATIONS



Streams are converted to garbage



Rubber Plantation



Drastic conditions of roots

DRASTIC CONDITIONS OF DIFFERENT WATER SOURCES



VARIOUS SITUATIONS



River covered by trees



Poor conditions of streams



VARIOUS SITUATIONS



Streams are converted to garbage



Rubber Plantation



Drastic conditions of roots



An old granite quarry situated in Panachikkapara Watershed



**Granite quarry in
Poonjar Watershed**



An old Granite quarry

**Transportation Facilities
in the Project Area**



**Pathetic conditions of the road
in the project area**



Poonjar Palace

Colony



**Project should be implemented for the
welfare of poor people**



PART - XI

CONVERGENCE

Many programmes can be converged with the Watershed Management Programmes.

- Integrated Watershed Management Programme (IWMP) of the land resources department has been identified as an important scheme for convergence with NREGS. NREGS works are more related to the soil and water conservation.
- The activities such as fodder grass cultivation, tuber crops cultivation, banana cultivation, earthworm compost etc are integrated with the department of agriculture and NHM.
- The activities like goat rearing and cow rearing can be converged with the dairy department and veterinary department.
- Bee keeping program is converged with the Khadi Department.
- Fishery programme is converged with Fishery Department.

Likewise other activities of the project can be integrated with other concerned departments.

PART - XII

MAJOR ACTIVITIES OF THE PROJECT

Major activities of the project are given below :

- Capacity building plan
- Initial stage planning
- Natural resource management programme
- Livelihood promotion activities.
- Production system management programme



PART – XIII

CAPACITY BUILDING PLAN AND INFORMATION EDUCATION AND COMMUNICATION PLAN

Need

Kerala is flourished with many natural resources. But in the case of water, we are facing the scarcity. To avoid this situation, we should be alert and should harvest the rain water for the water supply to the agricultural and household purpose. For creating such awareness, the Integrated Watershed Management Programme organizes Capacity Building Plan. Capacity building also referred to as capacity development is a conceptual approach that focuses on understanding the obstacles that inhibit people government and non- government organizations from realizing their developmental goals while enhancing the abilities that will allow them to achieve measurable and sustainable results.

Objectives

- **Individual level** : Capacity building on an individual level requires the development of conditions that allow individual participants to build and enhance existing knowledge and skills .
- **Institutional level** : Capacity building on an institutional level should involve creating institutions and moderating existing institutions and supporting them in forming sound policies ,organizational structures ,and effective methods of management and revenue control.
- **Societal level** : Capacity building at the societal level should support the establishment of a more “interactive public administration that learns equally from its actions and from feedback it receives from the population at large”.
- To develop work strength among the people behind the integrated watershed management programme for the sustainable results .
- Create awareness about the IWMP to the common people.
- Making aware to the current problems and situations .
- Establishing participatory actions to solve problems .
- Explain new technologies related to environmental protection .
- Introduce Scientific methods for soil and water conservation
- Develop social change.
- Enhance the groundwater scenario.

Representatives

- Watershed community



- Watershed committee
- User group representatives
- Neighborhood clusters
- Joint liability groups
- Watershed development society
- Block level watershed development society
- Block level co-ordination committee
- Grama panchayath board members
- Block panchayath board members
- Watershed development team
- TSO
- WCDC
- PAU
- SLNA
- Other members.

Key area for the capacity building.

- Lack of knowledge regarding the scientific methods for soil water conservation.
- Shortage of cluster groups for the environmental protection programmes
- Lack of leadership
- Lack of guidelines for environmental protection activities
- Lack of knowledge about IWMP among normal people .
- Eco-friendly approaches are less.
- Lack of waste management programme.



INTEGRATED WATERSHED MANAGEMENT PROGRAMME

ERATTUPETTA BLOCK PANCHAYATH

CAPACITY BUILDING & IEC PLAN

COST AT A GLANCE

Sl No	Funding pattern	Percentage	Amount
1.	State level programmes	6	247536
2.	District level programmes	18	742608
3.	Block level programmes	76	3135456
Total		100	4125600

PROJECT WISE ALLOCATION

Sl No	Phase	Amount
1.	1 st	1375200
2.	2 nd	916800
3.	3 rd	916800
4.	4 th	916800
Total		4125600
Less State and District wise programme fund		990144
Balance		3135456
Implementation Plan		Amount
1.	<u>Phase -1</u> Total Allocation - 100% of State wise programme fund and 25 % of the District level allocation ie, : 1375200- 247536 - 185652	942012
2.	<u>Phase - 2</u> Total Allocation - 25 % of the District wise programme fund ie, : 916800- 185652	731148
3.	<u>Phase -3</u> Total Allocation - 25 % of the District wise programme fund ie, : 916800- 185652	731148
4.	<u>Phase - 4</u> Total Allocation - 25 % of the District wise programme fund ie, : 916800- 185652	731148
Total		3135456



CAPACITY BUILDING & IEC PLAN

Phase - I

Sl No	Name of Activity / Training	Participants / Stake holders / Place	Main sub activity / Topics	Target / Average No. of participants	Expenditure / Unit cost	Amount
1.	Printing of Vouvher	Each households, Offices, schools, town area etc	<ul style="list-style-type: none"> ➤ Designing ➤ Printing ➤ Distribution 	10000 copies	10000 x 10	100000
2.	Printing of stickers	Each households, Offices, schools, town area, vehicles etc	<ul style="list-style-type: none"> ➤ Designing ➤ Printing ➤ Distribution 	10000 copies	10000 x 8	80000
3.	Wall writing	Block panchayath office, Gramspanchayath office, Public places etc.	<ul style="list-style-type: none"> ➤ Wall writing 	-	-	50000
4.	Distribution of cloth bags	Watershed community, People's representatives, others	<ul style="list-style-type: none"> ➤ Designing ➤ Printing ➤ Distribution 	2000	2000 x 100	200000
5.	'Souhruda Kootayma'	Watershed area	<ul style="list-style-type: none"> ➤ Awareness programmes ➤ Action programme 	3500 / Programme	100 Programmes	350000
6.	One day training programme about IWMP	Block panchayat & GP board members and officials	<ul style="list-style-type: none"> ➤ About IWMP ➤ Important government orders ➤ Funding pattern ➤ Institutional arrangements ➤ Project implementation plan 	80 participants	175 x 80 Participants x 1 day	14000



7.	Two day training programme on watershed management	Block panchayath GP board members and officials	<ul style="list-style-type: none"> ➤ Project activities ➤ Convergence possibilities ➤ Watershed concept ➤ Watershed treatment ➤ New techniques in soil and water conservation ➤ Ground water recharging practices 	80 participants	175 x 80 Participants x 2 day	28000
8.	One day training programme about IWMP	Block panchayath coordination committee members	<ul style="list-style-type: none"> ➤ About IWMP ➤ Important government orders ➤ Funding pattern ➤ Institutional arrangements ➤ Project implementation plan ➤ Project activities 	25 participants	175 x 25 Participants x 1 day	4375
9.	Quarterly training programme	Block panchayath coordination committee members	<ul style="list-style-type: none"> ➤ New Guidelines or orders ➤ Innovative water conservation techniques ➤ Innovative project ideas 	25 participants	175 x 25 Participants x 1 day	4375
10.	One day training programme about IWMP	Grama panchayath coordination committee members	<ul style="list-style-type: none"> ➤ About IWMP ➤ Important government orders ➤ Funding pattern ➤ Institutional arrangements ➤ Project implementation plan ➤ Project activities 	35 participants	175 x 35 Participants x 1 day	6125



11.	Two day training programme on watershed management	Grama panchayath board members and officials	<ul style="list-style-type: none"> ➤ Watershed concept ➤ Watershed treatment ➤ Soil and water conservation ➤ Watershed management 	35 participants x 2 days	175 x 35 Participants x 1 day	6125
12.	One day training programme about IWMP	Watershed committee members	<ul style="list-style-type: none"> ➤ About IWMP ➤ Important government orders ➤ Funding pattern ➤ Institutional arrangements ➤ Project implementation plan ➤ Project activities 	210 participants (Average 30 persons / WC x 7 watersheds)	210 x 35 Participants x 1 day	36750
13.	One day training programme on watershed management	Watershed committee members	<ul style="list-style-type: none"> ➤ Watershed concept ➤ Watershed treatment ➤ Mapping 	210 participants (Average 30 persons / WC x 7 watersheds)	210 x 35 Participants x 1 day	36750
14.	Day celebrations	PIA level	<ul style="list-style-type: none"> ➤ Awareness programmes ➤ Action 	-	-	25512
Sub Total						942012



Phase - II

Sl No	Name of Activity / Training	Participants / Stake holders / Place	Main sub activity / Topics	Target / Average No. of participants	Expenditure / Unit cost	Amount
1.	Fixation of mark boards (Welcome and Thanks Boards)	Each watershed area	<ul style="list-style-type: none"> ➤ Preparation ➤ Fixation 	21	8000/ boards x 7 Watersheds	168000
2.	Day celebrations	Eg:- Environment Day, world water day, Gandhi Jayanthi etc...	<ul style="list-style-type: none"> ➤ Awareness programmes ➤ Action programme 	6 programmes	10000 / Programme	60000
3.	Fixation of message boards (1)	Each watershed area, Junctions, Govt. offices	<ul style="list-style-type: none"> ➤ Preparation ➤ Fixation 	50 Nos	50 x 1000	50000
4.	Fixation of message boards (2)	Bathing area of the river side	<ul style="list-style-type: none"> ➤ Preparation ➤ Fixation 	25 Nos	25 x 1000	25000
5.	Printing of Digital Posters	Watershed area	<ul style="list-style-type: none"> ➤ Designing and printing 	2000	12 x 2000	24000
6.	Two day training programme on watershed management	Grama panchayath board members and officials	<ul style="list-style-type: none"> ➤ Watershed concept ➤ Watershed treatment ➤ Soil and water conservation ➤ Watershed management. 	35 participants x 2 days	175 x 35 Participants x 1 day	6125
7.	One day training programme on watershed management	Watershed community	<ul style="list-style-type: none"> ➤ Watershed concept ➤ Watershed treatment measures 	700 participants (Average 50 persons / WC x 7 watersheds)	175 x 700 Participants x 1 day	61250
8.	One day training programme on watershed	Kudumbasree CDS & ADS Members	<ul style="list-style-type: none"> ➤ Watershed Concept & Relevance 	350 Participants (Average 50)	175 x 350 Participants x	61250



	<p>management, About iwmp, Livelihood planning etc</p>	<ul style="list-style-type: none"> ➤ Characteristics of a Watershed ➤ Basic Principles of Watershed Based Approach ➤ Components of Watershed Development – NRM, Production System & Livelihood ➤ Centrality of Peoples Participation in Planning, Implementation & Monitoring of Watershed Activities ➤ Institutional Arrangement ➤ Outputs & Outcomes Expected ➤ Provisions in the Livelihood Guidelines ➤ Formation/strengthening of SHG/NHGs & Activity Groups ➤ Grading & Bank linkage ➤ Revolving Fund and its repayment system ➤ How to select Livelihood Activities ➤ Marketing assistance ➤ Provisions in the ProductionSystem & ME Guidelines ➤ Subsidy Norms ➤ Possible interventions 	<p>persons / WC x 7 watersheds)</p>	<p>1 day</p>	
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9.	One day training programme on watershed management, About iwmp, Livelihood planning etc	SHG/ NHG office bearers	<ul style="list-style-type: none"> ➤ in the Agriculture & Allied activities ➤ Convergence with other schemes ➤ Participatory planning ➤ Watershed Concept & Relevance ➤ Characteristics of a Watershed ➤ Basic Principles of Watershed Based Approach ➤ Components of Watershed Development – NRM, Production System & Livelihood ➤ Centrality of Peoples Participation in Planning, Implementation & Monitoring of Watershed Activities ➤ Institutional Arrangement ➤ Outputs & Outcomes Expected ➤ Provisions in the Livelihood Guidelines ➤ Formation/strengthening of SHG/NHGs & Activity Groups ➤ Grading & Bank linkage ➤ Revolving Fund and its repayment system ➤ How to select Livelihood Activities 	350 Participants (Average 50 persons / WC x 7 watersheds)	175 x 350 Participants x 1 day	61250
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10.	One day training programme - About iwmp, watershed management, Watershed treatment	User Group Members	<ul style="list-style-type: none"> ▶ Marketing assistance ▶ Provisions in the Production System & ME Guidelines ▶ Subsidy Norms ▶ Possible interventions in the Agriculture & Allied activities ▶ Convergence with other schemes ▶ Participatory planning 	350 Participants (Average 50 persons / WC x 7 watersheds)	175 x 350 Participants x 1 day	61250
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11.	One day training programme - About iwmp, watershed management, Livelihood promotion programmes, Production system and micro enterprises programmes	Farmers club members, Selected farmers	<ul style="list-style-type: none"> ➤ Watershed Concept & Relevance ➤ Characteristics of a Watershed ➤ Basic Principles of Watershed Based Approach ➤ Components of Watershed Development – NRM, Production System & Livelihood ➤ Centrality of Peoples Participation in Planning, Implementation & Monitoring of Watershed Activities ➤ Institutional Arrangement ➤ Outputs & Outcomes Expected ➤ Provisions in the Livelihood Guidelines ➤ Formation/strengthening of SHG/NHGs & Activity Groups ➤ Revolving Fund and its repayment system ➤ How to select Livelihood Activities ➤ Marketing assistance 	150 Participants	175 x 150 Participants x 1 day	26250
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<p>12. One day training programme - About iwmp, watershed management, Watershed treatment</p>	<p>MNREGS mates and workers</p>	<ul style="list-style-type: none"> ➤ Provisions in the Production System & ME Guidelines ➤ Subsidy Norms ➤ Possible interventions in the Agriculture & Allied activities ➤ Role of Padasekhara samithi/Farmers Club members in IWMP ➤ Convergence with other schemes ➤ Experience sharing 	<p>200 Participants</p>	<p>175 x 200 Participants x 1 day</p>	<p>35000</p>
<ul style="list-style-type: none"> ➤ Watershed Concept & Relevance ➤ Characteristics of a Watershed ➤ Basic Principles of Watershed Based Approach ➤ Organizational Set up ➤ Centrality of Peoples Participation in Planning, Implementation & Monitoring of Watershed Activities ➤ EPA – Permissible works ➤ NRM Concepts & Application ➤ Ridge to Valley concept 					



13.	One day training programme on EDP	Kudumbasree and other SHG members	<ul style="list-style-type: none"> ➤ Different types of structures/works to be taken up in a Watershed ➤ Convergence with MNREGS ➤ Entrepreneurship Development Programme ➤ Model projects ➤ Selection of income generating activities 	525 participants (Average 75 persons / WS x 7 watersheds)	175 x 525 Participants x 1 day	91875
Sub total						731250
Rounded off to:						731148



Phase - III

No	Name of Activity / Training	Participants / Stake holders / Place	Main sub activity / Topics	Target / Average No. of participants	Expenditure / Unit cost	Amount
1.	One day training programme on Modern Animal husbandry programme	JLG / Kudumbasree and other SHG members and selected beneficiaries	<ul style="list-style-type: none"> ➤ Cow rearing ➤ Mini diary unit 	100 participants	175 x 100 persons	17500
2.	One day training programme on Modern Animal husbandry programme	JLG / Kudumbasree and other SHG members and selected beneficiaries	<ul style="list-style-type: none"> ➤ Goat rearing 	100 participants	175 x 100 persons	17500
3.	One day training programme on Modern Animal husbandry programme	JLG / Kudumbasree and other SHG members and selected beneficiaries	<ul style="list-style-type: none"> ➤ Poultry unit ➤ Backyard poultry 	100 participants	175 x 100 persons	17500
4.	One day training programme on Modern Animal husbandry programme	JLG / Kudumbasree and other SHG members and selected beneficiaries	<ul style="list-style-type: none"> ➤ Poultry unit ➤ Backyard poultry 	100 participants	175 x 100 persons	17500
5.	One day training programme on Modern Animal husbandry programme	JLG / Kudumbasree and other SHG members and selected beneficiaries	<ul style="list-style-type: none"> ➤ Bee keeping 	100 participants	175 x 100 persons	17500
5.	One day training programme compost making	JLG / Kudumbasree and other SHG members and selected beneficiaries, Farmers	<ul style="list-style-type: none"> ➤ Composting ➤ Different types of composts ➤ Vermi composting ➤ Panchagavyam making ➤ Pest control in organic method 	100 participants	175 x 100 persons	17500



1.	Exposure visit - 1	Block level & GP level people's representatives, Implementing officers, TSO representatives	<ul style="list-style-type: none"> ➤ Exposure visit to another watershed project area ➤ Exposure visit to Model Organic farm ➤ Exposure visit to project related other Institutions 	100 x 2 Batches	900 x 200 participants	180000
2.	Exposure visit - 2	Watershed committee members, Selected members from each ws, board members, implementing officers, TSO representatives	<ul style="list-style-type: none"> ➤ Exposure visit to another watershed project area ➤ Exposure visit to Model Organic farm ➤ Exposure visit to project related other Institutions 	50 persons x 7 Batches	900 x 350 participants	315000
3.	Digital camera	-	-	-	7 ws x Rs. 15000/-	105000
4.	Miscellaneous fund (For Emergency Programmes)	-	-	-	-	26148
Sub Total						731148



Phase - IV

No	Name of Activity / Training	Participants / Stake holders / Place	Main sub activity / Topics	Target / Average No. of participants	Expenditure / Unit cost	Amount
1.	One day training programme on organic farming	Selected Farmers	<ul style="list-style-type: none"> ➤ Organic farming practices ➤ Soil fertility ➤ Productivity ➤ Details of organic fertilizers ➤ Pest control 	525 participants (Average 75 persons / WCx 7 watersheds)	175 x 525 persons	91875
2.	One day training programme on Modern Animal husbandry programme	JLG / Kudumbasree and other SHG members and selected beneficiaries	<ul style="list-style-type: none"> ➤ Mushroom cultivation ➤ Fish cultivation 	100 participants	175 x 100 persons	17500
3.	One day training programme	JLG / Kudumbasree and other SHG members and selected beneficiaries	<ul style="list-style-type: none"> ➤ Organic vegetable cultivation ➤ Tuber crops cultivation ➤ 	100 participants	175 x 100 persons	17500
4.	One day training programme on zero budget farming	Selected Farmers	<ul style="list-style-type: none"> ➤ Zero budget farming practices 	350 participants (Average 50 persons / WCx 7 watersheds)	175 x 350 persons	61250



15.	One day training programme on Participatory Monitoring & Evaluation	Watershed committee members	<ul style="list-style-type: none"> ➤ PM&E tools ➤ FGD etc. 	350 participants (Average 50 persons / WCx 7 watersheds)	175 x 350 persons	61250
16.	One day training programme Operation and maintenance (O&M)	Watershed committee members	<ul style="list-style-type: none"> ➤ Methods of O&M programmes 	350 participants (Average 50 persons / WCx 7 watersheds)	175 x 350 persons	61250
17.	Formation of Puzha Samrakshana samithy	-	-	-	-	25000
18.	High tech Krishi Information centre		At Block panchayath level	-	-	300000
19.	Documentary preparation		<ul style="list-style-type: none"> ➤ Photo & video documentation ➤ Field visits ➤ Documentation of success stories ➤ Documentary preparation 	-	-	150000
20.	Miscellaneous fund (For Emergency Programmes)	-	-	-	-	72398
Sub Total						731148



Major achievements

⇒ A detailed awareness are created among the following members about the watershed project. They are :

- ◆ Watershed society
- ◆ Watershed committee
- ◆ User group members
- ◆ Neighborhood clusters
- ◆ Joint liability group
- ◆ Watershed development society
- ◆ Block level watershed development society
- ◆ Block level co-ordination board members
- ◆ Grama Panchayath Board Members
- ◆ Block Panchayath Board Members
- ◆ Watershed development team

- ⇒ Explain the importance of watershed project to the common people.
- ⇒ Creating a society interested in environmental protection
- ⇒ The people can organize the project properly.
- ⇒ Development of low cost agricultural techniques
- ⇒ Soil water conservation thoughts develop in the minds of the people.
- ⇒ Job training programs
- ⇒ Help the farmers to improve their life style.
- ⇒ Increasing the income of the watershed people.
- ⇒ Project co-ordination
- ⇒ Formation of eco friendly militant groups.
- ⇒ Wall writings and posters .
- ⇒ Field visit.
- ⇒ Empowerment of local committee

Implementation

The project implementing agency will be directly dealing with the capacity building plan.

Monitoring and Evaluation

Block level co-ordination committee and PAU will monitor the capacity building plan. SLNA will also evaluate and monitor the plan.



PART - XIV

ENTRY POINT ACTIVITY INITIAL STAGE –IMPORTANCE

Introducing watershed development programme to the community has always been recognized as an important activity. This is done through what are called Entry Point Activities . It involves building the rapport with the community ,strengthening and sustaining it throughout the programme and beyond. Its aim is to make awarness to the watershed people about the project , method of implementation and its activities .

Usually whenever a project work begins, the participation will be very less in number. They join with the project activities if and only if they came to believe that this project will solve their problems. For this every watershed organizes a programme which focuses to fulfill their basic needs. Thus the participation of the people gradually increase which results to the development of project activities. Mainly soil water conservation steps are forwarded in the initial stage.

AIM

- Making arrangements for the initial stage of the project work in the watershed area.
- Attracting the people towards the project activities.
- Establishment of soil water conservation programmms .
- Regeneration of water sources in different watersheds .
- Presentation of scientific methods for the soil water conservation to the watershed community.
- Organizing rain water harvesting programme.
- Conducting awareness programme.
- Afforestation activities.

MAJOR PROBLEMS

- Lack of Participation
- Lack of efficiency in community groups.
- Lack of guidance for the scientific methods for soil water conservation.



- Lack of interest
- Lack Of Awareness Training Programme
- Lack of rain water harvesting programme
- Ground water scenario
- Misuse of plastic
- Lack of water storage structures.
- Wells affected water shortage.
- Degradation of water sources
- Uncontrolled use of chemical fertilizers and pesticides .

DIFFERENT ACTIVITIES

Following are the different types of activities implemented in the project area.

- Well renovation
- Eco–friendly beautification of towns.
- Soil treatment and distribution of soil health card.
- Grow bag vegetable seedling distribution.
- Well –recharging
- Roof water harvesting tank.
- Model Organic vegetable cultivation.
- Cloth bag distribution
- Stream bank protection by growing plants .
- Pond renovation
- Check Dam and Aammakettu construction
- Honey Village

Financial Analysis

Out of the total project fund , only 3.6 % funds is admissible for EPA. Funds allocated for the Entry Point Activities (EPA) considering the special feature of each watershed is explained / shown in the table below.



Sl. No.	Name of Watershed	Area (Ha)	Total Amount	EPA Fund
1.	Panachikappara	269.27	4039050	145406
2.	Poonjaar	542.26	8133900	292820
3.	Peringalam	1973.33	29599950	1065598
4.	Payyani thottam	433.22	6498300	233939
5.	Aruvithura	709.14	10637100	382936
6.	Kondoor	1499.83	22497450	809908
7.	Thidanaadu	684.95	10274250	369873
	Total	6112	91680000.00	3300480.00

Monitoring and Evaluation

Watershed team should be responsible for the monitoring and evaluation of the project. Watershed committee is responsible to fulfill the duties to be done in the watershed area. Evaluation of the project activities are done by the block level co-ordination committee, PAU, WCDC and SLMA.

Follow – up Programmes

Local watershed committee is responsible for the follow up programmes .For the follow up programmes ,the fund should be taken from the watershed development fund.



ENTRY POINT ACTIVITIES - BLOCK LEVEL ACTION PLAN

Sl No.	Activities	Activity description	Unit	Unit Cost	Target/Frequency/Nos.	IWMP Share
Panachikappara Watershed						
1.	Well Recharging	Collecting roof water during rainy season and directed towards the drinking water well through the filter tank filled with filter media	Nos.	10000.00	3	30000.00
2.	Well renovation (Govt. L.P. School)	<ul style="list-style-type: none"> • Sidewall construction (Increasing the height) • Plastering • Fitting the top with iron net 	Nos.	54000.00	1	54000.00
3.	Well renovation (Poonjaar Panchayat Office premises)	<ul style="list-style-type: none"> • Sidewall construction (Increasing the height) • Plastering • Fitting the top with iron net • Recharging 	Nos.	42000.00	1	42000.00
		Total in this category				126000.00
Poonjaar Watershed						
1.	Well Recharging	Collecting roof water during rainy season and directed towards the drinking water well through the filter tank filled with filter media	Nos.	10000.00	8	80000.00
2.	Well renovation (ST colony, Kalathungal)	<ul style="list-style-type: none"> • Sidewall construction (Increasing the height) • Plastering • Fitting the top with iron net • Deepening 	Nos.	70000.00	1	70000.00
	Well renovation (Poonjaar Panchayat Office premises)	<ul style="list-style-type: none"> • Sidewall construction (Increasing the height) • Plastering • Fitting the top with iron net • Deepening • Concrete belt at portions of soil sliding 	Nos.	74000.00	1	74000.00
		Total in this category				224000.00



Peringalam Watershed						
1. Well Recharging	Collecting roof water during rainy season and directed towards the drinking water well through the filter tank filled with filter media	Nos.	10000.00	7	70000	
2. Pond Renovation (AdivaaramVarambanatt)	<ul style="list-style-type: none">Side wall constructionCovering with net	Nos.	75000.00	1	75000	
3. Pond Renovation (IkkaraThekkedath)	<ul style="list-style-type: none">Side wall constructionCovering with net	Nos.	78000.00	1	78000	
4. Pond Renovation (Muthukora)	<ul style="list-style-type: none">Side wall constructionCovering with netDeepeningSpringhead protection	Nos.	77000.00	1	77000	
5. Spring renovation (Nedun ganaal)	<ul style="list-style-type: none">Side wall constructionCovering with netDeepening	Nos.	35000.00	1	35000	
6. Spring renovation (Nedun ganaal)	<ul style="list-style-type: none">Side wall constructionCovering with netDeepening	Nos.	50000.00	1	50000	
	Total in this category				385000	
Payyanthottam Watershed						
1. Construction of RWH Tank	Construction of Ferro cement tank for roof top rainwater harvesting with a storage capacity of 50000 litres	Nos.	250000.00	1	250000	
	Total in this category				250000	



Aruvithura Watershed							
1.	Construction of check dam and Gully plugs	Constructing check dam and Gully plugs across Aikkara Canal (Stream) at culvert side	Nos.	550000.00	1	55	
2.	Well renovation (Erattupetta Block Panchayat Premises)	<ul style="list-style-type: none"> Sidewall construction (Increasing the height) Plastering Fitting the top with iron net Deepening 	Nos.	75000.00	1	75C	
		Total in this category				62	
Kondoor Watershed							
1.	Well Recharging	Collecting roof water during rainy season and directed towards the drinking water well through the filter tank filled with filter media	Nos.	10000.00	6	60C	
2.	Construction of RWH Tank (Thidanaadu GP)	Construction of Ferro cement tank for roof top rainwater harvesting with a storage capacity of 50000 litres	Nos.	250000.00	1	250 ^H	
3.	Construction of RWH Tank (Malikayilpaara Colony)	Construction of Ferro cement tank for roof top rainwater harvesting with a storage capacity of 50000 litres	Nos.	250000.00	1	250 ^H	
		Total in this category				560^H	
Thidanaadu Watershed							
1.	Well Recharging	Collecting roof water during rainy season and directed towards the drinking water well through the filter tank filled with filter media	Nos.	10000.00	8	80C	
2.	Construction of RWH Tank	Construction of Ferro cement tank for roof top rainwater harvesting with a storage capacity of 25000 litres	Nos.	170000.00	1	170 ^H	
3.	Well Recharging	Collecting roof water during rainy season and directed towards the drinking water well through the filter tank filled with filter media					
4.	Vegetable Cultivation	Financial support for domestic vegetable gardens					
		Total in this category				250^H	



Common Programmes planned to implement in all the watershed						
1.	Honey Village	Honey comb boxes (Big) I Unit with 10 boxes Honey comb boxes (small) I Unit with 8 boxes	Nos.	12000.00	20	240000.00
2.	Soil quality testing and soil health card distribution	Soil quality test and health card preparation	Nos.	400-00	350	140000.00
3.	Model organic garden and management	Promotion of model organic vegetable garden and its maintenance and management	Nos.	24000.00	4	96000.00



Entry Point Activities

Geo-Reference Value

Sl. No.	Watershed	Entry Point Activity	Geo-reference Value
1.	Panachikappara	Renovation of the well in the Poonjar GP compound	N 09° 40.408 E 07° 47.740
		Renovation of the well of Govt. L. P. School	N 09° 40.335 E 07° 47.811
2.	Poonjaar	Renovation of the public well in Kal lekkulam Lakshamveed colony	N 09° 40.850 E 07° 49.437
3.	Aruvithura	Renovation of the existing well in the Block Panchayat Compound	N 09° 41.039 E 076° 46.370
4.	Payyanithottam	Construction of RWH tank with 30000 litre capacity for IHRD Engineering College	N 09° 40.442 E 076° 49.569
5.	Thidanaadu	Construction of RWH tank with 50000 litre capacity for Thidanaad Vocational Higher Secondary School	N 09° 39.454 E 076° 46.621
6.	Peringalam	Renovation of the Adivaaram Varambanaattu Pond	N 09° 39.578 E 076° 52.540
7.	Kondoor	Construction of a RWH tank with a capacity of 40000 litres for Malikakayilpara Colony	N 09° 37.407 E 076° 49.135
Construction of a RWH tank with a capacity of 40000 litres in Thidanaadu Grama Panchayat Compound			N 09° 4-.314 E 076° 47.878

The Pattern of Implementation

1. Soil test/analysis and distribution of Soil Health Card

The total geographic area of the watershed is 6012 Hectare and divided into seven micro watersheds for convenience. Under this component, 50 soil samples at random will be collected from the



watershed for analysis. The facilities available with the Agriculture Department will be made use for conducting the soil test. Based on the results, soil health card providing the full details of the farm land of each farmer in the watershed area will be prepared and distributed. This card will be the basis for further intervention in the agriculture sector in that particular watershed area. Soil test camps will be organized in each micro-watershed and based on the report awareness generation classes will also be conducted. A public meeting involving the farmers in a watershed will be convened and the findings will be explained to them.

2. Distribution of vegetable grow bags for promoting organic vegetable cultivation

The component envisages food security and non-poisonous vegetables/fruits at household levels. The landless also can get the benefit of this intervention as they too get opportunity to place these grow bags at any location available in the house they live. The vegetables seedlings planted grow bags are distributed. The vegetables produced in this way can be used within the household for their kitchen and the surplus can be distributed to their neighborhood, there by earning a supplementary income. This intervention will follow the cost pattern and criteria of State Horticulture Mission (SHM)

3. Distribution cloth bags.

The intention is to reduce the use of plastic bags. The target is 5000 households in the project area. While distributing the cloth bags, it will be ensured that messages towards nature protection and conservation (Eco-friendly messages) are imprinted on each bag. This will be carried out through Watershed Committees constituted in each watershed.

4. Model Organic Farm

The aim is to create organic agriculture. Interested farmers from each watershed will be selected for this purpose. They will be trained and financially assisted to establish model organic gardens. Such gardens will consists of vegetables, tubers, fruits bearing trees, medicinal herbs,



rainwater harvesting tanks, indigenous cow and goat, indigenous varieties of poultry, honey bee etc. including a vermi compost pits to ensure adequate and quality fertilizers for the garden. This will be a visiting spot for other farmers for learning and exchanging of ideas and lessons.

5. Honey Village

The honeybees are considered as small insects, but the service they render to the humanity is very great. For implementing this programme, Thidanaad and Kondoor watershed areas are specifically selected. The farmers will be given training and assistance to involve in bee-keeping.

6. Clean & Green Poonjaara

Three micro-watersheds – Peringalam, Poonjaara and Payyanithottam – of the IWMP area are comes under the jurisdiction of Poonjaara – Thekkekkara Grama Panchayaths. “Clean & Green Poonjaara” is a special programme designed to implement in these three micro watersheds with the following objectives:

- Make Poonjaara GP and surrounding areas litter free and keep the places hygienic.
- Make Poonjaara green for which shade trees and flowering plants are planted throughout the Grama Panchayat
- Bring vegetative cover on the banks of the rivers
- Enlighten the people to take up and implement natural resource management activities through public campaigns .
- Construction of well recharging and rainwater harvesting systems throughout the GP
- Establish medicinal and agricultural nurseries
- Organize sanitation & hygiene campaigns involving people and people’s organizations
- Organize and conduct family get together for discussing sustenance of activities



It is expected that, through the above mentioned activities, the participation of the people at all level of implementation can be ensured.

7. Construction of Rainwater Harvesting Tanks

Harvesting Tanks is planned as a part of the entry point activities (EPA) under IWMP. For Rainwater Harvesting Tanks construction, Ferro Cement construction Technology is used. According to the ferro cement technology, the cement and sand are mixed in a ratio of 1:3 and it is added to the structure made up of weld mesh, chicken mesh and MS wire and forms a three layer plastering. The rain water is collected in a neat finishing tank constructed without any joint. The water is collected from the roof top of common institutions such as Anganvadies and Schools and is filtered using filter chamber. By doing so, thousands of litres of rainwater can be collected and converted to drinking water.

8. Well Recharging

This is the most valuable and easy method for collecting roof top rainwater and considered as the most precious model of water conservation. Rain water is collected from roof top through special pipes (Gutter pipes in the case of tiled roof) and directed to the filter tank filled with filter media, kept adjacent to the well from where it is sent to the well. This is a drought management programme as the water table of the well will be increased and drying up during the summer is checked. When this component is being implemented as part of IWMP, there is a chance for the people to witness the benefit and they will take up the programme and do for themselves for their wells. This means that this is an easily replicable model for the water conservation activity.

9. Renovation of ponds

Renovation and regeneration of the existing water bodies in the watershed is one of the important part of the objectives of IWMP. A pond which is within the watershed and specifically selected for renovation and/or regeneration is one of the major Entry Point Activities (EPA).



10. Well Renovation

The aim is to rejuvenate the old and abandoned public wells that were once used for drinking water purposes. These wells may either dried up due to lack of proper management or due to other environmental reasons. Rejuvenating and renovating these water sources by de-silting and renewing the sidewalls will again avail these sources for public use. The works will include, reconstructing of side walls, plastering, and silt removing and covering the top with iron net. Well recharging system is also an additional component in this activity

11. Springhead protection

When the geography is full of slopes and valleys, there is chance for plenty of spring heads in the watershed. Erattupetta block is such a place with full of hill slopes and valleys. Protection of such springheads is very important to keep the water availability for an area. The activities are constructing protection walls, removing the silt and other deposits, check the contaminated water coming to the spring etc. The check measure can be a wire net that will help to prevent the silt and other solid wastes entering into the springhead.

12. Vegetative covering on the banks of canals

This one of the major activity planned to implement under EPA. The banks of the canal are planted with bamboo, Aatuvanchi and other deep rooting plants which prevent stream bank erosion. This will increase the water storage capacity of the streams and allow small fishes and other water organisms to thrive and sustain. The growing plants will keep the atmospheric temperature low .

13. Eco-friendly Town Beautification



This component aims at beautification of Panachikappara Township and the surrounding area, which forms the headquarters of Poonjaar Grama Panchayath. Shade plants, flowering plants and other fruit bearing plants are planted along the sides of the main road, premises of public institutions and surroundings of the stadium. Another important intervention is that cleaning the township and keeping it hygienic with the involvement of the public, voluntary organizations and other likeminded institutions. Educational Institutions and the labours in the town market shall also be involved in this process. It is expected that this intervention will take the people deep into the messages of IWMP and ensure people participation .

Implementing Officer

The implementing officer at Micro Watershed level will be the one who is entrusted with the responsibility by the Block Panchayath Secretary. Technical support for him will be availed by the WDT formed at block level.

The Implementation

The Entry Point Activities will be directly implemented by the Block Panchayat, the Project Implementing Agency (PIA). To meet the purpose user groups are formed in each watershed with the assistance of the conveners (VEOs). On putting the agreement by the user groups, the PIA shall transfer 50% of the total approved amount for the EPA to the accounts of the user groups. The User Groups shall initiate such activities with the advance and on completion based on the evaluation measure the rest of the amount shall be released.



EXPECTING RESULTS

Sl.no	Activities	Expecting results
1	Construction of rain water harvesting structure.	<ul style="list-style-type: none">• Conserve rain water as drinking water . .• Low cost programme.• Make sure of water availability.• Storage of water for long time.• Solution for scarcity of water.
2	Well recharging	<ul style="list-style-type: none">• Conserve rain water as drinking water ...• Solution for scarcity of water.• To increase the availability of water.• Water in nearby water sources will also increase.
3	Clean and Green Poonjar	<ul style="list-style-type: none">• Converting the polluted Poonjar to clean and healthy place.• Enhancing plantations in the river side.• Promoting pollution free place.• Increasing the participation.
4	Well renovation	<ul style="list-style-type: none">• To improve the availability of water in wells.• Develop irrigation facilities.• Rejuvenate the water sources.
5	Organic vegetable farming	<ul style="list-style-type: none">• Increase the use of Organic vegetable• Improve organic cultivations.• Develop an organic vegetable garden.
6	Grow bag vegetable seeds	<ul style="list-style-type: none">• Exploration of organic vegetable cultivation• Provide pure and healthy vegetables.• Agriculture method for small scale farmers• Creating a new method for vegetable production.



7	Soil treatment and distribution of soil health card.	<ul style="list-style-type: none">• To know the fertility of the soil.• To find the problems related to soil.• Finding solutions.• A Research on the type of soil.• Selection of crop with respect to the soil type.
8	Cloth Bag Distribution	<ul style="list-style-type: none">• Control the use of plastic carry bags.• Environmental protection
9	Honey Village	<ul style="list-style-type: none">• Enhance horticulture.• Increase the income.
10	Spring Development And Olly Renovation	<ul style="list-style-type: none">• To protect the water sources.
11	Stream Bank Stabilization With Vegetative Fencing	<ul style="list-style-type: none">• Side wall of the streams are protected.• Low cost protection• Environmental protection• Improving Bio-Diversity.
12	Beautification of Panichikappara Town.	<ul style="list-style-type: none">• Establishing cleanliness activities.• Eco –Friendly Panachikappara.
13	Gully Controlling check dam.(Aamakettu)	<ul style="list-style-type: none">• Control drainage.• Water harvesting .• The side wall of the streams is protected.• Prevent landslides.• Low cost water conservation is done.• The water level increases in the nearby water sources.• Increasing water availability months and reducing the drought periods of streams.



ACTIVITY CALENDER

Sl.No	Activity	April	May	June	July	Aug	Sept
1.	Rain Water Harvesting Tank Constuction			*	*	*	
2.	Well Recharging		*	*	*	*	*
3.	Clean and Green Poonjar		*	*	*		
4.	Pond Renovation	*	*				
5.	Model Organic vegetable cultivation.			*	*		
6.	Grow bag vegetable seedling distribution.			*	*	*	
7.	Soil treatment and distribution of soil health card.		*	*	*	*	*
8.	Cloth bag distribution		*	*			
9.	Honey Village	*	*	*	*		
10.	Well renovation	*	*				
11.	Olly Renovation	*	*				
12.	Stream bank protection by growing plants .			*	*	*	
13.	Eco –friendly beautification of towns.	*	*	*			
14.	Check Dam and aammakettu construction	*	*				



PART - XV

SOIL AND WATER CONSERVATION PROGRAMMES

- o Stone Bunding.
- o Water Collection Tank.
- o Moisture Collection Pits.
- o Shutter Type Check Dam
- o Gully Controlling Check Dam
- o Loose Boulder Check Dam
- o Pond Renovation.
- o Pond Construction
- o Head Pond Construction.
- o Stream Renovation (Silt Removing)
- o Quarry Conversion to head Pond.
- o Stream bank stabilization With Vegetative Method .
- o Roof Top Rain Water Harvesting tank.
- o Retaining Wall Construction.
- o Tree Plantation
- o Well Renovation
- o Live Fencing
- o Well Recharging
- o Nylon Pond Construction
- o Spring Renovation
- o Olly Renovation



Part - XVI

ERATTUPETTA BLOCK PANCHAYATH (IWMP - 5)

LIVELIHOOD ACTION PLAN

FACE SHEET

Total Project cost	91680000
1 st Phase allocation (4.1% of the total project cost)	3758880
2 nd Phase allocation (4% of the total project cost)	3667200
TOTAL Fund allocation (8.1% of the total project cost)	7426080
Fund distribution pattern	
One time grand for WDS (25000 x 7 Ws)	175000
One time grand for BLWDS	40000
Balance fund for implementation	7211080
Revolving fund for JLG's etc..	5047756
Fund for major Livelihood activity	2163324



LIVELIHOOD PLAN

Introduction

Economy of Kerala villages is primarily agrarian. Agriculture contributes nearly 30 per cent to the Net State Domestic Product (NSDP). About 73 % of the total main workers are engaged in agriculture. Over the last two to three decades there has been stagnation in agriculture in Kerala. The state has wider disparity in terms of agricultural growth. To fulfill the needs of the poor people ,livelihood plan budget is utilized. One of the key features of the watershed development includes focused priority on livelihood activities for landless/asset less persons. Nine percent of the total project cost has been assigned to support the livelihood activities for landless/asset less households. This component aims to maximize the utilization of potential generated by watershed activities and creation of sustainable livelihoods and enhanced incomes for households within the watershed area. This will facilitate inclusiveness through enhanced livelihood opportunities for the poor through investment into assets, improvements in productivity and income, and access of the poor to common resources and benefits and augment the livelihood strategy at household level. Poverty is a severe problem which has never found any solution to overcome. Upliftment of landless persons and increase their life style promotion is aimed in the livelihood plan. Livelihood plan mainly focuses on the programme for social and economic upliftment of the watershed people. This programme will include job opportunities for the people and several income generating activities.

Objectives

- To improve the livelihood activities of the watershed people.
- To promote food and income security.
- To build capacity of entrepreneurs by giving required technical inputs.

- Enhance livelihood opportunities for the poor through investment into asset creation and improvement in productivity and income..
- Improve access of the marginalized communities, including SC/ST, landless/assetless people, women, etc., to the benefits.
- To make sure of stable income to the people in the watershed area.
- Improve job opportunities.



- To improve the knowledge and skill of the watershed people.
- Development of the minority people

Preference

- ◆ Below poverty level people
- ◆ Landless people
- ◆ Asset less households
- ◆ Scheduled caste people
- ◆ Scheduled tribe people.
- ◆ Handicapped
- ◆ Women
- ◆ Widows

Major problems

The major problem in the watershed area is that the facilities for job training programmes are less . Many are educated but they don't have any career guidance . Inadequate Technical Training is seen in the project area.

Sales of local products are minimized and that of branded items maximized. Advertisement leads to improve the sales of the branded items whereas the local products of the area are less sold.

Crop diseases is also an important problem affecting the farmers in the area. agriculture is the main income source of the people in that area. diseases affecting the plants and animal will adversely affect the life of the people in the project area.

Major activities

1. Grant for watershed development society .
2. Grant for block level watershed development society .
3. Revolving fund
4. Formation of mini dairy units



5. Cow rearing
6. Bee – keeping
7. Poultry Unit
8. Chips making unit
9. Organic vegetable distribution centre
10. Cloth bag production unit.

Budget

According to IWMP, out of the total project fund, 8.1% of the fund is used to enhance livelihood opportunities for the poor.

Implementation Stages

Sl No	Stage	Am
1	Second year	375
2	Third year	366
	Total	742

Project Fund Verification

Sl.no	Item	Amount
1	Total available cost	7426080.00
2	Watershed development society (25000*7 watresheds)	175000.00
3	Block level watershed development society	40000.00
4	Implementation cost	7211080.00
5	JLG revolving cost	5047756.00
6	Main watershed project activity fund	2163324.00



Achievements

- ❖ The daily income activities of the watershed area will be enhanced .
- ❖ The conditions of Asset less households will be improved .
- ❖ The living conditions of the project area increased .
- ❖ Women empowerment.

Methods of Implementation

The livelihood programme of the integrated watershed management programme is implemented by self help groups, neighborhood clusters, Joint liability groups etc. The people who are not the participants of any of groups and are the needy, then they may be formed as SHGs of 5 - 20 people or may be conjoined to any self help groups or neighborhood groups with the consent of the members.

The beneficiary of the scheme is secured only for those people who are poor sections of society. The first priority in allocation of benefits of the livelihood support programme should be done for those people who are landless and have no rewarding assets which avail an income. The livelihood plans should be implemented only in active self help groups and others.

- The group members should be of scheduled caste or scheduled tribe.
- Majority members should be of scheduled caste or scheduled tribe.
- Handicapped groups
- Vanitha groups.
- Other groups .



Monitoring

Under block level, a seven member monitoring board should be formed by block panchayath president. The members include the Agricultural Assistant Director, one representative from TSO, Welfare Standing Committee Chairman and two nominees from Block Panchayath. Block panchayth secretary will be the convener of the monitoring board. At least once in a month, the programme should be monitored and evaluated to access the progress of the various activities . The responsibility for direct monitoring is given to each panchayath.

A monitoring cell committe of 5- 7 persons from each watershed may be constituted towards this. The monitoring committee may evaluate all the activities of the project and may intimate the results to the Grama Panchayath and PIA in due time. the committee may submit its own report together with the completion report of the project.



PART XVII

**PRODUCTION SYSTEM
AND
MICRO ENTERPRISES PLAN**

FACE SHEET

Total Project cost	91680000
1 st Phase allocation (4.5% of the total project cost)	4125600
2 nd Phase allocation (4.5% of the total project cost)	4125600
TOTAL Fund allocation (9% of the total project cost)	8251200

INTRODUCTION

Micro Enterprises Development (MED) is a proven way to strengthen variable small business resulting in increased household income and savings , and this alleviating the crunch of poverty . Micro Entreprises plays a critical role in the local development of any area. s Watersheds are of significant importance for the global ecosystem and are characterized by a high degree of ethnic, cultural and ecological diversity . Production system management is made an integral part of the watershed management programme to address the challenges of increasing food production and improving rural livelihoods while safeguarding other critical ecological functions.The goal is the development of sustainable production systems of the whole watershed ,which allows intensification and diversification of the lowland production system and stabililizing improved production system on the upland as it is necessary to enhance the food production base for food security in the selected watershed area, due to future population increase.



Objectives

- Encourage farmers to adopt and up-scale successful experiences of proven technologies, integrated farming systems and improved farming practices for livelihood augmentation.
- Improve sustainable agricultural techniques
- Establish improved agricultural activities.
- Enhance vegetation, animal husbandry, aquaculture, organic vegetable cultivation.
- Improve the quality and production of agricultural products.
- Enhance marketing facilities.
- To Improve income
- To improve standard living conditions of the people.

Preference

- Scheduled caste
- Scheduled tribe
- Small scale industry people .
- Womens who are income generating.

Major problems

- Lack of awareness
- Lack of marketing facility .

Major activities

- ◆ Layer distribution unit.
- ◆ Goat rearing
- ◆ Banana cultivation
- ◆ Organic vegetable cultivation
- ◆ Vermi compost
- ◆ Aquaculture
- ◆ Tuber crop cultivation
- ◆ Fodder grass cultivation
- ◆ Mushroom cultivation
- ◆ Grow bag production of vegetables .
- ◆ Pickle production unit.



Implementing phases

Sl.No	Fund allocation phase	Amount
1	Second phase	3500250
2	Third phase	3500250
Total		7000500

Implementing process

The fund allocated in this component can be used to improve the production system. And the important activities in this plan are animal husbandry, fodder grass cultivation, aquaculture, herbal plantation, gardening, mushroom cultivation, organic fertilizer production, seed bank, horticulture etc. It also gives importance to the enhancement of capital. The beneficiary should be scheduled caste, scheduled tribe, small scale industry people and to the women's who are income generating in home. User group of the beneficiaries are selected in which 10 to 20 members will be there. The application forms from the beneficiaries are collected and submitted to the project implementing agency. After that the applications are valued by the agricultural assistant director, veterinary surgeon, dairy extension officer etc.

Achievements

- Increased income
- Improvement in animal Veterinary.
- A sustain income fored through small scale industry..
- Increased job opportunities.
- Enhanced sustainable development.

Evaluation

For the evaluation process, SLNA should select an external agency. This agency have the responsibility for the evaluation process.



Part - XVIII

DETAILS OF MICRO WATRESHEDS

1. Details of the watershed area.
2. Master plan of each watershed .
3. Action plan of natural resource management programme.
4. Action plan of livelihood management programme.
5. Action plan of production system management.

INTEGRATED WATERSHED MANAGEMENT PROGRAMME (IWMP - 5)

ERATTUPETTA BLOCK PANCHAYATH

ARUVITHURA WATERSHED

(Watershed Code: 12M 28a, Area: 709.14 Ha)



SCALE 1:90000



സൂചകങ്ങൾ

1. തിടനാട് റോഡ്
2. ചേന്നാട് കനല
3. ചേന്നാട് റോഡ്
4. ചേന്നാട് തിടനാട് റോഡ്
5. കുമ്പനാന്നി തൃപ്പിൻ താ
6. പാലാമ്പുഴ മുണ്ടംമുഖം റോഡ്
7. മറ്റപ്പൻ കടപ്പുടി
8. മൊയ്തീൻ പുളി
9. അരുവിത്തുറ പുളി

- Aruvithura Watershed Area
- Drains
- Roads
- Panchayats
- Waterbodies

Prepared by:

Technical Support Organisation : **SUSTHIRA** Centre for Sustainable Development Studies and Action

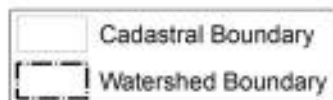
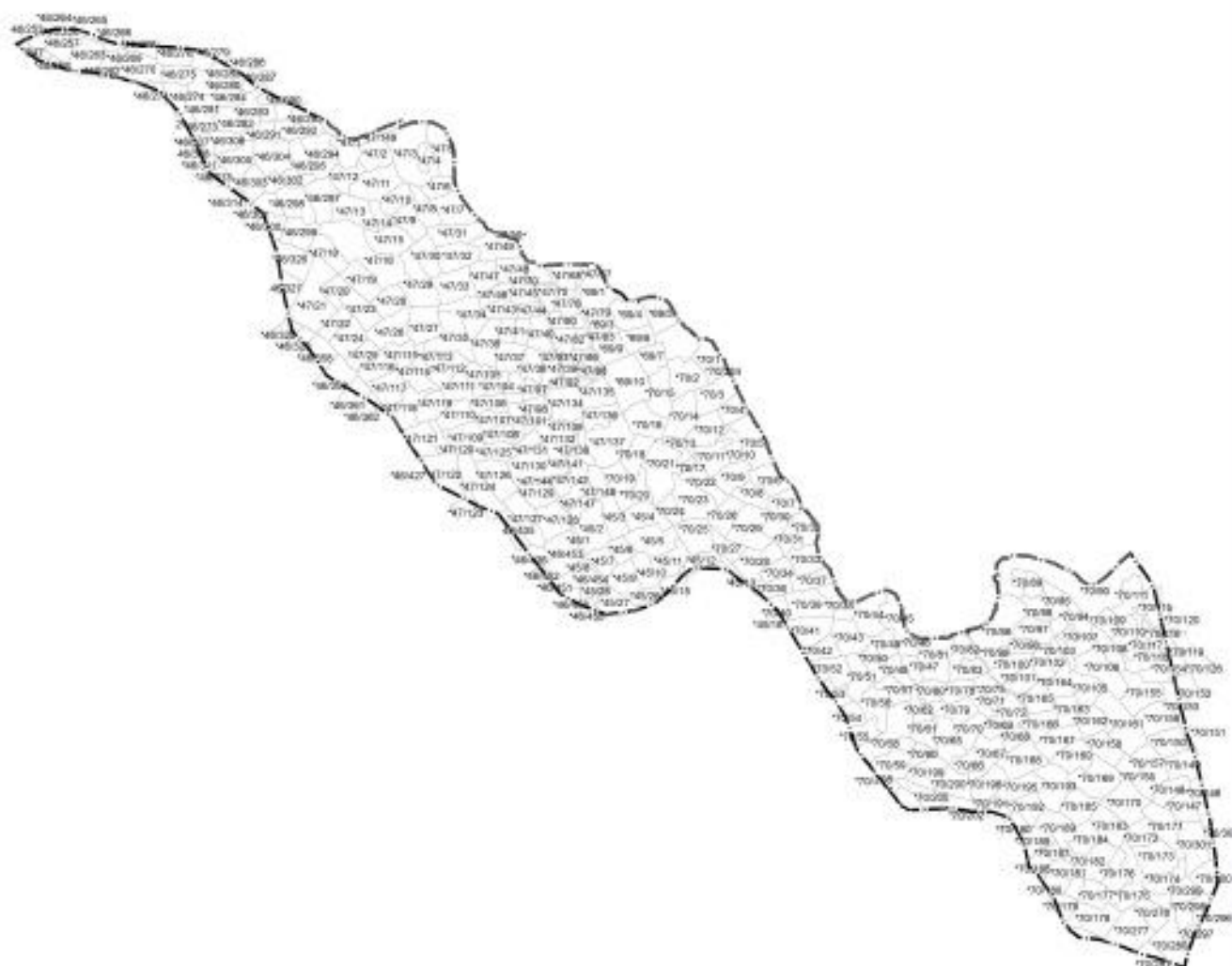
Source: Kerala State Landuse Board

INTEGRATED WATERSHED MANAGEMENT PROGRAMME (IWMP)

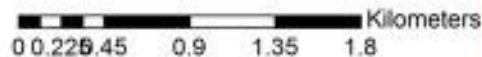
ERATTUPETA BLOCK PANCHAYATH

ARUVITHURA WATERSHED - 12M28a

CADASTRAL



Source: Survey & Land Records Kerala



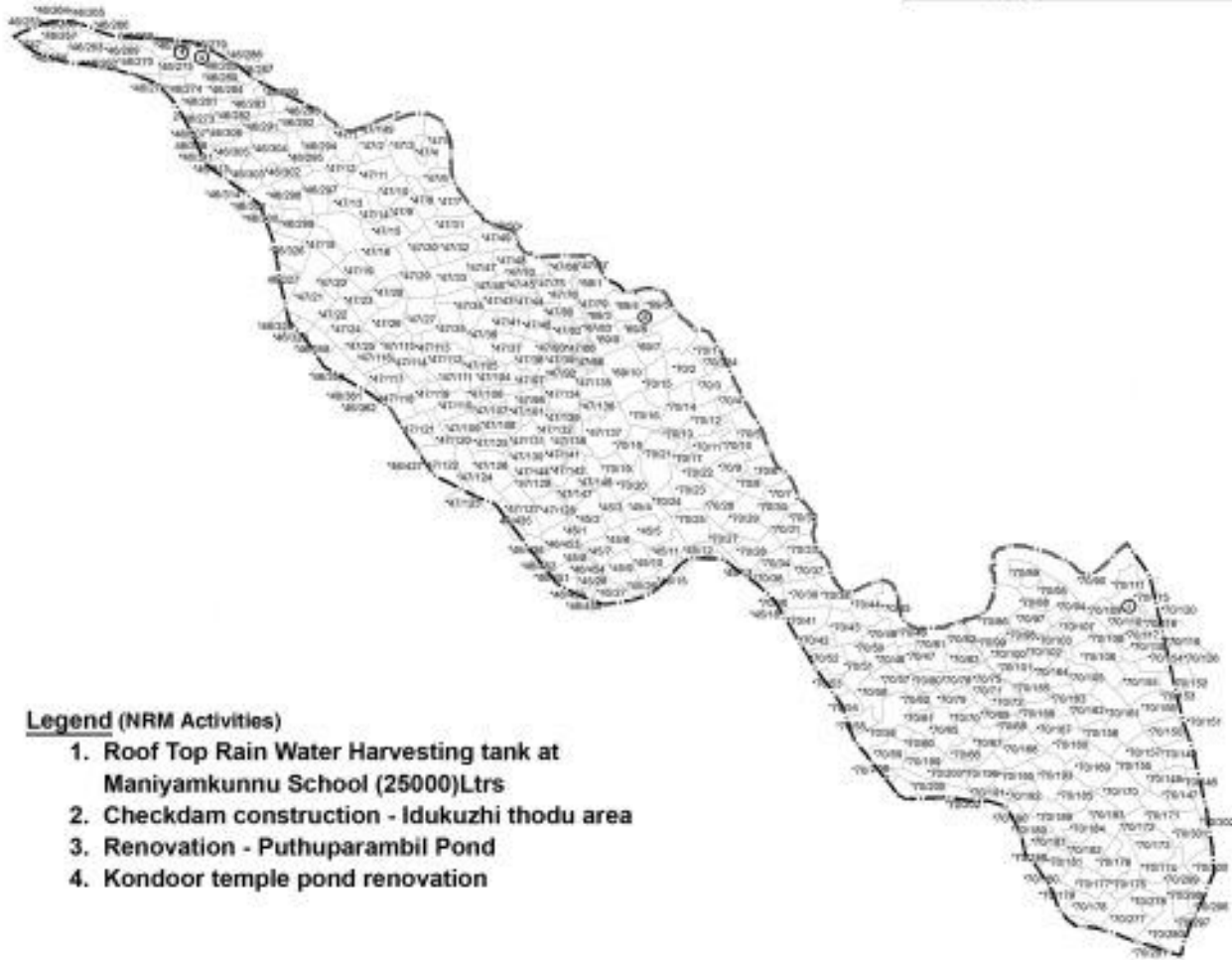
Technical Support Organisation : **SUSTHIRA** Centre for Sustainable Development Studies and Action

INTEGRATED WATERSHED MANAGEMENT PROGRAMME (IWMP)

ERATTUPETA BLOCK PANCHAYATH

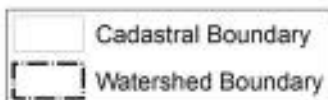
ARUVITHURA WATERSHED - 12M28a

INTERVENTION



Legend (NRM Activities)

1. Roof Top Rain Water Harvesting tank at Maniyamkunnu School (25000)Ltrs
2. Checkdam construction - Idukuzhi thodu area
3. Renovation - Puthuparambil Pond
4. Kondoor temple pond renovation



Source: Survey & Land Records Kerala



Technical Support Organisation : **SUSTHIRA** Centre for Sustainable Development Studies and Action



ARUVITHURA WATERSHED

Aruvithura Watershed consists of Poonjaar, Erattupetta and Thidanaadu Grama Panchayats of Erattupetta block in Meenachil Taluk of Kottayam District. The watershed is formed as Meenachil River as its base, i.e., the main drain of the area. The total area of the watershed is 709.14 Ha. Streams originating from the above mentioned areas are flowing towards Meenachil River and joins with it at different locations. The main stream in this watershed is Thalikathodu. This stream is originating from the plot of Veliyamkunnel Pappachan. This stream flows through the boundary line of Erattupetta and Thidanaadu Grama Panchayats and falls into Meenachil River. Parts of 2,3 and 4th wards of Thidanaadu GP, parts of 2,3,4th wards of Poonjaar GP and 13, 14, 15 and 16 wards exclusively and 17th ward partly of Erattupetta GP are included in this watershed.

Basic information

1. The Grama Panchayat(s) in which the watershed is situated:	Poonjaar, Erattupetta & Thidanaad
2. Village	Kondoor, Erattupetta and Poonjaar Thekkekkara
3. Block Panchayat	Erattupetta
4. Taluk	Meenachil
5. Area	684.95 Ha
6. Watershed Code	12M28a
7. Wards	
Erattupetta	17 (Partly) 13,14,15 & 16
Poonjaar	1,7,8,13 (Partly)
Thidanaadu	2,3 and 4 (Partly)

Boundaries

North	:	Meenachil River
South	:	Kondoor watershed
East	:	Panachiakappara Watershed
West	:	Thidanaad Watershed



Report on Boundary Identification.

Vettikal stream is flowing through Erattupetta panchayath of Aruvithura watershed . It is the combination of two streams originating from Mathakunnu . Another stream which originates from veyilkaanampara adjacent to the Grama Panchayath boundary of Thidanadu joins the stream coming from Madam side of Poonjar Grama Panchayath at chirappara colony . This stream is called Chirappara stream A small stream coming from Aruvithura church joins with vettikal stream . This stream joins with Meenachilar river at the junction of Muhadeen Koyikal church.

Stream from colony side flows through Thidanaadu Panchayat boundary and joins the river adjacent to the GP boundary. Another small stream coming from the College side also joins the river. Vettikkal Stream accepts a very small stream which is originating from the pond of Jilani Masjid. This watershed consists of 13th to 17th wards of Erattupetta GP. In the 17th Ward, except area that lies adjacent to the boundary of Thidanad GP and the other four wards of the GP are included in the watershed. Valyachan Mala forms part of this watershed. The poultry farm is situated on the boundary of the watershed . The Valyachanmala that seen in the beginning portion of Thidanaadu GP is an important mark of the watershed boundary . St. George L.P. School at Vayilukaanampara is another place in the watershed boundary. The highest location in Aruvithura Watershed is Vazhekkad, a place in the Pnachikappara – Cennadu Road. The maniykunnu Church is also in the watershed boundary .

Other details

Total cropped Area (lakh Hectres) - 674.00

Rainfed Agricultural land(lakh Hectres) - 709.14

Total no.of water storage structures - 98

Total storage capacity of water storage structures(cubic meters) - 980



Institutions in the Watershed

Important place of the watershed

The following are the important place in the watershed

Perunilam, maniyankunnu, Chirappara, Mandakkunnu, chennadu Junction, Valyachan Mala,
Aruvithura, Kondoor, Kannani and Vadethodu.

SL.No	Institutions /Places
1	Public health Centres (PHCs)
2	Post office
3	Electricity Section Office
4	Block Office
5	Jilani Mosque
6	Valyachanmala Pilgrimage Centre
7	Aruvithura Church
8	KSRTC Bus stand

Demographic Details

Total Families	:	2318
APL Families	:	1562
BPL Families	:	756
Total Population	:	9523
Total Female	:	4821
Total Male	:	4702
SC Families	:	16
ST Families	:	5
General	:	2297



Water Resource

Generally used water resources by the people are Well. There are people who use bore wells as well as public taps. People staying in colonies depends upon public taps for their irrigation purposes.

Important Streams in the Watershed

One of the important Stream in the watershed is that originate from near to the property of Veliyamkunnel Pappachan in Erattupetta GP. This stream flows towards north between the boundary of thidannadu GP and Eraattupetta GP and falls into Meenachil River. There is another stream starting near to Kondoor Temple and flows northward before it falls into Meenachil River.

Sub Streams

- Chairappara thodu
- A small stream originating from near the Aruvithura College flowing through the GP boundary of Thidannadu and joins the river.
- Thottukunnila Thodu
- Pulikkappalam Thodu
- Kallaikkal Thodu
- A stream flowing near the property of Shri. Maniyamkunnu Kizhakkethottam Johny.

Other Water sources Existing in the Watershed

Ponds:

Major ponds are, one near Jilani Masjid in Erattupetta GP, Aikkanaparambu Sanddeepaka Pond and Pond near Adoration convent at Perunilam. Other Details are given below:

Ponds (Seasonal)	-	48
Ponds (Perennial)	-	53
Total Ponds	-	101
Well (Seasonal)	-	477
Well (Perennial)	-	476



Total wells	-	953
Bore Wells/Tube Wells	-	329
Spring Seasonal	-	1
Spring Perennial	-	3
Total Spring	-	4
Public Tap	-	89
RWH Tanks	-	7

Drainage System

Watershed 12M29d is having an elongated shape with Dentritic pattern of streams. Total watershed area is 6.64 km² with a total stream length of 16.87 kms. The drainage density is 2.54 which is medium compared with other watersheds in this region.

Roads in the watershed

- College – Kondoor Temple Road
- Chirappara Road
- Chennadu – Vettikkal Road
- Jawan – Mantha Road
- Vanchangal Road
- Erattupetta – Thidanaadu Road
- Ettupankil Road
- Thaipparamba Colony road
- Erattupetta – Chennad Road
- Muthaaramkunnu Road
- Nellikkachaal – thannippara road
- Chemmarappaly Paramada Road.



Type of Soil

The soil in the watershed area are of three types – K07, K09 and K36. In hill areas red soil mixed with pebbles are generally seen. In the midland area there is red soil In the lower area of the watershed, the fertile black soil and a mixture of black and red soil is found. Information regarding the above soil is explained in page no 74 and 75 with soil maps.

Height of the watershed

The different heights of the Poonjaar watershed are shown below:

Height	Area in Hectare
20 - 60 meters	527.3
60 – 100 meters	163.64
100 & 200 meters	18.2
200 & 600 meters	-
600 & 1000 meters	-
Above 1000 Meters	-

Slope of the Watershed

The watershed lies in slopes of different measurements as shown below:

Slope	Area in Hectare
0 – 5%	218.19
5-15%	254.56
15 – 35%	200.03
35 – 70%	36.36
Above 70%	0

Agriculture and present land use

The land use pattern shows that 90 % of the total land available in the watershed is utilized for agriculture. Many crops are cultivated such as Rubber, Coconut, Nutmeg, Pepper, Coffee, Cocoa, Banana, Vegetables and Tuber Crops. Following are the crop statistics of the Aruvithura watershed. Remaining 10 % is used for Road and Construction .

Natural Vegetation

Teak, Jack, Mango, Anjily, Nelly, Irul etc., are the major trees in the watershed.

Cropping pattern

In ancient days, the importance was for food crops. Now the entire watershed is invaded by Rubber. The wide spread of rubber have affected seriously the food production in the area. The agriculture in the watershed is exclusively rain-fed. Only a few have shifted to organic fertilizers.

Medicinal Plants

Oscimum, Panikkoorkka, Touch me not, Kurunthotty, Kariveppu, Neem, Nutmeg, Rabbit ear, Kattarvaazha, Kodakan and Kaashithumba are the major medicinal plants in the watershed.

Sl.no	Crop
1	Rubber
2	Coconut
3	Nutmeg
4	Pepper
5	Coffee, cocoa
6	Banana
7	Vegetables
8	Tuber Crops



Socio-economic Situation

Majority of the watershed population are ordinary people. Some of them have accepted agriculture as their main source of income. There are rubber tapers, people involved in animal husbandry, Government employees and Head Load Workers. People in the watershed belong to different religion and different political parties and they live in harmony.

Marketing Facilities

People depends on Erattupetta for their marketing requirements. Those who are in Thidanaad GP they depend on thidanaad Township for the marketing facilities. People from Thidanaad travels 5 Kms and those from Maniyam Side travel 3 Kms to reach Erattupetta market plac

Health Scenario

People in the watershed avail the services of two Primary health Centres – Panachikappara PHC and Erattupetta PHC for their health care. Besides this, thre are three private hospitals in Erattupetta.

Electrification/ Energy

All the houses except three in the watershed are electrified. The KSEB Section office situates in Erattupetta.



Live Stock Population

There is no large scale live stock population in the watershed. However, small scale livestock population practices are persistent. Details are given below:

Sl. No.	Animals	Number of Animals
1.	Cows	133
2.	Goat	265
3.	Chicken	1376
4.	Ducks	77
5.	Quail	55
6.	Pig	6
7.	Rabbit	34
8.	Fish farming	310
9.	Dogs	247
10.	Cats	340

Sanitation Facilities

Sanitation facilities are not complete in this watershed. There are twelve houses without latrine facilities. Only in 40 houses soak pits are available. 24 houses have compost pits. Biogas plants that help in safe disposal of wastes is only in 16 houses. Public sanitation facilities are none.



Housing facilities

In the watershed 2019 families have own houses. Among them 602 are asbestos roofed. Here is a chance of health hazards for the people living in these type of houses. Tile roofed houses are 681. There are 741 single storied RCC houses and 67 two floored RCC houses.

Important Problems

Soil Erosion

Soil erosion is found mainly at Valyachanmala, Manthakkunnu, Mutharamkunnu, Kannanani and Maniyamkunnu areas.

Drinking Water Scarcity

Severe Drinking water scarcity is experienced in Kannanani, Valyachanmala, Manthakkunnu and Mutharamkunnu areas. Drinking water scarcity is a serious problem in these watershed areas.

Drought

Valyachanmala, Manthakkunnu, Mutharamkunnu, Kannanani and Maniyamkunnu are the drought prone areas in the watershed.



Plant Diseases and Remedies

Crop	pest	Causing Agents	Remedy
Rubber		Due to Continuous tapping	Give rest
		Phytophthora palmivora	Prophylactic spraying on the foliage prior to the onset of South-West monsoon with, Bordeaux mixture 1% at 4000 - 5000 lit/ha using high volume sprayers.or Oil based Copper oxy chloride using low volume sprayer or through aerial application.
		Oidium heveae	Dusting 11 to 14 kg 325 mesh fine Sulphur dust per round per ha
		Corticium salmonicolor	apply Bordeaux paste and when it dries up scrape off the superficial mycelium and damaged bark and apply Bordeauxpaste once again
Coconut	Rhinoceros beetle (Koman chelli)	Oryctes rhinoceros	(a) Application of 250g neem cake mixed with equal volume of sand in the innermost 2-3 leaf axils or (b) Naphthalene balls 12.0 g (4 nos.) in the innermost 2 leaf axils and covered with fine sand, once in 45 days
	Red palm weevil (Chemban chelli)	Rhynchophorus ferugeneus	In attacked palms, observe for the bore-holes and seal them except the top most one. Through the top most hole, pour 1 per cent carbaryl or 0.15% trichlorphon suspension @ one litre per palm, using a funnel. Use of pheromone trap for attracting and killing adult weevils @ one trap per 2 ha.
	Eriophyid Mite (Mandari)	Aceria guerreronis	Apply 2 % neem oil + garlic emulsion or commercial neem formulation azadirachtin 0.004 per cent (Neemazal T/S 1 per cent @ 4 ml per litre of water) or micronized wettable sulphur 0.4 per cent in the crown on young bunches.
		Ganoderma lucidum	Drench the basin with 40 litres of 1 % Bordeaux mixture or tridemorph 0.1 per cent or any other copper fungicide to soak soil up to 15 cm depth at quarterly intervals.
		Pytoplasma	Rogue out palms that are affected severely by root (wilt) and yield less than 10 nuts / palm / year. Replant with disease tolerant material / high yielding hybrids (Chandrasankara).Provide better management.



Water sources in dangerous situation

Waste disposal in Meenachil River at Erattupetta Township contaminates the river very seriously.
(Photo documents with regard to important problems is attached along with DPR)

		Phytophthora palmivora	In early stage heartleaf starts affected tissue paste and pro emerges.
		Thielaviopsis paradoxa	Chisel out co and paint the cent. Apply o tridemorph @ drenching onc
Pepper		Phytophthora capsici	After the rece June), all the radius 45-50 oxylchloride @ spray with 1 also to be give
		Colletotrichum gloeosporioides	Foliar spray o formulation carbendazim - month of Jun disease.
		Meloidogyne incognita, Radopholus similis	(a) Use nem raising (b) Apply talo macerans @ the time of pla monsoon perio
		Longitarsus nigripennis	spray any on namely, dimet cent concentra
	Scale insects	Aonidomytilus albus	In the case o crop can be p cent dimethoa time of appear
	Red Spider Mite		In the case o crop can be



Add/View Base Line Survey

ARUVITHURA

Project*

Total Geographical Area of Project (Lakh Hectares)	<input type="text" value="709.14"/>		
Project Area Covering*	<input type="text" value="Other"/>		
Treatable Area			
Wasteland (Lakh Hectares)	<input type="text" value="NL"/>	Rainfed Agricultural Land (Lakh Hectares)	<input type="text" value="709.14"/>
Total Cropped Area (Lakh Hectares)	<input type="text" value="674.00"/>	Net Sown Area (Lakh Hectares)	<input type="text" value="NL"/>
Total no. of Water Storage Structures	<input type="text" value="98"/>	Total no. of Water Extracting Units	<input type="text" value="12"/>
Total storage capacity of water storage structures (cubic meters)	<input type="text" value="980"/>		
No. of Household			
SC	<input type="text" value="16"/>	ST	<input type="text" value="5"/>
Others	<input type="text" value="2297"/>		
Total Population in the project Area	<input type="text" value="9523"/>	No. of Household of Landless people	<input type="text" value="30"/>
Total no. of BPL Household	<input type="text" value="756"/>		
No. of Small Farmer's Household	<input type="text" value="55"/>	No. of Marginal Farmer's Household	<input type="text" value="2062"/>
Depth of Ground Water (meters) below Ground Level			
Pre-monsoon	<input type="text" value="33"/>	Post-monsoon	<input type="text" value="28"/>
No. of person-days of Seasonal Migration	<input type="text" value="528"/>		



ERATTUPETA BLOCK PANCHAYATH - (IWMP-5) MASTER PLAN - ARUVITHURA WATERSHED

Instalment	IIEC	EPA	Dev.work	LAP	PSM	Monitoring	Evaluation	DPR	Administration	Flexi Fund	Consolidation	Total
	4.50%	3.60%	50.40%	8.10%	9%	0.90%	0.90%	0.90%	9%	10%	2.70%	100%
1st year	159556	382935	1021161			21274	21274	95734	212742	212742		212741
%	1.5	3.6	9.6			0.2	0.2	0.9	2	2		20
2nd year	106371		1595566	436122	478669	21274	21274		265928	265928		319113
%	1		15	4.1	4.5	0.2	0.2		2.5	2.5		30
3rd year	106371		1595565	425484	478669	31912	21274		265927	265927		319112
%	1		15	4	4.5	0.3	0.2		2.5	2.5		30
4th year	106371		1148807			21274	31912		212742	319113	287202	212742
%	1		10.8			0.2	0.3		2	3	2.7	20
Total	478669	382935	5361099	861606	957338	95734	95734	95734	957339	1063710	287202	1063710
%	4.5	3.6	50.4	8.1	9	0.9	0.9	0.9	9	10	2.7	100



ARUVITHURA WATERSHED - NRM ACTION PLAN - YEAR -1

SI No	Activity	Unit	Unit cost	Target	IWMP Fund	Convergence with MNREGS	Total
1.	Well recharging	Nos	10000	12	120000	0	120000
2.	Renovation of wells	Nos	12000	6	72000	0	72000
3.	Rain water harvesting Tank - Nylon -10000 Ltrs (2.75*2.5*1.5)	Nos	11000	9	90000	9000	99000
4.	Stone bunding / Heightening of the exiting bund	M2	144	2156.39	310520	0	310520
5.	Gully controlling structures (Aamakkettu) in sub stream and origin of main stream (Main area - ward 7)	Rm	2355	25	56641	2234	58875
6.	Moisture collection pits	M3	110	7000	0	770000	770000
7.	Live fencing	Rm	24	4000	0	96000	96000
8.	Yard water collection pits(2.00*2.00*1.00)	Nos	918	75	0	68850	68850
9.	Roof Top Rain Water Harvesting tank at Maniyamkundu school (25000 Ltrs)	Nos	125000	1	125000	0	125000
10.	Oli renovation (Near the plot of Muthirapara Appchen)	Nos	20000	1	16500	3500	20000
11.	Oli renovation (Near the plot of Kizhakkethottam Jhony - Maniyamkundu)	Nos	20000	1	16500	3500	20000
12.	Oli renovation (Near the plot of Kalloli Jaison)	Nos	20000	1	16500	3500	20000
13.	Renovation of Puthuparambil pond	Nos	50000	1	32500	17500	50000
14.	Check dam construction in Iykkarathodu	Nos	200000	1	165000	35000	200000
TOTAL					1021161	1009084	2030245



ARUVITHURA WATERSHED - NRM ACTION PLAN - YEAR -1I

SI No	Activity	Unit	Unit cost	Target	IWMP Fund	Convergence with MNREGS	Total
	Well recharging	Nos	10000	23	230000	0	2300
	Rain water harvesting Tank - Nylon -10000 Ltrs (2.75*2.5*1.5)	Nos	11000	15	150000	15000	1650
	Stone bunding	M2	144	2178.14	313652	0	3136
	Retaining wall construction (side protection of Ayikkarathodu)	RM	2372	150	345273	10527	3558
	Construction of head pond (Parakulam conversion - Near the plot of Pulickal Devasis)	Nos	675000	1	500000	175000	6750
	Live fencing	RM	24	8000	0	192000	1920
	Yard water collection pits(2.00*2.00*1.00)	Nos	918	125	0	114750	1147
	Moisture collection pits	M3	110	6500	0	715000	7150
	Gully contolling check dam in Poonjar GP area (Aamakkettu) and other sub streams	Rm	2355	25	56641	2234	588
Total					1595566	1224511	28200



ARUVITHURA WATERSHED - NRM ACTION PLAN - YEAR -III

SI No	Activity	Unit	Unit cost	Target	IWMP Fund	Convergence with M NREGS	
1.	Well recharging	Nos	10000	28	280000	0	
2.	Rain water harvesting Tank - Nylon -10000 Ltrs (2.75*2.5*1.00)	Nos	11000	20	200000	20000	
3.	Checkdam construction - Idukuzhi thodu area	Nos	150000	1	125000	25000	
4.	Kondoor temple pond renovation	Nos	240000	1	200000	40000	
5.	Retaining wall construction(side protection of Thalikathodu)	RM	2372	202.2	465565	14191	
6.	Live fencing	RM	24	10000	0	240000	
7.	Yard water collection pits(2.00*2.00*1.00)	Nos	918	100	0	91800	
8.	Moisture collection pits	M3	110	4000	0	440000	
9.	Pond renovation - Puthuparambil area	Nos	240000	1	200000	40000	
10.	Rain water harvesting Tank at Kondoor Anganvadi	Nos	125000	1	125000	0	
Total					1595565	910991	2



ARUVITHURA WATERSHED - NRM ACTION PLAN - YEAR - IV

SI No	Activity	Unit	Unit cost	Target	IWMP Fund	Convergence with MNREGS	T
1.	Well recharging	Nos	10000	11	110000	0	1
2.	Tree plantation (River side, Stream side, Common and private land, Road side)	Nos	23.75	2000	20000	27500	4
3.	Retaining wall construction(side protection of Vettikal thodu)	RM	2372	177.61	408807	12465	4
4.	Live fencing	RM	24	6000	0	144000	1
5.	Moisture collection pits	M3	0	4000	0	0	
6.	Pond renovation (Near the plot of Kalathil Joseph)	Nos	200000	1	140000	60000	2
7.	Pond renovation (Near the plot of Mr. Jose)	Nos	195000	1	145000	50000	1
8.	Roof Top Rain Water Harvesting tank at Kandethumala area- Sebastian Devasia (50000 Ltrs)	Nos	250000	1	250000	0	2
9.	Well protection - Near the plot of B Ramesh	Nos	75000	1	75000	0	
Total						293965	14



ERATTUPETTA BLOCK PANCHAYATH - (IWMP - 5)

LIVELIHOOD ACTION PLAN - PHASE - 1

ARUVITHURA WATERSHED

Sl No	Name of Activity	Unit	Unit cost	Target	IWMP Fund	Bank loan / Convergence	Total Amount
1.	Grand for WDS	0	0	0	25000	0	25000
2.	Grand for BLWDS	0	0	0	5714	0	5714
3.	Revolving fund	0	0	0	405408	45046	450454
Total					436122	45046	481168

PHASE - 2

Sl No	Name of Activity	Unit	Unit cost	Target	IWMP Fund	Bank loan / Convergence	Total Amount
1.	Revolving fund (Balance at location)	0	0	0	176217	19580	195797
Major livelihood activity							
2.	Cloth bag making unit	Nos	60000	1	30000	30000	60000
3.	Cow rearing	Nos	30000	10	150000	150000	300000
4.	Bee keeping (10 Box per unit)	Nos	15000	6	44267	45733	90000
5.	Chips making unit	Nos	50000	1	25000	25000	50000
Total					425484	270313	695797



ERATTUPETTA BLOCK PANCHAYATH - (IWMP - 5)

PRODUCTION SYSTEM AND MICRO ENTERPRISES PLAN - PHASE - 1

ARUVITHURA WATERSHED

SI No	Name of Activity	Unit	Unit cost	Target	IWMP Fund	WDF	Total Amount
1.	Vertical farming	Nos	20000	11	175469	44531	220000
2.	Organic Vegetable Cultivation	10 cent	3000	23	55200	13800	69000
3.	Fish cultivation	Nos	10000	5	40000	10000	50000
4.	Vermi composting	Nos	9000	20	144000	36000	180000
5.	Goat rearing (1 Goat/ Unit)	Nos	8000	10	64000	16000	80000
Total					478669	120331	599000

PHASE - 2

SI No	Name of Activity	Unit	Unit cost	Target	IWMP Fund	WDF	Total Amount
1.	Organic Vegetable Cultivation	10 cent	3000	20	48000	12000	60000
2.	Tuber crops cultivation (10 Cent)	Nos	1000	20	16000	4000	20000
3.	Vermi composting	Nos	9000	20	177598	2402	180000
4.	Goat rearing (1 Goat/ Unit)	Nos	8000	20	128000	32000	160000
5.	Backyard poultry unit	100/Bird	100	1364	109071	27329	136400
Total					478669	77731	556400

INTEGRATED WATERSHED MANAGEMENT PROGRAMME (IWMP - 5)

ERATTUPETTA BLOCK PANCHAYATH

PERUMGULAM WATERSHED

(Watershed Code: 12M 27b, Area: 1973.38 Ha)



SCALE 1:90000

സൂചകങ്ങൾ

1. എന്തായാൾ നോഡ്
2. കൈപ്പള്ളി നോഡ്
3. പൊരിങ്ങുളം - അടിവാരം നോഡ്
4. കുതിശ്ശമല നോഡ്
5. പൊരിങ്ങുളം ജംഗ്ഷൻ
6. തങ്ങൂർപാറ
7. ഇടമല റോഡ്
8. ഗുരുമന്ദിരം
9. കല്ലില്ലാക്കവല
10. ഇരുളങ്ങാനം
11. കുതിശ്ശമല നോഡ്



- Perumgulum Watershed Area
- Drains
- Roads
- Panchayats
- Waterbodies

Prepared by:

Technical Support Organisation : **SUSTHIRA** Centre for Sustainable Development Studies and Action

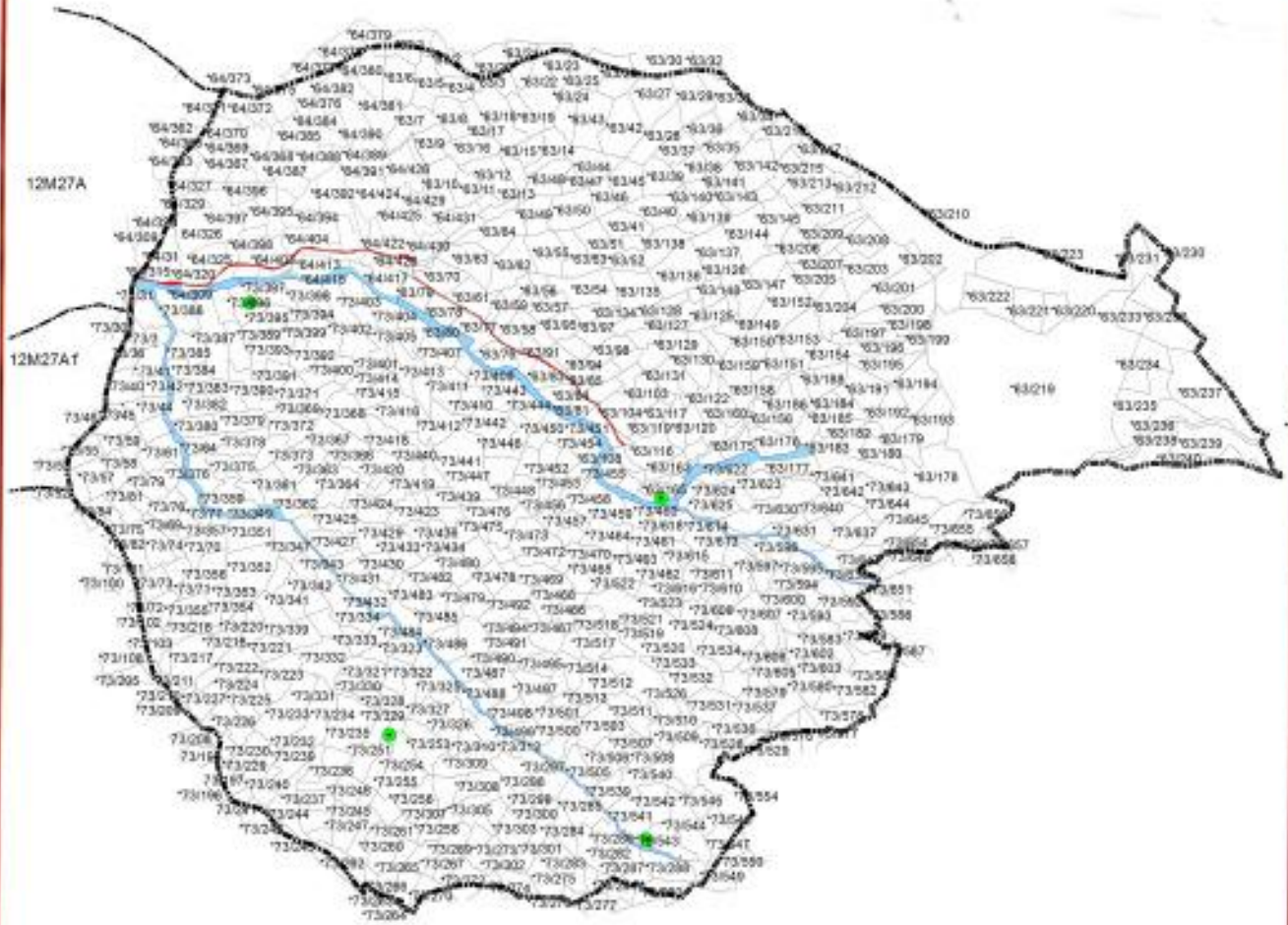
Source: Kerala State Landuse Board

INTEGRATED WATERSHED MANAGEMENT PROGRAMME (IWMP)

ERATTUPETA BLOCK PANCHAYATH

PERIGULAM WATERSHED - 12M27b

CADASTRAL



- Locations
- Road
- River
- Survey Boundary
- Watershed Boundary

Source: Kerala Land Survey & Resources

0 30 60 1,2201,8302,4403,050
Kilometers

Technical Support Organisation : **SUSTHIRA** Centre for Sustainable Development Studies and Action

INTEGRATED WATERSHED MANAGEMENT PROGRAMME (IWMP)

ERATTUPETA BLOCK PANCHAYATH

PERIGULAM WATERSHED - 12M27b

INTERVENTION



Legend (NRM Activities)

1. Roof Top Rain Water Harvesting tank at Adivaram LP School (50000 Ltrs)
2. Roof Top Rain Water Harvesting tank at Adivaram Anganvadi (20000 Ltrs)
3. Roof Top Rain Water Harvesting tank at Edamara Anganvadi (10000 Ltrs)
4. Roof Top Rain Water Harvesting tank at CMS School (50000 Ltrs)
5. Rain water harvesting tank in Kalipally LP school (50000 Ltrs)
6. Rain water harvesting tank in Kalipally Anganvadi (50000 Ltrs)

- Locations
- Road
- River
- Survey Boundary
- Watershed Boundary

Source: Kanala Land Survey & Resources

0 30 60 1,2201,8302,4403,050
Kilometers

Technical Support Organisation : **SUSTHIRA** Centre for Sustainable Development Studies and Action



PERINGALAM WATERSHED

Peringalam watershed embeds parts of Poonjaar - Thekkekkara and Thikkoyi Grama Panachayats in Erattupetta Block and parts of Kuttikkal Grama Panchayat of Kanhirappally Block Panchayat. The total watershed area is 1973.33 Ha. There are many high hills and many water flows in this watershed. The main stream of the watershed is Meenachil River. Peingalam, Adivaaram, Kallillakkamala, Kottathavalam, Vagamon, Kurisumala, thanalpara, Ilamkadu top, Iruimbanganam, Vagappally, Idamala, Pannimala, Kalathuchttambi, Kootupara, Kallarathodu, Chelachuvadu, Koonthanpara are the places included in this watershed. From Poonjaar Thekkekkara GP wards 3, 4, 5, 6 & 7 and from Koottikkal Panchayat the 6th ward are included in the watershed area. Peringdalam watershed is the slopes that leads to the stream originating from Kurisumala and going through Adivaram to Meenachil, to the stream that originate from the Ilakmodu Top and Iruuthanam, and to the stream Kaippally and Muthukara flowing together to Meenachil. And this stream is called Muttamthodu.

Basic information

1. The Grama Panchayat(s) in which the watershed is situated:	Poonjaar Thekkekkara, Thikkoyi and Koottikkal
2. Village	Poonjaar Nadubhagam and Poonjar Thekkekkara
3. Block Panchayat	Eerattupetta and Kanhirappally
4. Wards	3,4, 5 ,6and 7 of of Poonjaar Thekkekkara GP
	6 th ward of Koottikkal GP
	7&8 of Thikkoyi GP
5. Thaluk	Meenachil, Kanhirappally
6. Area	1973.38 Ha
7. Watershed Code	12M27b



Boundaries

North	:	Thikkoyi
South	:	Kappangadu
East	:	Wagomon
West	:	Poonjar & Payyanithottam Watersheds

Report on Boundary Identification

Peringalam Watershed spread over in three Grama Panchayats – Poonjar Thekkekkara, Thikkoyi and Koottikkal – of Erattupetta Block. The total area of the watershed is 1973.33 Ha. There are many high hills and a number of streams in the watershed. Meenachil River is the main drainage of Peringalam Watershed. Muttamthode originates from Kalathwa Side and joins to Meenachil river at Peringalam. The Meenachil river originates from the Koottikkal GP. The watershed boundary passes through Edamala, Enimala, Muthukora, Koonthanpaara, kalathwa, Edamkaadu Top, Kurishumala which are all the hill stations. A small portion of the Enimala is in the Watershed. At Kalathwa side, the chapel of Kaippally Church is situated in the watershed boundary.

From Poonjar thekkekkara GP, the wards 3, 4, 5, 6 and 7 are included in this watershed. Certain parts of the hills of Chattambi, Kaippally, Adivaram, Kattupara, Kallangadu, Chelachuvadu, Kallikkavala Kottathavalam and Irulanganam Wagomon are also forming the parts of the watershed.

Demographic Details

Total Families	:	949
SC Families	:	9
ST Families	:	50
General	:	890
Total Population	:	3136
Total Male	:	1661
Total Female	:	1475
APL Families	:	620
BPL Families	:	329

Other Details

Total cropped Area (lakh Hectres) - 1515.00

Rainfed Agricultural land(lakh Hectres) - 1973.38

Total no.of water storage structures - 37

Total storage capacity of water storage structures(cubic meters) - 370



Height of the watershed

Height	Area in Hectare
Between 60 & 100 meters	85.05
Between 100 & 200 meters	187.13
Between 200 & 600 meters	1088.76
Between 600 & 1000 meters	459.37
Above 1000 Meters	153.07

Slope of the Watershed

The watershed lies in slopes of different measurements as shown below:

Slope	Area in Hectare
0 – 5%	136.09
5-15%	10.03
15 – 35%	568.4
35 – 70%	1020.7
Above 70%	238.16

Type of Soil

The soil in the watershed area are of three types – K31 and K38. The details of the same types of soil are explained with soil map in page 74 and 75.

Geography

The major part of the watershed area is composed of very high hills with steep to very very heavy slopes. Certain higher reach cannot be accessed. This is an agriculture area and during monsoon the aesthetic value of the area is enhanced by several water rich streams.



Instituitons in the watershed

The only one institute in this watershed is the local veterinary hospital.

Agriculture and present land use

The land use pattern shows that 76.8 % of the total land available in the watershed is utilized for agriculture. Many crops are cultivated such as Rubber, Coconut, Nutmeg, Pepper, Coffee, banana , Vegetables and Tuber Crops. Following are the crop statistics of the Peringulam watershed. 5.2 % are rocky and grass lands ,and 10 % each for construction and roads . The remaining 8 % is water bodies .

Sl.no	Crop	Percentage
1	Rubber	59.4 %
2	Coconut	4.2 %
3	Nutmeg	3 %
4	Pepper	1.5 %
5	Coffee	1.5 %
6	Banana	5.4 %
7	Vegetables	5.4 %
8	Tuber Crops	3.3 %

Water Resources

Main river is Meenachil River and it originates from Kottathavalam of Koottikkal Panchayat. This is a very steep slopping area. In the beginning Meenachil river is a narrow strip of water flow and when reaches the valley it swells itself into a bigger water flow. Different waterflows and streams that are present in the watershed enriches Meenachil river at different locations and plays an important role in making the river bigger and bigger. When it reaches Peringalam Watershed it occupies a width of 14 meters. During summer, Meenachil river again shrinks and water is available only at the beginning of the river that too up to a few meters only.

The Sub Canals: The important/main canals that drain the watershed are:



1. Muttamthod
2. Chinnar Thodu
3. Kalaham thodu
4. Kandiyam thodu
5. Poonjaar Thodu
6. Pottampuzha Thodu

Other Water sources Existing in the Watershed

Ponds (Perennial)	-	21
Ponds (Seasonal)	-	16
Total Ponds	-	37
Well (Perennial)	-	137
Well (Seasonal)	-	89
Total wells	-	226
Bore Wells/Tube Wells	-	10
Spring (Perennial)	-	31
Spring (Seasonal)	-	167
Total Springs	-	198
RWH Tanks	-	9

Existing Drinking Water Schemes in the watershed

1. Vaaliplakkal Drinking Water Project
2. Chinnam Drinking Water Project
3. Peringalam Drinking Water Project

Besides these, WB aided Jananidhi Community Drinking Water supply scheme is being implemented here and expected to complete within a short period.

Drainage

Watershed 12M27b is having an circular shape with Trellis pattern of streams. Total watershed area is 19.79 km² with a total stream length of 71.22 kms. The drainage density is 3.6 which is highest compared with other watersheds in this region. This is the biggest drainage system here. The



large number of 1st order streams and the circular shape denote an intensive runoff and wash out in this watershed.

Change in Cropping Pattern

In earlier days, the importance was for food crops. But now, the total area is found to be converted for single crop that too cash crops. The wide spreading rubber cultivation affected the food production of the agriculture land of the watershed. The agriculture is exclusively rain-fed.

Trees in the watershed

Jack, Mango, cashew and Anjily are the major trees seen in the watershed.

Medicinal plants

The commonly seen medicinal plants in the watershed are Neem, mimosa, Panamari, Kayyoonni and Kurumthotty.

Socio-Economic Situation

Means of livelihood of majority of the population in the watershed is agriculture, and therefore any problems that the agriculture sector faces affects the normal life of the watershed population and their economic status.

Employment Scenario

The following are the occupation of the people in the watershed

- a. Rubber tapping
- b. Cow rearing
- c. Goat Rearing
- d. Tailoring
- e. Bee Keeping



Live stock Population

Conveyance Facilities

1. Kudamuratty - Edakkara Road
2. Poonjaar – Peringalam Road Road
3. Adivaram – 4 cent colony Road
4. Adivaram - Kunnad Road
5. Adivaram – Kurishumala Road
6. Adivaram – Purakkad Road
7. Kaippilly Kappangad – Koonthanpara Road
8. Kaippilly Temple Road
9. Kaippilly - Muttamannunkal Road
10. Peringalam – Kaippilly Enthayar Road
11. Adivaram – Mannungal Road
12. Adivaram – Muthukunnam Temple Road
13. Kaippilly - Kalathuvada Road.
14. Kaippilly – Chattambi Chunnambukallu Road
15. Kaippilly – Kappangad ST colony Road

S I. N o .	A n i m a l s	
1 .	C o w s	1 3 9
2 .	B u f f a l o	1
3 .	G o a t	4 9 2
4 .	C h i c k e n	1 5 2
5 .	D u c k s	1 5
6 .	P i g	3 0
7 .	R a b b i t	5 2
8 .	F i s h f a r m i n g	5 3 5
9 .	D o g s	1 0 0
1 0 .	C a t s	1 4 2

Sanitation Facilities

Sanitation in peringalam watershed is not effective. Out of the 949 houses in the watershed 19 have no latrines. Waste disposal facilities are also very rare. Soak pits are available in 10 houses. Even the partial disposal of domestic wastes is not accepted as a hygienic measure. Biogas plants are there in 28 houses. Similarly the number of compost tanks are also very few. Public disposal bins are not made available in the watershed.



Housing facilities

Out of the total families in the watershed 825 are residing in their own houses. The tiled houses are 322. Asbestos roofed are 258. There are 207 single storied RCC houses and 38 two floor RCC houses. Housing facilities cannot be considered as complete as there are some families do not have houses of their own. The asbestos sheeted houses cannot be considered a complete house.

Enterprises in the watershed

- Oil manufacturing
- Organic Fertilizer Manufacturing
- Cow Rearing
- Mineral Water Company
- Goat Farm
- Plantain/banana Cultivation

Problems in Peringalam Watershed

1. Soil Erosion

Soil erosion is found at places such as Kudamurutty, Kurishumala, Idakkara, Ettakkunnu, Mavadi, Chinnam, Kottathavalam, Adivaram, Mannadunkal, Muttam, Kapungadu, Kannumpara and Thalkkoyi.

2. Drinking Water Scarcity

Kudamurutty, Kurishumala, Idakkara, Ettakkunnu, Mavadi, Chinnam, Kottathavalam, Adivaram, Mannadunkal, Muttam, Kapungadu, Kannumpara and Thikkoyi.etc are places having drinking water scarcity.

Drought prone areas in the watershed

Kudamurutty, Kurishumala, Idakkara, Ettakkunnu, Mavadi, Chinnam, Kottathavalam, Adivaram, Mannadunkal, Muttam, Kapungadu, Kannumpara and Thikkoyi, etc., are coming under this category and draught is seasonal .

3. Lack of irrigation facilities

There are no irrigation facilities in places such as Adivaram, Mukalbhagam, Mavadi, 5th ward. People grow vegetables and plantain along the side of the streams but the produce is less. It is observed that if irrigation facilities are improved, the production will also be improved.

4. Stream bank erosion

Stream bank erosion in small streams and springs is observed in the watershed.



5. Plant Diseases & Remedies

Crop	Diseases	pest	Causing Agents	Remedy
Rubber	Tapping panei dryness (Patta marappu)		Due to Continuous tapping	Give rest
	Abnormal leaf fall		Phytophthora palmivora	Prophylactic spraying on the foliage prior to the onset of South-West monsoon with, Bordeaux mixture 1% at 4000 - 5000 lit/ha using high volume sprayers.or Oil based Copper oxy chloride using low volume sprayer or through aerial application.
	Powdery mildew (Podikkoon)		Oidium heveae	Dusting 11 to 14 kg 325 mesh fine Sulphur dust per round per ha
	Pink disease (cheek)		Corticium salmonicolor	apply Bordeaux paste and when it dries up scrape off the superficial mycelium and damaged bark and apply Bordeauxpaste once again
Coconut		Rhinoceros beetle (Komban chelli)	Oryctes rhinoceros	(a) Application of 250g neem cake mixed with equal volume of sand in the innermost 2-3 leaf axils or (b) Naphthalene balls 12.0 g (4 nos.) in the innermost 2 leaf axils and covered with fine sand, once in 45 days
		Red palm weevil (Chemban chelli)	Rhynchophorus ferugeneus	In attacked palms, observe for the bore- holes and seal them except the top most one. Through the top most hole, pour 1 per cent carbaryl or 0.15% trichlorphon suspension @ one litre per palm, using a funnel. Use of pheromone trap for attracting and killing adult weevils @ one trap per 2 ha.
		Eriophyid Mite (Mandari)	Aceria guereronis	Apply 2 % neem oil + garlic emulsion or commercial neem formulation azadirachtin 0.004 per cent (Neemazal T/S 1 per cent @ 4 ml per litre of water) or micronized wettable sulphur 0.4 per cent in the crown on young bunches.

(Photo documents with regard to important problems is attached along with DPR)



Crop	Diseases	pest	Causing Agents
	Thanjavur wilt		Ganoderma lucidum
	Root (Wilt)- Kattuveezhcha		Pytoplasma
	Bud rot		Phytophthora palmivora
	Stem Bleeding		Thielaviopsis paradoxa
<i>Technical Support Organisation: - SUSTHIRA [Centre for Sustainable Development Studies and Action]</i>			
	Quick wilt		Phytophthora capsici



Crop	Diseases	pest	Causing Agents
	Slow wilt		Meloidogyne incognita, Radopholus simi
		Pollu Beetle	longitarsus nigripennis
		Scale insects	Aonidomytilus albus
Tapioca		Red Mite Spider	Oligonychus gossypii
		Casava white fly	Bemisia tabaci
	Mosaic		Virus
	Pea aphid		Aphis craccivora

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Crop	Diseases	pest	Causing Agent
	Chilli Thrips		Scirtothrips dorsalis
	Fruit fly of cucurbits		Bractocera cucurbitae
	Downy Mildew		pseudoperonos cubensis
	Powdery Mildew		Erysiphe cichoracearum
	Wilt		Fusarium sp.
	Mosaic		Virus

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Add/View Base Line Survey

PERINGALAM

Project*

Total Geographical Area of Project (Lakh Hectares)	<input type="text" value="1973.38"/>
Project Area Covering*	<input type="text" value="Other"/>
Treatable Area	
Wasteland (Lakh Hectares)	<input type="text" value="NL"/>
Total Cropped Area (Lakh Hectares)	<input type="text" value="1515.10"/>
Total no. of Water Storage Structures	<input type="text" value="37"/>
Total storage capacity of water storage structures (cubic meters)	<input type="text" value="370"/>
Rainfed Agricultural Land (Lakh Hectares)	<input type="text" value="1973.38"/>
Net Sown Area (Lakh Hectares)	<input type="text" value="NL"/>
Total no. of Water Extracting Units	<input type="text" value="12"/>
No. of Household	
SC	<input type="text" value="9"/>
Others	<input type="text" value="890"/>
Total Population in the project Area	<input type="text" value="3136"/>
Total no. of BPL Household	<input type="text" value="321"/>
No. of Small Farmer's Household	<input type="text" value="204"/>
ST	<input type="text" value="50"/>
No. of Household of Landless people	<input type="text" value="66"/>
No. of Marginal Farmer's Household	<input type="text" value="569"/>
Depth of Ground Water (meters) below Ground Level	
Pre-monsoon	<input type="text" value="39"/>
Post-monsoon	<input type="text" value="30"/>
No. of person-days of Seasonal Migration	<input type="text" value="346"/>



ERATTUPETTA BLOCK PANCHAYATH - (IWMP - 5) MASTER PLAN - PERINGULAM - WATERSHED

Instalment	IEC	EPA	Dev.work	LAP	PSM	Monitoring	Evaluation	DPR	Administration	Flexi Fund	Consolidation	Total
	4.50%	3.60%	50.40%	8.10%	9%	0.90%	0.90%	0.90%	9%	10%	2.70%	100%
1st year	444000	1065598	2841595			59200	59200	266399	591999	591999		5919990
%	1.5	3.6	9.6			0.2	0.2	0.9	2	2		20
2nd year	295999		4439993	1213598	1331998	59200	59200		739999	739999		8879986
%	1		15	4.1	4.5	0.2	0.2		2.5	2.5		30
3rd year	295999		4439992	1183998	1331998	88800	59200		739999	739999		8879985
%	1		15	4	4.5	0.3	0.2		2.5	2.5		30
4th year	296000		3196795			59200	88800		591998	887998	799198	5919989
%	1		10.8			0.2	0.3		2	3	2.7	20
Total	1331998	1065598	14918375	2397596	2663996	266400	266400	266399	2663995	2959995	799198	29599950
%	4.5	3.6	50.4	8.1	9	0.9	0.9	0.9	9	10	2.7	100



PERINGULAM WATERSHED NRM ACTION PLAN – YEAR - I

SI No	Activity	Unit	Unit cost	Target	IWMP Fund	Convergence with MNREGS	Total
1.	Well recharging	Nos	10000	14	140000	0	140000
2.	Fruit bearing tree kit distribution	Nos	400	750	300000	0	300000
3.	Construction of water collection tank - 5000 Ltrs (Oli water)	Nos	25000	10	250000	0	250000
4.	Rain water harvesting Tank - Nylon -10000 Ltrs (2.75*2.5*1.5)	Nos	11000	25	250000	25000	275000
5.	Stone bunding	M2	144	5300.35	763250	0	763250
6.	Heightening of the existing bund	M2	144	1500	216000	0	216000
7.	Roof Top Rain Water Harvesting tank at the plot of Sivadasan Mudavanadu near kurishumala road (50000 Ltrs)	Nos	250000	1	250000	0	250000
8.	Roof Top Rain Water Harvesting tank at Mavadi Anganvadi (20000 Ltrs)	Nos	100000	1	100000	0	100000
9.	Roof Top Rain Water Harvesting tank at Edamana Anganvadi (10000 Ltrs)	Nos	50000	1	50000	0	50000
10.	Well renovation (Protection wall etc)	Nos	12000	15	180000	0	180000
11.	Gully controlling structures (Aamakkettu)	Rm	2355	62.83	142345	5620	147965
12.	New well construction	Nos	90000	4	200000	160000	360000
13.	Moisture collection pits	M3	110	7000	0	770000	770000
TOTAL					2841595	960620	3802215

PERINGALAM WATERSHED - NRM ACTION PLAN - YEAR - II

SI No	Activity	Unit	Unit cost	Target	IWMP Fund	Convergence with MNREGS	Tot
1.	Well recharging	Nos	10000	14	140000	0	14C
2.	Fruit bearing tree kit distribution	Nos	400	820	328000	0	328
3.	Construction of water collection tank - 5000 Ltrs (Oli Water)	Nos	25000	20	500000	0	50C
4.	Stone bunding	M2	144	7000	1008000	0	1008
5.	Heightening of the existing bund	M2	144	5736	825891	0	825
6.	Roof Top Rain Water Harvesting tank at CMS School (50000 Ltrs)	Nos	250000	1	250000	0	25C
7.	Roof Top Rain Water Harvesting tank at Adivaram Anganvadi (20000 Ltrs)	Nos	100000	1	100000	0	10C
8.	Roof Top Rain Water Harvesting tank at Kudamuruti Anganvadi (20000 Ltrs)	Nos	100000	1	100000	0	10C
9.	Tree plantation (Stream side, Common and private land, Road side)	Nos	23.75	3736	20000	68750	88
10.	H Type Check dam (In Vellorimaari stream)	Nos	22000	6	132000	0	132
11.	Retaining wall construction (Side protection of Adivaram Kombarathodu)	RM	2372	285.1	656102	20156	676
12.	Well renovation ((Aayikarathekkal)	Nos	180000	1	180000	0	18C
13.	Live fencing	RM	24	10000	0	240000	24C
14.	Moisture collection pits	M3	110	7000	0	770000	77C
15.	New well construction	Nos	90000	4	200000	160000	36C
Total							5698
					4439993	1258906	5698



PERINGALAM WATERSHED - NRM ACTION PLAN - YEAR - III

S No	Activity	Unit	Unit cost	Target	IWMP Fund	Convergence with MNREGS	Total
1.	Well recharging	Nos	10000	23	230000	0	230
2.	Fruit bearing tree kit distribution	Nos	400	800	320000	0	320
3.	Construction of water collection tank ferro cement -5000 Ltrs	Nos	25000	20	500000	0	500
4.	Construction of pond (Muttam thodu side, Near the plot of Vayalil Varkey)	Nos	600000	1	564800	35200	600
5.	Renovation of checkdam in kossrathodu	Nos	175000	1	150000	25000	175
6.	Spring development - Iykkarathackeparambil	Nos	75000	1	75000	15000	90
7.	Heightening of the existing bund	M2	144	4000	576000	0	576
8.	Tree plantation (Stream side, Common and private land, Road side)	Nos	23.75	3736	20000	68750	88
9.	H Type Check dam(Kalakkathodu)	Nos	22000	5	110000	0	110
10.	Retaining wall construction(Side protection of Kalakathodu)	RM	2372	301.59	694192	21166	715
11.	Live fencing	RM	24	10000	0	240000	240
12.	Moisture collection pits	MB	110	7000	0	770000	770
13.	New Pond Construction at Nedumganal	Nos	500000	1	500000	0	500
14.	Rain water harvesting tank in Kaipally/Anganvadi (50000 Ltrs)	Nos	250000	1	250000	0	250
15.	Oli Renovation	Nos	50000	3	150000	0	150
16.	New well construction	Nos	90000	6	300000	240000	540
Total						1415116	5855



PERINGALAM WATERSHED - NRM ACTION PLAN - YEAR - IV

SI No	Activity	Unit	Total unit cost	Target	IWMP Fund	Convergence with MNREGS	Total
	Well recharging	Nos	10000	21	210000	0	210000
	Construction of water collection tank ferro cement - 5000 Ltrs	Nos	25000	37	925000	0	925000
	Construction of pond (Near the plot of Mazhuvancherry Thankachen)	Nos	722800	1	664800	58000	722800
	Heightening of the existing bund	M2	144	1041.67	150000	0	150000
	H' Type Check dam (Muttamthodu)	Nos	22000	4	88000	0	88000
	Retaining wall construction (side protection of Muttamthodu)	RM	2372	286.3	658995	20109	679104
	Rain Water Harvesting Tank (50000 Ltr) at Adivaram 4 Cent B Colony	Nos	250000	1	250000	0	250000
	Live fencing	RM	24	10000	0	240000	240000
	Moisture collection pits	M3	110	3000	0	330000	330000
	New well construction	Nos	90000	1	50000	40000	90000
	Oli Renovation	Nos	50000	4	200000	0	200000
	Total				3196795	688109	3884904



ERATTUPETTA BLOCK PANCHAYATH - (IWMP - 5)

LIVELIHOOD ACTION PLAN - PHASE - I

PERINGALAM WATERSHED

SI No	Name of Activity	Unit	Unit cost	Target	IWMP Fund	Bank loan / Convergence	Total Amount
1.	Grant for WDS	0	0	0	25000	0	25000
2.	Grant for BLWDS	0	0	0	5716	0	5716
3.	Revolving fund	0	0	0	1182882	131432	1314314
Total					1213598	131432	1345030

PHASE - 2

SI No	Name of Activity	Unit	Unit cost	Target	IWMP Fund	Bank loan / Convergence	Total Amount
1.	Revolving fund (Balance allocation)	0	0	0	473934	52660	526594
Major livelihood activity							
2.	Mini diary farm (5 Cross breed cow unit)	Nos	400000	2	395064	404936	800000
3.	Cow rearing	Nos	30000	13	195000	195000	390000
4.	Bee keeping (10 Box per unit)	Nos	15000	16	120000	120000	240000
Total					1183998	772596	1956594



ERATTUPETTA BLOCK PANCHAYATH - (IWMP - 5)

PRODUCTION SYSTEM AND MICRO ENTERPRISES PLAN - PHASE -1

PERINGALAM WATERSHED

Sl No	Name of Activity	Unit	Unit cost	Target	IWMP Fund	WDF	Total Amount
1.	Banana Cultivation	Per plant	100	2500	200000	50000	250000
2.	Organic Vegetable Cultivation	10 cent	3000	127	304800	76200	381000
3.	Fodder grass cultivation	5 Cent	1200	30	28800	7200	36000
4.	Fish cultivation	Nos	10000	10	80000	20000	100000
5.	Backyard poultry unit	100/Bird	100	2400	193598	48402	242000
6.	Goat rearing (2 Goat/Unit)	Nos	16000	41	524800	131200	656000
Total					1331998	333002	1665000

PHASE - 2

Sl No	Name of Activity	Unit	Unit cost	Target	IWMP Fund	WDF	Total Amount
1.	Organic Vegetable Cultivation	10 cent	3000	125	300000	75000	375000
2.	Fish cultivation	Nos	10000	10	80000	20000	100000
3.	Mushroom cultivation	Nos	4000	5	16000	4000	20000
4.	Tuber crops cultivation (10 Cent)	Nos	1000	128	102400	25600	128000
5.	Vermi composting	Nos	9000	10	177598	-87598	90000
6.	Goat rearing (2 Goat/Unit)	Nos	16000	40	512000	128000	640000
7.	Backyard poultry unit	100/Bird	100	1800	144000	36000	180000
Total					1331998	201002	1533000

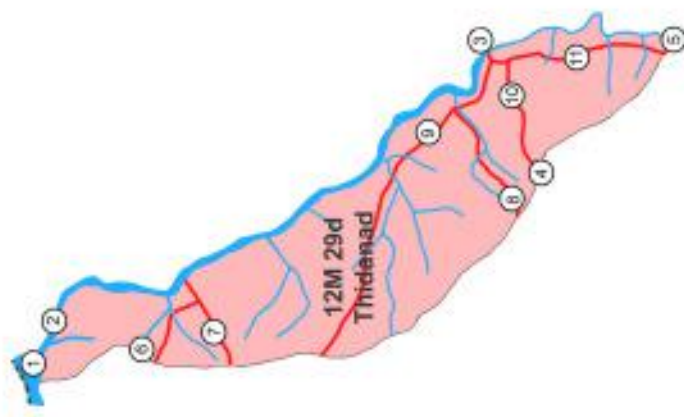
INTEGRATED WATERSHED MANAGEMENT PROGRAMME (IWMP - 5) ERATTUPETTA BLOCK PANCHAYATH

THIDANAD WATERSHED

(Watershed Code: 12M 29d, Area: 684.95 Ha)



SCALE 1:90000



സൂചകങ്ങൾ

1. ചിറ്റാറ്റ് തുണി
2. ചിറ്റാർ പുഴ
3. തിടനാട് പാലം
4. കുന്നൂരപ്പുര
5. ചെമ്മലശ്ശി
6. മണങ്ങനം - കൊണ്ടൂർ തോട്
7. പുഴത്തോട് തോട്
8. പെട്ടനാണി തോട്
9. തിടനാട് - മണങ്ങനം തോട്
10. പുഴത്തോട് - ശൈല തോട്
11. കാഞ്ഞിരപ്പള്ളി തോട്

- Thidanad Watershed Area
- Drains
- Roads
- Panchayats
- Waterbodies

Source: Kerala State Landuse Board

Prepared by:

Technical Support Organisation : SUSTHIRA Centre for Sustainable Development Studies and Action

INTEGRATED WATERSHED MANAGEMENT PROGRAMME (IWMP)

ERATTUPETA BLOCK PANCHAYATH

THIDANAD WATERSHED - 12M26d

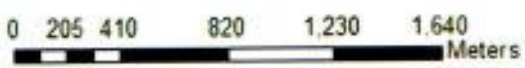


CADASTRAL



- Watershed Boundary
- 165 Survey Field with Number
- Blue River
- Red Road
- Green Location

Source: Kerala Land Survey & Resources



Technical Support Organisation : **SUSTHIRA** Centre for Sustainable Development Studies and Action

INTEGRATED WATERSHED MANAGEMENT PROGRAMME (IWMP)

ERATTUPETA BLOCK PANCHAYATH

THIDANAD WATERSHED - 12M26d

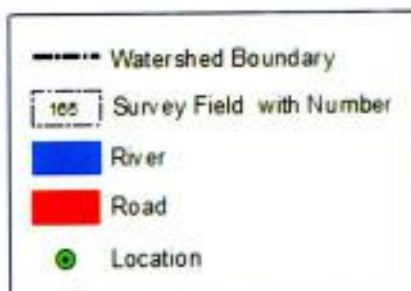


INTERVENTION



Legend (NRM Activities)

1. Kavumkulam panchayath well renovation
2. Check dam renovation at Thanninal area
3. Pond construction near chittar check dam
4. Roof Top Rain Water Harvesting tank at Thidanadu GVHS school (25000 Ltrs)
5. Pond renovation - Thidanadu vattakkavu temple



Source: Kerala Land Survey & Resources

0 205 410 820 1,230 1,640 Meters

Technical Support Organisation : **SUSTHIRA** Centre for Sustainable Development Studies and Action



THIDANADU WATERSHED

The wards 2,5,6,11,12,13 and 14 of Thidanadu Grama Panchayat of Erattupetta Block of Kottayam District is included in the Thidanadu Watershed. The important places - Thidanadu Town, Thidanadu Temple Side, Thanninaal, Maadamala, Valikkakkunnu, Ambadi Nirappel, Chittarumunni Kadaplakkal Junction, Citar Chappath and Mukkalikkadavu are situated within the watershed area. The watershed marks the catchment area of a number of streams that drains into Meenachil River which is starting from Thidanadu Petrol Pump towards the south east slope of the area.

Thidanadu watershed is geographically categorized into 4 different landscapes – low land, midland, midupland and upland. The upper reaches of the watershed are Madamala, Valikkakkunnu and Koluthikkuni. Around 80% of the total watershed area is slopes. Though there are many waterflows in the watershed majority of them are drying up during the summer.

Basic information

1. The Grama Panchayat(s) in which the watershed is situated:	Thidanaadu
2. Village	Kondoor
3. Block Panchayat	Eerattupetta
4. Wards	2,5,6,11,12,13 and 14
5. Thaluk	Meenachil
6. Area	684.95 Ha
7. Watershed Code	12M29d

Boundaries

North	:	Chittar River
South	:	Chemmalamattam
East	:	Kolathikkuni
West	:	Chittar River and Karimbanoli Watershed

Demographic Details

Total Families	:	832
APL Families	:	522
BPL Families	:	310



Total Population	:	3155
Total Female	:	1645
Total Male	:	1510
SC Families	:	28
ST Families	:	1
General	:	805

Report on Boundary Identification.

Thidanadu watershed is exclusively in Thidanadu Grama Panchayat. Thidanadu watershed has a total area of 684.95 ha and lies along the banks of Chittar river.

The outlet of this watershed is Chittarmunni, where the Chittar River joins Mennachil River. There is also a bunch of bamboo on the banks of the river. The property of Vallikkappu Family is near to this place.

Other Details

- Total cropped Area (lakh Hectres) - 608.00
- Rainfed Agricultural land(lakh Hectres) - 684.95
- Total no.of water storage structures - 39
- Total storage capacity of water storage structures(cubic meters) - 390

Geography

Thidanadu is the eastern slope of Chittar River. Chittar is an important tributary of Meenachil River. The watershed has a total area of 684.95 Ha and is with full of hillocks, slopes and water flows. The slopes can be seen towards western, southern and northern side of the watershed.

Type of Soil

The soil in the watershed area are of three types – K07, K09 and K36. The details of the same types of soil are explained with soil map in page 74 and 75.

Height of the watershed

The different heights of the Poonjaar watershed are shown below:

Slope of the Watershed

The watershed lies in slopes of different measurements as shown below:

Slope	Area in Hectare
0 – 5%	228.31
5-15%	351.25
15 – 35%	87.81
35 – 70%	17.58
Above 70%	-

Height	Area in Hectare
20 & 60 meters	509.32
60 & 100 meters	158.13
100 & 300 meters	17.5
200 & 600 meters	-
600 & 1000 meters	-

Agriculture and present land use

The land use pattern shows that 90 % of the total land available in the watershed is utilized for agriculture. Many crops are cultivated such as Rubber, Coconut, Nutmeg, Pepper, Banana, Vegetables and Tuber Crops. Following are the crop statistics of the Poonjaar watershed. 4.5 % of the land is used for constructions and 2.5 % are rocky area and waste lands . the remaining # % is water bodies .

Sl.no	Crop	Percentage
1	Rubber	75.9 %
2	Coconut	6.3 %
3	Nutmeg	2.5 %
4	Pepper	1.8 %
5	Banana	1.3 %
6	Vegetables	1.5 %
7	Tuber Crops	0.7 %



Water Resources

The main stream in the watershed is Chittar River. The river flows through the watershed from Thidanaadu petrol pump to Chittar Munni.

Streams in the watershed

- A small stream which originates from the property of Santhosh Mucholil and joins with Chittar near the property of V.J. Varkey is found in the watershed.
- There is an old pond in the property of Vadayattu Family. A small water canal originates from this pond and flows downwards and falls in Chittar River after flowing through the boundary of Vadayattu family. The houses at the starting point of this stream are Velikkakath Suresh, Villanthanam Sunny and Pullattu Thomas. From there a concrete road is leading towards the west which takes us to the watershed boundary.
- Stream originating from Pazhyattu Tomy and joins Chittar
- One Varalithodu originating near Illathuparambil Ouseppachan's and joins Chittar at Jimmy Porkattu
- One small water flow is originating from Sojan Villanthanam and flows through the frontage of the house of Kizhakkemuri Chellappan and joins Chittar.
- There is a stream flowing parallel to the road near to Ambarappara Cooperative Bank. Of late the habitants in the area named it as "Church Land Thodu". It originates from Puppantahanam Papachan's. Before falling into Chittar at Chittattinkara, this stream flows along the church land junction.
- Kappilithodu begin from the property of Kappilthodu Thomas and joins the Church Land Stream at Church Land.
- Thakidiyel thodu originates from the property of Kakkaniyil Abraham and joins with Chittar river at the property of Thakidiyer Doctor.
- Injakkal Stream originating from KaruvinalKunnel Side and joins Chittar river at Kinattinkara Jose property .
- Urumbarathodu starts from property of Subash Kadanneppallil and joins Chittar river at Moonnanappally Baby's property . Another small stream starts from Janatha Subash's and joins urumbarathodu.

Thuruthiyel stream is one of the important streams originating from kaarudinaalkunnu of Valikkunnu. This stream after its course forward joins Chellambaram Stream near Erattupetta – Bharananganam road. Then it crosses the road and falls into Chittar. Kulathil Kuniyil Stream is flowing between the properties of Pottananiyil Binoy and Mullaayil Thommachan. To this stream another stream from Pulikkunnil Omana's is joining to Kulathil Kuniyil Stream and they after flowing together joins Chittar. Another one is Kunnumpuram Stream. This is originating from near the properties



of Kuttichan Chennakkattu Kunnel and haridas Thazhath. This joins with the stream coming from the property of Ouseppachan Chennakkattukunnel and after flowing together parallel to the road joins chittar. Next one is the stream that flows across Kanhirappally – Thidanaadu road coming from the side of Thidanaad Temple near Kodoor Bhaskaran's. . Another one is flowing from Thanninam Pathil Nadamaadam Lillikutty's and crosses the road in the watershed before it joins chittar. There is another road which coming through Chengalappalam and crosses the road before joining Chittar. This originates from the property of Naripparayil Family.

Other Water sources Existing in the Watershed

Ponds (Perennial)	-	29
Ponds (Seasonal)	-	10
Total Ponds	-	39
Well (Perennial)	-	337
Well (Seasonal)	-	237
Bore Wells/Tube Wells	-	18
Total wells	-	574
Public Tap	-	Nil
RWH Tanks	-	8

Public Well: there is one public well near to Aarattu Kavuu

Public Bore wells

1. Chittar Munni Side	-	2
2. Poovangal Area	-	1
3. Near Thidanaadu Chappel	-	1
4. Near the Ration Shop(Ration Kadappadi)-		1
5. Near Periyath property Madamala Road	-	1
6. Madamal – Pollampuram Road	-	1
7. Thidanaadu Kunnumpuram Side	-	2

Drinking Water Schemes in the watershed

- Thidanadu project
- Maadamala Project



Drainage

Watershed 12M29d is having an elongated shape with Dentritic pattern of streams. Total watershed area is 6.64 km² with a total stream length of 16.87 kms. The drainage density is 2.54 which is medium compared with other watersheds in this region.

Trees in the watershed

Jack, mango, Aanjily, Murikku, Venga, Mahagani, Vatta, Tmarind, Bamboo, Pala, Konna, Kanikkonna.

Fruit Bearing Trees

Jack, mango, Suppotta, Pappaya, Pineapple, lemon, Tamarind, Philanthus Embelica, Anona, Chaamba, Badam, Guava, Lubica, Egg Fruit and Rambuttan.

Medicinal plants

As generally seen in the hill stations, Thidanaadu Watershed is also rich in medicinal herbs. The commonly seen are Oscimum, touch me not, Naruneendi, panikkoorkka, Aadalotakam, Nutmeg, Kaashithumba, Thazhuthaama, kacholam, Neem, Kurumthotty, Muringa, Kayyoonni, Keezhaar Nelli, Mukkuty, Kariveppu, Rabbit ear, Asparagus, Koovalam, Shankhupushpam, Erukku, Mylanchi, Koova, Ashokam, Karuka, Nilapulladi and Kodakan.

Plants at extinction

Four type of plants becoming rare in the watershed and they are Kaasithumba, Kacholam, Rabbit ear, and poovamkurunnila.

Socio-economic Situation

Majority of the watershed population accepted agriculture as the main source of income. The major crop is rubber. The low price of rubber affected the daily life of the people in this area. There are government employ es, construction workers, employees in private institutions etc., are also living in this watershed harmoniously.

Electrification/ Energy

There are three un-electrified houses in Thidanaadu watershed.

Sanitation Facilities

The watershed is seemingly poor in sanitation facilities. In 17 houses compost pits are available. Mechanisms for Domestic waste disposal – Biogas plants are found only 18 houses. There are 20



houses with soak pits. Out of the total households (832) 12 houses have no sanitation facilities. There is no public waste disposal facilities in the watershed area.

Housing facilities

Out of the total 832 families 730 have own houses but cannot be considered as saturated in the case of housing facilities. Among the 730 houses 287 are asbestos roofed. There are 279 single storied RCC houses and 38 two flooried RCC houses. Asbestos creates health problems to the families.

Livestock Population

Thidanaadu watershed is comparatively competent in Animal Husbandry. However, the available data from the watershed regarding animal husbandry are furnished below:

SL. NO	Animals	No of animals
1	Cow	91
2	Goat	118
3.	Chicken	788
4.	Duck	56
5.	Quail	308
6.	Pig	37
7.	Rabbit	25
8.	Dog	299
9.	Cat	84



Roads in the watershed

1. Kanhirappally - Erattupetta Road
2. Thidanaadu – Bharanaganam Road
3. Thidanaadu - Ambalam Road
4. Poovathodu – Aruvithura Road
5. Thidanaadu - Maadamala Road
6. Chemmalamaatam – Poovathaani Road
7. Cheraani - Vattakkanni Road
8. Poovangal Road
9. Chagalappalam Road
10. Poovathodu = Paika Road
11. Pottanaani Road
12. Vallikkunnu Road
13. Poovathodu Road

Important institutions

SL.No	Institutions /Places	Location
1	VHSE Thidanadu	Thidanadu
2	SIB Thidanadu	Thidanadu
3	Cheruvallikavu Temple	Cheruvallikavu
4	Aarattu Temple	Chittattinkara
5	Kurishupally	Thidanadu
6	Devi Temple	Ambalam junction
7	Sndp Temple	Ambalam junction
8	Mahadeva Temple	Ambalam junction
9	Yes club	Madamala



Plant Diseases & Remedies

Crop	Diseases	pest	Causing Agents	Remedy
Rubber	Tapping panei dryness (Patta marappu)		Due to Continuous tapping	Give rest
	Abnormal leaf fall		Phytophthora palmivora	Prophylactic spraying on the foliage prior to the onset of South-West monsoon with, Bordeaux mixture 1% at 4000 - 5000 lit/ha using high volume sprayers.or Oil based Copper oxy chloride using low volume sprayer or through aerial application.
	Powdery mildew (Podikkoon)		Oidium heveae	Dusting 11 to 14 kg 325 mesh fine Sulphur dust per round per ha
	Pink disease (cheek)		Corticium salmonicolor	apply Bordeaux paste and when it dries up scrape off the superficial mycelium and damaged bark and apply Bordeauxpaste once again
Coconut		Rhinoceros beetle (Komban chelli)	Oryctes rhinoceros	(a) Application of 250g neem cake mixed with equal volume of sand in the innermost 2-3 leaf axils or (b) Naphthalene balls 12.0 g (4 nos.) in the innermost 2 leaf axils and covered with fine sand, once in 45 days
		Red palm weevil (Chemban chelli)	Rhynchophorus ferugeneus	In attacked palms, observe for the bore- holes and seal them except the top most one. Through the top most hole, pour 1 per cent carbaryl or 0.15% trichlorphon suspension @ one litre per palm, using a funnel. Use of pheromone trap for attracting and killing adult weevils @ one trap per 2 ha.
		Eriophyid Mite (Mandari)	Aceria guerreronis	Apply 2 % neem oil + garlic emulsion or commercial neem formulation azadirachtin 0.004 per cent (Neemazal T/S 1 per cent @ 4 ml per litre of water) or micronized wetttable sulphur 0.4 per cent in the crown on young bunches.



Crop	Diseases	pest	Causing Agents	
	Thanjavur wilt		Ganoderma lucidum	Dre % 0.1 fun dep
	Root (Wilt)- Kattuveezhcha		Pytoplasma	Ro sev les Re ma (Ch ma
	Bud rot		Phytophthora palmivora	In e (wh with affe App it fr em
	Stem Bleeding		Thielaviopsis paradoxa	Ch tiss trid tar trid wa fou
	Quick wilt		Phytophthora capsici	Aft sho are 45- oxy A f Bo

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Crop	Diseases	pest	Causing Agents
	Epilachna Beetle		Henosepilachna vigintioctopunctata
	Sepentine Leaf miner		Liriomyza trifolii
	Chilli Thrips		Scirtothrips dorsalis
	Fruit fly of cucurbits		Bractocera cucurbitae
<i>(Photo documents with regard to important problems is attached along with DPR)</i>			
	Downy Mildew		pseudoperonospora cubensis
	Powdery Mildew		Erysiphe cichoracearum
	Wilt		Fusarium sp.
	Mosaic		Virus

Technical Support Organisation: - SUSTHIRA
[Centre for Sustainable Development Studies and Action]



Add/View Base Line Survey

THIDANAD

Project*

Total Geographical Area of Project (Lakh Hectares)	<input type="text" value="684.95"/>		
Project Area Covering*	<input type="text" value="Other"/>		
Treatable Area			
Wasteland (Lakh Hectares)	<input type="text" value="NIL"/>	Rainfed Agricultural Land (Lakh Hectares)	<input type="text" value="684.95"/>
Total Cropped Area (Lakh Hectares)	<input type="text" value="608.00"/>	Net Sown Area (Lakh Hectares)	<input type="text" value="NIL"/>
Total no. of Water Storage Structures	<input type="text" value="39"/>	Total no. of Water Extracting Units	<input type="text" value="12"/>
Total storage capacity of water storage structures (cubic meters)	<input type="text" value="380"/>		
No. of Household			
SC	<input type="text" value="26"/>	ST	<input type="text" value="1"/>
Others	<input type="text" value="805"/>		
Total Population in the project Area	<input type="text" value="3155"/>	No. of Household of Landless people	<input type="text" value="5"/>
Total no. of BPL Household	<input type="text" value="310"/>		
No. of Small Farmer's Household	<input type="text" value="69"/>	No. of Marginal Farmer's Household	<input type="text" value="677"/>
Depth of Ground Water (meters) below Ground Level			
Pre-monsoon	<input type="text" value="34"/>	Post-monsoon	<input type="text" value="27"/>
No. of person-days of Seasonal Migration	<input type="text" value="220"/>		



ERATTUPETA BLOCKPANCHAYATH - (IWMP - 5) MASTER PLAN - THIDANADU WATERSHED

Instalment	IEC	EPA	Dev.work	LAP	PSM	Monitoring	Evaluation	DPR	Admi nistra tion	Flexi Fund	Consolida tion	Total
	4.50%	3.60%	50.40%	8.10%	9%	0.90%	0.90%	0.90%	9%	10%	2.70%	100%
1st year	154114	369873	986328			20548	20548	92468	205485	205485		205484
%	1.5	3.6	9.6			0.2	0.2	0.9	2	2		20
2nd year	102743		1541137	421244	462341	20548	20548		256857	256856		308227
%	1		15	4.1	4.5	0.2	0.2		2.5	2.5		30
3rd year	102743		1541138	410970	462341	30823	20549		256856	256856		308227
%	1		15	4	4.5	0.3	0.2		2.5	2.5		30
4th year	102742		1109619			20549	30823		205485	308228	277405	205485
%	1		10.8			0.2	0.3		2	3	2.7	20
Total	462342	369873	5178222	832214	924682	92468	92468	92468	924683	1027425	277405	1027425
%	4.5	3.6	50.4	8.1	9	0.9	0.9	0.9	9	10	2.7	100



THIDANADU WATERSHED - NRM ACTION PLAN - YEAR -1

SINo	Activity	Unit	Unit cost	Target	IWMP Fund	Convergence With MNREGS	Total
1.	Well recharging	Nos	10000	22	220000	0	220000
2.	Renovation of wells	Nos	12000	10	120000	0	120000
3.	Rain water harvesting Tank - Nylon -10000 Ltrs (2.75*2.5*1.5)	Nos	11000	10	100000	10000	110000
4.	Stone bunding	M2	144	2189	315187	0	315187
5.	Gully controlling structures	Rm	2355	25	56641	2234	58875
6.	Moisture collection pits	M3	110	7000	0	770000	770000
7.	Live fencing	Rm	24	6000	0	144000	144000
8.	Yard water collection pits(2.00*2.00*1.00)	Nos	918	75	0	68850	68850
9.	Heightening of the existing bund	M2	144	1212	174500	0	174500
10.	Silt removal in the main and sub streams	M3	110	1500	0	165000	165000
	TOTAL				986328	1160084	2146412



THIDANADU WATERSHED - NRM ACTION PLAN - YEAR - II

SI No	Activity	Unit	Unit cost	Target	IWMP Fund	Convergence With MNREGS
1.	Well recharging	Nos	10000	7	70000	0
2.	Rain water harvesting Tank - Nylon - 10000 Ltrs (2.75*2.5*1.5)	Nos	11000	5	50000	5000
3.	Stone bunding / Heightening of the existing bund	M2	144	2854	410864	0
4.	Retaining wall construction(Side protection of Kaapilathodu)	RM	2372	150	345273	10527
5.	Renovation of wells	Nos	12000	10	120000	0
6.	Live fencing	RM	24	6500	0	156000
7.	Kootiyani pond renovation	Nos	125000	1	125000	0
8.	Roof Top Rain Water Harvesting tank at Thidanadu veterinary hospital (25000 Ltrs)	Nos	125000	1	125000	0
9.	Yard water collection pits(2.00*2.00*1.00)	Nos	918	125	0	114750
10.	Moisture collection pits	M3	110	7000	0	770000
11.	Pond renovation - Thi danadu vattakkavu temple	Nos	300000	1	250000	50000
12.	Kavumkulam panchayath well renovation	Nos	45000	1	45000	0
	Total				1541137	1106277



THIDANADU WATERSHED - NRM ACTION PLAN - YEAR - III

Sl No	Activity	Unit	Unit cost	Target	IWMP Fund	Convergence With MNREGS	Total
1.	Well recharging	Nos	10000	25	250000	0	250000
2.	Rain water harvesting Tank - Nylon -10000 Ltrs (2.75*2.5*1.5)	Nos	11000	15	150000	15000	165000
3.	Pond construction near chittar check dam	Nos	514250	1	474250	40000	514250
4.	Check dam renovation at Thanninal area	Nos	200000	1	200000	0	200000
5.	Retaining wall construction(side protection of Vazhathodu)	RM	2372	202.84	466888	14249	481137
6.	Live fencing	RM	24	10000	0	240000	240000
7.	Yard water collection pits(2.00*2.00*1.00)	Nos	918	100	0	91800	91800
8.	Moisture collection pits	M3	110	4000	0	440000	440000
	Total				1541138	841049	2382187



THIDANADU WATERSHED - NRM ACTION PLAN - YEAR - IV

Sl No	Activity	Unit	Unit cost	Target	IWMP Fund	Convergence With MNREGS	To
1.	Well recharging	Nos	10000	26	260000	0	260
2.	Tree plantation (River side, Stream side, Common and private land, Road side)	Nos	23.75	2000	20000	27500	47
3.	Retaining wall construction(side protection of Thadikapuzhathodu)	RM	2372	154.07	354619	10813	365
4.	Live fencing	RM	24	5000	0	120000	120
5.	Moisture collection on pits	M3	0	3000	0	0	
6.	Check dam renovation - Near Thidanadu town	Nos	400000	1	350000	50000	400
7.	Roof Top Rain Water Harvesting tank at Thidanadu GVHS school (25000 Ltrs)	Nos	125000	1	125000	0	125
	Total				1109619	208313	1317



ERATTUPETTA BLOCK PANCHAYATH - (IWMP - 5)

LIVELIHOOD ACTION PLAN - PHASE -1

THIDANADU WATERSHED

Sl No	Name of Activity	Unit	Unit cost	Target	IWMP Fund	Bank loan / Convergence	Total Amount
1.	Grand for WDS	0	0	0	25000	0	25000
2.	Grand for BLWDS	0	0	0	5714	0	5714
3.	Revolving fund	0	0	0	390530	43393	433923
Total					421244	43393	464637

PHASE - 2

Sl No	Name of Activity	Unit	Unit cost	Target	IWMP Fund	Bank loan / Convergence	Total Amount
1.	Revolving fund (Balance allocation)	0	0	0	170520	18947	189467
Major livelihood activity							
2.	Vegetable shop	Nos	80000	1	40000	40000	80000
3.	Cloth bag making unit	Nos	60000	1	30000	30000	60000
4.	Cow rearing	Nos	30000	8	117950	122050	240000
5.	Bee keeping (10 Box per unit)	Nos	15000	7	52500	52500	105000
Total					410970	263497	674467



ERATTUPETTA BLOCK PANCHAYATH - (IWMP - 5)

PRODUCTION SYSTEM AND MICRO ENTERPRISES PLAN - PHASE -1

THIDANADU WATERSHED

SI No	Name of Activity	Unit	Unit cost	Target	IWMP Fund	WDF	Total Amount
1.	Banana Cultivation	Per plant	100	1000	80000	20000	100000
2.	Organic Vegetable Cultivation	10 cent	3000	20	48000	12000	60000
3.	Fish cultivation	Nos	10000	5	40000	10000	50000
4.	Backyard poultry unit	100/Bird	100	1380	110341	27659	138000
5.	Pickle manufacturing unit	Nos	30000	1	24000	6000	30000
6.	Vegetable nursery	Nos	30000	1	24000	6000	30000
7.	Vermi composting	Nos	9000	10	72000	18000	90000
8.	Goat rearing (1 Goat/ Unit)	Nos	8000	10	64000	16000	80000
Total					462341	115659	578000

PHASE - 2

SI No	Name of Activity	Unit	Unit cost	Target	IWMP Fund	WDF	Total Amount
1.	Organic Vegetable Cultivation	10 cent	3000	20	48000	12000	60000
2.	Tuber crops cultivation (10 Cent)	Nos	1000	20	16000	4000	20000
3.	Vermi composting	Nos	9000	20	177598	2402	180000
4.	Goat rearing (1 Goat/ Unit)	Nos	8000	20	128000	32000	160000
5.	Backyard poultry unit	100/Bird	100	1160	92743	23257	116000
Total					462341	73659	536000

INTEGRATED WATERSHED MANAGEMENT PROGRAMME (IWMP - 5) ERATTUPETTA BLOCK PANCHAYATH

PANACHIKAPARA WATERSHED

(Watershed Code: 12M 26a, Area: 269.27 Ha)



SCALE 1:90000



സൂചകങ്ങൾ

1. അനുബന്ധങ്ങൾ കോഡിങ്ങ്
2. തൊഴുതോടി
3. തൊഴുതോടിതൊഴുതോടി
4. തൊഴുതോടി
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12. തൊഴുതോടി തൊഴുതോടി
13. തൊഴുതോടി
14. തൊഴുതോടി തൊഴുതോടി
15. തൊഴുതോടി തൊഴുതോടി
16. തൊഴുതോടി തൊഴുതോടി

- Panachikappara Watershed Area
- Drains
- Roads
- Panchayats
- Waterbodies

Source: Kerala State Landuse Board

Prepared by:

Technical Support Organisation : SUSTHIRA Centre for Sustainable Development Studies and Action

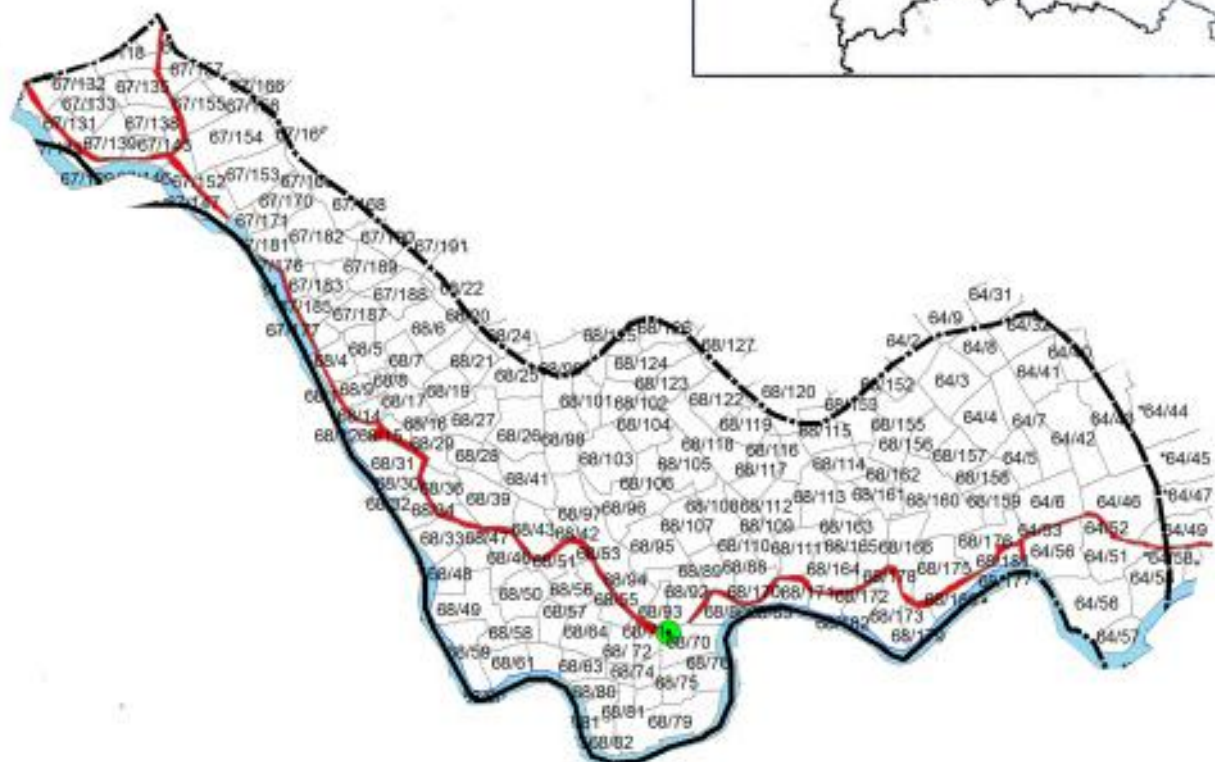
INTEGRATED WATERSHED MANAGEMENT PROGRAMME (IWMP)

ERATTUPETA BLOCK PANCHAYATH

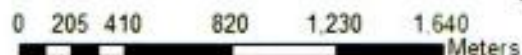
PANACHIKAPARA WATERSHED - 12 M 26A



CADASTRAL



Source: Kerala Land Survey & Resources



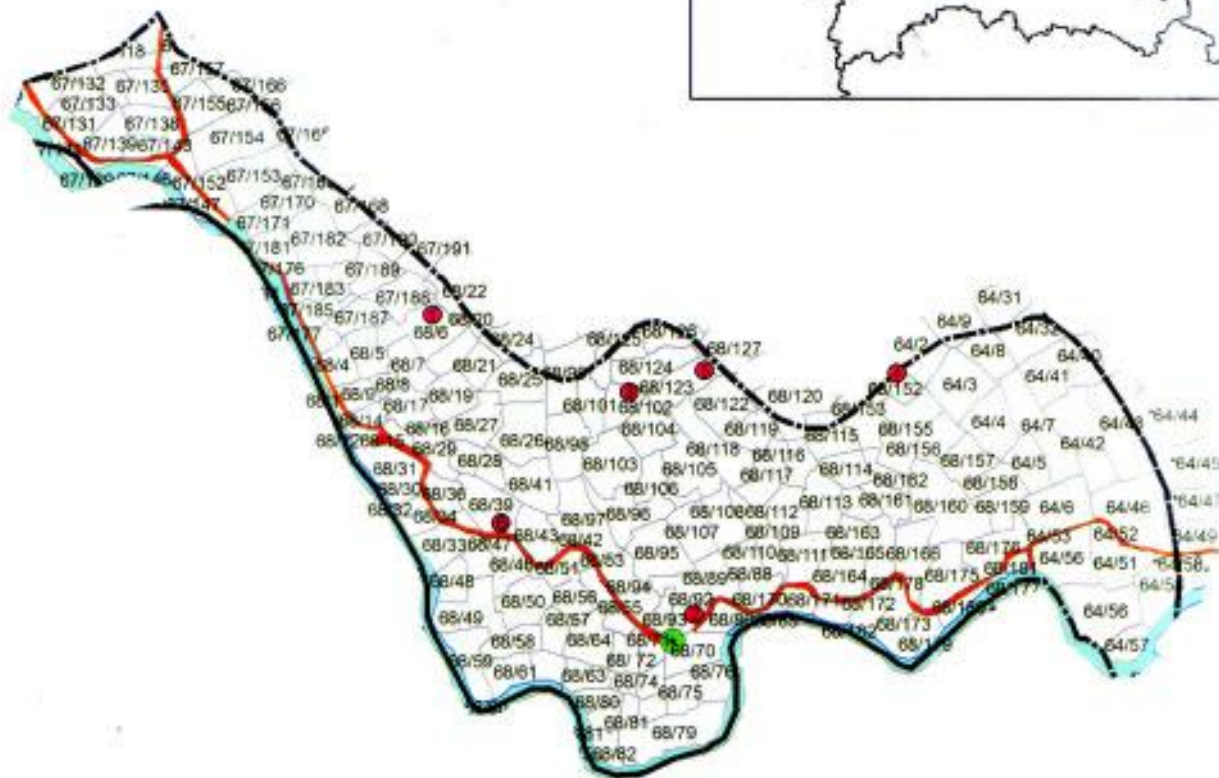
Technical Support Organisation : **SUSTHIRA** Centre for Sustainable Development Studies and Action

INTEGRATED WATERSHED MANAGEMENT PROGRAMME (IWMP)

ERATTUPETA BLOCK PANCHAYATH

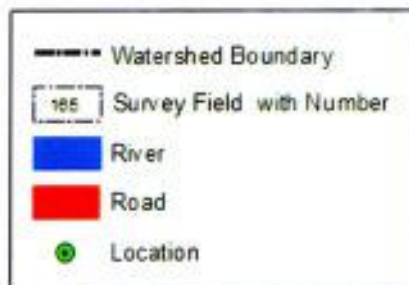
PANACHIKAPARA WATERSHED - 12 M 26A

INTERVENTION

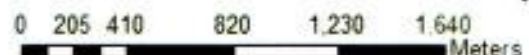


Legend (NRM Activities)

1. Well renovation (Mandapathipara colony)
2. Pond renovation - Near GV Raja Stadium
3. Well renovation (Thannipara drinking water scheme, Kanjiramattom)
4. Rain water harvesting Tank - Thannipara Angarvadi (10000 Ltrs)
5. Thannipara - Panchayath well renovation
6. Well renovation (Chemmarampalikkunil)



Source: Kerala Land Survey & Resources



Technical Support Organisation : **SUSTHIRA** Centre for Sustainable Development Studies and Action



PANCHIKAPPARA WATERSHED

Poonjaar, Poonjaar Thekkakkara and Erattupetta Grama Panchayaths are coming under Panachikappara Watershed. The River Meenachi is flowing through this watershed. The area of the watershed is 269.27 hectares. The junction of Vadakkanaar which is originating from Illikkal Kallu and Mennachilaar is considered as the boundary of the watershed. Parts of the 10th, 11th and 12th wards of Erattupetta GP, parts of 2nd, 3rd, 4th and 5th wards of Poonjaar GP and 11th ward of Poonjaar thekkekkara GP are included in this watershed area. Erattupetta, panachikappara, Mandapathil Kunnu, Mattakkadu, Chemmar pallikkunnu, Vellieppallikkandam, Thannippara, Pallivathil, Muzhiyankal, Ambattupaara, Pulpiram, Nellikkalchal, Thundathil Vaathil Paramada, Kanhiramattam Palace etc. are the places in the watershed.

There are three wards from Poonjaar Thekkekkara GP included in the watershed. The wards included in the watershed are 1,2, and 3. Poojaar is a slopping area towards the streams that originate from Eetilappara, Kulathingalmaavadi, Neelonmala hillocks. Majority of the land is very sloppy in this watershed.

Basic Information

1. The Grama Panchayat(s) in which the watershed is situated:	Eraattupetta, Poonajar and Poonjaar Thekkekkara
2. Village	Poonjaar Nadubhagam and Erattupetta
3. Block Panchayat	Eerattupetta
4. Wards	10, 11 and 12 wards of Erattupetta GP 2,3,4 ,5 and 6 of Poonjaar GP 1 ward of Poonjaar Thekkekkara GP
5. Thaluk	Meenachil
6. Area	269.27 Ha
7. Watershed Code	12M26a



Boundaries

North	:	Nedungazhi
South	:	Aruvithura Watershed
East	:	Poonjaar Watershed
West	:	Aruvithura Watershed

Report on Boundary Identification.

Areas from Erattupetta GP

Angalamman Kovil which situated at the junction where the Vadakkanaar coming from Illikkal Kallu and Meenachilaar river are in the boundary of Panachikappara Watershed. Meenachil river flows along the boundary of the watershed. The bridge that joins Kanjirappally road and kottayam road is also in the boundary. In ward 12, the house of Amazhathinaal Rasheed and the Macca Musjid are in the watershed boundary. The fish market and Pallippara drinking water project situates in the boundary. The market road passes through watershed boundary upto Muthumangalam Unani Junction. The Manchakkal Road passes through the watershed boundary. Kizhedam pareekkochy who is in Konnachaadam area is residing in watershed boundary. The other places that either passes through or situated in the boundaries from Erattupetta GP are: Maliekkal Colony, The storage tank of Alumthara Drinking water project. The remaining part of the watershed is in Poonjaar GP and is known as Mandapathipaara.

Areas from Poonjaar GP

The name of the boundary line Mandapthil Kadavu is on Erattupetta - Poonjaar Road. Here there is a stream flowing across the road. This stream is originating from Kochalumparamba. This stream falls in to Meenachil river after flowing across the road near the house of Mandapthil Kunnel Pappachan. Another stream, originating from Puthyanickal paramba can be found flowing across Erattupetta – Poonjaar Road. At the beginning of Padikkamattam – Palace road, the left side is 5th ward and right side is 3rd ward. Ayyappan Temple and Meenakshi Temple are situated near Poonjaar palace in 2nd ward. The left side of the kanjiramattam – Palace Road is 3rd ward, and the right side is 5th Ward. Similarly Mandapthil paara is also in the watershed boundary and Mandapthil colony is situated there. There is a small spring and two dried up water tanks. Very near to this , a spring is seen which originates from the Quarry near Chemmarappallikkunnu. Another stream is



originating from the property of Nandakumar of 5th Ward and flowing along the side of Poonjaar Service Cooperative bank and across the road before it fall into Meenachil River. The next stream is originating from the property of Shankaran Shanthinivas and flowing along the 5th ward and reaches Meenachil river near G.V. Raja Stadium at a place known as Velliyepallikandam . A small stream is flowing through the boundary of Poonjaar and Poonjaar Thekkekkara GPs. Part of this stream is flowing very adjacent to Poonjaar- Thekkekkara rather than Poonjaar. This area is known as Pallivathil Junction. . The Moozhiankall Junction, Pulppuram side, Ambattupara SC colony, Anganvadi (Ward 6), Thundathil Vaathil (Ward 4) are the places included in the Panachikkappara Watershed.

The spot where the pump house is seen at Nellikkachaal which is a part of 5th ward can be considered as boundary of the watershed. Very near to this location there is a mosque and an Anganvadi. Thannippara – Vettiparambil Road in the 6th ward is passing through the watershed boundary. This is also the political boundary of Poonjaar Thekkekkara Grama Panchayat.

Areas from Poonjaar – Thekkekkara GP

The petrol pump in Poonjaar is situated on the boundary of the watershed. Anithottam Colony is also on the boundary. Moozhoyankal area on the Vettiparambu – Thannippara road marks the political boundary of Poonjaar thekkekkara GP. The road is also passes through the watershed boundary

Demographic Details

Total Families	:	1766
SC Families	:	27
ST Families	:	4
General	:	1745
Total Population	:	6972
Total Male	:	3460
Total Female	:	3512
APL Families	:	1051
BPL Families	:	72



Other Details

Total cropped Area (lakh Hectres) - 254.00

Rainfed Agricultural land(lakh Hectres) - 269.27

Total no.of water storage structures -80

Total storage capacity of water storage structures(cubic meters) -800

Height of the watershed

Slope of the Watershed

The watershed lies in slopes of different measurements as shown below

Slope	Height	Area in Hectare
0 - 5%	Between 20 - 60 meters	168.97
5 - 15%	Between 60 - 100 meters	84.14
15 - 35%	Between 100 - 200 meters	67.34
35 - 70%	Between 200 - 600 meters	16.82
Above 70%	Between 600 - 1000 meters	-
	Above 1000 Meters	-



Geography

The watershed is sloping from north to east. The area of the watershed ranges from heavy slopes to moderate slopes and sometimes plain lands. The highest part of the watershed is the area where the Kanhiramattam Palace is situated. The sloping areas are Mandapathikkunnu, Chemmarappallikkunnu, Thannippara, Nellikkachaal and Ambattupara. Panachikappara, Mattakkadu, Pallivathil, Thundathilvaathil are the plain lands.

Type of soil

In common the soil found in the watershed project area belongs to K36 type. Detail of K36 soil is explained in page 74 and 75 with a soil map.

Agriculture and present land use

The land use pattern shows that 94 % of the total land available in the watershed is utilized for agriculture. Many crops are cultivated such as Rubber, Coconut, Nutmeg, Pepper, Cocoa, Vegetables and Tuber Crops. 4.2 % of the land is used for construction and roads . 2. 5 % are waste lands and rocky area. Remaining 1.8 % are water bodies .Following are the crop statistics of the Panichikappara watershed.

Sl.no	Crop	Percentage
1	Rubber	54.2 %
2	Coconut	4.1 %
3	Nutmeg	14.3 %
4	Pepper	2.2 %
5	Cocoa	1 %
6	Vegetables	10.2 %
7	Tuber Crops	8 %



Water Resources

Main water drainage system is Meenachil River. Pallivathil Illickal from which the Vadakkanar coming and joins Meenachil at Ankalan Kovil marks the political boundary of Poonjaar Gp and Poonjaar Thekkekkara GP and situates in the watershed boundary of Panachikappara Watershed

The important/main canals that drain the watershed are:

1. The Mandapathilkkadavu Thodu flowing across the boundary of the watershed and joining Meenachil River.
2. A stream that originates from Puthiyannikkal Parambu end ending in Meenachil River
3. The spring in Chemmarappallikkunnu Paramada
4. Stream that originates from the property of Mr. nandakumar (5th ward of Poonjaar GP) and fall into Meenachil River.
5. Stream that originates from the property of Mr. Shouran Shanthinivas of Poonjaar Panchayat and flowing along the 5th ward and then falling into Meenachil River.
6. Stream that flows parallel to the boundary of Poonjaar and Poonjaar Thekkekkara GPs and falling into Meenachil River.

Other Water sources Existing in the Watershed

Ponds (Perennial)	-	37
Ponds (Seasonal)	-	46
Total Ponds	-	83
Well (Perennial)	-	313
Well (Seasonal)	-	472
Total wells	-	785
Bore Wells/Tube Wells	-	93
Spring (Perennial)	-	11
Spring (Seasonal)	-	16
Total Springs	-	27
Public Tap	-	Nil
RWH Tanks	-	4

Drainage

Watershed 12M26a is having an elongated shape with contorted pattern of streams. Total watershed area is 2.75 km² with a total stream length of 2.84 kms. The drainage density is 1.03 which is very low compared with other watersheds in this region so the runoff and erosion is comparatively low.



Existing Drinking Water Schemes in the watershed

1. Nellikkalchaal Thannippara Drinking Water Project
2. Adaikkappara Drinking Water Project
3. Kanhiramattam Drinking Water Project

Natural vegetaions in the watershed

Teak, Aanjily, Jack, Mahagani, Nelli, Pongalyam, Banian Tree, Guava are the natural vegetation that are seen in the watershed.

Medicinal plants

The commonly seen medicinal plants in the watershed are Neem, Mimosa , Naruneendi, Kurumthotty, panikkoorkka, Oscimum, Turmeric, Kariveppu, Mukkutti, Nutmeg, Kudakan, Aluvera, etc.

Cropping Pattern

In ancient times the farm lands which were cultivated with mixed crops are now turned to mono crops, that too cash crops like Rubber and plantain. The cropping in this watershed is exclusively rain-fed. The rubber plantations are bench terraced and water conservation pits are made to help soil moisture . Where there are mixed cultivation, the main crops are vegetables and tubers.

Socio-Economic Situation

Majority of the population are farm labourers. The change that brought about in the Agriculture sector of this watershed have changed the living conditions of the people also. The changes that occurred is seriously affected the daily life of the people in the watershed. The population is a mixed one with construction workers, farmers and those who are involved in animal husbandry. No traditional workers are available at present.

Electrification/ Energy

Electricity is available in all parts of the watershed. Street lights are fixed at many places. Severe voltage shortage is experienced in different parts of the watershed.



Plant Diseases & Remedies

Crop	Diseases	pest	Causing Agent
Rubber	Tapping panei dryness (Pattamarappu)		Due to Continuous tapping
	Abnormal leaf fall		Phytophthora palmivora
	Powdery mildew (Podikkoon)		Oidium heveae
	Pink disease (cheek)		Corticium salmonicolor
		Rhinoceros beetle (Kombanchelli)	Oryctes rhinoceros
		Red palm weevil	Rhynchophorus ferrugineus
Coconut			

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Crop	Diseases	pest	Causing Agents	
	Thanjavur wilt		Ganoderma lucidum	Dre % 0.1 fun dep
	Root (Wilt)- Kattuveezhcha		Pytoplasma	Ro sev les Re ma (Ch ma
	Bud rot		Phytophthora palmivora	In e (wh with affe App it fr em
	Stem Bleeding		Thielaviopsis paradoxa	Ch tiss trid tar trid wa fou
	Quick wilt		Phytophthora capsici	Aft sho are 45- oxy A f Bo

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Centre for Sustainable Development Studies and Research



Crop	Diseases	pest	Causing Agents
	Epilachna Beetle		Henosepilachna vigintioctopunctata
	Sepentine Leaf miner		Liriomyza trifolii
	Chilli Thrips		Scirtothrips dorsalis
	Fruit fly of cucurbits		Bractocera cucurbitaria
	Downy Mildew		pseudoperonospora cubensis
	Powdery Mildew		Erysiphe cichoracearum
	Wilt		Fusarium sp.
	Mosaic		Virus

Market Facilities

The nearby market is Erattupetta . The watershed inhabitants have to travel a distance of 2 to 4 Kms to reach Erattupetta.

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Livestock Population

The number and type of animals are furnished below:

Roads in the watershed

1. Mandapathilpara – Panchikappaa Road
2. Nellikkachaal – Thannippara Road
3. Chemmarappally – Paramada Road
4. Mattakkadu Road
5. Velliyepallikkandam – Nellikkachaal Road
6. Puthiyaanikkal Shappumpadi Road
7. Moozhiyankal Vaathil - Thannippara Road
8. Mattakkadu Arayathinaal colony Road
9. Panachikappara – Maniyamkunnu Road
10. Thannippara – Maniyamkunnu Road
11. Chennadu – Vettikkal Road
12. Chirappara Road
13. College – Kondoor Temple Road.

Sl. No.	Animals	N
1.	Cows	15
2.	Goat	33
3.	Chicken	660
4.	Ducks	10
5.	Quail	65
6.	Pig	1
7.	Rabbit	38
8.	Fish farming	> 300
9.	Dogs	33
10.	Cats	29

Sanitation Facilities

One cannot say that sanitation facilities are enough and people practices sanitation hygiene measures in the watershed. Safe disposal mechanisms of organic and inorganic wastes are minimum and that also functions partly. Seven families among the 1776 families in the watershed also needed to construct latrine facilities . The number of bio-gas plants and compost pits are also very less in number found in the watershed. Soak pits are found in 23 households and Biogas plants are with 20 households. Another 12 houses have compost tanks



Housing facilities

Out of the total 1776 families a total of 1655 families have own houses. Among those 479 are asbestos roofed and 439 are tile roofed. There are 600 single storied RCC houses and 137 two floor RCC houses. Asbestose brings health problems to the families. There are some families without their own houses.

Important Problems

Mandapathikkunnu/Mandapathippara, Sunnyppara, Nellikkalchaal, Chemmarappallikkunnu, Maniyankunnu etc are coming under this category and experianced drought during summer .

Soil Erosion

Soil erosion is found at places like Mandapathikkunnu/Mandapathippara, Sunnyppara, Nellikkalchaal, Chemmarappallikkunnu, Maniyankunnu areas of the watershed.

Drinking Water Scarcity

Mandapathikkunnu/Mandapathippara, Sunnyppara, Nellikkalchaal, Chemmarappallikkunnu, Maniyankunnu etc are places having drinking water scarcity during summer .

Drought prone areas in the watershed

Mandapathikkunnu /Mandapathippara , Sunnyppara , Nellikkalchaal , Chemmarappallikkunnu , Maniyankunnu ,etc are coming under this category and experiancing drought during summers.

Contamination of Waters Source

Meenachil River has heavily contaminated due to deposit of plastic waste and other organic wastes. Both liquid and solid wastes are disposed into the river by the inhabitants.

Lack of Drainage

During monsoon, G.V. Raja Stadium is becoming dirty due to absence of drainage facilities for draining the rainwater from the stadium.

(Photo documents with regard to important problems is attached along with DPR)



Add/View Base Line Survey

PANACHIKAPPARA

Project*

Total Geographical Area of Project (Lakh Hectares)	<input type="text" value="269.27"/>
Project Area Covering*	<input type="text" value="Other"/>
Treatable Area	
Wasteland (Lakh Hectares)	<input type="text" value="NIL"/>
Total Cropped Area (Lakh Hectares)	<input type="text" value="254.00"/>
Total no. of Water Storage Structures	<input type="text" value="80"/>
Total storage capacity of water storage structures (cubic meters)	<input type="text" value="800"/>
Rainfed Agricultural Land (Lakh Hectares)	<input type="text" value="269.27"/>
Net Sown Area (Lakh Hectares)	<input type="text" value="NIL"/>
Total no. of Water Extracting Units	<input type="text" value="7"/>
No. of Household	
SC	<input type="text" value="27"/>
Others	<input type="text" value="1745"/>
Total Population in the project Area	<input type="text" value="6972"/>
Total no. of BPL Household	<input type="text" value="725"/>
No. of Small Farmer's Household	<input type="text" value="15"/>
ST	<input type="text" value="4"/>
No. of Household of Landless people	<input type="text" value="109"/>
No. of Marginal Farmer's Household	<input type="text" value="1434"/>
Depth of Ground Water (meters) below Ground Level	
Pre-monsoon	<input type="text" value="35"/>
Post-monsoon	<input type="text" value="28"/>
No. of person-days of Seasonal Migration	<input type="text" value="485"/>



ERATTUPETTA BLOCK PANCHAYATH (IWMP - 5) MASTER PLAN - PANICHKAPARA WATERSHED

Instalment	IEC	EPA	Dev.work	LAP	PSM	Monitoring	Evaluation	DPR	Administra tion	Flexi Fund	Consolid ation	Total
	4.50%	3.60%	50.40%	8.10%	9%	0.90%	0.90%	0.90%	9%	10%	2.70%	100%
1st year	60586	145406	387749			8078	8078	36352	80781	80781		807811
%	1.5	3.6	9.6			0.2	0.2	0.9	2	2		20
2nd year	40390		605858	165601	181757	8078	8078		100976	100976		121171.
%	1		15	4.1	4.5	0.2	0.2		2.5	2.5		30
3rd year	40390		605857	161562	181757	12118	8078		100976	100976		121171.
%	1		15	4	4.5	0.3	0.2		2.5	2.5		30
4th year	40391		436217			8078	12118		80781	121172	109054	807811
%	1		10.8			0.2	0.3		2	3	2.7	20
Total	181757	145406	2035681	327163	363514	36352	36352	36352	363514	403905	109054	403905



PANACHIKAPARA WATERSHED

SI No	Activity
1.	Well recharging
2.	Tree plantation (River side, Stream side, Common and private land, Road side)
3.	Stone bunding / Heightening of the existing bund
4.	Gully controlling structures
5.	Moisture collection pits
6.	Live fencing
7.	Yard water collection pits (2.00*2.00*1.00)
TOTAL	

PANACHIKAPARA WATERSHED

SI No	Activity
1.	Well recharging
2.	Stone bunding / Heightening of the existing bund
3.	Well renovation (Chemmarampalikulmnil)
4.	Well renovation (Mandapathipara colony)
5.	Live fencing
6.	Yard water collection pits (2.00*2.00*1.00)



PANACHIKAPARA WATERSHED - NRM ACTION PLAN - PHASE - III

SI No	Activity	Unit	Unit cost	Target	IWMP Fund	Convergence With MNREGS	Total	
1.	Well recharging	Nos	10000	14	140000	0	14000	
2.	Rain water harvesting Tank - Nylon -10000 Ltrs (2.75*2.5*1.5)	Nos	11000	6	60000	6000	6600	
3.	Well renovation (Health centre)	Nos	65000	1	65000	0	6500	
4.	Live fencing	RM	24	10000	0	240000	24000	
5.	Yard water collection pits(2.00*2.00*1.00)	Nos	918	100	0	91800	9180	
6.	Moisture collection pits	M3	110	4000	0	440000	44000	
7.	Well renovation (Thannipara drinking water scheme, Kanjiramattom)	Nos	100000	1	90000	10000	10000	
8.	Pond renovation - Near GV Raja Stadium	Nos	150000	1	100000	50000	15000	
9.	Rain water harvesting Tank - Thannipara Anganvadi (10000 Ltrs)(Thannippara)	Nos	50000	1	50000	0	5000	
10.	Thannipara - Panchayath well renovation	Nos	50000	1	50000	0	5000	
11.	Adakapara drinking water scheme well renovation	Nos	50857	1	50857	0	5085	
Total							837800	144365



PANACHIKAPARA WATERSHED - NRM ACTION PLAN - PHASE - IV

SI No	Activity	Unit	Unit cost	Target	IWMP Fund	Convergence with MNREGS
1.	Well recharging	Nos	10000	16	160000	0
2.	Well renovation (Velladath drinking water scheme)	Nos	126217	1	126217	0
3.	Well renovation (Mattakkattu area)	Nos	150000	1	150000	0
4.	Live fencing	RM	24	5000	0	120000
5.	Moisture collection pits	M3	110	3000	0	330000
Total					436217	450000



ERATTUPETTA BLOCK PANCHAYATH - (IWMP - 5)

LIVELIHOOD ACTION PLAN - PHASE - I

PANACHIKAPARA WATERSHED

SI No	Name of Activity	Unit	Unit cost	Target	IWMP Fund	Bank loan / Convergence	Total Amount
1.	Grand for WDS	0	0	0	25000	0	25000
2.	Grand for BLWDS	0	0	0	5714	0	5714
3.	Revolving fund	0	0	0	134887	15059	149946
Total					165601	15059	180660

PHASE - 2

SI No	Name of Activity	Unit	Unit cost	Target	IWMP Fund	Bank loan / Convergence	Total Amount
1.	Revolving fund (Balance allocation)	0	0	0	72627	8070	80697
	Major livelihood activity				0	0	0
2.	Cow rearing	Nos	30000	6	88935	91065	180000
Total					161562	99135	260697



ERATTUPETTA BLOCK PANCHAYATH - (IWMP - 5)

PRODUCTION SYSTEM AND MICRO ENTERPRISES PLAN - PHASE -1

PANACHIKAPARA WATERSHED

SI No	Name of Activity	Unit	Unit cost	Target	IWMP Fund	WDF	Total Amount
1.	Banana Cultivation	Per plant	100	400	32000	8000	40000
2.	Organic Vegetable Cultivation	10 cent	2000	26	40894	11106	52000
3.	Organic fertilizer distribution	100 /KG	2000	47	73663	20337	94000
4.	Mushroom cultivation	Nos	4000	11	35200	8800	44000
Total					181757	48243	230000

PHASE - 2

SI No	Name of Activity	Unit	Unit cost	Target	IWMP Fund	WDF	Total Amount
1.	Banana Cultivation	Per plant	120	400	38400	9600	48000
2.	Goat rearing (1 Goat/ unit)	Nos	8000	11	70400	17600	88000
3.	Backyard poultry unit	100/Bird	100	912	72957	18243	91200
Total					181757	45443	227200

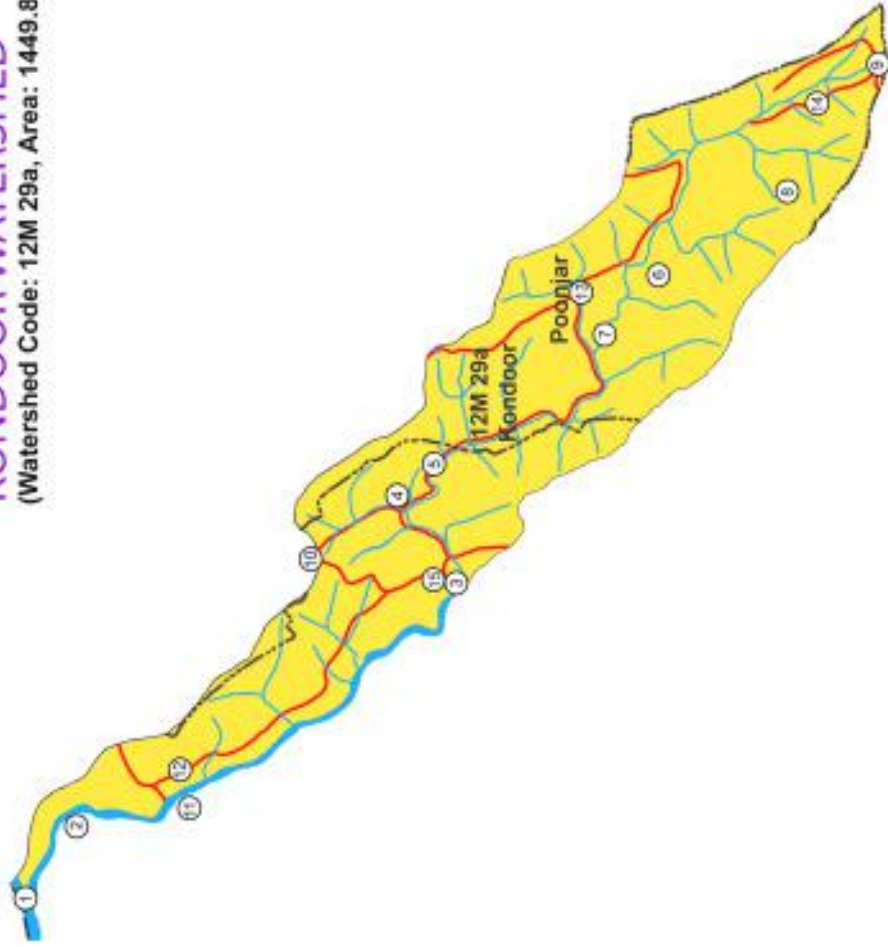
INTEGRATED WATERSHED MANAGEMENT PROGRAMME (IWMP - 5) ERATTUPETTA BLOCK PANCHAYATH

KONDOOR WATERSHED

(Watershed Code: 12M 29a, Area: 1449.88 Ha)

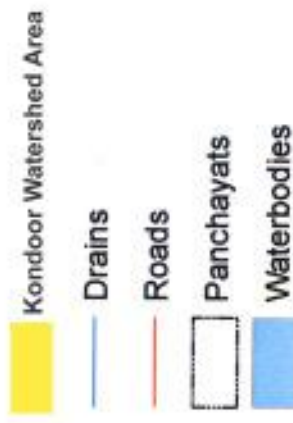


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സൂചിക (Legend)

1. ചിറ്റാട്ടുപുഴ
2. ചിറ്റാട് തോട്
3. തിടമുക്ക് പുഴ
4. പാലയാ തോട്
5. ചുരുമുക്ക് തോട്
6. ചുരുമുക്ക് തോട്
7. പാലയാ തോട്
8. ചുരുമുക്ക് തോട്
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10. ചുരുമുക്ക് തോട്
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13. ചുരുമുക്ക് തോട്
14. ചുരുമുക്ക് തോട്
15. ചുരുമുക്ക് തോട്



Prepared by:

Technical Support Organisation : **SUSTHIRA** Centre for Sustainable Development Studies and Action

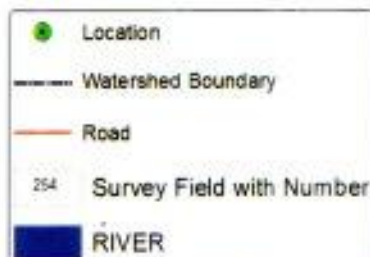
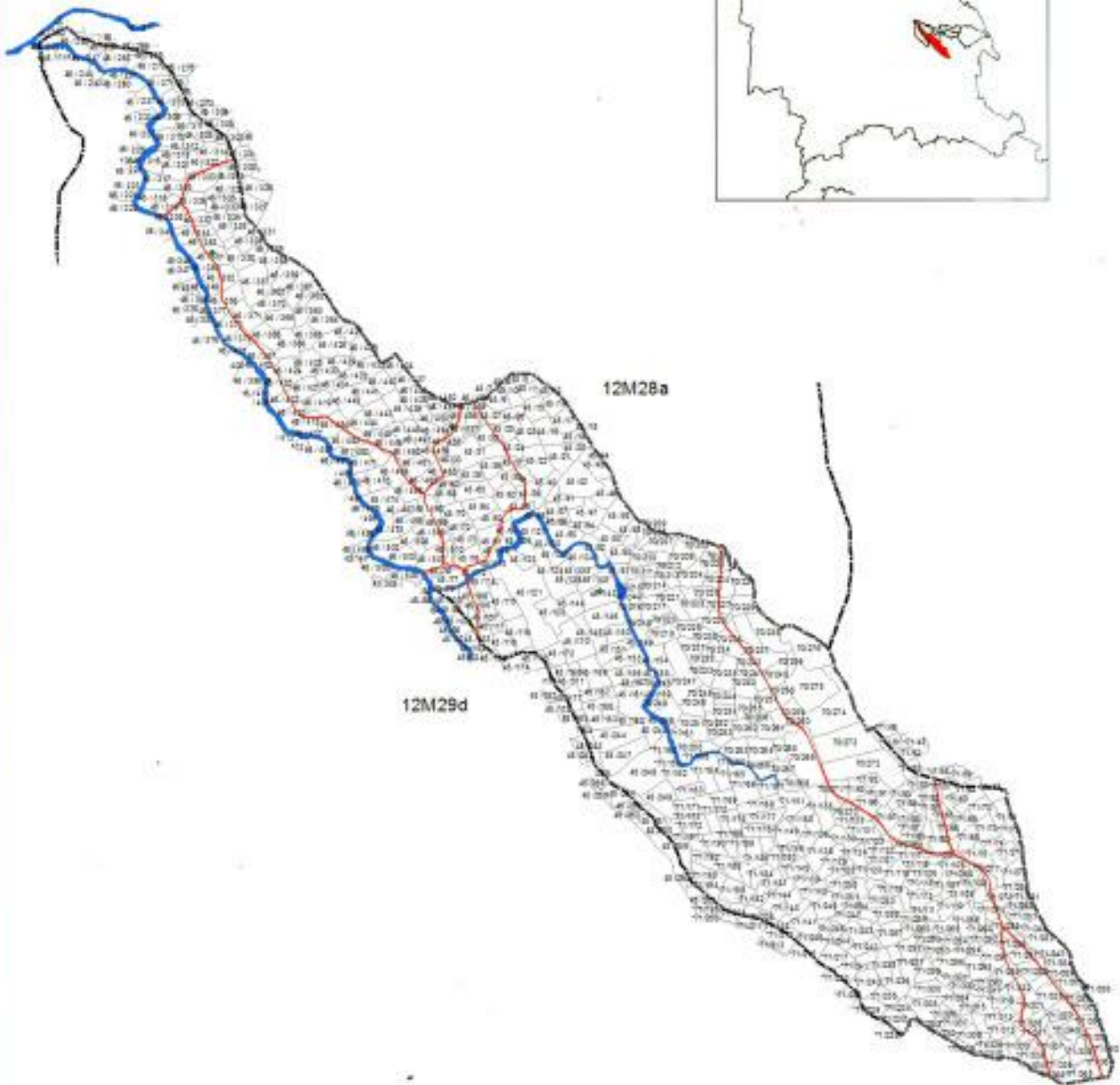
Source: Kerala State Landuse Board

INTEGRATED WATERSHED MANAGEMENT PROGRAMME (IWMP)

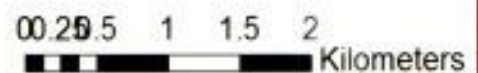
ERATTUPETA BLOCK PANCHAYATH

KONDOOR WATERSHED - 12M29a

CADASTRAL



Source: Survey & Land Records Kerala



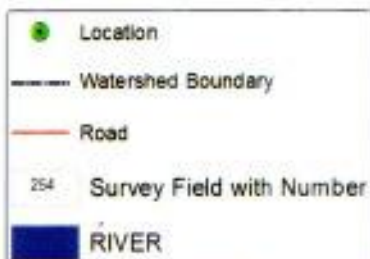
Technical Support Organisation : **SUSTHIRA** Centre for Sustainable Development Studies and Action

INTEGRATED WATERSHED MANAGEMENT PROGRAMME (IWMP)

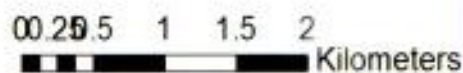
ERATTUPETA BLOCK PANCHAYATH

KONDOOR WATERSHED - 12M29a

INTERVENTION



Source: Survey & Land Records Kerala



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KONDOOR WATERSHED

Kondoor watershed includes Erattupetta, Poonjaar, thidanadu Grama Panchayat Erattupetta Block of Kottayam District. The main drainage of the watershed is Pannikkadan thodu. This Stream originates from Malikayil Area of Poonjaar Panchayat. Part of the 17th ward of Erattupetta GP, Part of the 1st ward of Poonjaar GP and 10th, 11th, 12th and 13th wards exclusively included in the Watershed. From Thidanadu GP, 2nd, 3rd 4th and 13th wards are also included in the watershed. The important places in the watershed are Erattupetta, Thidanaadu, chittattinkara, Perunilam, Kannani, Maniyamkulam, Chennadu and Malika.

Basic information

1. The Grama Panchayat(s) in which the watershed is situated:	Erattupetta, Thidanaadu, Parathodu and Poonjaar
2. Village	Erattupetta, Munakkayam, Poonjaar Thekkekkara and Kondoor
3. Block Panchayat	Erattupetta
4. Wards	Part of 17 th Ward of Erattupetta GP 2 nd , 3 rd 4 th and 13 th wards of Thidanaadu GP 1 and 2 wards of Parathode.
	Part of 1 st ward of Poonjaar GP and Exclusive of 10 th , 11 th , 12 th and 13 th wards of Poonjaar GP
5. Thaluk	Meenachil
6. Area	1499.88 Ha

Boundaries

North	:	Aruvithura
South	:	Parathodu, Thidanaad
East	:	Poonjaar – Thekkekkara, Valathookku
West	:	Chittattinkara & Kaippallikkavu



Demographic Details

Total Families	:	1486
APL Families	:	707
BPL Families	:	779
Total Population	:	6344
Total Female	:	3218
Total Male	:	3126
SC Families	:	29
ST Families	:	2
General	:	1455

Report on Boundary Identification.

Kondoor watershed spreads over Poonjar and Thidanadu panchayat under Erattupetta Grama Panchayath. The main drainage in this watershed carrying 1500 Ha is Pannikkadan stream . It originates from the place malikka in Poonjar Panchayath . To be in Detailed , Pannikkadan stream originates exactly from the spring pond situated in the lower part of the property of Akkaparambil Shivadas . This place is situated adjacent to Parathodu Grama Panchayath . Another stream known as Varalithodu joins with Pannikkadan stream . It is flowing through the lower portion around 500 meters along the boundary of the property of Thannikuzhiyil family (On the road side) . The house of Sri . kaarattu Kasim which is in Nedunthaanam side is also lies in the Watershed boundary.

The other part is karimbanoli watershed. . This higher reach of the watershed is known as Karimala. Pathiyil Thodu is another stream originates from Karimala. This also flows into Pannikkadan Thodu. Another stream is Kalaveenaam thodu. This join with Pannikkadan Thodu at a point 300 meters low at the Hospital. There two hills that marks the watershed boundary – Oottupara Mala and Thyni Mala. The pannikkadan Thodu flows parallel to the road from Chennadu. The stream reaches Thidanadu via Pakkayam and joins to Chittar River behind the Petrol Pump. The Kanhirappally – Eraattupetta Road reaches at the highest peak of Kondoor Watershed near the houses of George Vazhayil, Celina George Velukkunnel. From there the slope towards east is Aruvithura Watershed. The Paraadi Colony is in the waterhshed boundary. The highest part of the watershed is a pilgrimage centre called Valyachanmala.

The last part of the watershed boundary is Arattu kadavu of Kondoor Temple. At chittar Munniyi, around 500 meters lower reach the Chittar joins Meenachil. The other bank of the Chittar is



Thidanaadu Watershed. From this point up to the petrol pump situated at Thidanaadu town, the watershed boundary is marked by Chittar River.

The following are the important places in the watershed:

Chennad, Maalika, Maniyamkulam, Vettikulam in Poonjaar GP, Arrattukadavu, Kaippallikkavu, Mosco Junction, Thadikkapuzha Kadavu, Manjaakka Creep Mill side, Chittatinkara, Chappath, Pathazhe, Karucharadi, Kuthirappalam, Thidanaad Kurishu and Veyilkanampara in Thidanaadu GP.

Height of the watershed

The different heights of the Poonjaar watershed are shown below:

Height	Area in Hectare	Slope	Area in Hectare
20 - 60 meters	393.71		
60 - 100 meters	543.7		
100 - 200 meters	431.23	0 - 5%	262.47
200 - 600 meters	131.24	5-15%	468.71
600 - 1000 meters	-	15 - 35%	581.22
Above 1000 Meters		35 - 70%	187.48
		Above 70%	-

Slope of the Watershed

The watershed lies in slopes of different slope classes as shown below:



Other Details

Total cropped Area (lakh Hectres) - 1498.00

Rainfed Agricultural land(lakh Hectres) - 1499.88

Total no.of water storage structures -96

Total storage capacity of water storage structures(cubic meters) -960

Geography

The slope of this watershed is towards south-west side. The Kondoor watershed consists of sloppy area, moderately to steep slopping area and plain lands. The highest point in the watershed is Kannanani of Poonjaar Watershed. The moderately slopping areas are Malika, Chennad Manniyamkulam. The plain lands are Perunilam, Thidanaadu and chittattinkara .

Type of soil

In common the soil found in the watershed belongs to K36 and K31 type. Information regarding the above soil is explained in page no 74and 75 with soil maps.

Agriculture and present land use

The land use pattern shows that 80 %of the total land available in the watershed is utilized for agriculture. Many crops are cultivated such as Rubber, Coconut, Nutmeg, Banana , Vegetables and Tuber Crops. 8.4 % of the land is used for the construction and 6 % is rocky area . the remaining 5.6 % lands are the waterbodies . Following are the crop statistics of the Kondoor watershed.

Sl.no	Crop	Percentage
1	Rubber	73.4 %
2	Coconut	1.2 %
3	Nutmeg	3.1 %
4	Banana	1.3 %
5	Vegetables	1.3 %
6	Tuber Crops	1 %



Water Resources

The Main source of water is from household and public wells. Public taps and bore wells are also used. Around 72 families consumes water from Kandethumala Drinking Water Project (Perunnilam Well) of Poonjaar Panchayat.

Important Streams

1. PANNIKKADAN THODU

The Sub canals are:

1. Thadikkapuzha Thodu
2. Vaazha Thodu
3. Muhala Thodu
4. Kappily Thodu
5. Vellukunnenkandothodu
6. Pukappura Thodu
7. Pathiyil thodu
8. Vettukuttiyaal Valari thodu
9. Vaniyappura thodu

- Thadikkappuzha thodu is originating from the property of Mailamparambil Kuttiyachan and joins Chittar near the property of Binoy Pallikkaparambil
- Vazhathod originates from Mantha and joins Chittar at Chalil Appachan's property
- Muhalathodu originates from the valley of Valyachan Mala and joins chittar at Vakathod
- Kappilythodu after originating from between Paradi Colony and Olippara Colony joins chittar at the property of Moovelil Josekutty
- Velukkunnel Kunamthodu originates from the slope of Velukkunnel Family and joins Chittar
- Pukappurathodu starts from the property of Thekkel Pappachan and joins Chittar at Puthuparambil Joy
- Pathiyilthodu originates from Mantha and joins Vazhayil Thodu
- A stream- Vettukuttiyaal Valarithod - is originating from the property of Thayyil family and joins Chittar at the sold out property of Periyath Family
- Vaniyappura thod originates from Varikkattuparamba and joins Muhala thodu after flowing through the property of Muyilas'
- Thelli Thodu originates from the property of the Thelly Family and joins Kappilithodu

Other Water sources Existing in the Watershed

Ponds (Perennial) - 36



Ponds (Seasonal)	-	63
Total Ponds	-	99
Well (Perennial)	-	353
Well (Seasonal)	-	556
Total wells	-	909
Bore Wells/Tube Wells	-	65
Spring (Perennial)	-	8
Spring (Seasonal)	-	8
Total Spring	-	16
Public Tap	-	20
RWH Tanks	-	25

Drainage

Watershed 12M29a is having an elongated shape with rectangular pattern of streams. Total watershed area is 15.01 km² with a total stream length of 38.69 kms. The drainage density is 2.58 which is medium compared with other watersheds in this region.

Live Stock Population

Animal husbandry in the watershed is comparatively satisfactory. However, the full potential is not utilized. The available data are furnished below:

Sl. No.	Animals	N
1.	Cows	236
2.	She Buffalo	2
3.	He Buffalo	5
4.	Goat	371
5.	Chicken	1788
6.	Ducks	43
7.	Quail	90
8.	Pig	16
9.	Rabbit	89
10.	Fishery	592
11.	Dogs	348
12.	Cats	367



Trees in the watershed

Pongalyam, Jack, Nelli, Mango, Eetty, Palm, Irul, Mahagani, and Venga are the trees seen commonly in the watershed.

Trees at Extinction

Palm and Irul are slowly disappearing from the watershed.

Plants at extinction

Among the medicinal plants, Kaashithumba has already been on the edge of extinct.

Medicinal plants

Mimosa, Kodakan, Neem, Kurunthotty, Aluvera, Kariveppu are commonly seen medicinal plants in the watershed. Shankhu Pushpam have already extinct from the watershed.

Cropping Pattern

Now, mono crop is persistent in the watershed. In olden days the watershed experienced the benefit of mixed crops. The area is rapidly shifting to mono crops, especially for rubber. Plantain coconut and arecanut are reducing rapidly. The agriculture is rain-fed and the rapid shift to mono crops has affected the production of food crops and there is drastic reduction in the production of food crops.



Plant Diseases & Remedies

Crop	Diseases	pest	Causing Agents	Remedy
Rubber	Tapping panei dryness (Patta marappu)		Due to Continuous tapping	Give rest
	Abnormal leaf fall		Phytophthora palmivora	Prophylactic spraying on the foliage prior to the onset of South-West monsoon with, Bordeaux mixture 1% at 4000 - 5000 lit/ha using high volume sprayers. or Oil based Copper oxy chloride using low volume sprayer or through aerial application.
	Powdery mildew (Podikkoon)		Oidium heveae	Dusting 11 to 14 kg 325 mesh fine Sulphur dust per round per ha
	Pink disease (cheek)		Corticium salmonicolor	apply Bordeaux paste and when it dries up scrape off the superficial mycelium and damaged bark and apply Bordeauxpaste once again
Coconut		Rhinoceros beetle (Komban chelli)	Oryctes rhinoceros	(a) Application of 250g neem cake mixed with equal volume of sand in the innermost 2-3 leaf axils or (b) Naphthalene balls 12.0 g (4 nos.) in the innermost 2 leaf axils and covered with fine sand, once in 45 days
		Red palm weevil (Chemban chelli)	Rhynchophorus ferugeneus	In attacked palms, observe for the bore- holes and seal them except the top most one. Through the top most hole, pour 1 per cent carbaryl or 0.15% trichlorphon suspension @ one litre per palm, using a funnel. Use of pheromone trap for attracting and killing adult weevils @ one trap per 2 ha.
		Eriophyid Mite (Mandari)	Aceria guerreronis	Apply 2 % neem oil + garlic emulsion or commercial neem formulation azadirachtin 0.004 per cent (Neemazal T/S 1 per cent @ 4 ml per litre of water) or micronized wettable sulphur 0.4 per cent in the crown on young bunches.



Crop	Diseases	pest	Causing Agents	
	Thanjavur wilt		Ganoderma lucidum	Dre % 0.1 fun dep
	Root (Wilt)- Kattuveezhcha		Pytoplasma	Ro sev les Re ma (Ch ma
	Bud rot		Phytophthora palmivora	In e (wh with affe App it fr em
	Stem Bleeding		Thielaviopsis paradoxa	Ch tiss trid tar trid wa fou
	Quick wilt		Phytophthora capsici	Aft sho are 45- oxy A f Bo

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Crop	Diseases	pest	Causing Agent
	Slow wilt		Meloidogyne incognita, Radopholus similis
		Pollu Beetle	longitarsus nigripennis
Tapioca		Scale insects	Aonidomytilus
		Red Spider Mite	Oligonychus gossypii
	Mosaic		Virus
	Pea aphid		Aphis craccivora

*Technical Support Organisation: - SUSTHIRA
[Centre for Sustainable Development Studies and Action]*
Casava white fly

Bemisia tabaci



Crop	Diseases	pest	Causing Agents
	Epilachna Beetle		Henosepilachna vigintioctopunctata
	Sepentine Leaf miner		Liriomyza trifolii
	Chilli Thrips		Scirtothrips dorsalis
	Fruit fly of cucurbits		Bractocera cucurbitae
	Downy Mildew		pseudoperonospora cubensis
	Powdery Mildew		Erysiphe cichoracearum
	Wilt		Fusarium sp.
	Mosaic		Virus

Socio-Economic Situation

The watershed has people in different categories. There are farmers, private employees, rubber tapers and government employees. Around 50% of the total population in the watershed depend upon agriculture, a slight variation in the factors that influence the agriculture prosperity will affect the economy of the people and their normal life will be in question.

Roads in the watershed

1. Erattupetta – Chennad Road
2. Erattupetta – Ambaranirappu Road
3. Erattupetta – Kanhirappally Road
4. Rakshabhavan – Thidanaadu Road

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Sanitation Facilities

The watershed area has not fully utilized the possibilities of waste disposal and environmental sanitation. Out of the total 1486 households three had no sanitation facilities. Only 18 households own soak pits. In one house, a compost tank is seen. Two families have biogas plants. Only three families have both biogas plant and compost pits.

Housing

All the families have housing facilities of their own. Out of the total houses 434 are asbestos sheet roofed. This cannot be considered as safe and in that sense, the housing in the watershed is unsafe. There 530 single storied RCC houses and 121 double storied RCC houses in the watershed. 409 houses are tile roofed.

Electrification/ Energy

All the houses in the watershed are electrified.

Institutions in the Watershed

SL.No	Institutions /Places
1	Chennad Veterinary Hospital
2	Electricity Office
3	Chennad Post office
4	Anganvadi
5	Church
6	Post office
7	Chennadu Primary Health Centre
8	St.Joseph's L.P School
9	St.Mariya Gorotties H.S
10	Nirmala L.P.S
11	Panchayat Office

(Photo documents with regard to important problems is attached along with DPR)



Add/View Base Line Survey

KONDOOR

Project*

Total Geographical Area of Project (Lakh Hectares)	<input type="text" value="1499.88"/>
Project Area Covering*	<input type="text" value="Other"/>
Treatable Area	
Wasteland (Lakh Hectares)	<input type="text" value="NL"/>
Total Cropped Area (Lakh Hectares)	<input type="text" value="1498.00"/>
Total no. of Water Storage Structures	<input type="text" value="96"/>
Total storage capacity of water storage structures (cubic meters)	<input type="text" value="960"/>
Rainfed Agricultural Land (Lakh Hectares)	<input type="text" value="1499.88"/>
Net Sown Area (Lakh Hectares)	<input type="text" value="NL"/>
Total no. of Water Extracting Units	<input type="text" value="29"/>
No. of Household	
SC	<input type="text" value="29"/>
Others	<input type="text" value="1455"/>
Total Population in the project Area	<input type="text" value="6344"/>
Total no. of BPL Household	<input type="text" value="779"/>
No. of Small Farmer's Household	<input type="text" value="110"/>
ST	<input type="text" value="2"/>
No. of Household of Landless people	<input type="text" value="109"/>
No. of Marginal Farmer's Household	<input type="text" value="1355"/>
Depth of Ground Water (meters) below Ground Level	
Pre-monsoon	<input type="text" value="34"/>
Post-monsoon	<input type="text" value="29"/>
No. of person-days of Seasonal Migration	<input type="text" value="461"/>



ERATTUPETTA BLOCK PANCHAYATH - (IWMP - 5) MASTER PLAN - KONDOOR WATERSHED

Instalment	CB & IEC	EPA	Dev.wor.k	LAP	PSM	Monitoring	Evaluation	DPR	Administration	Flexi Fund	Consolidation	Total
1st year	4.50%	3.60%	50.40%	8.10%	9%	0.90%	0.90%	0.90%	9%	10%	2.70%	100%
%	337462	809908	2159755			44995	44995	202477	449949	449949		4499490
	1.5	3.6	9.6			0.2	0.2	0.9	2	2		20
2nd year	224974		3374617	922395	1012385	44995	44995		562436	562436		6749233
%	1		15	4.1	4.5	0.2	0.2		2.5	2.5		30
3rd year	224975		3374618	899898	1012385	67492	44995		562436	562436		6749235
%	1		15	4	4.5	0.3	0.2		2.5	2.5		30
4th year	224975		2429725			44995	67492		449949	674924	607432	4499492
%	1		10.8			0.2	0.3		2	3	2.7	20
Total	1012386	809908	11338715	1822293	2024770	202477	202477	202477	2024770	2249745	607432	2249745C
%	4.5	3.6	50.4	8.1	9	0.9	0.9	0.9	9	10	2.7	100



KONDOOR WATERSHED - NRM ACTION PLAN - YEAR -1

Sl No	Activity	Unit	Unit cost	Target	IWMP Fund	Convergence	Total
1.	Well recharging	Nos	10000	14	140000	0	14000
2.	Well renovation (Block panchayath well Near Porkkattil purayidam)	Nos	48000	1	48000	0	4800
3.	Well renovation (Veyilkanampara public well)	Nos	52000	1	52000	0	5200
4.	Well renovation (Pathazha school)	Nos	45000	1	45000	0	4500
5.	Well renovation (Vettikulam - Karimbanoli drinking water scheme)	Nos	100000	1	75000	25000	10000
6.	Well renovation (Pathazha laksham veed colony)	Nos	45000	1	45000	0	4500
7.	Rain water harvesting Tank - Nylon -10000 Ltrs (2.75*2.5*1.5)	Nos	11000	15	150000	15000	16500
8.	Stone bunding	M2	144	2500	360000	0	36000
9.	Heightening of the existing bund	M2	144	1510	217410	0	21741
10.	Pond renovation - Vettikulam area- Pannikkadan thodu side - (public land)	Nos	700000	1	500000	200000	70000
11.	Well renovation (Protection wall etc)	Nos	12000	5	60000	0	6000
12.	Gully controlling structures / Aamakkettu (Sub streams)	Rm	2355	62.83	142345	5620	14790
13.	Moisture collection pits	M3	110	7000	0	770000	77000
14.	Yard water collection pits(2.00*2.00*1.00)	Nos	918	250	0	229500	22950
15.	Chennadu stadium well construction	Nos	175000	1	125000	50000	17500
16.	Well construction near Maniyamkulam Church	Nos	95000	1	50000	45000	9500
17.	Pond renovation (Vettikulam thodu side)	Nos	200000	1	150000	50000	20000
Total					2159755	1390120	354987



KONDOOR WATERSHED - NRM ACTION PLAN - YEAR - II

SI No	Activity	Unit	Unit cost	Target	IWMP Fund	Convergence
1	Well recharging	Nos	10000	15	150000	0
2	Pond construction near Poonjar GP stadium	Nos	350000	1	300000	50000
3	Well renovation (Near the plot of Vayalil Tomy)	Nos	40000	1	40000	0
4	Well renovation (Near the plot of Kizhakkal Blakrishmana Nair)	Nos	45000	1	45000	0
5	Well renovation (Near the plot of Sivaprasad - Malika, Chennai)	Nos	73000	1	48000	25000
6	Spring development (Vellukunel kandam area)	Nos	55000	1	52000	3000
7	Rain water harvesting Tank - Nylon -10000 Ltrs (2.75*2.5*1.5)	Nos	11000	15	150000	15000
8	Stone bunding	M2	144	4550	655124	0
9	Heightening of the existing bund	M2	144	3242	466750	0
10	Roof Top Rain Water Harvesting tank at Nirmala LP school Chennai (50000 Ltrs)	Nos	250000	1	250000	0
11	Roof Top Rain Water Harvesting tank at Pathazha Anganvadi (25000 Ltrs)	Nos	125000	1	125000	0
12	Tree plantation (Stream side, Common and private land, Road side)	Nos	23.75	3000	30000	41250
13	Check dam construction Near kinattukara purayidam, valikakunnu	Nos	200000	1	175000	25000
14	Retaining wall construction (side protection of Pannikkadanthodu)	RM	2372	285.1	656102	20156
15	Live fencing	RM	24	10000	0	240000
16	Gully controlling structures	Rm	2355	25	56641	2234
17	Moisture collection pits	M3	110	7000	0	770000
18	Check dam dam construction Near the plot of peter muniyil	Nos	200000	1	175000	25000
Total					3374617	1216640



KONDOOR WATERSHED - NRM ACTION PLAN - YEAR - III

Sl No	Activity	Unit	Unit cost	Target	IWMP Fund	Convergence	Total
1	Well recharging	Nos	10000	50	500000	0	500000
2	Roof Top Rain Water Harvesting tank at Veyilkanam para school (50000Ltrs)	Nos	250000	1	250000	0	250000
3	Roof Top Rain Water Harvesting tank at Pakkayam Anganvadi (40000 Ltrs)	Nos	200000	1	200000	0	200000
4	Aarattukadavu distric panchayath pond renovation	Nos	501876	1	366676	35200	401876
5	Rain water havesting Tank - Nylon -10000 Ltrs (2.75*2.5*1.5)	Nos	11000	40	400000	40000	440000
6	Tree plantation (Stream side, Common and private land, Road side)	Nos	23.75	3000	30000	41250	71250
7	Retaining wall construction (side protection of Vaazhathodu)	RM	2372	278.61	641301	19562	660863
8	Well renovation (Parappet etc.)	Nos	12000	15	180000	0	180000
9	Live fencing	RM	24	10000	0	240000	240000
10	Gully controlling structures (Aamakkettu)	Rm	2355	25	56641	2234	58875
11	Moisture collection pits	M3	110	8000	0	880000	880000
12	Rain water havesting Tank - Ward - 10 & 11 (50000 Ltrs)	Nos	250000	2	500000	0	500000
13	Roof Top Rain Water Harvesting tank at Pathazha colony (50000 Ltrs)	Nos	250000	1	250000	0	250000
Total						1258246	4632864



KONDOOR WATERSHED -

Sl No	Activity
1.	Well recharging
2.	Pottananiyil well renovation
3.	Head pond development with Checkdam (Near the plot of Azhath Baby -Quarry development)
4.	Renovation of Chittar area checkdam
5.	Ponthanal Chappath heightening
6.	Retaining wall construction(side protection of Pathiyilthodu)
7.	Roof Top Rain Water Harvesting tank atLaksham veedu colony colony (50000 Ltrs)
8.	Live fencing
9.	Moisture collection pits

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[Centre for Sustainable Development Studies and Action] Total



ERATTUPETTA BLOCK PANCHAYATH - (IWMP - 5)

LIVELIHOOD ACTION PLAN - PHASE - 1

KONDOOR WATERSHED

SI No	Name of Activity	Unit	Unit cost	Target	IWMP Fund	Bank loan / Convergence	Total Amount
1.	Grand for WDS	0	0	0	25000	0	25000
2.	Grand for BL WDS	0	0	0	5714	0	5714
3.	Revolving fund	0	0	0	891681	99076	990757
Total					922395	99076	1021471

PHASE - 2

SI No	Name of Activity	Unit	Unit cost	Target	IWMP Fund	Bank loan / Convergence	Total Amount
1.	Revolving fund (Balance all ocaation)	0	0	0	362424	40270	402694
Major livelihood activity							
2.	Broiler unit (250 Birds)	Nos	102700	1	51350	51350	102700
3.	Mini Diary Farm	Nos	400000	1	200000	200000	400000
4.	Bee keeping (10 Box per unit)	Nos	15000	11	82500	82500	165000
5.	Cow rearing	Nos	30000	14	203624	216376	420000
Total					899898	590496	1490394



ERATTUPETTA BLOCK PANCHAYATH - (IWMP - 5)

PRODUCTION SYSTEM AND MICRO ENTERPRISES PLAN - PHASE - 1

KONDOOR WATERSHED

SI No	Name of Activity	Unit	Unit cost	Target	IWMP Fund	WDF	Total Amount
1.	Banana Cultivation	Per plant	100	2000	160000	40000	200000
2.	Organic Vegetable Cultivation	10 cent	3000	50	120000	30000	150000
3.	Fodder grass cultivation	5 Cent	1200	30	28800	7200	36000
4.	Fish cultivation	Nos	10000	15	112385	37615	150000
5.	Backyard poultry unit	100/Bird	100	2095	167600	41900	209500
6.	Grow bag cultivation	80/ bag	80	2618	167600	41900	209500
7.	Goat rearing (2 Goat/ Unit)	Nos	16000	20	256000	64000	320000
Total					1012385	262615	1275000

PHASE - 2

SI No	Name of Activity	Unit	Unit cost	Target	IWMP Fund	WDF	Total Amount
1.	Organic Vegetable Cultivation	10 cent	3000	50	120000	30000	150000
2.	Fish cultivation	Nos	10000	18	144000	36000	180000
3.	Mushroom cultivation	Nos	4000	35	112000	28000	140000
4.	Tuber crops cultivation (10 Cent)	Nos	1000	40	32000	8000	40000
5.	Vermi composting	Nos	9000	22	158400	39600	198000
6.	Goat rearing (2 Goat/ Unit)	Nos	16000	25	320000	80000	400000
7.	Backyard poultry unit	100/Bird	100	1575	125985	31515	157500
Total					1012385	253115	1265500

INTEGRATED WATERSHED MANAGEMENT PROGRAMME (IWMP - 5)

ERATTUPETTA BLOCK PANCHAYATH

PAYYANITHOTTAM WATERSHED

(Watershed Code: 12M 27c, Area: 433.22 Ha)



SCALE 1:90000



സൂചകങ്ങൾ

1. താങ്ങനാൽ പാലം
2. ലിറ്റിൽ ഫ്ളൂവൽ ഓടൊമ്പലി
3. പള്ളിക്കുന്നേൽ ഗവൺമെന്റ് ക്ലബ്ബ്
4. കടവടവ്
5. താങ്ങനാൽ കവാടം
6. കൈപ്പള്ളി തോട്
7. പെരിമ്പള്ളി
8. വെലംപറമ്പിൽ തോട്
9. കുളങ്ങര തോട്
10. എഴുതലിൽ തോട്
11. വാടകൻ പാലം തോട്
12. കുളങ്ങര തോട്
13. താങ്ങനാൽ തോട്
14. കൈപ്പള്ളി തോട്
15. കുളങ്ങര തോട്

Payyanithottam

Watershed Area

Drains

Roads

Panchayats

Waterbodies

Prepared by:

Technical Support Organisation : **SUSTHIRA** Centre for Sustainable Development Studies and Action

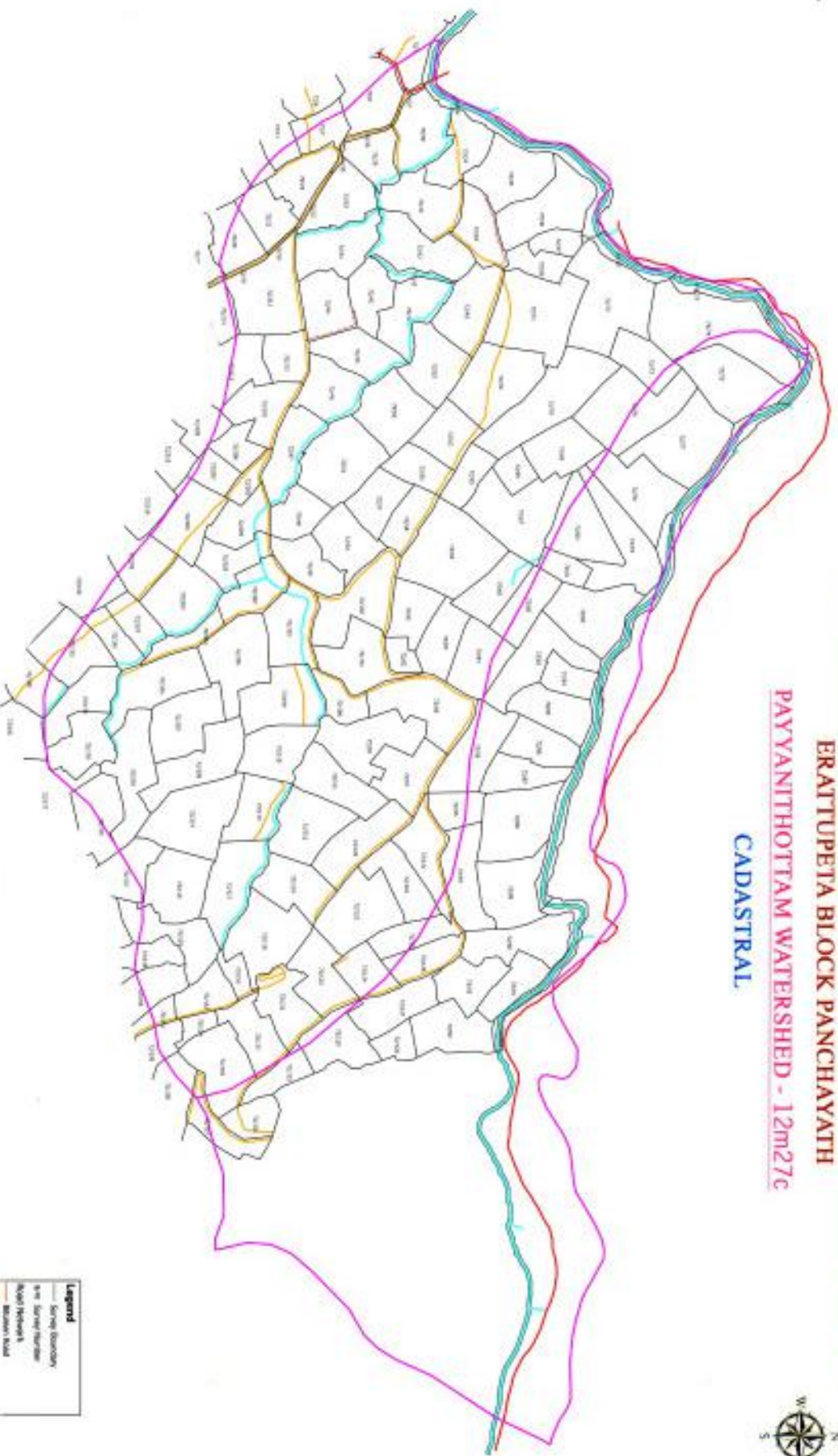
Source: Kerala State Landuse Board

INTEGRATED WATERSHED MANAGEMENT PROGRAMME (IWMP)

ERAITUPETA BLOCK PANCHAYATH

PAYYANTHOTTAM WATERSHED - 12m27c

CADASTRAL

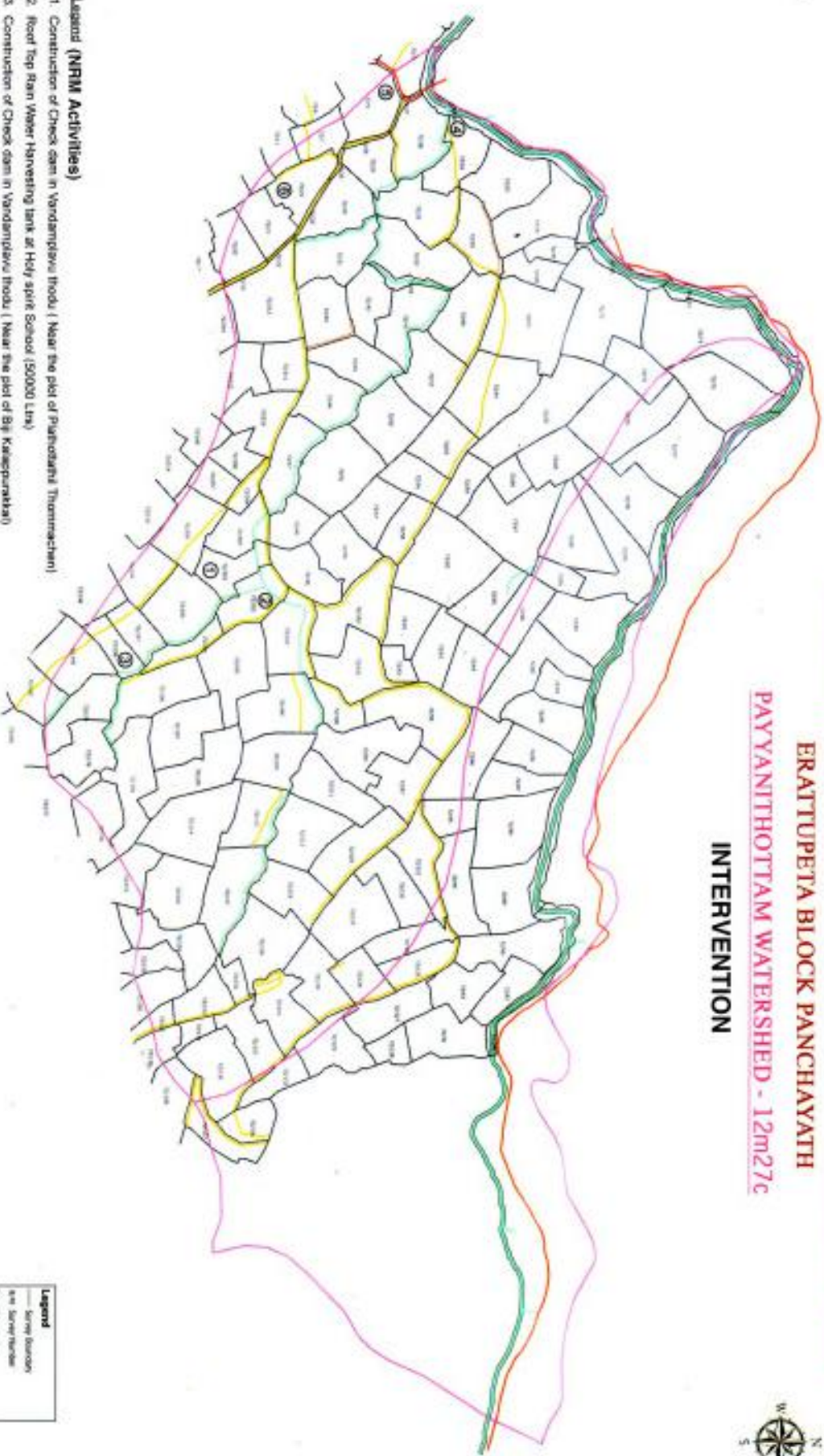


1:50,000

Legend	
—	Survey Boundary
—	Water Boundary
—	Water Channel
—	Water Pond
—	Water Well
—	Water Tank
—	Water Reservoir
—	Water Dam
—	Water Lift
—	Water Pump
—	Water Treatment Plant
—	Water Distribution Network

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**INTEGRATED WATERSHED MANAGEMENT PROGRAMME (IWMP)
 ERATTUPETA BLOCK PANCHAYATH
 PAVYANITHOTTAM WATERSHED - 12m27c
 INTERVENTION**



- Legend (NRM Activities)**
1. Construction of Check dam in Vandampalavu Thodu (Near the plot of Puthudurai Thammachari)
 2. Road Top Rain Water Harvesting tank at Holy spirit School (50000 Ltrs)
 3. Construction of Check dam in Vandampalavu Thodu (Near the plot of Big. Kaseppurakkal)
 4. Construction of Check dam Near Natharal Colony
 5. Road Top Rain Water Harvesting tank at St. Anthony's School (50000 Ltrs)
 6. Construction of pond (Near Kuzhithurai temple)

Source: Kerala Land Survey & Resources

Legend	
	Survey Boundary
	the Survey Boundary
	Road/ Pathways
	Waterway Canal
	Water
	Other
	Project Intervention Boundary

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PAYYANITHOTTAM WATERSHED

PAYYANITHOTTAM watershed is situated in Poonjaar - Thekkekkara Grama Panchayat in Erattupetta Block of Kottayam District. The total area of the watershed is 433.22 hectares. The main water draining system is centred around the Menachil River (Poonjaar River). Those part of the Meenachil River from the Peringalam to Njaralakkatty Chechamma, s near Nathanal Bridge flows through the boundary of the watershed. The streams that enrich Meenachil river in this watershed are Velamparambi thod, Kulathinaal Thodu, Ozhukayil Thode and Vandanplaavu thode. And these makes the main drain of the watershed along with Meenachil river . The watershed includes 6th ,7th ,13th and 14th wards of the Grama Panchayat.

Basic information

1. The Grama Panchayat(s) in which the watershed is situated:	Poonjaar Thekkekkara
2. Village	Poonjaar Thekkekkara
3. Block Panchayat	Eerattupetta
4. Wards	6, 7, 13 ,14
5. Thaluk	Meenachil
6. Area	433.22 Ha
7. Watershed Code	12M27c

Boundaries

North	:	Poonjaar Watershed
South	:	Poonjaar Thekkekkara
East	:	Perigalam Watershed
West	:	Panchikappara Watershed

Demographic Details

Total Families	:	582
SC Families	:	19
ST Families	:	0



General	:	563
Total Population	:	1834
Total Male	:	923
Total Female	:	911
BPL Families	:	308
APL Families	:	274

Report on Boundary Identification.

Payyanithottam watershed is spread in Poonjaar - Thekkekkara Grama Panchayat. The total area of the watershed is 433.22 hectares. The southern bank of Meenachil River that extends from Peringalam to the lower portion of the Poonjaar Thekkekkara Bridge is Payyanithottam watershed and the northern bank of the Meenachil is Poonjaar Thekkekkara Watershed. The Little Flower Monastery and the property of Biji Plathottam are situated in the boundary of the watershed. Pallikkunnu Temple is also in the watershed boundary. The watershed starts from the Kadalaadimattam of Kunnonni Road to the property of Paul Kodakkanaal. The highest reach of the watershed is Njarakkal. The watershed exclusively includes the 13th ward of the Grama Panchayat.

Height of the watershed

The different heights of the Poonjaar watershed are shown below:

Height	Area in Hectare
20 - 60 meters	103.97
60 - 100 meters	103.97
100 - 200 meters	155.96
200 - 600 meters	69.32
600 - 1000 meters	-
Above 1000 Meters	-



Slope of the Watershed

The watershed lies in slopes of different measurements as shown below:

Slope	Area in Hectare
0 – 5%	69.32
5-15%	34.65
15 – 35%	173.3
35 – 70%	138.63
Above 70%	17.32

Other Details

Total cropped Area (lakh Hectres) - 430.00

Rainfed Agricultural land(lakh Hectres) - 432.22

Total no.of water storage structures -12

Total storage capacity of water storage structures(cubic meters) -120

Agriculture and present land use

The land use pattern shows that 93 % of the total land available in the watershed is utilized for agriculture. Many crops are cultivated such as Rubber, Coconut, Nutmeg, Pepper, Cocoa, Vegetables and Tuber Crops. 45 of the land is used for the construction and the remaining 3 % is waterbodies . Following are the crop statistics of the Payyanithottam watershed.

Sl.no	Crop	Percentage
1	Rubber	82.2 %
2	Coconut	2.6 %
3	Banana	1.2 %
4	Pepper	1 %
5	Cocoa	1 %
6	Vegetables	1.2 %
7	Tuber Crops	6 %



Geography

The watershed contains moderately sloping to steep areas . The highest point in the watershed is Njarakkal. Vandanplavu, Kadaladimattam and Idamalabhagam are the very steeply sloped areas. Lower portions of the watershed are Pallikkunnu Temple area, Kulathungal Nathanaan area, and Perigalam area. The slope of this watershed is from south to north.

Type of soil

In common the soil found in the watershed belongs to K36 type. Details regarding K36 soil is explained in page 74 and 75 including soil maps .

Water Resources

The Main water drain of the watershed is Meenachil. Meenachil River keeps its presence in the watershed around 4½ KMs. along its course from the point where the Muttamthod joins the river to the Poonjaar bridge up to the property of Njaralakkattu Chechamma.

Another important canal is Vandanplaavu Thod. This is originating from Vandanplaavu and flows along with some other canals and joins with Meenachil River near Nathanaal bridge.

The Sub canals are

1. Velamparambil Thodu
2. Kulathinaal Thodu
3. Ozhukayil Thodu
4. Kulathungal Vettikkunnu Parathodu
5. Kuthonni Thodu

Other Water sources Existing in the Watershed

Ponds (Perennial)	-	5
Ponds (Seasonal)	-	11
Total Ponds	-	16
Well (Perennial)	-	120
Well (Seasonal)	-	99
Total wells	-	219



Bore Wells/Tube Wells	-	8
Spring (Perennial)	-	3
Spring (Seasonal)	-	8
Total Spring	-	11
Public Tap	-	Nil
RWH Tanks	-	5

Drainage

Watershed 12M27c is having an elongated shape with dendritic pattern of streams. Total watershed area is 4.29 km² with a total stream length of 12.38 kms. The drainage density is 2.89 which is medium compared with other watersheds in this region.

Trees in the watershed

Jack, Mango, Aanjily, Teak, Pongalyam, Bamboo, Murikku, Maruthu, Vatta, Mahagani, Kanikkonna, Pala, tamarind, Rambuttan, Guava, Egg Fruit, Chaamba. Nelli, Coconut, Arecanut, Sheemakkonna, Valanpuli, Muringa and nutmeg are the important trees that are seen in the watershed.

Medicinal plants

Mimosa, Naruneendi, Paadakizhangu, Oscimum, panikkoorkka, touch me not, Erukku, murikku, Moringa, Nutmeg, Koovaraku, naruneendi, Kayyoonni, Asparagus, Aadalotakam, Neem, Lariveppu, Kurnthotty, Ashokam, Muyalcheviyan, Thumba, Keezharnelli, Kaashithumba etc.

Plants at extinction

Among the medicinal plants, Kaashithumba has already been on the edge of extinct.

Socio-Economic Situation

The watershed is mainly inhabited by ordinary people. Majority of the people are farmers. Other categories of people in watershed are: farm labourers, construction workers, animal growers, Office Employees etc. The societal life is very interesting as the total population of mixture of different religions, political parties and social denominations.



Basic Infra Structure Facilities

Roads in the watershed

1. Pandanplaavu Road
2. Kadalaarimattam Road
3. Payyanithottam – Aanathanam Road
4. Peringalam – Pallikkal Road
5. Oeringalam Ambalam Road
6. Kudamurutty - Edakkara Road

Live Stock Population

Animal husbandry in the watershed is not satisfactory. The full potential is not utilized. The available data are furnished below:

Sl. No.	Animals	Number of
1.	Cows	36
2.	Buffalo	11
3.	Goat	164
4.	Chicken	343
5.	Ducks	18
6.	Pig	13
7.	Rabbit	40
8.	Dogs	33
9.	Cats	24

Sanitation Facilities

The waste disposal is only partly fulfilled in the watershed. Out of the total 582 houses only 3 houses has safe disposal mechanism like soak pits and compost pits. Biogas plants for domestic waste is found only a very few households. Only seven houses has compost tanks. Seven houses have no sanitation facilities at all.

Electrification/ Energy

All the houses in the watershed are electrified.

Communication Facilities

The main communication media are TV, Radio and News Papers.



Market Facilities

People in the watershed depends Poonjaar Township one KMs away from the watershed, for their marketing. Besides, the weekly market/auction market that is conducted every Monday is a good opportunity for the farmers to sell their produce directly to the consumers. Major part of the goods brought to the market are organically produced.

Institutions in the Watershed

SL.No	Institutions /Places	Location
1	Holy Spirit Public School	Payyanithottam
2	St. Antony's Higher Secondary School	Poonjar
3	St. Antony's L.P. School	Poonjar
4	, Holy Spirit KG School	Payyanithottam
5	IHRD Engineering College	Payyanithottam
6	SNPA Arts & Science College	Payyanithottam
7	Payyanithottam Church	Payyanithottam

Important Problems

1. Soil Erosion

Heavy soil erosion is found at places such as Vandanplaavu, Vallikkunnu, Temple Area, Njarakkal, etc.

2. Drinking Water Scarcity

Scarcity of drinking water is also experienced in Vandanplaavu, Vallikkunnu, Temple Area, Njarakkal, etc during summer .

3. Drought

Almost all the areas are susceptible to draught .

(Photo documents with regard to important problems is attached along with DPR)



Add/View Base Line Survey

PAYYANITHOTTAM

Project*

Total Geographical Area of Project (Lakh Hectares)	<input type="text" value="432.22"/>		
Project Area Covering*	<input type="text" value="Other"/>		
Treatable Area			
Wasteland (Lakh Hectares)	<input type="text" value="NIL"/>	Rainfed Agricultural Land (Lakh Hectares)	<input type="text" value="432.22"/>
Total Cropped Area (Lakh Hectares)	<input type="text" value="430.00"/>	Net Sown Area (Lakh Hectares)	<input type="text" value="NIL"/>
Total no. of Water Storage Structures	<input type="text" value="12"/>	Total no. of Water Extracting Units	<input type="text" value="9"/>
Total storage capacity of water storage structures (cubic meters)	<input type="text" value="120"/>		
No. of Household			
SC	<input type="text" value="19"/>	ST	<input type="text" value="0"/>
Others	<input type="text" value="563"/>		
Total Population in the project Area	<input type="text" value="1834"/>	No. of Household of Landless people	<input type="text" value="28"/>
Total no. of BPL Household	<input type="text" value="308"/>		
No. of Small Farmer's Household	<input type="text" value="86"/>	No. of Marginal Farmer's Household	<input type="text" value="421"/>
Depth of Ground Water (meters) below Ground Level			
Pre-monsoon	<input type="text" value="37"/>	Post-monsoon	<input type="text" value="29"/>
No. of person-days of Seasonal Migration	<input type="text" value="280"/>		



ERATTUPETTA BLOCKPANCHAYATH (IWMP - 5) MASTER PLAN - 5) PAPPANITHOTTAM WATERSHED												
Instalment	IEC	EPA	Dev.work	LAP	PSM	Monitoring	Evaluation	DPR	Administration	Flexi Fund	Consolidation	Total
	4.50%	3.60%	50.40%	8.10%	9%	0.90%	0.90%	0.90%	9%	10%	2.70%	100%
1st year	97474	233939	623837			12997	12997	58485	129966	129966		129966
%	1.5	3.6	9.6			0.2	0.2		2	2		20
2nd year	64983		974745	266430	292424	12997	12997		162458	162458		194949
%	1		15	4.1	4.5	0.2	0.2		2.5	2.5		30
3rd year	64983		974745	259932	292424	19495	12996		162457	162457		194948
%	1		15	4	4.5	0.3	0.2		2.5	2.5		30
4th year	64983		701816			12996	19495		129966	194949	175454	129965
%	1		10.8			0.2	0.3		2	3	2.7	20
Total	292423	233939	3275143	526362	584848	58485	58485	58485	584847	649830	175454	649830
%	4.5	3.6	50.4	8.1	9	0.9	0.9	0.9	9	10	2.7	100



PAYYANITHOTTAM WATERSHED - NRM ACTION PLAN - YEAR - I

SI No	Activity	Unit	Unit cost	Target	IWMP Fund	Convergence with MNREGS	To
	Well recharging	Nos	10000	5	50000	0	5
	Construction of water collection tank - 5000 Ltrs	Nos	25000	6	150000	0	15
	Stone bunding	M2	144	2550	367196	0	36
	Gully controlling structures	Rm	2355	25	56641	2234	5
	Moisture collection pits	M3	110	7000	0	770000	77
	Live fencing	Rm	24	4000	0	96000	9
	Yard water collection pits(2.00*2.00*1.00)	Nos	918	100	0	91800	9
	TOTAL				623837	960034	158



PAYYANTHOTTAM WATERSHED - NRM ACTION PLAN - YEAR - II

SI No	Activity	Unit	Unit cost	Target	IWMP Fund	Convergence with MNREGS	Total
1.	Well recharging	Nos	10000	5	50000	0	5000
2.	Stone bunding	M2	144	2676	385305	0	38530
3.	Roof Top Rain Water Harvesting tank at Holy spirit School (50000 Ltrs)	Nos	250000	1	250000	0	25000
4.	Construction of pond (Near kulathinkal temple)	Nos	300000	1	289440	10560	30000
5.	Live fencing	RM	24	7000	0	168000	16800
6.	Yard water collection pits(2.00*2.00*1.00)	Nos	918	150	0	137700	13770
7.	Moisture collection pits	M3	110	7000	0	770000	77000
	Total				974745	1086260	206100



PAYYANITHOTTAM WATERSHED - NRM ACTION PLAN - YEAR - III

Sl No	Activity	Unit	Unit cost	Target	IWMP Fund	Convergence with MNREGS	To
1.	Well recharging	Nos	10000	5	50000	0	5
2.	Rain water harvesting Tank - Nylon - 10000 Ltrs (2.75*2.5*1.5)(IHRD Engineering College)	Nos	11000	5	50000	5000	5
3.	Roof Top Rain Water Harvesting tank at St. Antonys School (50000 Ltrs)	Nos	250000	1	250000	0	25
4.	Fruit bearing tree kit distribution	Nos	400	250	100000	0	10
5.	Construction of Check dam Near Nathanal Colony	Nos	150000	1	150000	0	15
6.	Live fencing	RM	24	10000	0	240000	24
7.	Yard water collection pits(2.00*2.00*1.00)	Nos	918	100	0	91800	9
8.	Moisture collection pits	M3	110	4000	0	440000	44
9.	Heightening the existing bund	M2	144	1908	274745	0	27
10.	Water collection tank (5000 Ltr)	Nos	25000	4	100000	0	10
	Total				974745	776800	175



PAYYANITHOTTAM WATERSHED - NRM ACTION PLAN - YEAR - IV

SI No	Activity	Unit	Unit cost	Target	IWMP Fund	Convergence with MNREGS	Total
1.	Well recharging	Nos	10000	10	100000	0	1000
2.	Construction of Check dam in Vandamplavu thodu (Near the plot of Biji Kalappurakkal)	Nos	150000	1	150000	0	1500
3.	RWH Tank Nylon (10,000 Ltr)	Nos	150000	1	150000	0	1500
4.	Live fencing	RM	24	5000	0	120000	1200
5.	Moisture collection pits	M3	110	3000	0	330000	3300
6.	Retaining wall construction(side protection of Chiramughamthodu)	RM	2372	131.13	301816	9203	3110
	Total				701816	459203	11610



ERATTUPETTA BLOCK PANCHAYATH - (IWMP - 5)

LIVELIHOOD ACTION PLAN - PHASE - 1

PAYYANITHOTTAM WATERSHED

SI No	Name of Activity	Unit	Unit cost	Target	IWMP Fund	Bank loan / Convergence	Total Amount
1.	Grand for WDS	0	0	0	25000	0	25000
2.	Grand for BLWDS	0	0	0	5714	0	5714
3.	Revolving fund	0	0	0	235716	26191	261907
Total					266430	26191	292621

PHASE - 2

SI No	Name of Activity	Unit	Unit cost	Target	IWMP Fund	Bank loan / Convergence	Total Amount
1.	Revolving fund (Balance allocation)	0	0	0	111238	12360	123598
Major livelihood activity							
2.	Bee keeping (10 Box per unit)	Nos	15000	6	43694	46306	90000
3.	Cow rearing	Nos	30000	7	105000	105000	210000
Total					259932	163666	423598



ERATTUPETTA BLOCK PANCHAYATH - (IWMP - 5)

PRODUCTION SYSTEM AND MICRO ENTERPRISES PLAN - PHASE - 1

PAYYANITHOTTAM WATERSHED

Sl No	Name of Activity	Unit	Unit cost	Target	IWMP Fund	WDF	Total Amount
1.	Banana Cultivation	Per plant	100	1000	80000	20000	100000
2.	Organic Vegetable Cultivation	10 cent	2000	29	46400	11600	58000
3.	Backyard poultry unit	100/Bird	100	936	74880	18720	93600
4.	Tuber crops cultivation (10 Cent)	Nos	1000	26	20744	5256	26000
5.	Goat rearing (1 Goat/ unit)	Nos	8000	11	70400	17600	88000
Total					292424	73176	365600

PHASE - 2

Sl No	Name of Activity	Unit	Unit cost	Target	IWMP Fund	WDF	Total Amount
1.	Banana Cultivation	Per plant	100	800	64000	16000	80000
2.	Goat rearing (1 Goat/unit)	Nos	8000	24	153600	38400	192000
3.	Backyard poultry unit	100/Bird	100	936	74824	18776	93600
Total					292424	73176	365600

INTEGRATED WATERSHED MANAGEMENT PROGRAMME (IWMP - 5) ERATTUPETTA BLOCK PANCHAYATH POONJAR WATERSHED

Watershed Code: 12M 27a, Area: 542.26 Ha)

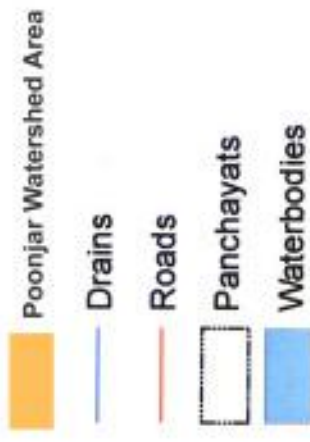


SCALE 1:90000



സൂചകങ്ങൾ

1. പെട്ടാർപ്പിൻ (പുത്താർപ്പിൻ)
2. ആനിക്കോട്ടം കോളനി
3. കരപ്പുഴക്കര തോട്
4. കരപ്പുഴക്കര ബാലവടി
5. മൂത്താനി ഓലിക്കോട്ടം
6. പെരിങ്ങമുക്ക് താലൂക്ക്
7. മേലമേലമുക്ക് എക്സ്പ്രസ്സേജ്
8. പത്താമുക്ക് ഓഫീസ്
9. പുത്താർ - അടവാരം തറസ്



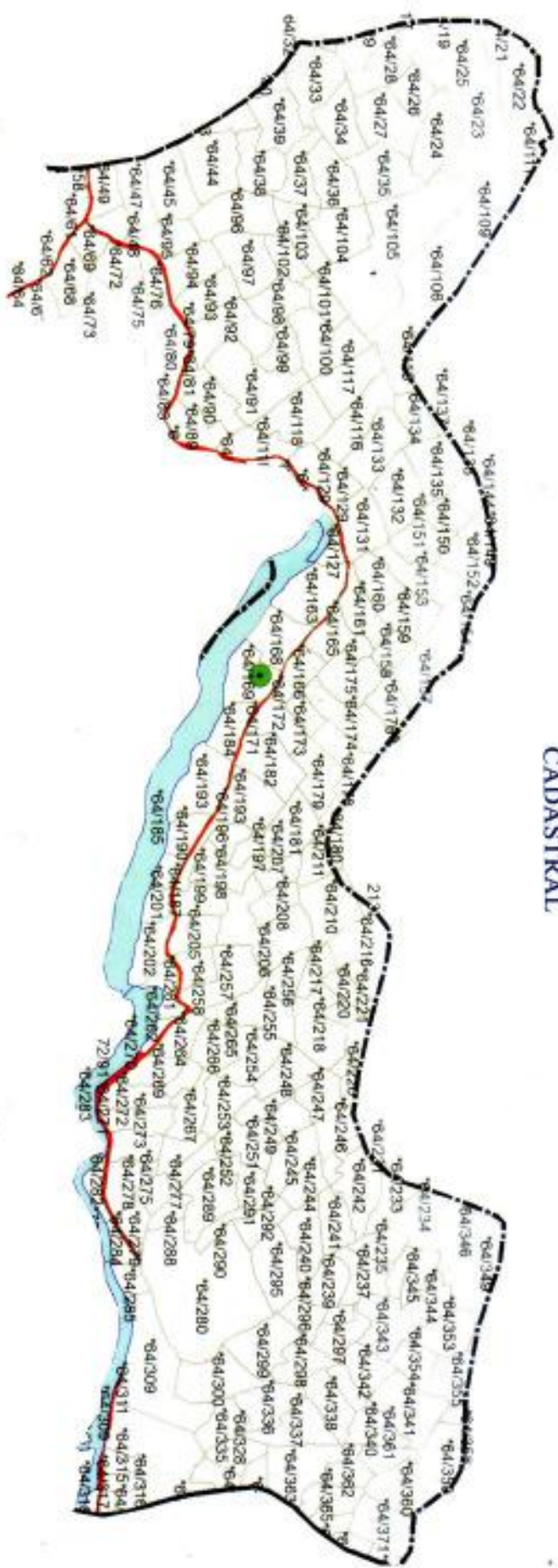
Prepared by:

Technical Support Organisation : **SUSTHIRA** Centre for Sustainable Development Studies and Action

Source: Kerala State Landuse Board



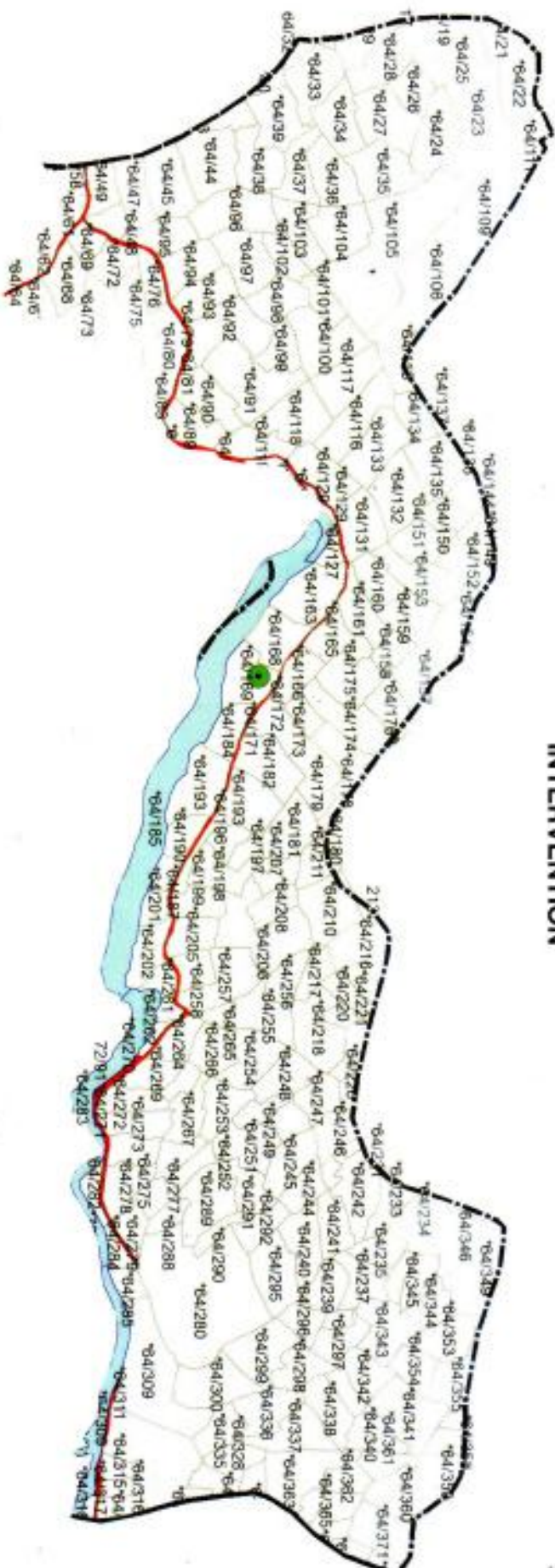
INTEGRATED WATERSHED MANAGEMENT PROGRAMME (IWMP)
ERATTUPETA BLOCK PANCHAYATH
POONJAR WATERSHED - 12M27a
CADASTRAL



Source: Survey & Land Records Kerala

Technical Support Organisation : **SUSTHIRA** Centre for Sustainable Development Studies and Action

**INTEGRATED WATERSHED MANAGEMENT PROGRAMME (IWMP)
 ERATTUPETA BLOCK PANCHAYATH
POONJAR WATERSHED - 12M27a
 INTERVENTION**



Cadastral Boundary
 Watershed Boundary

Source: Survey & Land Records Kerala

Technical Support Organisation : **SUSTHIRA** Centre for Sustainable Development Studies and Action



POONJAAR WATERSHED

Poonjaar watershed is spread in two Grama Panchayats – Poonjaar - Thekkekkara and Thikkoyi Grama Panchayats of Erattupetta Block of Kottayam District. The watershed has a total area of 542.26 hectares. Out of this, 522.02 ha is in Poonjaar Thekkekkara Grama Panchayat and the rest 20.24 ha is in Thikkoyi Grama Panchayat. The watershed is enriched by Menachil River. Meenachil River keeps its way in the watershed along its course from the point where the Muttamthod joins the river near the property of Njaralakkattu Family near the Little Flower Monastery.

The important places in the watershed are: the township of Poonjaar, , Parappanthara, Cherimala, Charalikkunnu, Karimaanthadam, Kalakkallu, Kallekkulam, Mannupurayidam, Puliidukku, Muzhayanmaavu, Peringalam School Junction, Kulathikkalmaavadi, Aanithadam and Kottakkathadam

There are three wards from Poonjaar Thekkekkara GP included in the watershed. The wards included in the watershed are 1,2, and 3. Poojaar is a slope towards the streams that originate from Eetilappara, Kulathingalmaavadi, Neelonmala hillocks. Majority of the land is very slopping in this watershed.

Report on Boundary Identification.

Poonjaar watershed is spread in two Grama Panchayats – Thekkekkara Grama Panchayat and Thikkoyi Grama Panchayat. It has a total 542.26 hectares. The main streams in this watershed are, Kochupurathod, Kalluthavalam thodu and Moovalithod. These three streams together fall in the meenachil River. Pallivaathil Junction is a place adjacent to Meenachil River and starting from Poonjaar – Peringalam road . Cherimala Top is the highest portion in this watershed. A stream is originating from the watershed boundary and flowing along the land of Sahadevan mailampampil. There are two more streams that originate from Manjapra and flowing along the properties of Azhakathu David and joins the stream that flows along the properties of Mohanan Mannur and Chokkattu Mohanan and then joins Meenchil.



Basic information

1. The Grama Panchayat(s) in which the watershed is situated:	Poonjaar Thekkekkara and Thikkoyi
2. Village	Poonjaar Nadubhagam
3. Block Panchayat	Erattupetta
4. Wards	1,2 and 3 wards of the Poonjar Thekkekkara GP. 8 and 10 wards of Thikoyi GP
5. Taluk	Meenachil
6. Area	542.26 Ha
7. Watershed Code	12 M 27a

Boundaries

North	:	Thikkoyi Grama Panchayat
South	:	Payyanithottam Watershed
East	:	Perigalam Watershed
West	:	Panchippara Watershed

Demographic Details

Total Families	:	668
SC Families	:	18
ST Families	:	29
General	:	621
Total Population	:	2564
Total Male	:	1272
Total Female	:	1292
APL Families	:	369
BPL Families	:	299



Height of the watershed

The different heights of the Poonjaar watershed are shown below:

Height	Area in Hectare
20 - 60 meters	144.60
60 - 100 meters	90.38
100 - 200 meters	144.6
200 - 600 meters	162.68
600 - 1000 meters	-
Above 1000 Meters	-

Slope of the Watershed

The watershed lies in slopes of different measurements as shown below:

Slope	Area in Hectare
0 – 5%	90.37
5-15%	90.38
15 – 35%	162.67
35 – 70%	180.77
Above 70%	18.07

Type of soil

In common the soil found in the watershed belongs to K36 type. Details regarding K36 soil is explained in page 74 and 75 including the soil maps .

Other Details

Total cropped Area (lakh Hectres) - 521.00

Rainfed Agricultural land(lakh Hectres) -542.26

Total no.of water storage structures -11

Total storage capacity of water storage structures(cubic meters) -110



Agriculture and present land use

The land use pattern shows that 83 % of the total land available in the watershed is utilized for agriculture. Many crops are cultivated such as Rubber, Coconut, Nutmeg, Pepper, Banana, Vegetables, Coffee and Tuber Crops. 8 % of the land is used for construction and 4 % are rocky areas. The remaining 5 % is waterbodies. Following are the crop statistics of the Poonjar watershed.

Sl.no	Crop	Percentage
1	Rubber	69.5 %
2	Coconut	1.8 %
3	Nutmeg	3.1 %
4	Banana	1.2 %
5	Pepper	1.4 %
6	Vegetables	1.2 %
7	Coffee	1.4 %
8	Tuber Crops	6 %

Streams

Main Canal (Thodu) is Meenachil. The watershed is enriched by Meenachil River. Meenachil River keeps its way in the watershed along its course from the point where the Muttamthod joins the river to the Poonjaar bridge up to the property of Njaralakkattu Chechamma.

The Sub Canals: The important/main canals that drain the watershed are:

1. Uravaplaavu Thodu
2. Muzhayam Maavu Thodu
3. Puliyidukku Thodu
4. Kallekkulam Thodu



Other Water sources Existing in the Watershed

Ponds (Perennial)	-	3
Ponds (Seasonal)	-	6
Total Ponds	-	9
Well (Perennial)	-	95
Well (Seasonal)	-	109
Total wells	-	204
Bore Wells/Tube Wells	-	50
Spring (Perennial)	-	33
Spring (Seasonal)	-	42

Drainage

Watershed 12M27a is having an elongated shape with dendritic pattern of streams. Total watershed area is 5.39 km² with a total stream length of 9.11kms. The drainage density is 1.69 which is low compared with other watersheds in this region.

Existing Drinking Water Schemes in the watershed

There are two important drinking water schemes functioning in the watershed. They are Aanithottam, Parappanthara Janasree drinking water Schemes.

Livestock Population

Poonjaar watershed is very backward in Animal Husbandry. The available data are furnished below:

Sl. No.	Animals	Number
1.	Cows	91
2.	Goat	118
3.	Chicken	788
4.	Ducks	56
5.	Quail	308
6.	Pig	37
7.	Rabbit	25
8.	Fish farming	427
9.	Dogs	299
10.	Cats	84



Trees in the watershed

Aanjily, Jack, mango, maruthu, Poovarasu, Pongalyam, Mahagani, Bamboo, Pala, Vatta, Kanikkonna, Sheemakkonna, Valanpuli, Murikku are the important trees that are seen in the watershed.

Fruit Bearing Trees

Rambuttan, Guava, Njaaval, Pappaya, Chaamba, Kadachakka, Mango, Jack, Loovi, Annona, Egg fruit etc. are the fruit bearing trees seen in the watershed.

Medicinal plants

As generally seen in the hill station in the state, Poonjaer water shed is also rich in medicinal herbs. The commonly seen are Oscimum, panikkoorkka, touch me not, Erukku, murikku, Moringa, Nutmeg, Koovaraku, naruneendi, Kayyoonni, Asparagus, Aadalotakam, Neem, Kariveppu, Kurnthotty, Ashokam, Muyalcheviyan, Thumba etc.

Plants at extinction

There are two plants that approaching its extinction from the watershed and they are Kaasithumba and Arimulla. Unless they are taken care of the next generation will not see these two varieties of plants.

Roads in the watershed

1. Poonjaer – Perungalam Road
2. Poonjaer Cherimala Road
3. Poonjaer – Charalikkunnu Road
4. Kallekkulam Kulathingal – Mavadi Road
5. Parappanthara – Mankuzhi ambalam Road
6. Poonjaer – Pathampuzha Road
7. Vettippambathu Road
8. Peringulam – Uravaplaavu Road
9. Kallekkulam – Neelolmala Road (Un tarred)



10. Kallekkulam – O. V Varkey Road (Un tarred)

Electrification/ Energy

There ten (10) un-electrified houses in Poonjaar watershed.

Public Pond

Uravakkayam Pond is the only public pond in Poonjaar watershed.

Public Wells

1. Charalikkunnu Panchayat well
2. Kallekkulam Panchayat well
3. Kallekkulam Laksham veedu Panchayat well
4. Maavadi Kulathingal Panchayat Well

Public bore Wells

1. Bore well on the side of Charalikkunnu Road – 1
2. Kallekkulam Laksham Veedu - 1
3. Kallekkulam Neelolmala - 2

Sanitation Facilities

The watershed is seemingly poor in sanitation facilities. Domestic waste is not treated or disposed properly. There is not even a single soak pit or compost pits among the 668 families in the watershed. Only in one house there is a bio-gas plant. There is no public disposal mechanism for the organic and inorganic wastes in any place of the watershed. There are seven houses which have no safe latrine facilities.



Institutions in the Watershed

SL.No	Institutions /Places	Location
1	Poonjaar Petrol Pump	Poonjaar town
2	Federal bank	Poonjaar town
3	GP Office	Poonjaar town
4	Krishibhavan	Poonjaar town
5	Office of the Kudumbasree Mission	Poonjaar town
6	Akshaya Centre	Poonjaar town
7	Veterinary Hospital	Poonjaar town
8	Jijo Hospital	Kallekulam
9	Kalverment Homeo Hospital	Poonjaar town
10	Kallekkulam We-One Arts And Sports Club	Kallekulam
11	Eerattupetta Block Panchayat office Cultural Centre	Poonjaar town
12	Meenachil East urban Cooperative bank	Poonjaar town
13	Poonjaar Service Cooperative Bank	Peringulam
14	Government Ploytechnic (IHRD)	Poonjaar town
15	Poonjaar Kurisupalli	Poonjaar

Housing facilities

Out of the total 668 families only 562 have own houses. Among those houses 184 are asbestos roofed and 209 are tile roofed. There are 135 single storied RCC houses and 34 two floor RCC houses. Asbestose brings health problems to the families.

Market Facilities

The people in the watershed depends upon the nearby market in the Poonjaar Township. The farmers directly bring and sell their agriculture produce in the weekly market. Majority of the produce that reaches the market are organically produced.



Market Facilities

The people in the watershed depends to the market situated in Poonjaar Township. The farmers directly bring and sell their agriculture produce in the weekly market. Majority of the produce that reaches the market are organically produced.

Important Problems

1. Soil Erosion

Heavy soil erosion is found at places like Aanithottam, Charalikkunnu and Kulathungal areas of the watershed.

2. Drinking Water Scarcity

Scarcity of drinking water is experienced in Cherimala, Charalikkunnu, Kulathungal, Maavadi and Aanithottam areas.



3. Plant Diseases & Remedies

Crop	Diseases	pest	Causing Agents	Remedy
Rubber	Tapping panei dryness (Patta marappu)		Due to Continuous tapping	Give rest
	Abnormal leaf fall		Phytophthora palmivora	Prophylactic spraying on the foliage prior to the onset of South-West monsoon with, Bordeaux mixture 1% at 4000 - 5000 lit/ha using high volume sprayers.or Oil based Copper oxy chloride using low volume sprayer or through aerial application.
	Powdery mildew (Podikkoon)		Oidium heveae	Dusting 11 to 14 kg 325 mesh fine Sulphur dust per round per ha
	Pink disease (cheek)		Corticium salmonicolor	apply Bordeaux paste and when it dries up scrape off the superficial mycelium and damaged bark and apply Bordeauxpaste once again
Coconut		Rhinoceros beetle (Koman chelli)	Oryctes rhinoceros	(a) Application of 250g neem cake mixed with equal volume of sand in the innermost 2-3 leaf axils or (b) Naphthalene balls 12.0 g (4 nos.) in the innermost 2 leaf axils and covered with fine sand, once in 45 days
		Red palm weevil (Chemban chelli)	Rhynchophorus ferugeneus	In attacked palms, observe for the bore- holes and seal them except the top most one. Through the top most hole, pour 1 per cent carbaryl or 0.15% trichlorphon suspension @ one litre per palm, using a funnel. Use of pheromone trap for attracting and killing adult weevils @ one trap per 2 ha.
		Eriophyid Mite (Mandari)	Aceria guerreronis	Apply 2 % neem oil + garlic emulsion or commercial neem formulation azadirachtin 0.004 per cent (Neemazal T/S 1 per cent @ 4 ml per litre of water) or micronized wettable sulphur 0.4 per cent in the crown on young bunches.



Crop	Diseases	pest	Causing Agents	
	Thanjavur wilt		Ganoderma lucidum	Dre % 0.1 fun dep
	Root (Wilt)- Kattuveezhcha		Pytoplasma	Ro sev les Re ma (Ch ma
	Bud rot		Phytophthora palmivora	In e (wh with affe App it fr em
	Stem Bleeding		Thielaviopsis paradoxa	Ch tiss trid tar trid wa fou
	Quick wilt		Phytophthora capsici	Aft sho are 45- oxy A f Bo

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Crop	Diseases	pest	Causing Agents
	Epilachna Beetle		Henosepilachna vigintioctopunctata
	Sepentine Leaf miner		Liriomyza trifolii
	Chilli Thrips		Scirtothrips dorsalis
	Fruit fly of cucurbits		Bractocera cucurbitaria
<i>(Photo documents with regard to important problems is attached along with DPR)</i>			
	Downy Mildew		pseudoperonospora cubensis
	Powdery Mildew		Erysiphe cichoracearum
	Wilt		Fusarium sp.
	Mosaic		Virus

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Add/View Base Line Survey

POONJAR

Project*

Total Geographical Area of Project (Lakh Hectares)	<input type="text" value="542.25"/>		
Project Area Covering*	<input type="text" value="Other"/>		
Treatable Area			
Wasteland (Lakh Hectares)	<input type="text" value="NL"/>	Rainfed Agricultural Land (Lakh Hectares)	<input type="text" value="542.25"/>
Total Cropped Area (Lakh Hectares)	<input type="text" value="521.00"/>	Net Sown Area (Lakh Hectares)	<input type="text" value="NL"/>
Total no. of Water Storage Structures	<input type="text" value="11"/>	Total no. of Water Extracting Units	<input type="text" value="3"/>
Total storage capacity of water storage structures (cubic meters)	<input type="text" value="110"/>		
No. of Household			
SC	<input type="text" value="18"/>	ST	<input type="text" value="29"/>
Others	<input type="text" value="621"/>		
Total Population in the project Area	<input type="text" value="3155"/>	No. of Household of Landless people	<input type="text" value="37"/>
Total no. of BPL Household	<input type="text" value="299"/>		
No. of Small Farmer's Household	<input type="text" value="39"/>	No. of Marginal Farmer's Household	<input type="text" value="319"/>
Depth of Ground Water (meters) below Ground Level			
Pre-monsoon	<input type="text" value="38"/>	Post-monsoon	<input type="text" value="30"/>
No. of person-days of Seasonal Migration	<input type="text" value="129"/>		



ERATTUPETTA BLOCK PANCHAYATH (IWMP - 5) MASTER PLAN - POONJAR WATERSHED

Instalment	IEC	EPA	Dev.work	LAP	PSM	Monitoring	Evaluation	DPR	Administration	Flexi Fund	Consolidation	Total
	4.50%	3.60%	50.40%	8.10%	9%	0.90%	0.90%	0.90%	9%	10%	2.70%	100%
1st year	122008	292820	780855			16268	16268	73205	162678	162678		1626780
%	1.5	3.6	9.6			0.2	0.2	0.9	2	2		20
2nd year	81339		1220085	333490	366026	16268	16268		203347	203347		2440170
%	1		15	4.1	4.5	0.2	0.2		2.5	2.5		30
3rd year	81339		1220085	325356	366026	24401	16268		203348	203348		2440171
%	1		15	4	4.5	0.3	0.2		2.5	2.5		30
4th year	81339		878461			16268	24401		162678	244017	219615	1626779
%	1		10.8			0.2	0.3		2	3	2.7	20
Total	366025	292820	4099486	658846	732052	73205	73205	73205	732051	813390	219615	8133900
%	4.5	3.6	50.4	8.1	9	0.9	0.9	0.9	9	10	2.7	100



POONJAR WATERSHED - NRM ACTION PLAN - YEAR -I

Sl No	Activity	Unit	Unit cost	Target	IWMP Fund	Convergence	Total
1.	Well recharging	Nos	10000	5	50000	0	50000
2.	Renovation of wells	Nos	12000	11	132000	0	132000
3.	Stone bunding	M2	144	3265.375	470214	0	470214
4.	Gully controlling structures	Rm	2355	25	56641	2234	58875
5.	Moisture collection pits	M3	110	7000	0	770000	770000
6.	Live fencing	Rm	24	4000	0	96000	96000
7.	Yard water collection pits(2.00*2.00*1.00)	Nos	918	100	0	91800	91800
8.	Heightening of the existing bund	M2	144	500	72000	0	72000
	TOTAL				780855	960034	1740889



POONJAR WATERSHED - NRM ACTION PLAN - YEAR - II

Sl No	Activity	Unit	Unit cost	Target	IWMP Fund	Convergence	Total
1.	Well recharging	Nos	10000	5	50000	0	50000
2.	Stone bunding	M2	144	3511.951	505721	0	505721
3.	Retaining wall construction(side protection of Puliyidukuthodu)	RM	2372	200	460364	14036	474400
4.	Renovation of wells	Nos	12000	5	60000	0	60000
5.	Live fencing	RM	24	6500	0	156000	156000
6.	Yard water collection pits(2.00*2.00*1.00)	Nos	918	125	0	114750	114750
7.	Moisture collection pits	M3	110	7000	0	770000	770000
8.	Heightening of the existing bund	M2	144	1000	144000	0	144000
	Total				1220085	1054786	2274871



POONJAR WATERSHED - NRM ACTION PLAN - YEAR - III

SI No	Activity	Unit	Unit cost	Target	IWMP Fund	Convergence with MNREGS
	Well recharging	Nos	10000	3	30000	0
	Rain water harvesting Tank - Nylon -10000 Ltrs (2.75*2.5*1.5)	Nos	11000	6	60000	6000
	Roof Top Rain Water Harvesting tank at Aani thottam colony (50000 Ltrs)	Nos	250000	1	250000	0
	Roof Top Rain Water Harvesting tank at Parappanthara Anganvadi (20000 Ltrs)	Nos	100000	1	100000	0
	Retaining wall construction(side protection of Cherumala-NedumparaRoad)	RM	2372	152.1	350085	10675
	Live fencing	RM	24	10000	0	240000
	Yard water collection pits(2.00*2.00*1.00)	Nos	918	100	0	91800
	Moisture collection pits	M3	110	4000	0	440000
	New Pond construction	Nos	305000	1	305000	0
	Water Collection Tank (5000 Ltr.)	Nos.	25000	5	125000	0
	Total				1220085	788475



POONJAR WATERSHED - NRM ACTION PLAN - YEAR - IV

SI No	Activity	Unit	Unit cost	Target	IWMP Fund	Convergence with MNREGS	Tot
1.	Well recharging	Nos	10000	25	250000	0	250
2.	Tree plantation (River side, Stream side, Common and private land, Road side)	Nos	23.75	1000	10000	27500	37
3.	Fruit bearing tree kit distribution	Nos	400	25	10000	0	10
4.	Retaining wall construction(side protection of peringulam – kuthungal road)	RM	2372	136.62	314461	9602	324
5.	Live fencing	RM	24	5000	0	120000	120
6.	Moisture collecti on pits	M3	0	3000	0	0	0
7.	Charlikunnu drinking water scheme - source development	Nos	60000	1	50000	10000	60
8.	Pond renovation (Near Thottakara purayidam - Public land)	Nos	175000	1	125000	50000	175
9.	Aanithottam drinking water scheme - source renovation	Nos	60000	1	119000	10000	129
	Total				878461	227102	1105



ERATTUPETTA BLOCK PANCHAYATH - (IWMP - 5)

LIVELIHOOD ACTION PLAN - PHASE - 1

POONJAR WATERSHED

Sl No	Name of Activity	Unit	Unit cost	Target	IWMP Fund	Bank loan / Convergence	Total Amount
1.	Grand for WDS	0	0	0	25000	0	25000
2.	Grand for BLWDS	0	0	0	5714	0	5714
3.	Revolving fund	0	0	0	302776	33642	336418
Total					333490	33642	367132

PHASE - 2

Sl No	Name of Activity	Unit	Unit cost	Target	IWMP Fund	Bank loan / Convergence	Total Amount
1.	Revolving fund (Balance allocation)	0	0	0	136916	15213	152129
	Major livelihood activity				0	0	0
2.	Bee keeping (10 Box per unit)	Nos	15000	12	90000	90000	180000
3.	Cow rearing	Nos	30000	7	98440	111560	210000
Total					325356	216773	542129



ERATTUPETTA BLOCK PANCHAYATH - (IWMP - 5)

PRODUCTION SYSTEM AND MICRO ENTERPRISES PLAN - PHASE -1

POONJAR WATERSHED

SI No	Name of Activity	Unit	Unit cost	Target	IWMP Fund	WDF	Total Amount
1.	Banana Cultivation	Per plant	100	800	64000	16000	80000
2.	Organic Vegetable Cultivation	10 cent	3000	16	38400	9600	48000
3.	Backyard poultry unit	100/Bird	100	1016	81226	20374	101600
4.	Organic Fertilizer distribution	100 Kg	2000	50	80000	20000	100000
5.	Goat rearing (1 Goat/ Unit)	Nos	8000	16	102400	25600	128000
Total					366026	91574	457600

PHASE -2

SI No	Name of Activity	Unit	Unit cost	Target	IWMP Fund	WDF	Total Amount
1.	Organic Vegetable Cultivation	10 cent	3000	16	38400	9600	48000
2.	Tuber crops cultivation (10 Cent)	Nos	1000	20	16000	4000	20000
3.	Vermi composting	Nos	9000	13	93600	23400	117000
4.	Goat rearing (1 Goat/ Unit)	Nos	8000	20	128000	32000	160000
5.	Backyard poultry unit	100/Bird	100	1126	90026	22574	112600
Total					366026	91574	457600



CONSOLIDATE REPORT - NRM ACTION PLAN - YEAR - I

SI No	Activity	Unit	Unit cost	Target	IWMP Fund	Convergence with MNREGS	Total
1.	Well recharging	Nos	10000	89	890000	0	890000
2.	Well renovation (Block panchayath well Near Porkkattil puradyidam)	Nos	48000	1	48000	0	48000
3.	Well renovation (Veyilkanampara public well)	Nos	52000	1	52000	0	52000
4.	Well renovation (Pathazha school)	Nos	45000	1	45000	0	45000
5.	Well renovation (Vettikulam - Karimbanoli drinking water scheme)	Nos	100000	1	75000	25000	100000
6.	Well renovation (Pathazha laksham veed colony)	Nos	45000	1	45000	0	45000
7.	Well renovation	Nos	12000	47	564000	0	564000
8.	Rain water harvesting Tank - Nylon -10000 Ltrs (2.75*2.5*1.5)	Nos	11000	59	590000	59000	649000
9.	Stone bunding	M2	144	19705.64	2837475	0	2837475
10.	Heightening of the existing bund	M2	144	4722	679968	0	679968
11.	Pond renovation - Vettikulam area- Pammikkadan thodu side - (public land)	Nos	700000	1	500000	200000	700000
12.	Gully controlling structures	Rm	2355	250.66	567895	22410	590305
13.	Moisture collection pits	M3	110	45000	0	4950000	4950000
14.	Yard water collection pits(2.00*2.00*1.00)	Nos	918	700	0	642600	642600
15.	Chennadu stadium well construction	Nos	175000	1	125000	50000	175000
16.	Well construction near ManiyamKulam Church	Nos	95000	1	50000	45000	95000
17.	Pond renovation (Vettikulam thodu side)	Nos	200000	1	150000	50000	200000
18.	Renovation of Puthuparambil Pond	Nos	50000	1	32500	17500	50000
19.	Live Fencing	Rm	24	20000	0	480000	480000



20.	Construction of Water Collection tank-5000 ltr	I
21.	Tree Plantaion (River side , Stream side , Common and private land , road side .)	I
22.	Silt removal in the main and sub streams	I
23.	Fruit Bearing tree kit distribution	I
24.	New well construction	I
25.	Roof top rain water harvesting tank at Adivaram LP School (50000 ltr)	I
26.	Roof top rain water harvesting tank at Mavadi Anganvadi (20000 ltr)	I
27.	Roof top rain water harvesting tank at Edmana ganvadi (10000 ltr)	I
28.	Roof top rain water harvesting tank at Maniyamkunnu School (75000 ltr)	I
29.	Oli renovation (Near the plot of Kizhake thottam Jonny maniyamkunnu)	I
30.	Oli Renovation (Near the plot of muthirapara appachan)	I
31.	Oli Renovation (Near the plot of kaloli Jaison)	I
32.	Check dam construction in iykkarathodu	I

Total
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CONSOLIDATE REPORT - NRM ACTION PLAN - YEAR -II

SI No	Activity	Unit	Unit cost	Target	IWMP Fund	Convergence	Total
1.	Well recharging	Nos	10000	98	899000	0	899000
2.	Well renovation (mandapathipara colony)	Nos	60000	1	60000	0	60000
3.	Well renovation (chemmarampallikunnil)	Nos	55000	1	55000	0	55000
4.	Well renovation	Nos	12000	5	60000	0	60000
5.	Well renovation (near the plot of vayalil Tomy)	Nos	40000	1	40000	0	40000
6.	Well renovation (near the plot of kizhakeI balakrishnan Nair)	Nos	45000	1	45000	0	45000
7.	Renovation of wells	Nos	12000	25	300000	0	120000
8.	Retaining wall construction	RM	2372	785.1	2463114	75392	2538516
9.	Well renovation(near the plot of shiva Prasad-malika chemnadu)	Nos	73000	1	48000	25000	73000
10.	Rain water harvesting Tank - Nylon -10000 Ltrs (2.75*2.5*1.5)	Nos	11000	35	350000	35000	385000
11.	Stone bunding	M2	144	24780.14	3579524	0	3579524
12.	Heightening of the existing bund	M2	144	9978	1436641	0	1436641
13.	Spring development	Nos	55000	1	52000	3000	55000
14.	Construction of water collection tank 5000lte	Nos	25000	20	500000	0	500000
15.	Fruit bearing tree kit distribution	Nos	400	250	100000	0	100000
16.	Construction of head pond parakulam conversion	Nos	675000	1	500000	175000	675000
17.	Gully controlling check dam poonjar GP	Rm	2355	25	56641	2234	58875
18.	Moisture collection pits	M3	110	45000	0	4950000	4950000



19.	Yard water collection pits(2.00*2.00*1.00)	Nos	918	600	0	550800	550800
20.	Construction of pond (near kulathinakal temple)	Nos	300000	1	289440	10560	300000
21.	Tree plantation	Nos	23.75	5000	50000	68750	118750
22.	H type check dam	Nos	22000	15	330000	0	330000
23.	New well construction	Nos	90000	4	200000	160000	360000
24.	Pond construction near poonjar GP stadium	Nos	350000	1	300000	50000	350000
25.	Live Fencing	Rm	24	54000	0	1296000	1296000
26.	Gully controlling structures	Rm	2355	25	56641	2234	58875
27.	Check dam construction near the plot of peter	Nos	200000	1	175000	25000	200000
28.	Pond renovation	Nos	125000	1	125000	0	125000
29.	Pond renovation thidanadu vattakavu temple	Nos	300000	1	250000	50000	300000
30.	Kavumkulam panchayath well renovation	Nos	45000	1	45000	0	45000
31.	Roof top rain water harvesting tank (50000 ltr)	Nos	250000	3	750000	0	750000
32.	Roof top rain water harvesting tank at Mavadi Anganvadi (20000 ltr)	Nos	100000	1	100000	0	100000
33.	Roof top rain water harvesting tank at Maniyamkundu School (25000 ltr)	Nos	125000	2	250000	0	250000
TOTAL					13752001	7545230	21297231



CONSOLIDATE REPORT- NRM ACTION PLAN - YEAR - III

SI No	Activity	Unit	Unit cost	Target	IWMP Fund	Convergence	Total
1.	Well recharging	Nos	10000	227	2270000	0	2270000
2.	Roof Top Rain Water Harvesting tank (20000Ltrs)	Nos	100000	1	100000	0	100000
3.	Roof Top Rain Water Harvesting tank at Pakkayam Anganvadi (40000 Ltrs)	Nos	200000	1	200000	0	200000
4.	Rain water harvesting Tank - Nylon -10000 Ltrs (2.75*2.5*1.5)	Nos	11000	92	920000	92000	1012000
5.	Tree plantation (Stream side, Common and private land, Road side)	Nos	23.75	3000	30000	41250	71250
6.	Retaining wall construction	RM	2372	1137.34	2618031	79843	2697874
7.	Well renovation (Parappet etc.)	Nos	12000	15	180000	0	180000
8.	Live fencing	RM	24	168	0	1680000	1680000
9.	Gully controlling structures (Aamakkettu)	Rm	2355	25	56641	2234	58875
10.	Moisture collection pits	M3	110	35000	0	3850000	3850000
11.	Well renovation	Nos	65000	1	65000	0	65000
12.	Roof Top Rain Water Harvesting tank (50000 Ltrs)	Nos	250000	8	2000000	0	2000000
13.	Yard water collection pits	Nos	918	500	0	459000	459000
14.	Pond renovation near GV raja stadium	Nos	150000	1	100000	50000	150000
15.	Rain water harvesting tank 10000ltr	Nos	50000	1	50000	0	50000
16.	Well renovation panchayath	Nos	50000	2	100857	0	100857



17.	Pond construction	Nos	514250	1	474250	40000	51425
18.	Check dam renovation at thanninal area .	Nos	200000	1	200000	0	20000
19.	Well renovation	Nos	100000	1	90000	10000	10000
20.	Fruit bearing tree kit distribution	nos	400	500	200000	0	20000
21.	Construction of check dam	Nos	150000	2	275000	25000	30000
22.	Construction of water collection tank 5000ltr	nos	25000	20	500000	0	50000
23.	Pond construction	Nos	600000	1	564800	35200	60000
24.	Check dam renovation in kossrathodu	Nos	170000	1	150000	25000	17500
25.	Spring development	Nos	75000	1	75000	15000	9000
26.	Pond renovation aarattukadavu	Nos	401876	1	366676	35200	40187
27.	Heighting of existing bund	M 2	144	1908	274745	0	27474
28.	Heighting of the existing bund	M 2	144	4000	576000	0	57600
29.	Tree plantation	Nos	23.75	5000	50000	68750	11875
30.	H type check dam	Nos	22000	20	440000	0	44000
31.	New well construction	Nos	90000	6	300000	240000	54000
32.	Rain water harvesting tank at koondor anganvadi	Nos	125000	1	125000	0	12500
33.	Pond renovation	Nos	240000	1	200000	40000	24000
TOTAL					13752000	6828477	2058047



CONSOLIDATE REPORT - NRM ACTION PLAN - YEAR -1V

Sl No	Activity	Unit	Unit cost	Target	IWMP Fund	Convergence	Total
1.	Well recharging	Nos	10000	177	1770000	0	1770000
2.	Well renovation in pottananiyil	Nos	70930	1	70930	0	7930
3.	Velladathu drinking water scheme	Nos	126217	1	126217	0	126217
4.	Well renovation (mattakkattu area)	Nos	150000	1	150000	0	150000
5.	Head pond development with check dam	Nos	600000	1	514800	85200	600000
6.	Renovation of chittar check dam	Nos	300000	1	250000	50000	300000
7.	Check dam renovation near thidanadu town	Nos	400000	1	350000	50000	400000
8.	H type check dam	Nos	22000	19	418000	0	418000
9.	Retaining wall	M2	2372	1172.03	2697693	82301	2779994
10.	Drinking water scheme charliekunnu	Nos	60000	2	169000	20000	189000
11.	Pond renovation (near thottakara purayidam public land)	Nos	175000	1	125000	50000	175000
12.	Ponthanal chapathu heighting	Nos	150000	1	125000	25000	150000
13.	Moisture collection pits	M3	110	23000	0	1430000	1430000
14.	Heighting of the existing bund	M2	144	1041.67	150000	0	150000
15.	Roof top rain water harvesting tank at kandethumala (50000 ltr)	Nos	250000	1	250000	0	250000



16.	New Well construction	Nos	90000	1	50000	40000	90000
17.	Pond renovation near the plot of kalathil joseph	Nos	200000	1	140000	60000	200000
18.	Pond renovation near the plot of jose	Nos	195000	1	145000	50000	195000
19.	Live Fencing	Rm	24	86000	0	1080000	1080000
20.	Construction of pond	Nos	722800	1	664800	58000	722800
21.	Tree Plantaion (River side , Stream side , Common and private land , road side .)	Nos	23.75	6000	60000	82500	142500
22.	Construction of water collection tank 5000ltr	Nos	25000	37	925000	0	925000
23.	Well protection ear the plot of B Ramesh	Nos	75000	1	75000	0	75000
24.	Roof top rain water harvesting tank at laksham veedu colony (50000 ltr)	Nos	250000	1	250000	0	250000
25.	Roof top rain water harvesting tank at thi danadu GVHS school (25000ltr)	Nos	125000	1	125000	0	125000
26.	Check dam construction	Nos	150000	2	300000	0	300000
TOTAL					9901440	3163001	13064441



PART- XIX

ACTIVITIES -AT A GLANCE

1. NATURAL RESOURCE MANAGMENT

Sl.no	Activities	general	private	Aim				
				1 st yr	2 nd yr	3 rd yr	4 th yr	Total
1.	Well Recharge	*	*	99	118	257	182	656
2.	Well Renovation	*	*	51	25	19	2	97
3.	Rain Water Harvesting Tank (5000 Ltr)		*	16	20	20	37	93
4.	Spring Conservation		*	-	1	1	-	2
5.	Stone Bunding		*	15898.35	19916.14	-	-	35814.49
6.	Stone Bund Heighting		*	9143.13	14842	5908	-	30934.8
7.	RWH Tank (50000 Ltr)	*		1	5	7	-	13
8.	RWH Tank (20000 Ltr)	*		1	1	1	-	3
9.	RWH Tank (25000 Ltr)	*		1	3	-		4
10.	RWH Tank (10000 Ltr)	*	*	60	35	93	-	188
11.	Fruit Bearing Plants Distribution	*	*	1750	2500	2500	-	6750
12.	Amakkettu	*		150	50	-	-	200
13.	Moisture Collection Pits		*	45000	45000	58000		148000
14.	Retaining Wall Construction	*		-	2242.23	1561.44		3803.94

(common places , colonies and Bpl areas)

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Sl. No	Activities	general	private	Aim				
				1 st yr	2 nd yr	3 rd yr	4 th yr	Total
15.	Heighting of Pothanal Chappath	*		-	-	-	1	1
16.	RWH (40000 Ltr)	*		-	-	1	-	1
17.	Check Dam	*		125	25	-	-	150
18.	H Type Check Dam	*		-	25	29	-	54
19.	Aforestation/Planting Trees	*	*	1000	8000	8000	-	17000
20.	Live Fencing		*	20000	54000	60000	45000	179000
21.	Small Pond Renovation	*		3	-	-	-	3
22.	Pond Construction	*		-	2	3	-	5
23.	Rainwater Collection Pit		*	700	600	500	-	1800
24.	Head Pond	*		-	1	-	-	1
25.	Conversion of Granate Quarry to Head Pond & Check Dam Construction	*		-	1	-	-	1
26.	Check Dam Construction	*		-	4	3	-	7
27.	Pond Renovation	*		2	4	2	-	8
28.	Source Renovation of Drinking Water Supply Scheme	*		-	-	2	-	2



2. Livelihood Activities

phase - 1 (second year)		
sl.no	Activities	Aim
1.	One time grant for Watershed Development Society	175000
2.	One time grant for Block level Watershed Development Society	40000
3.	Revolving Fund	5608695
Phase - 2 (Third year)		
Major Livelihood Activities.		
4.	Mini Diary Farm	3
5.	Cow Rearing Unit	65
6.	Bee Keeping	580
7.	Cloth Bag Production	2
8.	Chips Baking Unit	1
9.	Brolier Chicken Unit	1
10.	Vegetable Marketing Unit	1



Production system and micro Enterpris

Sl. No	Activities	Aim		
		Second year	Third year	Total
1.	Banana Cultivation	7700	1200	8900
2.	Organic Vegetable Cultivation	290	231	521
3.	Back Yard Poultly Distribution	7847	8873	16720
4.	Pisy Culture	35	28	63
5.	Fodder Grass Cultivation	60	-	60
6.	Goat Rearing (2 Unit)	61	65	126
7.	Goat Rearing (1 Unit)	47	95	142
8.	Mushroom Cultivation	11	40	51
9.	Tuber Crops Cultivation	26	228	254
10.	Vermy Compost	30	85	115
11.	Vertical Farming	11	-	11
12.	Grow Bag Cultivation	1500	-	1500
13.	Pickle Production Unit	1	-	1
14.	Vegetable Nursery	1	-	1



PART - XX

OUTCOME OF THE PROJECT

NATURAL RESOURCE MANAGEMENT

- Pure and uncontaminated drinking evaluated for the target community through out the year.
- Soil erosion controlled and agriculture improved
- Adequate irrigation facilities improved and farmers supported for butter cultivation.
- Ground water table increased and water ensured for the irrigation
- Soil protection cover promoted using traditional plants and this helped to improve Oxygen availability.
- Un conversional methodology adopted and promoted in water storage and distribution through the year coming the beneficiaries.
- Orchard (promotion of fruit bearing trees) the project year for increasing the income and to ensure fruit security.
- Traditional water resources like streams and springs protected and used for agriculture promotion.
- New water storage system constructed to ensure adequate water for irrigation.
- Steady and regular income ensured for the indigenous communities and the most backward village farmers.
- Peoples participation brought in to the development process at all stages of planning execution and evaluation and flop including management all stages.



LIVELIHOOD SUPPORTING SYSTEM AND PRODUCTION SUPPORTING SYSTEM

- Animal husbandry promoted and sustained among the village community
- Alternative income generation programmes promoted among the landless community in the watershed area.
- Poison less organic from product availed in the village market so that the health status of the village community improved.
- Income of the village community is especially weaker sections of the societies increased.
- Steady and regular income ensured for the indigenous communities and the most backward village farmers.
- Peoples participation brought in to the development process at all stages of planning execution and evaluation and flop including management all stages.



WATERSHED DEVELOPMENT FUND

Financial assistance for the post implementation period is the accumulated money from different sources is the Watershed Development Fund.

Beneficiary Contribution collected at the rate of 10 % from the general category and 5 % from the SC/ST category for NRM activities are accounted separately and treated as WDF.

User Group Charges and other contribution is accounted and also the income generated from assets created under the project as common property are also be accounted as WDF.

The Contribution collected from the beneficiaries of PSM and Livelihood Activities at the rate of 20 % and 10 % respectively (general and SC/ST) is also accounted as WDF.

After the completion of the project period the WDF can be utilized for the cost of maintenance for the common assets and can be spent for revolving fund to the Watershed people who are the beneficiaries.



INTEGRATION POSSIBILITIES

1. Natural resource sector

Sl No.	Activity	Intergration Possibilities
1.	Well Recharge	MNREGS
2.	Well Renovation	MNREGS
3.	Rain Water Harvesting Tank (5000 Ltr)	MNREGS
4.	Spring Conservation	MNREGS
5.	Stone Bunding	MNREGS
6.	Stone Bund Heighting	MNREGS
7.	RWH Tank (50000 Ltr)	MNREGS
8.	RWH Tank (20000 Ltr)	MNREGS
9.	RWH Tank (25000 Ltr)	MNREGS
10.	RWH Tank (10000 Ltr)	MNREGS
11.	Fruit Bearing Plants Distribution	MNREGS
12.	Amakkettu	MNREGS
13.	Moisture Collection Pits	MNREGS
14.	Retaining Wall Construction	MNREGS



Sl No	Activities	Integration Possibilities
15.	Heighting of Pothanal Chappath	MNREGS
16.	RWH (40000 Ltr)	MNREGS
17.	Check Dam	MNREGS
18.	H Type Check Dam	MNREGS
19.	Aforestation/Planting Trees	MNREGS
20.	Live Fencing	MNREGS
21.	Small Pond Renovation	MNREGS
22.	Pond Construction	MNREGS
23.	Rainwater Collection Pit	MNREGS
24.	Head Pond	MNREGS
25.	Conversion of Granite Quarry to Head Pond & Check Dam Construction	MNREGS
26.	Check Dam Construction	MNREGS
27.	Pond Renovation	MNREGS
28.	Source Renovation of Drinking Water Supply Scheme	MNREGS



Integration Possibilities

Activity	Integration possibilities.
Mini Diary Farm	Diary Development, MNREGS
Cow Rearing Unit	Diary Development, MNREGS
Bee Keeping	Agriculture Department, MNREGS
Cloth Bag Production	L.S.G.D.
Chips Baking Unit	Kudumbasree
Broiler Chicken Unit	Vetinary Department
Vegetable Marketing Unit	Agriculture Department, MNREGS
Banana Cultivation	Agriculture Department, MNREGS
Organic Vegetable Cultivation	Agriculture Department, MNREGS
Back Yard Poultly Distribution	Vetinary Department
Pisy Culture	Fisheries Department
Fodder Grass Cultivation	Diary Development, Agriculture Department, MNREGS
Goat Rearing (2 Unit)	Diary Development, MNREGS
Goat Rearing (1 Unit)	Diary Development, MNREGS
Mushroom Cultivation	Agriculture Department, Kudumbasree
Tuber Crops Cultivation	Agriculture Department, MNREGS



Activity	Integration possibility
Vermicompost	Agriculture Department, MNREGS
Vertical Farming	Agriculture Department, MNREGS
Grow Bag Cultivation	Agriculture Department, MNREGS
Pickle Production Unit	Kudumbasree
Vegetable Nursery	Agriculture Department, MNREGS

EXIT PROTOCOL

At the end of the project, the watershed Committee is to take the responsibility for post project management, for which the memorandum of Agreement is to be formulated between the PIA and Watershed committee using on the following terms and conditions.

- The list of assets created under EPA, NRM, PSM and Livelihood Support System (LSS) is to be prepared with the joint signature of the chairman, Secretary of the watershed Committee and PIA. The Watershed Committee will retain one copy of the list for future reference.
- **The amount lying unspent as on closing date will be transferred to the watershed development fund (WDF).** Balance amount to be disbursed to the direct beneficiaries should be treated as unspent .At the same time on completion of the works they committed this subsidy part should be disbursed. To meet this purpose the amount has to be deposited in the WDF and should be treated as WDF.
- **Watershed committee will be authorized to use only one bank account i.e. WDF account.** At the time of phasing out the project implementation, the project fund which had been operated jointly by the Watershed Committee Chairperson and the treasurer should be closed. Then the remaining shall be the WDF. This is the account to be jointly operated by the concerned at the closure of the programme.
- **Yearly auditing of the accounts by the chartered accountant will be mandatory and to be adhered strictly.** Whether it is project account or WDF, the accounts should be subjected to audit (both social audit and mandatory chartered accountant audit) to keep and ensure transparency of project implementation as well as post implementation interventions and expenses.
- **The office bearers of the watershed committee shall involve all the community irrespective of caste, creed and religion.** It should be ensured there is representation of the cross section of the community even in the post project phase of IWMP, so that equality and justice is kept to ensure inclusion of under privileged communities.



- **The Watershed Committee shall have the right to decide the user charges to be collected from the beneficiaries which shall be deposited under the Watershed Development Fund.** If common property resources (CPR) are developed under IWMP, for the common use, a user fee shall be received from the concerned for the operation and maintenance of such CPRs, and this should be deposited and accounted in the WDF before further use.
- **The cost of repair and maintenance of the assets created out of NRM component shall be born out of Watershed Development Fund (WDF) by using maximum 50 % of the amount collected in a year.** If more amounts than the 50% of WDF is required to meet the expense of some of the assets created under IWMP, this amount shall additionally be collected from the beneficiaries and deposited and accounted in WDF before utilizing it.
- **The WDF account will primarily run as revolving fund.** Whatever fund is being spent from the WDF, this should be considered as revolving fund to the UGs, and the UGs are liable to return this amount as per conditions pertaining to the release of funds from the WDF.
- **No individual beneficiary should be granted any sort of grant or financial assistance in any form.** Grant/ Revolving fund should not be given to individual. The UGs only have the right to receive any type of fund from the WDF. The WC and UG will have to sign and MoU regarding the repayment schedule.