



## Integrated Watershed Management Programme (IWMP)



## Detailed Project Report 2015 February



# MALLAPPALLY BLOCK PANCHAYATH

*Technical Support Organization*



**Centre for Socio-economic and Environmental Studies(CSES)**

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## DETAILED PROJECT REPORT (DPR)

IWMP- III /2013-14 PATHANAMTHITTA

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## ABBREVIATIONS

APL	Above Poverty Line
AAP	Annual Action Plan
BLCC	Block Level Co-ordination Committee
BPL	Below Poverty Line
BRGF	Backward Regions Grant Fund
CEO	Chief Executive Officer
CSES	Centre for Socio-economic and Environmental Studies
DLCC	District Level Co-ordination Committee
DPC	District Planning Committee
DPR	Detailed Project Report
EPA	Entry Point Activities
FGD	Focus Group Discussion
GIS	Geographic Information System
GP	Grama Panchayat
GW	Ground Water
IEC	Information, Education and Communication
IT	Information Technology
IWMP	Integrated Watershed Management Programme
LFA	Logical Framework Analysis
LSGD	Local Self Government Department
LSGI	Local Self Government Institutions
LSS	Livelihood Support System
MCM	Million Cubic Meters
MGNREGA	Mahatma Gandhi National Rural Employment Guarantee Act

MLA LAD	Member of Legislative Assembly Local Area Development scheme
MoU	Memorandum of Understanding
MPLAD	Member of Parliament Local Area Development
MSL	Mean Sea Level
NABARD	National Bank for Agriculture and Rural Development
NGO	Non-Governmental Organization
NRAA	National Rainfed Areas Authority
NRHM	National Rural Health Mission
NRM	Natural Resource Management
OBC	Other Backward Caste
PIA	Project Implementing Agency
PRA	Participatory Rural Appraisal
PRIs	Panchayati Raj Institutions
PS&M	Production System and Microenterprises
SC	Scheduled Caste
SHG	Self Help Group
SLNA	State Level Nodal Agency
SPSP	State Perspective and Strategic Plan
ST	Scheduled Tribe
TSO	Technical Support Organisation
UG	User Group
VEO	Village Extension Officer
WC	Watershed Committee
WCC	Watershed Co-ordination Committee
WCDC	Watershed Cell cum Data Centre
WDT	Watershed Development Team
WW	Women Welfare



## PROJECT AT A GLANCE

<b>Name of Project</b>	: IWMP- III /2013-14
District	: Pathanamthitta
Block	: Mallappally and Koipuram
No. Of micro watersheds	: 5
Project amount (in Lakhs)	:660
Project Implementing Agency	: Mallappally Block Panchayat
Location	: Latitude : 9°23'6.72"E to 9°29'9.6"E : Longitude : 76°36'28.81"E to76°42'44.64"E
Grama panchayats	: Kaviyoor, Kunnanathanam, Kollooppara, Mallappally, aanickadu,Kottangal, ezhumattoor and Puramattom
Total Geographical Area (Lakh Hectares)	: 0.055
<b>Project area Coverage</b>	
Treatable Area (Lakh Hectares)	: 0.055
Wasteland (Lakh Hectares)	: 0.0002
Rain fed Agriculture land(Lakh Hectares)	: 0.055
Total Cropped area (Lakh Hectares)	: 0.04275
Net Sown area (Lakh Hectares)	: 0.03825
Total No. of Water Storage Structures	: 44
Total no. of Water Extracting Units	: 7525
Total Capacity of water storage structures (cubic meters)	: 4.4 lakhs
<b>No. of Households</b>	
SC	: 1391
ST	: 69
Others	: 10400
Total Population in the project area	: 46932
Total No. of BPL Households	: 4492
No. of Small farmers households	: 216
No. of Marginal Farmers Households	: 10094
<b>Depth of Ground Water (meters)below ground level</b>	
Pre-monsoon	: 14.27
Post-monsoon	: 1.12
No. of person days of seasonal migration	: NA

## INTRODUCTION

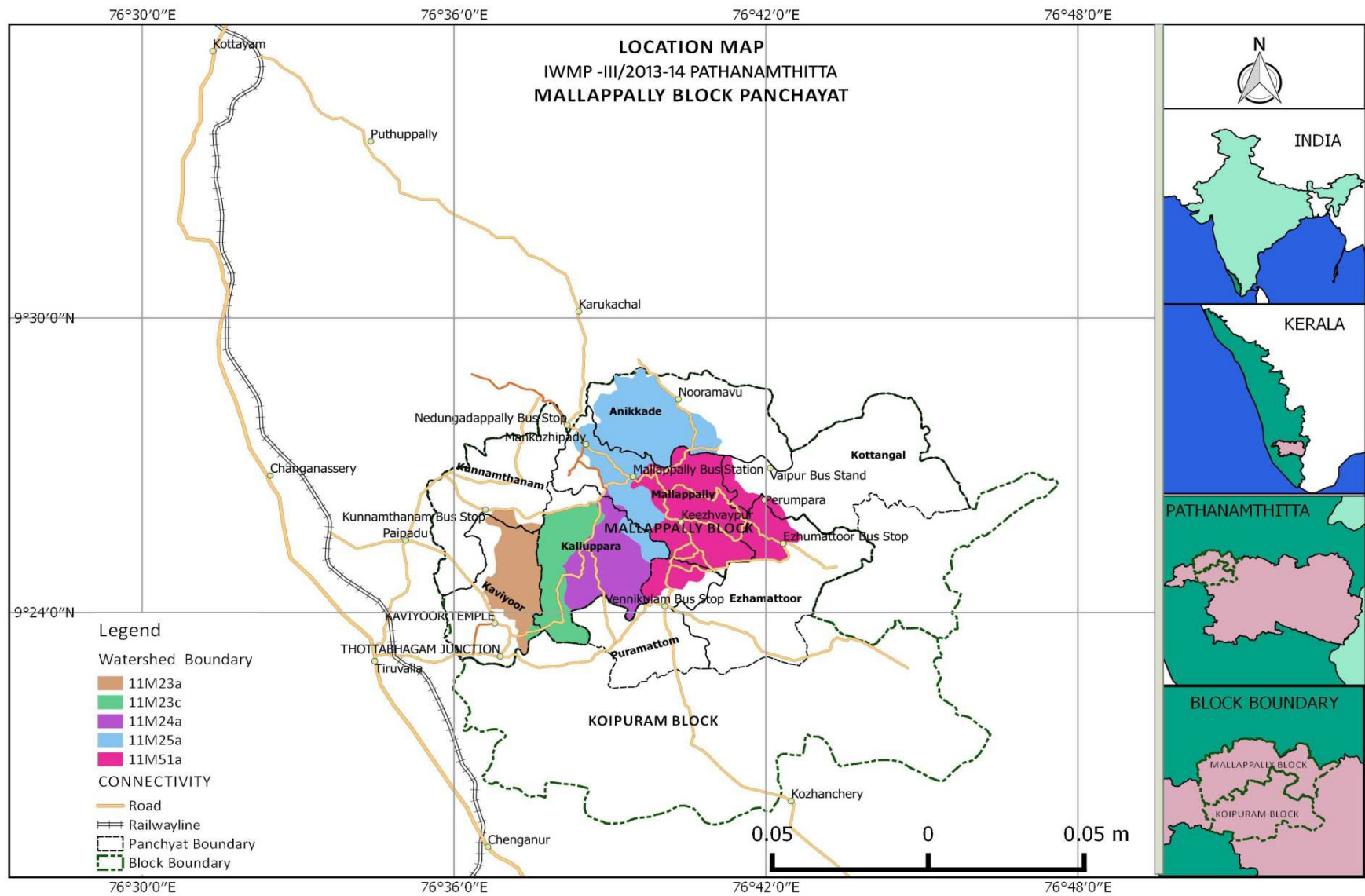
The Integrated Watershed Management Programme (IWMP), initiated by the Ministry of Rural Development (MoRD), Government of India, is a unique watershed programme calling for multidisciplinary approach to natural resource management for ensuring continuous benefit on a sustainable basis. Watershed Management brings about the best possible balance between natural resources on the one side and human beings on the other. IWMP not only helps in land, water and biomass management of degraded areas but also in the conservation of the protected areas so that biodiversity and genetic resources are available for future generations. The programme is implemented through Panchayati Raj Institutions thereby ensuring people's participation in different stages such as planning, implementation, monitoring, evaluation and post project activities.

### PROJECT BACKGROUND

Pathanamthitta IWMP- III /2013-14 project is located at Mallappally and Koipuram block panchayats in Pathanamthitta District of Kerala. The project comprises of five micro-watersheds namely *Kottoor WS* (11M23a), *Panayampala WS*(11M23c), *Vadakkakara WS*(11M24a), *Mallappally WS*(11M25a) and *Keezhvaypur WS*(11M51a). Water from all these micro watersheds drains in to Manimala river. The details of the project area are given below. There are 11860 households in the project area and the total population is 46932. The total cost of the project is Rs. 660.0 lakhs. It is located between 9°23'6.72"N to 9°29'9.6"N latitude 76°36'28.81"E to 76°42'44.64"E longitude.

**Table 1: Details of Individual Watersheds**

WS Code	Name of Watershed	Name Panchayat	Ward No.		Treatable Area (Hector)
			Completed	Partial	
11M23a	Kottoor WS	Kaviyoor	3,4,5	2,6,7,8,9,14	669
		Kunnanathanam		9	
11M23c	Panayampala WS	Kalloopara	10,11,12,13,14	1,2,9	685
		Kaviyoor		8	
11M24a	Vadakkakara	Kalloopara	4,6,7,8	3,9	793
		Mallappally		12,14	
11M25a	Mallappally WS	Kalloopara	5		1562
		Mallappally	3,13	1,2,12,14	
		Anikkadu	2,3,10,11,12,13	1,8,9	
11M51a	Keezhvaypur WS	Mallappally	4,5,6,7,8,9,10,11		1791
		Kottangal		1,13	
		Puramattom	5	4	
		Ezhumattoor	1,14		
<b>Total</b>					<b>5500</b>



## PHYSIOGRAPHY, RELIEF AND DRAINAGE

Project area is in the agro climatic zone of Southern Midland within the elevation range between 0 to 175 meters. Topographically the area is nearly level to very gently sloping. A number of drainages and streams enriching the project area and drain to Manimala river.

**Table 2: Watershed Characteristics**

Watershed	Kottoor	Panayampal a	Vadakkekara	Mallappally	Keezhvaypur
Shape index	1:3 (Rectangular)	1:5 (Rectangular)	1:1 (Circular)	1:1 (Circular)	1:1 (Circular)
Length of Main stream (KM)	5.4	6.1	4.3	4.3	6.4
Drainage Density (KM/Sq.KM)	1.27	1.2	1.36	0.87	1.14
Slope Range (%)	Up to 25%	Up to 20%	Up to 45 %	Up to 38%	Up to 43%
Relief(M)	76	60	72	90	167
Elevation Range(M)	0 to 76 M	0 to 60 M	8 to 80 M	10 to 100 M	8 to 175
Perimeter(KM)	15.51	17.15	15.36	26.07	23.28
Area(KM <sup>2</sup> )	6.69	8.85	7.93	15.62	17.91
Drainage inside the WS (KM)	8.47	10.66	10.77	13.64	20.36

## CRITERIA FOR SELECTION OF THE PROJECT

The weightage and criteria for selection of the watershed management programme is given in Table 3. The weightage under different criteria for Pathanamthitta IWMP- III /2013-14 Mallappally watershed is given in Table 4.

**Table 3: Criteria for Selection of the Project**

No	Criteria	Maximum Score	Ranges & scores			
i	Poverty index (% of poor to population)	10	Above 80 % (10)	80 to 50 % (7.5)	50 to 20 % (5)	Below 20 % (2.5)
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)	Actual wages are equal to or higher than minimum wages (0)		
iv	% of small and marginal farmers	10	More than 80 % (10)	50 to 80 % (5)	Less than 50 % (3)	
v	Ground water status	5	Over exploited (5)	Critical (3)	Sub critical (2)	Safe (0)
vi	Moisture index	15	-66.7 & below (15)	-33.3 to -66.6 (10)	0 to -33.2 (0)	

	DPAP/ DDP Block		DDP Block	DPAP Block	Non DPAP/ DDP Block	Above 70 % (Reject)
vii	Area under rain-fed agriculture	15	More than 90 % (15)	80 to 90 % (10)	70 to 80% (5)	Fully covered (0)
viii	Drinking water	10	No source (10)	Problematic village (7.5)	Partially covered (5)	
ix	Degraded land	15	High – above 20 % (15)	Medium – 10 to 20 % (10)	Low-less than 10% of TGA(5)	
x	Productivity potential of the land	15	Lands with low production & where productivity can be significantly enhanced with reasonable efforts (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)	
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)	Contiguity within the micro watersheds in the project but non contiguous to previously treated watershed (5)	Neither contiguous to previously treated watershed nor contiguity within the micro watersheds in the project(0)	
xii	Cluster approach in the plains (more than one contiguous micro-watersheds in the project)	15	Above 6 micro-watersheds in cluster (15)	4 to 6 micro watersheds in cluster (10)	2 to 4 micro watersheds in cluster (5)	
	Cluster approach in the hills (more than one contiguous micro-watersheds in the project)		Above 5 micro-watersheds in cluster (15)	3 to 5 micro watersheds in cluster (10)	2 to 3 micro watersheds in cluster (5)	

**Table 4: Score as per SPSP and presently identifies**

Name of Project	Score as per SPSP													
	i	ii	iii	iv	v	vi	vii	viii	ix	x	xi	xii	xiii	Total
IWMP- III, 2013-14 Pathanamthitta	7.5	3	0	10	2	0	15	5	10	10	10	10	0	82.5
	Presently identified score													
	7.5	3	0	10	0	0	15	5	5	10	0	10	0	65.5

#### Major Reasons for Selection of Watershed

- Poor socio- economic condition of the people
- Low productivity of land
- Strong presence of SC/ ST, BPL families and marginal farmers
- Poor adaptation to climate change

## CLIMATE

### Rainfall

The project area experiences humid tropical climate with a bountiful rainy season through the northeast and southwest monsoons and severe summer. The hot season is from March to May and it is followed by South West monsoon season from June to September. South west monsoon contributes the major part of the annual rainfall. Average annual rainfall of the last 10 years (2003-2012) is 2496.33mm. There is no drought or dry spells. The South-West monsoon contributes nearly 58% of annual rainfall followed by 20% of North-East monsoon. Summer showers contribute remaining 22%. The humidity is higher during the monsoon period (from June to September).

**Table 5: Monthly Rainfall Details (mm)**

Year	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
2003	0.0	59.0	60.0	161.7	110.4	504.2	430.2	345.2	93.8	496.9	95.4	0.0	2356.8
2004	3.8	0.0	53.4	100.4	327.8	519.8	324.0	306.5	195.8	508.5	253.0	0.0	3093.0
2005	16.4	63.6	37.4	200.2	206.8	602.6	451.7	132.1	312.8	251.2	119.4	73.4	2467.6
2006	43.0	0.0	46.0	107.4	511.0	505.5	430.4	309.2	349.1	407.6	188.2	0.0	2897.4
2007	0.0	22.2	3.6	200.4	264.4	596.9	861.3	418.8	363.4	279.7	168.0	13.0	3191.7
2008	0.0	60.0	200.9	145.8	62.0	392.8	641.5	236.8	273.1	308.9	171.0	8.8	2501.6
2009	3.0	Nil	48.5	86.0	61.0	416.2	480.0	136.5	257.5	163.0	15.0	47.0	1713.7
2010	8.0	NA	75.0	168.0	208.5	475.0	367.0	299.0	177.0	470.5	351.0	91.0	2690.0
2011	118.0	52.0	5.0	329.0	363.0	471.0	308.5	240.0	387.5	214.0	69.0	173.0	2730.0
2012	4.0	Nil	27.0	127.0	150.0	160.5	272.5	382.0	166.0	3.0	29.5	Nil	1321.5
Average annual rainfall of the last 10 years (2003-2012)													2496.33
Contribution in various season	January to May					June to September					October to December		
	22 %					58 %					20 %		

Source: Agro meteorological Observatory, Agricultural Research Station, Thiruvalla

### Temperature

The minimum temperature ranges from 18.6<sup>0</sup> C to 28.27<sup>0</sup> C whereas the maximum temperature ranges from 30.07<sup>0</sup> C to 34.7<sup>0</sup> C. Hottest month is April and March and coldest is January.

**Table 6: Monthly Mean Temperature During 2002 - 2011(° C)**

Year		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2002	Min	22.6	23.2	24.1	25.1	24.2	23.2	22.9	22.6	23.3	22.9	23.1	22.1
	Max	32.2	32.0	33.5	33.6	31.7	29.5	29.4	29.0	30.8	31.9	31.9	33.2
2003	Min	22.0	23.4	23.9	24.9	24.6	22.8	21.7	22.1	22.1	22.1	22.3	20.6
	Max	32.6	33.0	34.0	34.1	32.9	30.8	28.8	29.5	30.7	31.3	32.2	32.6
2004	Min	20.7	21.7	23.6	23.5	22.1	22.0	21.5	21.3	22.0	21.6	21.6	20.9
	Max	32.0	34.2	34.0	33.7	30.1	29.7	29.3	28.9	30.8	30.8	32.3	32.9
2005	Min	23.8	23.8	25.5	23.7	24.1	21.9	21.3	22.6	23.9	23.7	23.7	23.1
	Max	32.6	32.9	32.8	32.9	33.6	30.4	29.2	30.4	29.7	31.1	31.2	31.2
2006	Min	22.4	22.8	24.7	25.7	24.9	23.8	22.7	23.0	23.2	23.1	22.9	21.8
	Max	32.1	32.4	32.7	33.1	32.1	30.5	29.1	29.2	30.0	30.4	30.9	32.1
2007	Min	21.6	22.5	24.9	24.5	25.0	23.0	22.0	22.4	22.9	22.9	22.7	22.1
	Max	31.8	31.7	32.5	32.8	32.3	29.2	28.4	29.1	30.0	30.9	31.4	32.1
2008	Min	21.2	22.8	22.7	23.6	24.2	23.0	22.2	22.6	22.9	22.9	22.8	22.0
	Max	31.9	31.2	31.6	31.8	32.1	30.0	29.0	29.5	30.3	31.1	31.1	32.0
2009	Min	20.5	22.2	23.6	24.7	24.3	23.2	22.5	22.8	23.0	23.6	23.0	22.7
	Max	32.8	32.4	33.1	33.3	32.1	30.7	29.8	30.5	30.1	31.7	32.3	32.8
2010	Min	21.9	23.2	24.6	24.4	24.2	23.6	23.1	24.3	24.6	24.3	24.6	23.7
	Max	32.2	32.8	34.2	34.0	33.0	30.2	29.1	28.3	29.3	30.4	30.4	30.8
2011	Min	23.0	23.1	24.9	24.5	25.7	24.2	23.3	23.1	23.0	23.9	23.1	22.5
	Max	31.5	31.6	32.7	32.8	32.6	30.9	29.3	29.2	29.6	31.6	31.5	32.2

Source: Indian Meteorological Department, for Alappuzha, Thiruvananthapuram.

### Wind

The wind is predominantly from east and northeast during morning hours and during the evening hours the predominant wind direction is from west and northwest. The table below shows that the project area experiences very low velocity wind. The highest velocity of wind is experienced during southwest monsoon and northeast monsoon.

**Table 7 : Wind Speed**

Month	Wind speed (m/s)				
	2009	2010	2011	2012	2013
January	1.48	NA	2.16	1.5	1.46
February	2.4	1.47	2.41	1.93	1.5
March	1.84	2.27	2.62	2.8	2.34
April	1.74	2.01	2.29	2.6	2.48
May	NA	2.4	2.19	2.7	2.56
June	NA	1.89	2.16	NA	1.47
July	1.76	2.23	2.01	2.43	2.84
August	2.13	2.35	2.12	2.22	
September	2.56	1.83	1.82	1.73	
October	NA	2.12	1.80	1.13	
November	NA	1.58	1.14	1.28	
December	NA	1.48	1.27	1.08	

Source: Agrometeorological Observatory, Agricultural Research Station, Thiruvalla

## Humidity

The humidity is higher (about 99.8%) during the monsoon period, June to September.

**Table 8: Relative Humidity**

Year		Jan	Feb	Mar	Apr	May	June	Jul	Aug	Sep	Oct	Nov	Dec
2009	mini	44.5	46.7	NIL	60.5	70.4	63.2	81.1	75.9	78.6	75.3	NA	NA
	max	77.4	77.4	NIL	80.5	90.5	91.7	95.7	87.6	90.8	94.6	NA	NA
2010	mini	NA	61.1	56.3	68	79.2	90.4	88.2	89.1	82.5	75.8	75	74.2
	max	NA	83.3	93.1	98	99.4	99.8	99.3	99.1	96.4	83.3	85.3	83.4
2011	mini	62	60	63.7	67.3	69	77.4	78.5	77.3	76.7	71.2	69.1	66.4
	max	85.6	83.5	82.5	82.9	81.8	88.4	84.7	84	83.3	80.4	77.5	80.6
2012	mini	61.6	60.1	68.2	70.3	73.5	76.1	76.2	75.5	77.1	69.6	69.7	62.4
	max	77.4	81.3	82.4	81.8	85.2	84	84.3	84.8	84.3	74.6	79.3	76
2013	mini	20.6	21	24	23.9	28.4	25.4	23.5	26	NA	NA	NA	NA
	max	32.3	30.1	33.3	33.4	36	26.1	24.7	37.2	NA	NA	NA	NA

Source: Agrometeorological Observatory, Agricultural Research Station, Thiruvalla

## Geology

As per geological survey of India the project area falls in the Archaeans Formation. Under this formation the project area falls in Charnockite groups. Cordierite gneiss, charnockite, charnockite gneiss and pyroxene granulite are these groups.

## GROUND WATER

Ground water extraction is mainly through open dug wells and bore wells. Open dug wells are the main drinking water resources in the watershed area, there are 9856 open dug wells and 2197 bore wells and 5354 ponds are existing in the project area. The open dug wells in hilly area are dry up during summer season. In 1.7 % of the total open dug wells, the water availability duration is less than 6 months. Water availability duration is up to 11 months in 47.7 % open wells. 50.56 % open dug wells are providing drinking water throughout the year. Details of the ground water development in the project area is in the following table.

**Table 9: Number of water sources in the project area**

Watershed	Bore Well	Pond	Dug Well	Total
11M23a	116	467	1227	1810
11M23c	382	1118	1657	3157
11M24a	185	663	1426	2274
11M25a	687	1349	2653	4689
11M51a	827	1757	2893	5477
Total	2197	5354	9856	17407

Source: Baseline Survey



**Table10: Water Availability in Open Well**

Watershed	Less than 6 months	6-11 months	Throughout the year
	No.	No.	No.
11M23a	18	621	588
11M23c	20	698	939
11M24a	23	660	743
11M25a	48	1175	1430
11M51a	60	1549	1284
Total	169	4703	4984

Source: Baseline Survey

**Table 11: Ground Water Details**

Sl. No.	Details	Block Panchayat (2004)	
		Mallappally	Koipuram
1	Total Annual GW recharge (MCM)	22.63	22.38
2	Existing gross ground water draft for irrigation (MCM)	11.96	11.82
3	Existing gross ground water draft for domestic & industrial water supply(MCM)	5.07	5.28
4	Existing gross ground water draft for all uses (MCM)	10.04	9.91
5	Stage of development (4/1x100 %)	44.37%	44.28%
6	Category	Safe	Safe

Source: Central Ground Water Board, Ministry of Water Resources, Government of India.

**Table 12: Ground water details of observation wells in the project are**

Location	Ezhumattur	Anikkadu	Koipuram	Kunanthanam	Mallappally	Kunnanthanam
Well No.	PTA/07	PTA/08	PTA/21	PTA/25	PTAOW41	PTAOW43
Block	Koipuram	Mallappally	Koipuram	Mallappally	Mallappally	Mallappally
Latitude	9° 24 ' 55" N	9° 27 ' 40" N	9° 26 ' 05" N	9° 24 ' 05" N	9° 25 ' 49" N	9° 26 ' 00" N
Longitude	76° 42 ' 15" E	76° 40 ' 10" E	76° 40 ' 44" E	76° 36 ' 30" E	76° 40 ' 20" E	76° 36 ' 37" E
Type of Well	Bore Well	Bore Well	Bore Well	Bore Well	Open Well	Open Well
River Basin	Manimala	Manimala	Manimala	Manimala	Manimala	Manimala
<b>Month (2014)</b>	<b>Ground Water Level (m)</b>					
January	10.39	7.11	2.25	2.31	4.66	11.48
February	11.06	7.81	1.62	2.55	4.76	10.29
March	11.29	8.13	2.25	2.65	4.85	10.93
April	10.60	7.43	1.87	2.45	4.45	8.72
May	9.76	6.93	2.18	2.11	4.51	9.37
June	8.24	7.34	1.12	1.97	3.26	7.51
July	-	-	-	-	-	-
August	6.61	6.74	1.12	1.72	2.97	5.72
September	10.04	7.34	2.04	2.06	4.34	9.03
October	8.27	6.76	1.35	1.94	3.59	6.97
November	9.10	6.98	2.12	2.06	4.61	9.34
December	10.13	6.93	1.97	2.13	4.65	10.83

Source: Ground water department, Pathanamthitta

## SURFACE WATER RESOURCES AND IRRIGATION

The project area has a number of public and private ponds and drainages which are the main source of irrigation. Paddy is generally grown in the valleys. Besides, cash crops like coconut, banana, cocoa etc are also growing. Irrigation is not required during June to November, as good rainfall is recorded.

**Table13: Ponds and drainages in the project area**

Watershed	11M23a	11M23c	11M24a	11M25a	11M51a
Public Pond	7	4	5	3	7
Main Drainages (Nos)	8	6	7	14	11

Source: Baseline Survey

**Table 14: Number of perennial and non-perennial streams in the project area**

	Number of Streams				
	Kottoor	Panayampala	Vadakkkara	Mallappally	Keezhvaypur
With good water flow	0	0	0	0	0
With low water flow	2	2	2	1	4
No water flow	18	8	9	12	12
<b>Total</b>	<b>20</b>	<b>10</b>	<b>11</b>	<b>13</b>	<b>16</b>

Source: Baseline Survey

## SOCIO-ECONOMIC AND DEMOGRAPHIC CHARACTERISTICS OF THE POPULATION

The socio-economic characteristics of the population in the project area have been obtained by conducting a census survey of the households in the project area.

**Table15: Details of the population in the project area**

Watershed Code	Male	Female	Total
11M23a	3074	3411	6485
11M23c	3694	3951	7645
11M24a	3128	3337	6465
11M25a	6042	6811	12853
11M51a	6557	6927	13484
<b>Total</b>	<b>22495</b>	<b>24437</b>	<b>46932</b>

Source: Baseline Survey

**Table 16: Age distribution of population in the project area**

Watershed Code	No.members below 15 yrs	No.Members above 60 yrs	No.Members between 15-60 yrs	Total
11M23a	958	976	4551	6485
11M23c	1383	1418	4844	7645
11M24a	1062	1193	4210	6465
11M25a	1925	2417	8511	12853
11M51a	1931	2354	9199	13484
<b>Total</b>	<b>7259</b>	<b>31315</b>	<b>8358</b>	<b>46932</b>

Source: Baseline Survey

**Table17 : Number of households in the project area**

Name of GP	Watershed Code					Total
	11M23a	11M23c	11M24a	11M25a	11M51a	
Kaviyoor	1510					1510
Kunnamthanam	99					99
Kallooppara		1846	1493	304		3643
Mallappally			124	821	2093	3038
Anicadu				2250		2250
Kottangal					314	314
Ezhimattoor					514	514
Puramattom					492	492
<b>Total</b>	<b>1609</b>	<b>1846</b>	<b>1617</b>	<b>3375</b>	<b>3413</b>	<b>11860</b>

Source: Baseline Survey

**Table 18: Social classification of households in the project area**

Watershed Code	SC		ST		OBC		General		Total	
	No	%	No	%	No	%	No	%	No	%
11M23a	289	18.0	12	0.7	70	4.4	1238	76.9	1609	100.0
11M23c	160	8.7	2	0.1	275	14.9	1409	76.3	1846	100.0
11M24a	190	11.8	13	0.8	191	11.8	1223	75.6	1617	100.0
11M25a	307	9.1	14	0.4	334	9.9	2720	80.6	3375	100.0
11M51a	445	13.0	28	0.8	628	18.4	2312	67.7	3413	100.0
<b>Bsl</b>	<b>1391</b>	<b>11.7</b>	<b>69</b>	<b>0.6</b>	<b>1498</b>	<b>12.6</b>	<b>8902</b>	<b>75.1</b>	<b>11860</b>	<b>100.0</b>

Source: Baseline Survey

**Table 19: Poverty status of households**

Watershed Code	BPL		APL		Total	
	No	%	No	%	No	%
11M23a	702	43.6	907	56.4	1609	100.0
11M23c	715	38.7	1131	61.3	1846	100.0
11M24a	498	30.8	1119	69.2	1617	100.0
11M25a	1284	38.0	2091	62.0	3375	100.0
11M51a	1293	37.9	2120	62.1	3413	100.0
<b>Total</b>	<b>4492</b>	<b>37.9</b>	<b>7368</b>	<b>62.1</b>	<b>11860</b>	<b>100.0</b>

Source: Baseline Survey

**Table 20: Main source of Income of households in the project area**

Income Source	Watershed Code										Total	
	11M23a		11M23c		11M24a		11M25a		11M51a			
	No	%	No	%	No	%	No	%	No	%	No	%
Agriculture	244	15.2	354	19.2	152	9.4	475	14.1	342	10.0	1567	13.2
Fisheries	111	6.9	64	3.5	173	10.7	153	4.5	174	5.1	675	5.7
Daily wages	754	46.9	517	28.0	483	29.9	1184	35.1	1321	38.7	4259	35.9
Agriculture labour	53	3.3	40	2.2	30	1.9	87	2.6	83	2.4	293	2.5

Salary- Govt	64	4.0	67	3.6	107	6.6	141	4.2	171	5.0	550	4.6
Salary – Private	63	3.9	106	5.7	46	2.8	247	7.3	227	6.7	689	5.8
Self employed/ Business	53	3.3	73	4.0	66	4.1	176	5.2	217	6.4	585	4.9
Income from abroad	106	6.6	210	11.4	274	16.9	215	6.4	342	10.0	1147	9.7
Pension	92	5.7	189	10.2	194	12.0	335	9.9	335	9.8	1145	9.7
Others	69	4.3	226	12.2	92	5.7	362	10.7	201	5.9	950	8.0
<b>Total</b>	<b>1609</b>	<b>100.0</b>	<b>1846</b>	<b>100.0</b>	<b>1617</b>	<b>100.0</b>	<b>3375</b>	<b>100.0</b>	<b>3413</b>	<b>100.0</b>	<b>11860</b>	<b>100.0</b>

Source: Baseline Survey

**Table 21: land holding of households in the project area**

Watershed Code		Landless	1 to 5 cent	5.1 to 50 cent	50.1 to 250 cent	250.1 to 500 cent	Above 500 cent	Total
11M23a	No.	144	252	895	295	17	6	1609
	%	8.9	15.7	55.6	18.3	1.1	0.4	100.0
11M23c	No.	41	171	1081	510	23	20	1846
	%	2.2	9.3	58.6	27.6	1.2	1.1	100.0
11M24a	No.	68	238	808	472	25	6	1617
	%	4.2	14.7	50.0	29.2	1.5	0.4	100.0
11M25a	No.	37	461	1686	1080	84	27	3375
	%	1.1	13.7	50.0	32.0	2.5	0.8	100.0
11M51a	No.	83	438	1711	1047	101	33	3413
	%	2.4	12.8	50.1	30.7	3.0	1.0	100.0
<b>Total</b>	No.	<b>373</b>	<b>1560</b>	<b>6181</b>	<b>3404</b>	<b>250</b>	<b>92</b>	<b>11860</b>
	%	<b>3.1</b>	<b>13.2</b>	<b>52.1</b>	<b>28.7</b>	<b>2.1</b>	<b>0.8</b>	<b>100.0</b>

Source: Baseline Survey

**Table 22: Proportion of households with electric connection**

Watershed Code	Yes		No		Total	
	No.	%	No.	%	No.	%
11M23a	1591	98.9	18	1.1	1609	100.0
11M23c	1833	99.3	13	0.7	1846	100.0
11M24a	1605	99.3	12	0.7	1617	100.0
11M25a	3334	98.8	41	1.2	3375	100.0
11M51a	3337	97.8	76	2.2	3413	100.0
<b>Bsl</b>	<b>11700</b>	<b>98.7</b>	<b>160</b>	<b>1.3</b>	<b>11860</b>	<b>100.0</b>

Source: Baseline Survey

**Table 23: Toilet facilities of families in the project area**

Watershed Code	Septic Tank		Pit latrine		Public Toilet		No Toilet		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
11M23a	750	46.6	828	51.5	1	0.1	30	1.9	1609	100.0
11M23c	1070	58.0	758	41.1			18	1.0	1846	100.0
11M24a	709	43.8	897	55.5	3	0.2	8	0.5	1617	100.0
11M25a	1489	44.1	1844	54.6	1	0.0	41	1.2	3375	100.0
11M51a	1887	55.3	1469	43.0	8	0.2	49	1.4	3413	100.0
<b>Total</b>	<b>5905</b>	<b>49.8</b>	<b>5796</b>	<b>48.9</b>	<b>13</b>	<b>0.1</b>	<b>146</b>	<b>1.2</b>	<b>11860</b>	<b>100.0</b>

Source: Baseline Survey

**Table 24: Number of families joined in Self Help Group**

Watershed	Kudumbasree		Block SHG		Others		No membership		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
11M23a	492	30.6	54	3.4	4	0.2	1059	65.8	1609	100.0
11M23c	620	33.6	19	1.0	10	0.5	1197	64.8	1846	100.0
11M24a	426	26.3	5	0.3	6	0.4	1180	73.0	1617	100.0
11M25a	874	25.9	22	0.7	61	1.8	2418	71.6	3375	100.0
11M51a	1319	38.6	21	0.6	40	1.2	2033	59.6	3413	100.0
<b>Total</b>	<b>3731</b>	<b>31.5</b>	<b>121</b>	<b>1.0</b>	<b>121</b>	<b>1.0</b>	<b>7887</b>	<b>66.5</b>	<b>11860</b>	<b>100.0</b>

Source: Baseline Survey

**Table 25: Main source of drinking water in the project area**

	Watershed Code					
	11M23a	11M23c	11M24a	11M25a	11M51a	Total
	No.	No.	No.	No.	No.	No.
Own Water Connection	142	81	126	587	119	1055
Public Tap	178	28	63	257	246	772
Well (Pvt)	1185	1689	1370	2235	2676	9155
Public Well	50	39	26	185	157	457
Bore well	8	1	16	28	38	91
Springs				6	5	11
Buying	23	1	2	34	89	149
Rain Water Harvesting Tank		1		2		3
Pond				4	4	8
From Streams	4	2	1	8		15
Others	19	4	13	29	79	144
<b>Total</b>	<b>1609</b>	<b>1846</b>	<b>1617</b>	<b>3375</b>	<b>3413</b>	<b>11860</b>

**Table 26: Details of livestock and poultry in the project area**

Watershed Code	Cow	Bedfellows	Duck	Chicken	Goat	Total
11M23a	168	29	211	970	234	1612
11M23c	241	15	223	1808	206	2493
11M24a	187	38	52	1263	204	1744
11M25a	761	84	224	3401	773	5243
11M51a	752	91	350	3940	775	5908
<b>Bsl</b>	<b>2109</b>	<b>257</b>	<b>1060</b>	<b>11382</b>	<b>2192</b>	<b>17000</b>

Source: Baseline Survey

**Table 27: Institutions in the project area**

Institutions	Nos	Institutions	Nos	Institutions	Nos
Anganwadies	47	Agriculture Office	3	Micro Enterprises	7
U.P. Schools	4	L.P. School	12	Police Station	1
High School	3	Higher Secondary School	3	Telephone Exchange	1
College	4	Ayurveda Hospital	3	Ration Shop	25
PHC	6	Veterinary Hospital	2	Mavali Store	5
Sub Centre	1	K.S.E.B.	2	Play ground	7
Dispensary	0	Club/ Library	28	Post Office	14
Court	0	Village Office	4	Bank	23
Grama Panchayat Office	3	Homeo Hospital	5	Old age Home	3
ATM	12	Public Market	2	Community Hall	3
Milk Society	5	Water Authority	1	Graveyard	1

Source: Baseline Survey

**Table 28: Educational institutions in the project area**

Sl. No	Name of WS	Name of GP	Name of the School	Govt -1 Aided-2, Unaided-3	No. of Students		Sufficient Toilet (Yes/ No)	Drinking water facility (Yes/ No)	Electrified (Yes /No)	Smokless Chool a (Yes /No)
					M	F				
1	PANAYA MBALA	KALLU PARA	GOVT.U.P.S.PARIYARAM	1	12	9	YES	YES	YES	YES
2			GVT.HIGH SCHOOL KALOOPARA	1	28	15	YES	YES	YES	YES
3			GOVT. L P G S KALLOOPARA	1	12	11	YES	YES	YES	YES
4	VADAKE KARA	KALLU PARA	G.U.P.S.,THURUTHIKAD	1	22	23	YES	YES	YES	YES
5	MALLAPALLY	MALLA PALLY	C.M.S.H.S.S. MALLAPALLY	2	357	223	YES	YES	YES	YES
6			ST.PHILOMINAS U.P.SCHOOL NEDUNGADAPALLY	2	204	165	YES	YES	YES	YES
7		ANIKKAD	BAPPUJI ENGLISH MEDIAM SCHOOL NOOROMAVU	3	59	31	YES	NO	YES	YES
8			SOPHIYA INTERNATIONAL ACADEMY	3	162	153	YES	YES	YES	YES
9			M T L P S POOVANPARA	2	10	6	YES	YES	YES	YES
10			MARSEVERIOS ENGLISH SCHOOL L.P KUNNIRIKKAL	3	44	35	YES	YES	YES	YES
11			M.T.L.P.S.KEEZHVAYPUR	2	3	3	YES	YES	YES	YES
12	MALLA PALLY	MALLA PALLY	C.M.S.L.P.SCHOOL KIZHAKEKARA,KEEZHVAY POOR	2	17	15	YES	YES	YES	YES
13			KEEZHVAYPOOR	EZHUMATOOR	GOVT.H.S.SCHOOL EZHUMATOOR	1	109	81	YES	YES

Source: Baseline Survey

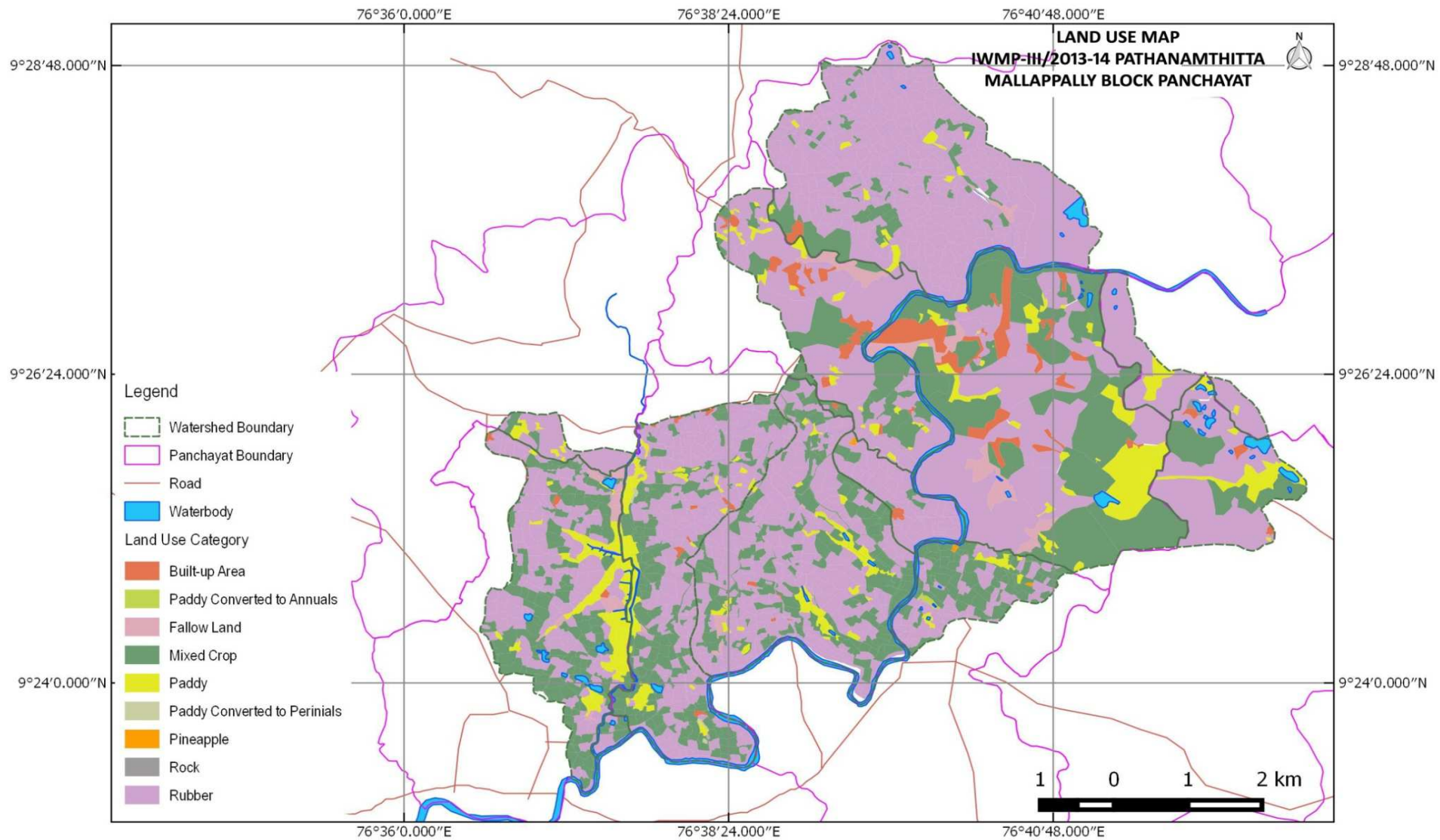
## AGRICULTURE AND PRESENT LAND USE

Present land use of the project area is given below. Major portion of the area is wider rubber cultivation. Mixed crop with coconut tree is the second largest land use cover in the project area. Inter cropping with vegetables, arecanut, spices, fruit trees and hard wood trees like teak, mahogany etc. Paddy is cultivated in one season depending on rainy season.

**Table 29: Present land use in the project area**

Land use	Kottoor	Panayampala	Vadakkerala	Mallappally	Keezhvaypur	Total
Rubber	290.93	374.67	453.34	1222.68	758.01	3099.63
Mixed Crops with Coconut tree	218.32	305.03	265.14	215.15	619.64	1623.28
Paddy Field	84.61	47.9	38.94	35.44	162.62	369.51
Paddy field converted to seasonal crops	0	0	0	0	2.25	2.25
Paddy field converted to perennial crops	0	2.08	0	0	0	2.08
Fallow Land	19	0.62	5.31	22.4	52.9	100.23
Pineapple	0	0	0	0.78	1.13	1.91
Built-up area	3.33	6.13	1.35	126.17	5.366	142.35
Water bodies	0	0	0	0	16.76	16.76
Quarry	30	20	25	27	40	142.00
<b>Total</b>	<b>646.19</b>	<b>756.43</b>	<b>789.08</b>	<b>1649.62</b>	<b>1658.676</b>	<b>5500</b>

Source: Calculated Using GIS





## MAJOR SOILS IN THE PROJECT AREA

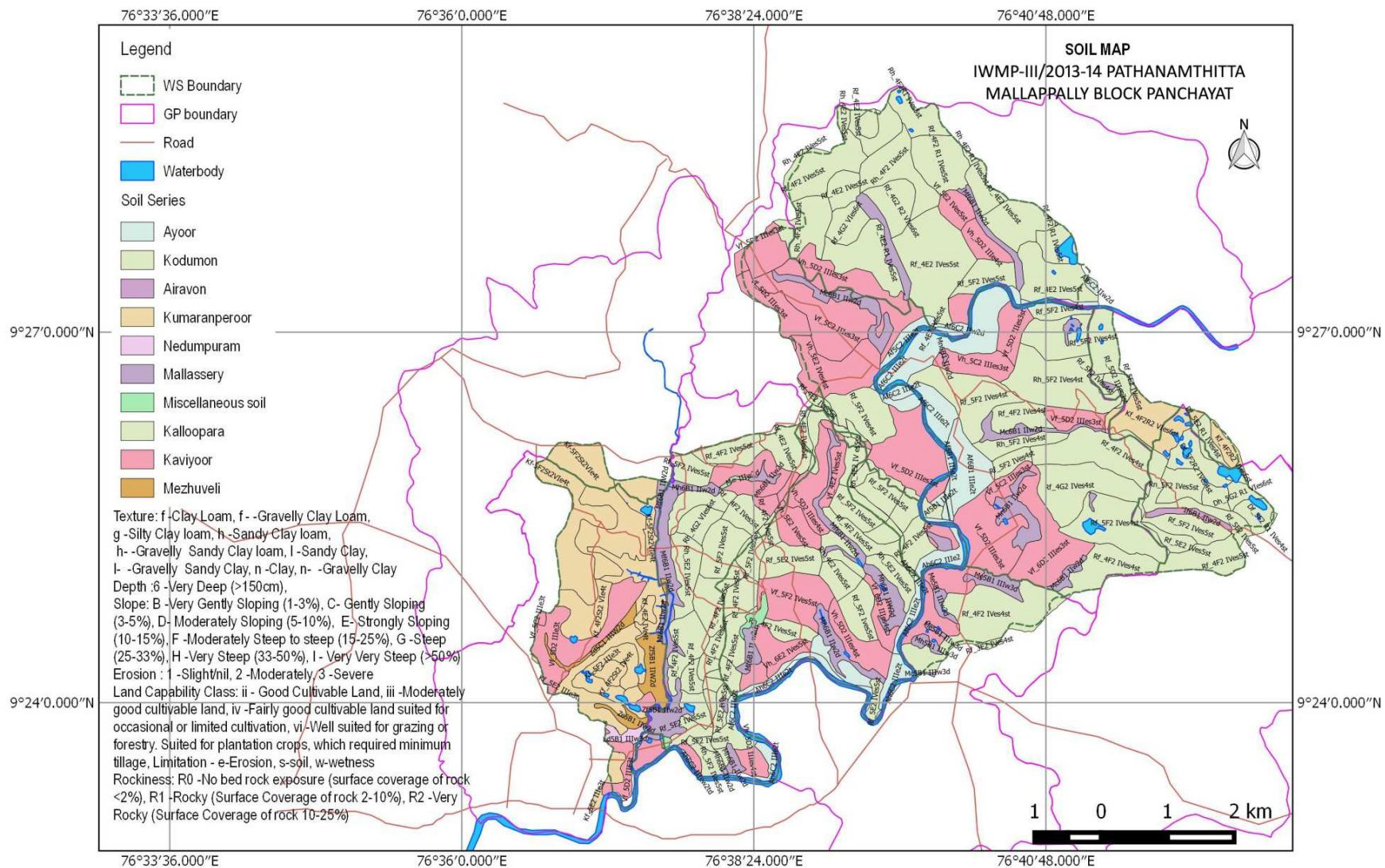
Laterite and alluvial soils are seen in the project. The soils in the project area are mainly classified as ten series. Ayroor, Airavon, Mallassery, Kallooppara, Kaviyoor, Kumaranperoor, Kodumon, Mezhuveli, Nedumpuram, Miscellaneous Soils are the soil series. Details are given below.

**Table 30: Type of soil series in the project area**

SI No.	Soil Series	Details
1	Ayroor Series	Ayroor series developed from riverine alluvium are seen along the river banks on gently sloping to level lands of pathanamthitta district. These very deep soils have loam to sandy clay loam, brown to dark yellowish brown surface soil followed by sandy clay loam to clay, dark brown to strong brown subsurface soil. The soils are extremely to medium acidic in reaction and medium in nutrient status. A variety of crops can be grown with average management
2	Airavon Series	Soils of Airavon series developed from alluvial deposits occur on nearly level to very gently sloping valleys. These soils are deep to very deep and have slow permeability. Surface soil is sandy clay loam to clay with dark grayish brown to brownish yellow colour. Subsurface soils are silt loam to clay with dark reddish brown to dark yellowish brown colour. These soils are strongly to medium acidic in reaction and are low to medium in nutrient status. Poor drainage , high ground water occassional flooding limits the choice of crops mostly to paddy.
3	Mallassery Series	Mallassery series occupies nearly level to very gently sloping valleys and are developed from alluvial deposits. These soils are deep to very deep and have moderate permeability. Surface horizon is sandy loam to clay loam with very dark greyish brown to yellowish brown colour. Subsurface soils have clay loam to clay texture with dark brown to yellowish brown colour. The soils are strongly acidic in reaction. The selection of crops is limited and mostly cultivated to paddy and other seasonal crops.
4	Kallooppara series	Soils of kallooppara series occur on strongly sloping to steeply sloping lands and developed on gneissic rocks. These are excessively drained with moderate permeability. These soils are moderately deep to deep to deep with gravelly sandy clay loam to

		gravelly clay texture. Colour of surface soil is dark reddish brown to and that of subsoil is yellowish red to red. The soils are strongly to very strongly acidic. The reduced soil depth along with gravel reduces the effective soil volume for crops performance in production. Soils are highly susceptible to erosion.
5	Kaviyoor series	Kaviyoor soils occur on gently to moderate sloping midlands. These deep to very deep soils are developed from gneissic material. Surface texture varies from gravelly sandy clay loam to gravelly sandy clay with dark reddish brown to yellowish red colour. Subsurface soils have gravelly sandy clay loam to gravelly sandy clay loam to gravelly clay texture and yellowish red colour. These soils are well drained with moderately rapid permeability. The soils are extremely to very strongly acidic in reaction. The gravels in the soil reduce the effective soil volume to supply nutrient and water for the crops
6	Kumaranperoor series	Soils of kumaranperoor series occur on steep to very steep forest and rubber growing tracts of pathanamthiita district. These soils developed on granite gneiss are well drained with moderately rapid to moderate permeability. Quartz gravels and gneissic boulders of varying sizes are distributed throughout the profile. These soils are moderately shallow to deep with gravelly loam to gravelly clay loam surface horizon and gravelly silt loam to gravelly clay subsurface horizon. Colour of surface soil is dark reddish brown to very dark brown and subsurface soils is brown to yellowish red. The soils are medium to slightly acidic. The area under this series is partially cultivated. As far as possible the area may be kept under forest cover. Soils are susceptible to erosion.
7	Kodumon series	Soils of kodumon series occur on moderately steep to steep lands. They are developed from granite gneiss. These soils are deep to very deep. These soils have gravelly loam to gravelly clay loam, dark brown to dark yellowish brown A horizon and gravelly clay loam to gravelly clay, strong brown B horizons. Gravels are

		noticed throughout the profile. The soils of kodumon series are well drained with moderate permeability. The soils are very strongly to strongly acidic. The crops perform well with average level of management. The soils are susceptible to erosion.
<b>8</b>	Mezhuveli Series	Mezhuveli series occur on gently sloping valleys and are developed from colluvio alluvial materials. These are very deep soils with loamy sand to silty loam texture. Colour of surface layer is brown to dark yellowish brown. Subsurface soils have yellowish brown to light grey colour. The soils are extremely to very strongly acidic in reaction. Poor drainage, high water table and occasional overflow limits the choice of crop mostly to paddy.
<b>9</b>	Nedumpuram Series	Nedumpuram soils are noticed on gently sloping lands mostly on river banks. These soils are developed from riverine alluvium. The soils are very deep with sandy clay loam to clay surface texture and dark brown to dark yellowish brown colour. Texture of subsurface soil varies from loamy sand to sandy clay with dark brown to yellowish brown colour. The lower part of the subsoil is sand. The soils are extremely to medium acid in reaction. The physical properties and nutrient status of the soil is above average. The soils are subjected to occasional flooding during rainy season. A variety of crops can be grown with average management.
<b>10</b>	Miscellaneous Soils	Miscellaneous Soils are converted wetlands. Paddy fields are filled up with transported soils for growing crops like coconut, banana, tapioca and vegetables and for other non-agricultural purposes. These soils do not reveal any uniformity in characteristics. In general, these soils are very deep occurring on very gently sloping land subject to slight/nil to moderate erosion.



## **APPROACH AND METHODOLOGY OF PREPARING THE DETAILED PROJECT REPORT (DPR)**

The project area lies in Mallappally and Koipuram Block Panchayats of Pathanamthitta district. The common guidelines provide a flexible framework for the preparation of the Detailed Project Report of the projects under IWMP. The methodology for the preparation of the Detailed Project Report of IWMP – III/2013-14 of Pathanamthitta District is outlined below:

- The project comprises of five micro watersheds. A cluster approach has been followed in the preparation of DPR.
- Review of the official documents on MGNREGS at the national and state levels was done prior to the field level activities.
- Preliminary discussions with elected representatives and officials at the block and district level were conducted.
- Secondary Data: The DPR has to be based on a situation analysis of secondary data and information available from various sources. Basic information about the watershed such as rainfall, temperature, location, topography, hydrology, hydrogeology, soils, geology and geomorphology, demographic and socio-economic characteristics of the population, land-use pattern, major crops and productivity, soil and water conservation practices adopted, irrigation, livestock and micro-enterprisers were collected from different sources such as Census of India, development reports, publications of government departments etc.
- Baseline Survey: A detailed baseline survey was conducted covering all households in the project area. The database thus created is expected to facilitate the assessment of the impact of the watershed development programme on the project area during and after the implementation of the project.
- Participatory Rural Appraisal (PRA): The participation of stakeholders is essential in identifying the problems and needs of the people in the project area and in identifying suitable watershed development activities. A Logical Framework Analysis was done at the project level for identifying the important problems (through problem tree analysis) as well as for the purpose of assessing the present situation. Other PRA techniques like transect walk, social mapping, resource mapping, seasonal calendar, etc., were employed in each micro watershed area.
- Use of GIS and Remote Sensing for Planning: GIS and remote sensing devices have used in the preparation of DPR. Quantum GIS Software was used for preparation of maps. Google Earth images of the project area were also used for the planning. 1: 4000 scale cadastral maps of each village were the base map for planning.

- Indepth interviews, Focus Group Discussions with officials, farmers, entrepreneurs of micro-enterprises etc. were undertaken.
- An assessment of the resources likely to be available from other sources and schemes was done in the initial stages of the plan preparation.
- Field level verification of the identified interventions was undertaken by the DPR preparation team which includes the Technical Support Organisation, Watershed Development Team and Watershed Cell come Data Centre.
- Prioritisation: Prioritisation of the interventions was done taking into account the scientific and technical inputs.
- Identification of Entry Point Activities: The entry point activities were identified taking into account its potential as a model for replication.
- IEC and Capacity Building: IEC and capacity building plan has been formulated to achieve the desired results from watershed management programmes.

## BUDGET

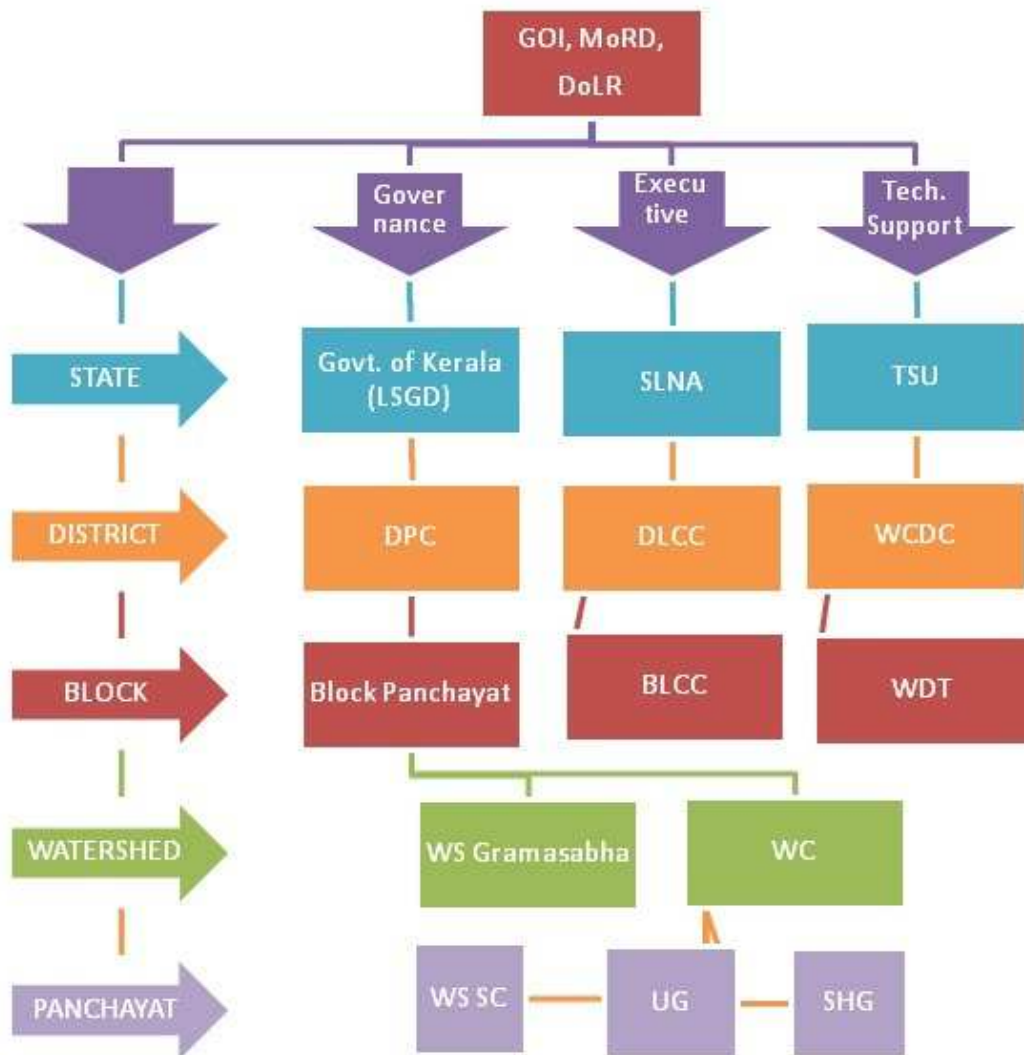
**Table 31: Financial Plan**

Category	Fund Distribution	1 <sup>st</sup> Year	2 <sup>nd</sup> Year	3 <sup>rd</sup> Year	4 <sup>th</sup> Year	5 <sup>th</sup> year	Amount (Rs.)
<b>MANAGEMENT COST</b>							
Administrative cost	10 %	1320000	1320000	1320000	1320000	1320000	<b>6600000</b>
Monitoring	1 %	132000	132000	132000	132000	132000	<b>660000</b>
Evaluation	1 %	132000	132000	132000	132000	132000	<b>660000</b>
<b>PREPARATORY PHASE</b>							
Entry point activities	4 %	2640000	0	0	0	0	<b>2640000</b>
Institution and Capacity Building	5 %	660815	1044595	788055	470455	336080	<b>3300000</b>
<i>SLNA&amp;WCDC</i>	24 %	<i>277413</i>	<i>39387</i>	<i>33000</i>	<i>158400</i>	<i>283800</i>	<i>792000</i>
<i>PIA</i>	76 %	<i>384402</i>	<i>1001208</i>	<i>756055</i>	<i>313055</i>	<i>53280</i>	<i>2508000</i>
DPR Preparation	1 %	594000	33000	0	0	33000	<b>660000</b>
<b>WORK PHASE</b>							
Watershed Development Activities	56 %	0	23661468	6557707	3824688	2916138	<b>36960000</b>
Livelihood activities	9 %	0	857043	2285565	1510000	1287392	<b>5940000</b>
Production system and micro enterprises	10 %	0	1319490	1992750	1968210	1319550	<b>6600000</b>
<b>CONSOLIDATION PHASE</b>	3 %	98000	100000	396000	693000	693000	<b>1980000</b>
<b>TOTAL</b>	100 %	<b>5577815</b>	<b>28595596</b>	<b>13605077</b>	<b>10051353</b>	<b>8170160</b>	<b>66000000</b>

## INSTITUTIONAL ARRANGEMENTS OF IWMP

By adopting the principles and guidelines of Integrated Watershed Management Programme (IWMP), appropriate institutional arrangements are made at various levels in order to have an effective and professional management of watershed projects.

### Institutional set up of IWMP



### Institution Building at State and District Level

Department of Rural Development is the nodal department for the implementation of IWMP at the state level. State Level Nodal Agency (SLNA) is coordinating and providing guidelines for the effective planning and implementation of the individual IWMP projects. District Planning Committee (DPC) is responsible for the planning and implementation of the projects at the district level. To help the DPC and to coordinate the project level activities Watershed Cell Cum Data Centre (WCDC) is working at the

District level. District Level Coordination Committee has been set up under the chairmanship of District Panchayath President, Pathanamthitta. District Collector is functioning as Member Secretary and Principal Agriculture Officer as Member Convener. All the district level officers of the line departments are functioning as members.

### **Institution Building at Block Level**

Mallappally Block Panchayat is the Project Implementation Agency (PIA) for this IWMP project. They are responsible for all the activities under the project starting from the preparation of Detailed Project Report (DPR) till the completion of project. A Block Level Coordination Committee (BLCC) has been formed for the timely implementation of the project and to provide help to the PIA in technical and administrative matters related to the project. President of Mallappally block panchayat is the chairman of the BLCC. President of Koipuram block panchayat is the co-chairman. Watershed Development Team (WDT) has been formed and started working under the PIA. Details of PIA are given below.

**Table 32: Details of Project Implementation Agency (PIA)**

<b>Name of the Project</b>	IWMPI II/ 2013-14, Pathanamthitta
<b>Programme Implementation Agency</b>	Mallappally Block Panchayat
<b>Implementation Officer</b>	Block Development Officer, Mallappally Block Panchayat
<b>Address of PIA</b>	Mallappally Block Panchayat, Mallappally West PO, Pathanamthitta. 689685
<b>Telephone</b>	0469 2682258
<b>Email</b>	<a href="mailto:iwmpmplpy@gmail.com">iwmpmplpy@gmail.com</a> , <a href="mailto:bdomallappally@gmail.com">bdomallappally@gmail.com</a>

### **Institution Building at Grama Panchayat (GP) Level**

Watershed management works are implemented at Grama Panchayat level. The GPs supervise, support and advise Watershed Committee. The different institutions formed as part of IWMP are given below.

#### **Watershed Committee (WC)**

Watershed Committee has a pivotal role to play during and after the project implementation period. The dates of Neerthada Grama Sabha convened in each watershed are given below. These Grama Sabhas constitutes the WCs for each watershed. These WCs will work as the subcommittees of GPs. In the case of Micro Watersheds



spread over more than one GP, separate subcommittees are formed in each GP to manage the watershed development project in the GP.

**Table 33: Details of micro watershed committees**

SI No.	Name of Chairman	Name of Co-chairman	Convener
<b>KOTTOOR WATERSHED (11M23a)</b>			
1	Mr. T. K Sajeev (President Kaviyoor GP)	Ms. Malathi Surendran (President Kunnamthanam GP) Elizabeth Mathew(Block member) Geetha Thomas(Block member) Prof.Madhusoodananan Nair(Block member)	Salil Kumar (Kaviyoor VEO)
<b>PANAYAMPALA WATERSHED (11M23c)</b>			
2	Mr. Soman E. K (Vise President, Kalloppara G. P)	Mr. T. K. Sajeev (President Kaviyoor G.P) Adv Reji Thomas (block president ) Elizabeth Mathew(block Member) Sherly Varky(block Member)	Subin (Kalloppara VEO)
<b>VADAKKEKARA WATERSHED (11M24a)</b>			
3	Ms. Susan Thomson (President Kalloppara GP)	Ms. Marythomas (President Mallappally GP) Ms. Sherly Varky (Block Member) Adv. Raji Thomas(Block Member) Ms. Sreedevi(Block Member) Rathnamma Sasidaran Pillai(Block Member)	Subin (Kalloppara VEO)
<b>MALLAPPALLY WATERSHED (11M25a)</b>			
4	Ms. Sophyamma (Anikkad Panchayat President)	Ms. Mary Thomas(Presidedent, Mallappally GP) Mr. T N Nainan(block member) MS. Sreedevi(block member) Ms. Rathnamma (block member)Sashidharan pillai(block member) Ms. Susan Thomson (President Kalloppara GP)	Mr.Haris P.(Anikkad VEO)
<b>KEEZHUVAIPUR WATERSHED (11M51a)</b>			
5	Ms. Mary Thomas (President Mallappally GP)	Ms. Marythomas (President Mallappally GP) Ms. Rathnamma Sasidaranpillai(Block member) Ms. Bindu CV (Block member) Ms. P. T Seena Kumari (President Puramattom GP) Ms. Sughathakumari (President Ezhumattoor GP) Mr. Joseph John (President Kottangal GP)	Charithardh U N (Mallappally VEO)

### **Self Help Groups (SHGs)**

There are 2595 SHGs working in the project area already. Under IWMP III/ 2013-14 project, the registration process is going on. These groups are organized through credit and thrift activities. Some of the groups are also engaged in micro- enterprises. Both women and men SHGs are active in the project area. Details of the SHGs in the project area are given below.

## User Groups (UGs)

User groups are proposed to be formed to manage the different activities or assets created under the programme on a long term basis. The user groups are expected to collect user charges from their members, oversee the works and manage the benefits. At present, user groups to implement Entry Point Activities have been formed. Later on, it will be formed for each work.

## IWMP PROJECT MANAGEMENT

**Table 34: Implementation phases of IWMP**

Phase	Name	Duration
I	Preparatory Phase	1-2 years
II	Watershed Works Phase	2-3 years
III	Consolidation and Withdrawal Phase	1-2 years

Activities under each phase are mentioned below.

### Preparatory Phase:

- Institution building, training and empowerment of institutions like watershed committee (WC), user groups (UGs) and self help groups (SHGs) through Capacity Building and IEC activities.
- Preparation of Detailed Project Report with detailed action plans through participatory exercises. Entry Point Activity shall be taken up during this phase to establish credibility of the Watershed Development Team (WDT) and create a rapport with the village community.

### Watershed Works Phase:

- This phase is the heart of the programme in which the DPR will be implemented.
- Execution of yearly action plans (NRM works, Production System and Micro-enterprises and Livelihood activities will be implemented)

### Consolidation and Withdrawal Phase:

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

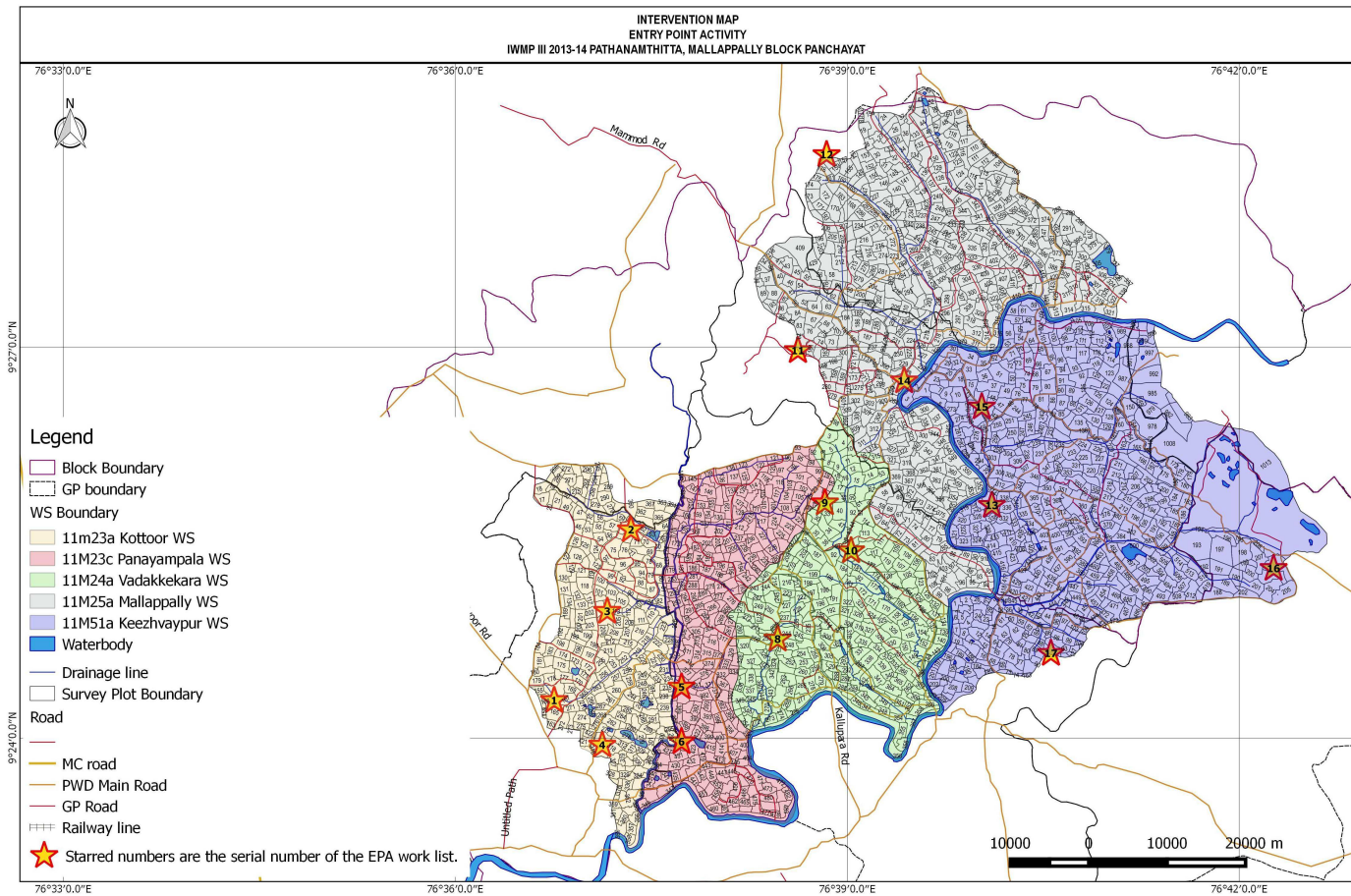
## ENTRY POINT ACTIVITY

Taking up entry point activities to establish credibility of the Watershed Development Team (WDT) and create a rapport with the watershed community. The entry point activities are suggested in the project area are given below.

**Table 35: List of Entry Point Activities in the project area**

Sl. No	Activity	Grama Panchayath	Area Benefitted (ha)	Capacity	No of Persons Benefitted	Estimated Amount	Latitude	Longitude
<b>WS Kottoor WS</b>								
1	Well Renovation at Thumbukkal Colony	Kaviyoor	1.62	171.77 cum	500	48,688	9°24'17.0"N	76°36'46.0"E
2	Renovation of Farm pond at Mundiyaikulam		0.404	30.64 M3		1,01,552	9°25'36.0"N	76°37'21.0"E
3	Punniam Punched vegetable cultivation		1.5	20 cent	20	2,000	9°24'58.0"N	76°37'10.0"E
4	Renovation and side protection of Cheriya Pollakkal Farm Pond		1.43	1238 cum	456	1,56,992	9°23'57.0"N	76°37'08.0"E
<b>Panayampala WS</b>								
5	Well Renovation at Vennivila Padasekharam	Kallupara	2.02	28.63 cum	325	1,03,961	9°24'23.0"N	76°37'44.0"E
6	Desiltation of Drainage Channels of Cheriya Padom Padasekharam		2.4	280 cum	180	36,000	9°23'58.0"N	76°37'44.0"E
7	Desiltation, deepening and construction of shutter at Kaithottil, Panayambala thodu.		2.4	396 cum	180	7,08,215	9°23'58.0"N	76°37'44.0"E
8	Desiltation and Side protection of Puthiyathottil house		3	115.43 cum	250	1,74,132	9°24'45.0"N	76°38'28.0"E
<b>Vadakkera WS</b>								
9	Well Recharging Units-15 nos at Maprampallil		26.7	15 wells	150	1,65,688	9°25'48.0"N	76°38'50.0"E
<b>Mallappally</b>								
10	Renovation of Public well and Rain water Harvesting Tank at Govt. U P school Thuruthikkadu	kalluppara	0.4	25000 L	115	28,736	9°25'26.0"N	76°39'02.0"E
11	Renovation of Public well and Rain water Harvesting Tank at Mallappally Block Panchayat	Mallappally	0.445	30000 L	250	35,000	9°26'58.0"N	76°38'38.0"E
12	Well Recharging units-18 nos at Mulel Colony	Anicadu	40.4	18 wells	1500	1,74,023	9°28'29.0"N	76°38'50.0"E
<b>Keezhvaypur WS</b>								
13	Construction of Rooftop Rainwater Harvesting Ferro cement Tank and preparation of Medicinal Plant Nursery at Ayurveda Hospital at Keezhvaipur	Mallappally	0.242	30000L	350	2,29,548	9°25'46.0"N	76°40'07.0"E

14	Seedlings distribution of various Fruit plants & Plantation Crops		44	1050 Nos	1050	1,41,150	9°26'44.0"N	76°39'26.0"E
15	Biogas plant at CMHSS		2	15kg/day	2000	3,09,315	9°26'32.0"N	76°40'02.0"E
	Construction of Rooftop Rainwater Harvesting Tank at CMHSS			50000 L	2000		9°26'32.0"N	76°40'02.0"E
16	Desiltation and Side protection of Dugout Pond at Ambedkar Colony	Ezhumattur	2.6	30.64 cum	750	1,60,000	9°25'18.0"N	76°42'16.0"E
17	Renovation of Well at Kavunkal Colony	Puramattom	2.2	85.88 cum	220	65,000	9°24'39.0"N	76°40'34.0"E
<b>Total</b>			<b>133.76</b>		<b>10296</b>	<b>2640000</b>		



## **MAJOR PROBLEMS IDENTIFIED**

The five micro watersheds in the project area face many common problems because of the similarities existing among the micro watersheds. The major problems identified through PRA techniques which have led to the identification of the interventions to be undertaken under the IWMP project are Drinking water shortage, soil erosion, inefficient conservation measures of soil and moisture, lack of proper waste management, waste dumping into the water bodies, fields kept uncultivated, shortage of agricultural labourers, unscientific construction of roads and foot paths, etc.

### **Watershed Work Phase**

The major activities in this phase are

- i. Watershed Development Works or Natural Resource Management (NRM)
- ii. Livelihood Activities for the poor people
- iii. Production System and Microenterprises

The main watershed development interventions are as follows,

### **Watershed Development Works/Natural Resource Management (NRM) Activities**

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

- a) Well Recharging
- b) Construction of stone pitched Contour wall
- c) Construction of Rain Pits
- d) Water harvesting Structures
- e) Afforestation
- f) Protection of Natural springs (*Oli*)
- g) Renovation and Conservation of water bodies
- h) Sub surface dam for conserving ground water
- i) Check dams
- j) Protection and Renovation of natural Drainages
- k) Mulching
- l) Renovation of VCB's

## **Livelihood Support**

Common Guidelines for Watershed Development Projects gives priority to livelihood support for landless/assetless persons. Nine per cent of the total project cost is assigned to support the livelihood activities of landless/assetless households. This aims to maximize the utilization of potential generated by watershed activities and in creating sustainable livelihoods for households within the watershed area.

The guiding principles for livelihood improvement initiatives are:

1. Livelihood improvement initiatives emphasize on natural resource based activities and conform to principles of equity, gender sensitivity and transparency. It strives to:-

- a) Enhance livelihood opportunities for the poor through investment for asset creation and improvement in productivity and income.
- b) Improve access of the marginalized communities including SC/ST, landless/ assetless people, women etc to the benefits.
- c) Select the beneficiaries in a transparent manner.

2. Livelihood initiatives for landless/assetless households should aim at improved household income, participation and division of labour, access to information, knowledge, appropriate technologies and resources. Improving livelihood opportunities by promoting homemade food processing units, supply of cow, goat, duck, chicks etc. is also another objective. Manufacturing of eco-friendly alternative products, collection and marketing of vegetables, milk, egg etc., unit for value added production of vegetables, milk, egg etc., Cattle rearing, back yard poultry, pisciculture, production unit of pickles, squash, jam etc., providing subsidy to acquire coconut tree climbing machine and weed cutter, marketing of eco-friendly products etc. are the major activities proposed under livelihood initiatives.

## **Production System and Microenterprises**

According to the Common Guidelines for Watershed Development Projects 10 per cent of the total project cost is to be assigned to support the production system and micro enterprises. This component aims to: (a). promote diversified production/farming system based livelihood activities/ interventions (b). encourage farmers to adopt and upscale successful experiences of proven technologies, integrated farming systems and improved farming practices for livelihood augmentation. (j) Agricultural production enhancement is planned by supporting the progressive farmers in Horticulture, Paddy cultivation, Dairy, Poultry, Fodder cultivation, innovative farming, irrigation, etc.

The scope for convergence with other schemes and programmes has been examined in identifying interventions under IWMP. The interventions under IWMP are expected to help in restoring the ecological balance of the project area, conserving the natural resources and in improving the livelihood opportunities of the people. Nursery formation, promotion of horticulture and paddy cultivation and progressive farming system, bio- fertilizer and pesticide production unit, promotion of cattle rearing, poultry farm, fodder grass cultivation, vermin compost manufacturing unit, promotion of progressive farming systems like rains helter etc., promotion of modern irrigation technologies like drip irrigation etc. , mushroom cultivation, pisciculture, cultivation of fallow land, asola cultivation and floriculture are the main activities proposed for the enhancement of production system and promotion of micro enterprises.

### SCOPE FOR CONVERGENCE

**Table 36: Scope for Convergence**

Sl. No.	Type of intervention	Department/Schemes which can be converged with IWMP
1.	Renovation of Pond (Desilting)	MGNREGA
2.	<i>Varambu Pothiyal</i> and Contour Bund	MGNREGA
	Rain water harvesting Pit	MGNREGA
	Well Recharge from Roof Top	MGNREGA
3.	Aforestation	MGNREGA, LSGI Department of Social Forestry
4.	Horticulture	Department of Agriculture MGNREGA, LSGI
5.	Dairy development	Department of Dairy development LSGI
6.	Waste Management Activities	Swatch Bharat Mission, NRHM, LSGI
7.	Exposure Visit , soil testing and Training / Water quality analysis	ATMA , CCDU Soil Survey
8.	Public Market	HADA / NRLM/ SHM

## CAPACITY BUILDING PLAN

**Table 37: Plan for institution and capacity building**

No	Item	Number of Activities	Estimated Amount (Rs)
1	User Group Formation	150	140800
2	SHG Formation	50	60000
3	Formation of Federation	6	50000
<b>Total</b>			<b>250800</b>

**Table 38: IEC Plan**

Sl. No.	Activity	Estimated Amount (Rs)					
		Year 1	Year 2	Year 3	Year 4	Year 5	Total
1	International Day – Water Day Celebration	5000	5000	5000	5000	5000	25000
2	Environment Day	5000	5000	5000	5000	5000	20000
3	Earth Day	5000	5000	5000	5000	5000	25000
4	Forest Day	0	5000	5000	2500	2500	15000
5	Soil Day	0	5000	5000	2500	2500	15000
6	Street Play	60000	0	0	0		60000
7	Brochure/ Stickers	5000	0	5000	0		10000
8	Hoardings with WS map and details	50000	0	0	0		50000
9	Awareness programme for School Children on Environment	1000	1000	1000	1000	1000	5000
10	Competitions in schools	5000	5000	5000	5000	5000	25000
11	Distribution of Name slips and time table cards	6000	6000	6000	6000	1000	30000
12	Calendar	10000	10000	10000	10000	10000	50000
	<b>Total</b>	<b>152000</b>	<b>47000</b>	<b>52000</b>	<b>42000</b>	<b>22000</b>	<b>330000</b>



**Table 39: Plan for capacity building activities**

<b>Sl No.</b>	<b>Training Programme</b>	<b>Expected Outcome</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>	<b>Expected Expense</b>
1	Training for Elected Representatives in the watershed area	Ensuring the public participation	50000	58800	20000	20000	0	<b>148800</b>
2	Training for Members of the watershed committee	Ensuring the participation of the watershed committee members along the Programme..	50000	50000	33000	0	0	<b>133000</b>
3	Training for Political leaders, activists, members of various organisations etc.	Ensuring the participation of all social activists for the better watershed management	20000	0	29600	0	0	<b>49600</b>
4	Skill Development and up gradation training programme for progressive farmers and micro entrepreneurs	Promotion of progressive farming and allied activities and help to develop micro entrepreneurs	0	200000	150000	153000	150000	<b>653000</b>
5	Exposure Visit	Understanding best Practices in other similar areas.	0	101100	0	0	0	<b>101100</b>
6	Training for SHGs, JLGs and Federation	Development of livelihood activities	40000	30000	35000	22900	20000	<b>147900</b>
7	Training for UG Members	Ensuring the sustainability better management of assets.	57125	57125	57125	27125	30000	<b>228500</b>
8	Training for PTA members	For reach awareness to children and their parents	20000	20000	26300	0	0	<b>66300</b>
9	Training for club, library, and literacy workers, etc.	Developing them as the mediators of IWMP and the guardians of the natural recourses	25000	25000	25000	25000	0	<b>100000</b>
10	Training for Watershed Community, ASHA Workers and Health Department	Making aware the people about importance of soil and water management for a healthy community	40000	50000	50000	26600	0	<b>166600</b>

11	Training for Watershed Community	Enhancing awareness about the scheme as well the watershed management	64750	64750	64750	34750	30000	<b>259000</b>
12	Training on progressive agriculture practices for Farmers, CDS & ADS members	Increased level of organic farming within the families.	20000	46500	50000	30000	0	<b>146500</b>
13	Formation of farmers clubs and promotion of innovative farm practices	Motivating the upcoming farmers and to lead more to it	7100	30000	20000	20000	0	<b>77100</b>
14	Environmental Camps for Selected NSS, Nature Club and NCC members	To conduct 2-3 days camp during Onam, Christmas vacation and to make sure the good attitude towards environment.	14900	50000	25000	25000	0	<b>114900</b>
15	Formation of <i>Paristhithi Sena</i> within the Selected volunteers from each Watershed area	Ensuring the maintenance and sustainability of the watershed area and work as a vigilant group for environment protection	9200	20000	40000	0	30000	<b>99200</b>
16	Training for management of plastic and e-waste management	Making aware people about importance of waste management	7900	30000	30000	20000	0	<b>87900</b>
17	Skill development training for workers of MGNREGS who completed 100 days of work	Ensuring quality soil and water conservation works in MGNREGA	0	40000	41200	0	0	<b>81200</b>
18	Training programme for water conservation activities	Inspiring the people for implementing water harvesting practices.	8600	20000	15000	0	15000	<b>58600</b>
<b>Total</b>			<b>434575</b>	<b>893275</b>	<b>711975</b>	<b>404375</b>	<b>275000</b>	<b>2719200</b>

## ANNUAL ACTION PLAN

Table 40: Watershed wise action plan

Type of Activity		1st Year		2nd Year		3rd Year		4th Year		Grant Total	
		IWMP	Expecting WDF	IWMP	Expecting WDF	IWMP	Expecting WDF	IWMP	Expecting WDF	IWMP	Expecting WDF
Watershed Development Works	11m23a	2108732	119541	1029729	72081	815267	63537	850563	59539	<b>4495681</b>	314698
	11M23c	2187558.5	153129	2126577	148860	81900	5733	207165	14502	<b>4603200</b>	322224
	11M24a	3227280	225910	1329405	93058	409395	28658	362880	25402	<b>5328960</b>	373027
	11M25a	7224848	505739	1663392	116437	814653	57026	793747.5	55562	<b>10496640</b>	734765
	11M51a	8283020	579811	1024642	71725	2060998	144270	666859	46680	<b>12035519</b>	842486
<b>Total</b>		<b>23753868</b>	<b>1584130</b>	<b>7173744</b>	<b>502162</b>	<b>3732288</b>	<b>299223</b>	<b>2881215</b>	<b>201685</b>	<b>36960000</b>	<b>2587200</b>
Production System and Micro Enterprises	11m23a	160580	27299	240990	40968	240530	40890	160700	27319	<b>802800</b>	136476
	11M23c	164270	27926	256050	43529	237120	40310	164560	27975	<b>822000</b>	139740
	11M24a	190610	32404	286150	48646	284760	48409	190080	32314	<b>951600</b>	161772
	11M25a	374900	63733	565200	96084	560550	95294	373750	63538	<b>1874400</b>	318648
	11M51a	429130	72952	644360	109541	645250	109693	430460	73178	<b>2149200</b>	365364
<b>Total</b>		<b>1319490</b>	<b>224313</b>	<b>1992750</b>	<b>338768</b>	<b>1968210</b>	<b>334596</b>	<b>1319550</b>	<b>224324</b>	<b>6600000</b>	1122000
Seed money to SHGs for starting Micro enterprises and enhance the livelihood of Landless people.		<b>Grant/SM</b>	<b>No. of Group</b>	<b>Grant/SM</b>	<b>No. of Group</b>	<b>Grant/SM</b>	<b>No. of Group</b>	<b>Grant/SM</b>	<b>No. of Group</b>	<b>Grant/SM</b>	<b>No. of Group</b>
	11m23a	101153	4	351729	14	143197	6	126441	5	722520	29
	11M23c	103572	4	355358	14	151405	6	129465	5	739800	30
	11M24a	131288	5	396932	16	164110	7	164110	7	856440	34
	11M25a	236174	9	554262	22	495218	20	401306	16	1686960	67
	11M51a	284856	11	627284	25	556070	22	466070	19	1934280	77
<b>Total</b>		<b>857043</b>	<b>34</b>	<b>2285565</b>	<b>91</b>	<b>1510000</b>	<b>60</b>	<b>1287392</b>	<b>51</b>	<b>5940000</b>	<b>238</b>
<b>Grant Total</b>		<b>25930401</b>		<b>11452059</b>		<b>7210498</b>		<b>5488157</b>		<b>49500000</b>	

**Table 41: Action plan for natural resource management**

SI No.	Category of NRM works	Kottoor WS					Panayampala WS				
		Y1	Y2	Y3	Y4	Total	Y1	Y2	Y3	Y4	Total
1	Stone pitched Contour Bunding	524257	0	0	0	<b>524257</b>	630441	0	0	0	630441
2	Recharging of Well	283500	0	0	0	<b>283500</b>	330750	0	0	0	330750
3	Water Harvesting Tanks	456750	0	0	0	<b>456750</b>	262500	0	0	0	262500
4	Afforestation	16090	0	0	0	<b>16090</b>	18460	0	0	0	18460
5	Renovation of Pond	0	550693.5	288020.3	34650	<b>873364</b>	0	54600	34650	0	89250
6	Renovation of Well	139995.5	137812.5	0	0	<b>277808</b>	26250	87570	0	53550	167370
7	Protection of Streams	688138.5	357945	527247	490581	<b>2063912</b>	0	1965947	47250	153615	2166812
8	Rrenovation of Check Dam	0	0	0	0	<b>0</b>	349650	0	0	0	349650
9	Construction of VCB	0	0	0	0	<b>0</b>		0	0	0	0
10	Renovation of VCB	0	0	0	0	<b>0</b>	126000	0	0	0	126000
11	Construction of Ramp Way	0	0	0	0	<b>0</b>	456035	0	0	0	456035
12	Renovation of WHT	0	0	0	0	<b>0</b>	5932.5	0	0	0	5932.5
	<b>Total</b>	<b>2108731</b>	<b>1046451</b>	<b>815267.3</b>	<b>525231</b>	<b>4495680</b>	<b>2206019</b>	<b>2108117</b>	<b>81900</b>	<b>207165</b>	<b>4603200</b>

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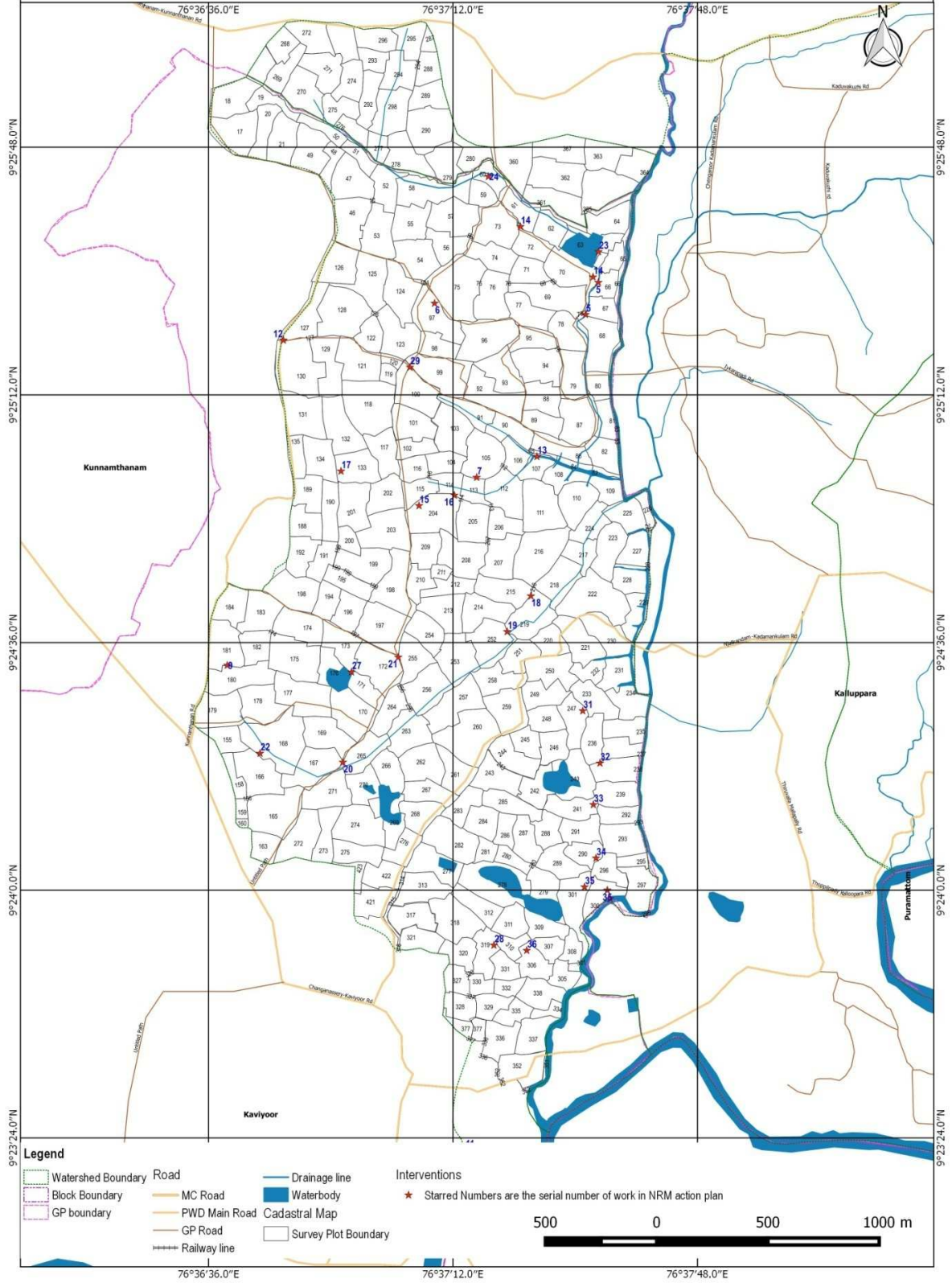
Sl No.	Category of NRM works	Vadakkera WS					Mallappally WS				
		Y1	Y2	Y3	Y4	Total	Y1	Y2	Y3	Y4	Total
1	Stone pitched Contour Bunding	780675	0	0	0	<b>780675</b>	3160091	0	0	0	<b>3160091</b>
2	Recharging of Well	614250	0	0	0	<b>614250</b>	1134000	0	0	0	<b>1134000</b>
3	Water Harvesting Tanks	262500	0	0	0	<b>262500</b>	2084250	0	0	0	<b>2084250</b>
4	Afforestation	16170	0	0	0	<b>16170</b>	33750	0	0	0	<b>33750</b>
5	Renovation of Pond	173250	0	236250	0	<b>409500</b>	0	0	0	421260	<b>421260</b>
6	Renovation of Well	0	10500	10500	5250	<b>26250</b>	86625	89250	21000	0	<b>196875</b>
7	Protection of Streams	0	1197735	162645	419055	<b>1779435</b>	388497	1010142	945903	592987.5	<b>2937530</b>
8	Construction of Check Dam	0	0	0	0	<b>0</b>	240975	0	0	0	<b>240975</b>
9	Renovation of VCB	0	0	0	78330	<b>78330</b>	0	0	0	0	<b>0</b>
10	Bio-fencing	99750	0	0	0	<b>99750</b>	0	0	0	0	<b>0</b>
11	leading Channel	189525	0	0	0	<b>189525</b>	0	0	0	0	<b>0</b>
12	Soil protection activity	967575	0	0	0	<b>967575</b>	0	0	0	0	<b>0</b>
13	Spring Protection	0	105000	0	0	<b>105000</b>	287910	0	0	0	<b>287910</b>
	<b>Total</b>	<b>3103695</b>	<b>1313235</b>	<b>409395</b>	<b>502635</b>	<b>5328960</b>	<b>7416098</b>	<b>1099392</b>	<b>966903</b>	<b>1014248</b>	<b>10496640</b>

Continue..

Sl No.	Category of NRM works	Keezhvaypur WS				
		Y1	Y2	Y3	Y4	Total
1	Stone pitched Contour Bunding	3177085	0	0	0	<b>3177085</b>
2	Recharging of Well	1407000	21000	10500	10500	<b>1449000</b>
3	Water Harvesting Tanks	1575000	10500	0	10500	<b>1596000</b>
4	Afforestation	34130	0	0	0	<b>34130</b>
5	Renovation of Pond	524155	416850	105000	42000	<b>1088005</b>
6	Renovation of Well	10500	99645	33180	10500	<b>153825</b>
7	Protection of Streams	956025	442517.3	944322.8	532140	<b>2875005</b>
8	Construction of Check Dam	315000	0	365820	61219	<b>742039</b>
9	Spring Protection	286755	0	0	0	<b>286755</b>
10	Gabion Check dam	602175	0	0	0	<b>602175</b>
11	Percolation pits	31500				<b>31500</b>
	<b>Total</b>	<b>8919325</b>	<b>990512.3</b>	<b>1458823</b>	<b>666859</b>	<b>12035519</b>

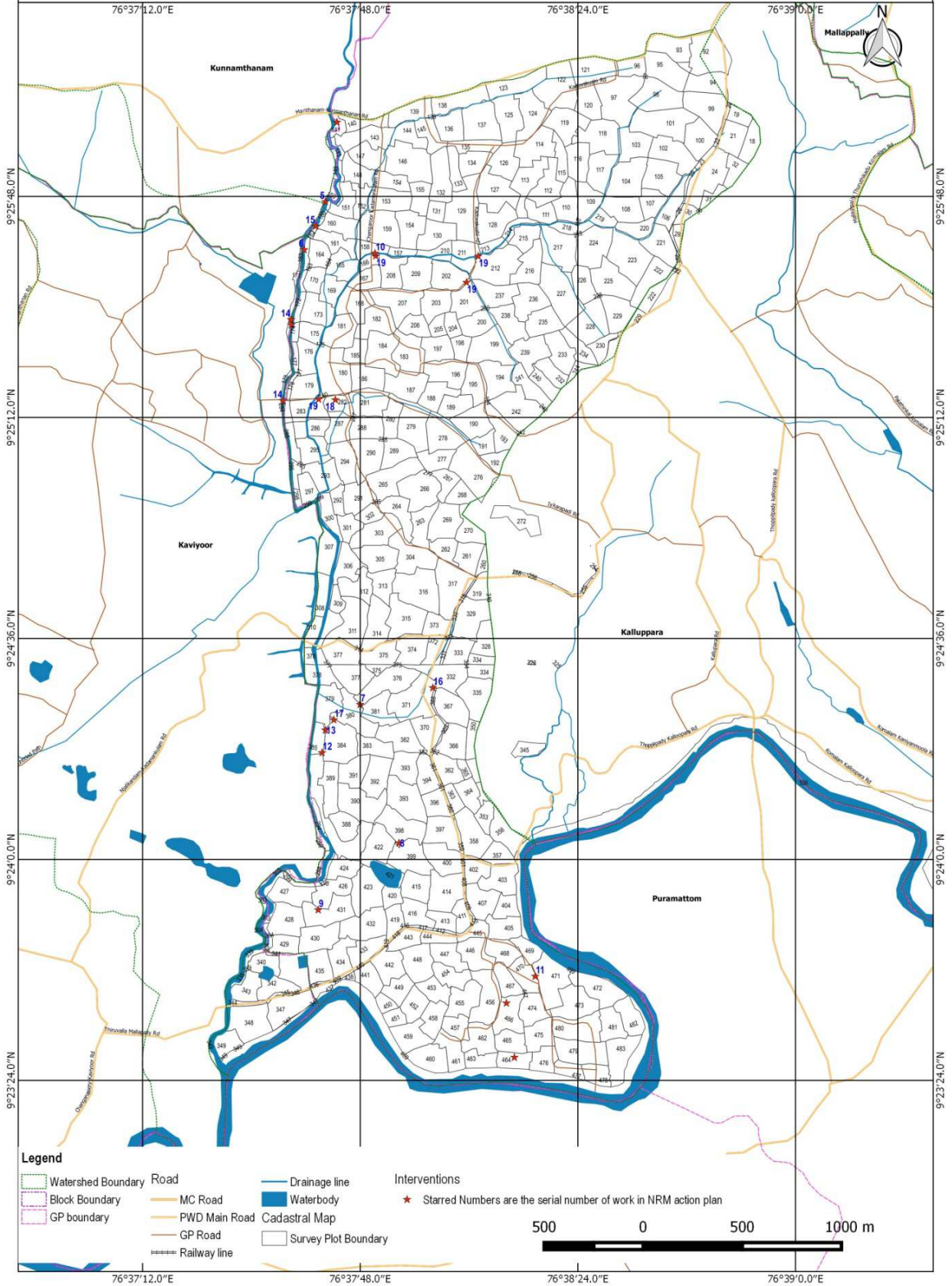
## Intervention Maps

**INTERVENTION MAP  
KOTTOOR WATERSHED (11M23a)  
IWMP III/2013-14 PATHANAMTHITTA, MALLAPPALLY BLOCK PANCHAYAT**

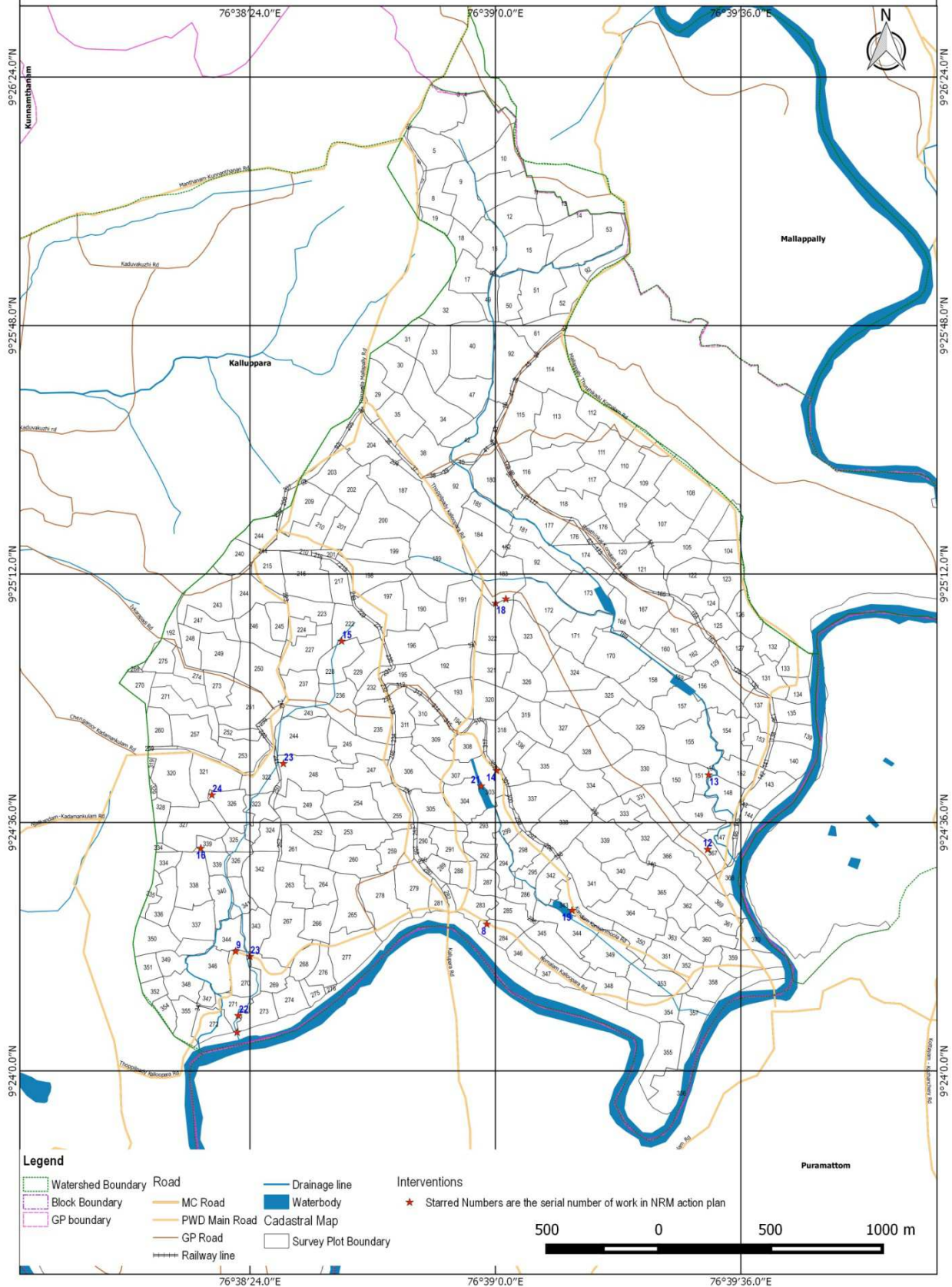




**INTERVENTION MAP**  
**PANAYAMPALA WATERSHED (11M23c)**  
**IWMP III/2013-14 PATHANAMTHITTA, MALLAPALLY BLOCK PANCHAYAT**

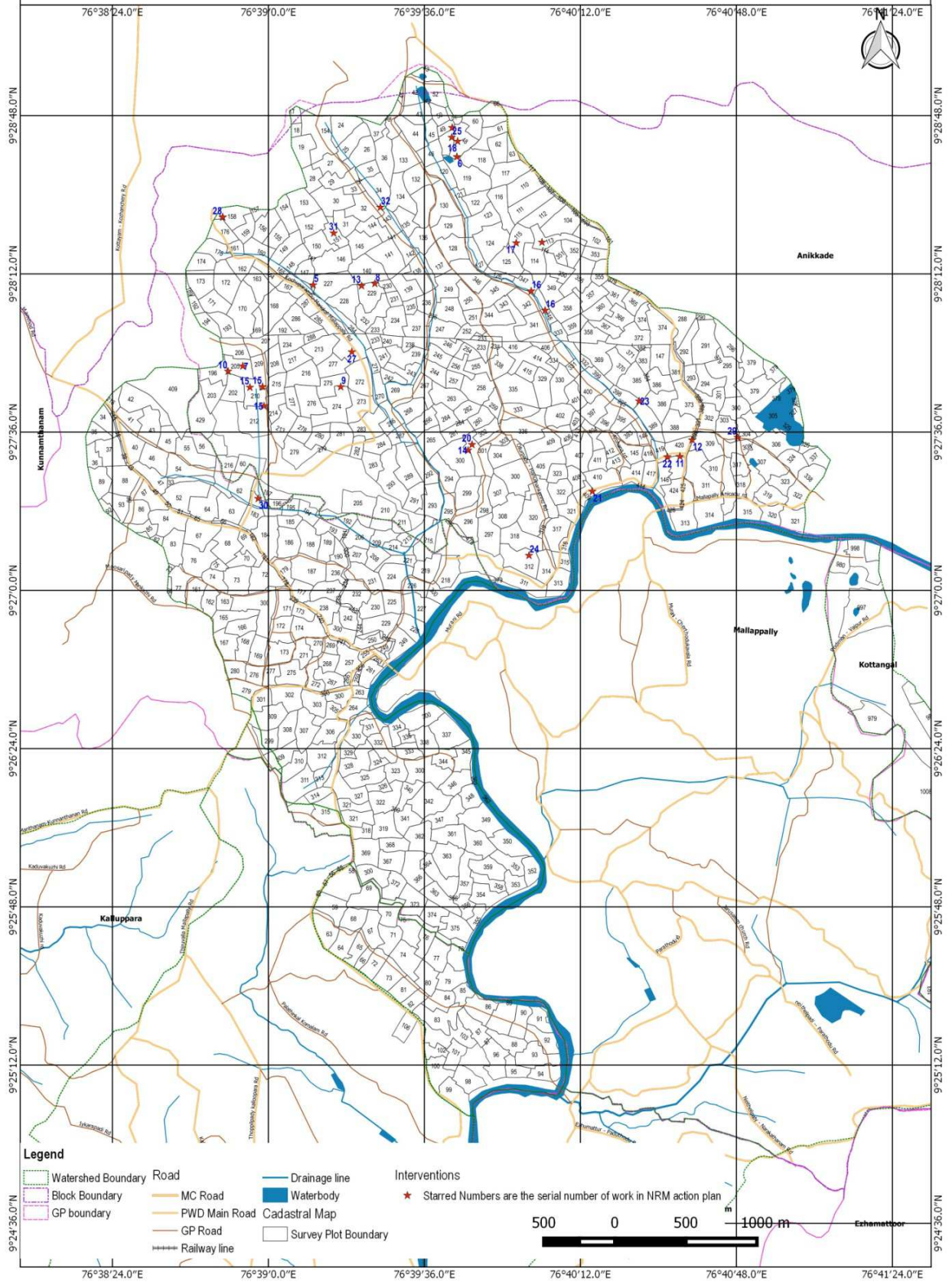


**INTERVENTION MAP**  
**VADAKKEKARA WATERSHED (11M24a)**  
**IWMP III/2013-14 PATHANAMTHITTA, MALLAPPALLY BLOCK PANCHAYAT**





**INTERVENTION MAP**  
**MALLAPPALLY WATERSHED (11M25a)**  
**IWMP III/2013-14 PATHANAMTHITTA, MALLAPPALLY BLOCK PANCHAYAT**



**Legend**

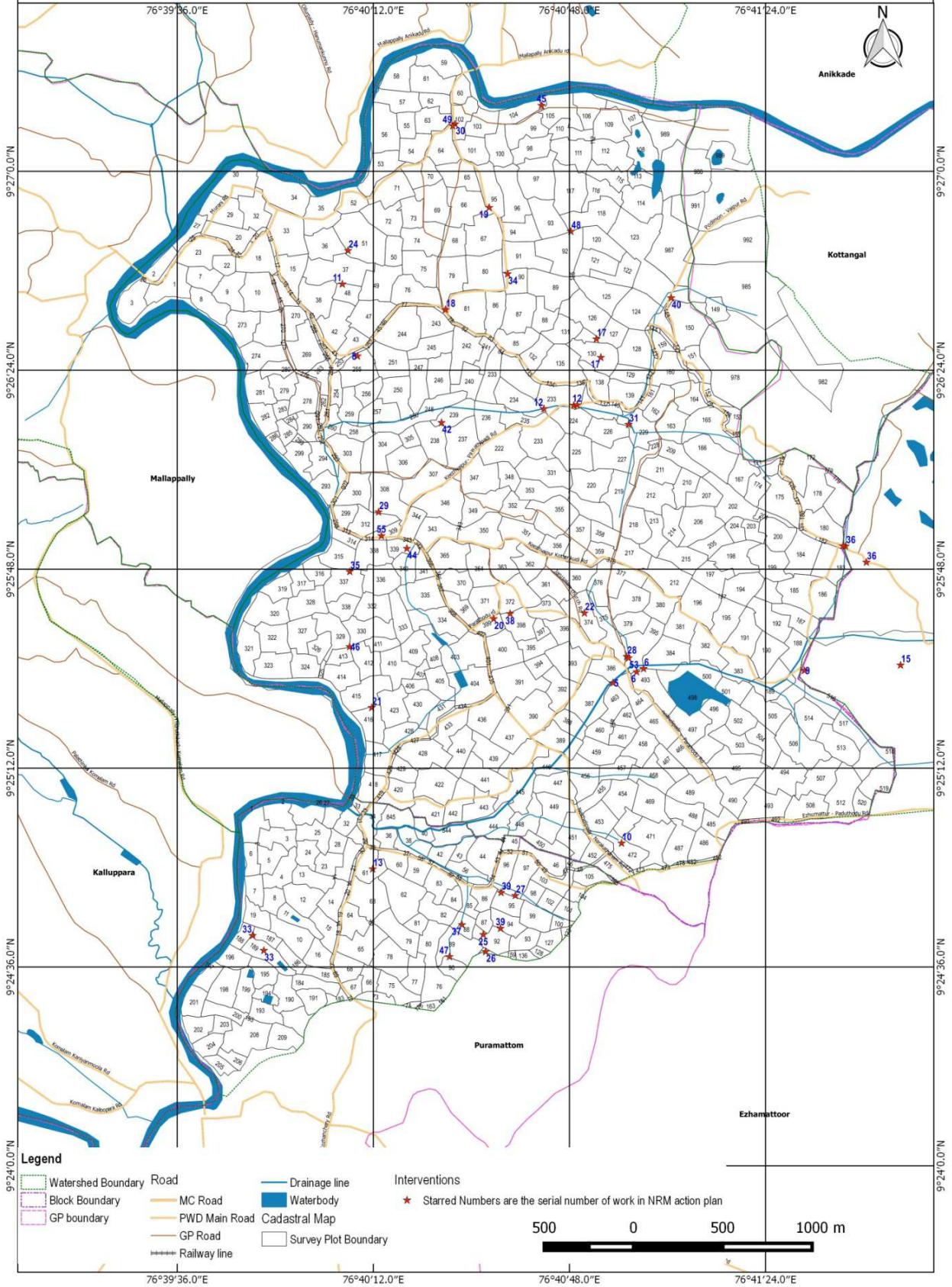
- Watershed Boundary
- Block Boundary
- GP boundary
- Road
- MC Road
- PWD Main Road
- GP Road
- Railway line
- Drainage line
- Waterbody
- Cadastral Map
- Survey Plot Boundary

**Interventions**

- ★ Starred Numbers are the serial number of work in NRM action plan



**INTERVENTION MAP  
KEEZHVAYPUR WATERSHED (11M51a)  
IWMP III/2013-14 PATHANAMTHITTA, MALLAPPALLY BLOCK PANCHAYAT**





**Table 42: Fund distribution of livelihood action plan**

1	Total Project Coast									66000000
2	Fund for livelihood plan (Rs)									5940000
3	Fund for Seed money distribution (Rs)									4323912
4	Fund for Grant to SHG federations and Major activities									1616088
<b>Seed Money Distribution</b>										
	<b>Seed Money</b>	<b>No. of Group benefit</b>	<b>Seed Money</b>	<b>No. of Group benefit</b>	<b>Seed Money</b>	<b>No. of Group benefit</b>	<b>Seed Money</b>	<b>No. of Group benefit</b>	<b>Seed Money</b>	<b>No. of Group benefit</b>
<b>11M23a</b>	101153	5	151729	6	143197	7	126441	5	522520	23
<b>11M23c</b>	103572	5	155358	7	151405	8	129465	6	539800	26
<b>11M24a</b>	131288	7	196932	9	164110	8	164110	8	656440	32
<b>11M25a</b>	236174	11	354262	17	295218	13	295218	14	1180872	55
<b>11M51a</b>	284856	14	427284	20	356070	17	356070	17	1424280	68
	<b>857043</b>	<b>42</b>	<b>1285565</b>	<b>59</b>	<b>1110000</b>	<b>53</b>	<b>1071304</b>	<b>50</b>	<b>4323912</b>	<b>204</b>
<b>Grant in aid for major activities</b>										
	<b>Grant</b>	<b>No. of Group benefit</b>	<b>Grant</b>	<b>No. of Group benefit</b>	<b>Grant</b>	<b>No. of Group benefit</b>	<b>Grant</b>	<b>No. of Group benefit</b>	<b>Grant</b>	<b>No. of Group benefit</b>
<b>11M23a</b>	0	0	200000	1	0	0	0	0	200000	1
<b>11M23c</b>	0	0	200000	1	0	0	0	0	200000	1
<b>11M24a</b>	0	0	200000	1	0	0	0	0	200000	1
<b>11M25a</b>	0	0	200000	1	200000	1	106088	1	506088	3
<b>11M51a</b>	0	0	200000	1	200000	1	110000	1	510000	3
	<b>0</b>	<b>0</b>	<b>1000000</b>	<b>5</b>	<b>400000</b>	<b>2</b>	<b>216088</b>	<b>2</b>	<b>1616088</b>	<b>9</b>

**Table 43: Micro watershed wise livelihood action plan**

Sl. No.	Proposed activities	Kottoor WS					Panayampala WS				
		Y1	Y2	Y3	Y4	Total	Y1	Y2	Y3	Y4	Total
	<b>Seed Money for JLGs</b>										
1	Manufacturing of Eco-friendly products	12500	0	27797	0	<b>40297</b>	0	12958	26940	0	<b>39898</b>
2	Collection and Marketing of locally available products	0	26729.2	0	0	<b>26729.2</b>	25172	0	0	26000	<b>51172</b>
3	Production of value added products using locally available resources	0	0	23000	0	<b>23000</b>	46000	0	23665	0	<b>69665</b>
4	Calf rearing (5 Nos. in 1 Unit)	25000	0	25000	25000	<b>75000</b>	0	25000	0	25500	<b>50500</b>
5	Goat rearing	0	0	25000	54041	<b>79041</b>	0	25000	25000	0	<b>50000</b>
6	Back yard poultry	20500	0	0	0	<b>20500</b>	0	0	41000	41665	<b>82665</b>
7	Lease farming	18152.8	0	17400	20400	<b>55952.8</b>	17400	17400	34800	36300	<b>105900</b>
8	Pisciculture	0	0	0	0	<b>0</b>	15000	0	0	0	<b>15000</b>
9	Pickles production	0	0	25000	0	<b>25000</b>	0	25000	0	0	<b>25000</b>
10	Note book production unit	0	50000	0	0	<b>50000</b>	0	0	0	0	<b>0</b>
11	Umbrella production units	0	25000	0	0	<b>25000</b>	0	0	0	0	<b>0</b>
12	production of detergents, lotion etc.	25000	0	0	27000	<b>52000</b>	0	25000	0	0	<b>25000</b>
13	Duck farming	0	25000	0	0	<b>25000</b>	0	25000	0	0	<b>25000</b>
14	Ornamental fish culture	0	25000	0	0	<b>25000</b>	0	0	0	0	<b>0</b>
	<b>Total</b>	<b>101152.8</b>	<b>151729.2</b>	<b>143197</b>	<b>126441</b>	<b>522520</b>	<b>103572</b>	<b>155358</b>	<b>151405</b>	<b>129465</b>	<b>539800</b>
	<b>Grant in aid for JLGs</b>	0	0	0	0	<b>0</b>	0	0	0	0	<b>0</b>
1	Collection of eco-friendly products of JLGs and its value addition and marketing	0	200000	0	0	<b>200000</b>	0	200000	0	0	<b>200000</b>
	<b>Total</b>	<b>0</b>	<b>200000</b>	<b>0</b>	<b>0</b>	<b>200000</b>	<b>0</b>	<b>200000</b>	<b>0</b>	<b>0</b>	<b>200000</b>

Continue ...

No.	Proposed activities	Vadakkera WS					Mallappally WS				
		Y1	Y2	Y3	Y4	Total	Y1	Y2	Y3	Y4	Total
	<b>Seed Money for JLGs</b>										
1	Manufacturing of Eco-friendly products	25888	13500	13710	25000	<b>78098</b>	13474	25000	0	25918	<b>64392</b>
2	Collection and Marketing of locally available products	0	26032	0	0	<b>26032</b>	0	50462	25000	25000	<b>100462</b>
3	Production of value added products using locally available resources	23000	24000	0	23000	<b>70000</b>	0	23000	23000	23000	<b>69000</b>
4	Calf rearing (5 Nos. in 1 Unit)	25000	0	26000	26000	<b>77000</b>	25000	50000	50918	0	<b>125918</b>
5	Goat rearing	0	0	0	26000	<b>26000</b>	25000	50000	25000	0	<b>100000</b>
6	Back yard poultry	0	41000	0	20500	<b>61500</b>	20500	41000	20500	20500	<b>102500</b>
7	Lease farming	17400	17400	18400	17400	<b>70600</b>	52200	34800	35800	34800	<b>157600</b>
8	Pisciculture	15000	0	30000	0	<b>45000</b>	0	30000	15000	15000	<b>60000</b>
9	Pickles production	0	0	25000	0	<b>25000</b>	25000	0	25000	25000	<b>75000</b>
10	Jam, squash production	0	25000	25000	0	<b>50000</b>	0	0	0	0	<b>0</b>
11	Note book production unit	0	0	0	26210	<b>26210</b>	0	0	0	0	<b>0</b>
12	production of detergents, lotion etc.	0	25000	26000	0	<b>51000</b>	25000	50000	0	51000	<b>126000</b>
13	Production of Purse, bag, ornaments, dolls, glass paintings	0	0	0	0	<b>0</b>	25000	0	50000	25000	<b>100000</b>
14	Duck farming	25000	25000	0	0	<b>50000</b>	25000	0	0	25000	<b>50000</b>
15	Ornamental fish culture	0	0	0	0	<b>0</b>	0	0	25000	25000	<b>50000</b>
	<b>Total</b>	<b>131288</b>	<b>196932</b>	<b>164110</b>	<b>164110</b>	<b>656440</b>	<b>236174</b>	<b>354262</b>	<b>295218</b>	<b>295218</b>	<b>1180872</b>
	<b>Grant in aid for JLGs</b>										
1	Collection of eco-friendly products of JLGs and its value addition and marketing	0	200000	0	0	<b>200000</b>	0	0	200000	0	<b>200000</b>
2	Tailoring Unit	0	0	0	0	<b>0</b>	0	200000	0	0	<b>200000</b>
3	Production of rice and spices powder	0	0	0	0	<b>0</b>	0	0	0	106088	<b>106088</b>
	<b>Total</b>	<b>0</b>	<b>200000</b>	<b>0</b>	<b>0</b>	<b>200000</b>	<b>0</b>	<b>200000</b>	<b>200000</b>	<b>106088</b>	<b>506088</b>

Continue ....

Sl. No.	Proposed activities	Keezhvaypur WS				
		Y1	Y2	Y3	Y4	Total
	<b>Seed Money for JLGs</b>					
1	Manufacturing of Eco-friendly products	38056	25000	26000	25000	<b>114056</b>
2	Collection and Marketing of locally available products	25500	0	25000	25470	<b>75970</b>
3	Production of value added products using locally available resources	0	23000	23000	46000	<b>92000</b>
4	Calf rearing (5 Nos. in 1 Unit)	50000	51000	76270	25000	<b>202270</b>
5	Goat rearing	50000	50584	50000	25000	<b>175584</b>
6	Back yard poultry	20500	20500	41000	0	<b>82000</b>
7	Lease farming	35800	52200	34800	69600	<b>192400</b>
8	Pisciculture	15000	30000	30000	15000	<b>90000</b>
9	Pickles production	25000	25000	25000	0	<b>75000</b>
10	Jam, squash production	25000	25000	0	25000	<b>75000</b>
15	production of detergents, lotion etc.	0	50000	25000	50000	<b>125000</b>
17	Duck farming	0	50000	0	50000	<b>100000</b>
18	Ornamental fish culture	0	25000	0	0	<b>25000</b>
	<b>Total</b>	<b>284856</b>	<b>427284</b>	<b>356070</b>	<b>356070</b>	<b>1424280</b>
	<b>Grant in aid for JLGs</b>					
1	Collection of eco-friendly products of JLGs and its value addition and marketing	0	200000	0	0	<b>200000</b>
2	Value addition and marketing of JLG products like vegetables, egg, pickles etc.	0	0	200000	0	<b>200000</b>
4	Production of rice and spices powder	0	0	0	110000	<b>110000</b>
	<b>Total</b>	<b>0</b>	<b>200000</b>	<b>200000</b>	<b>110000</b>	<b>510000</b>



**Table 44: Micro watershed wise action plan for production system and micro enterprises**

Sl. No.	Activity	Kottoor WS					Panayampala WS				
		Y1	Y2	Y3	Y4	Total	Y1	Y2	Y3	Y4	Total
1	Nursery	0	0	0	0	0	0	0	0	0	0
2	Rain shelter	33500	0	100500	0	134000	0	67000	67000	67000	201000
3	Distribution of agriculture equipments	30000	24500	0	3000	57500	30000	0	0	0	30000
4	Distribution of bio-fertilizers and pesticides	0	10000	15000	5000	30000	100000	10000	0	0	110000
5	Production of vermin compost	8000	0	0	0	8000	8000	8000	4000	0	20000
6	Promotion of innovative irrigation facilities	0	0	73000	0	73000	0	73000	73000	0	146000
7	Fallow land cultivation	0	20000	10000	10000	40000	0	10000	0	0	10000
8	Dairy development	30000	6000	12000	30000	78000	12000	30000	24000	30000	96000
9	Fodder cultivation	24950	4990	9980	24950	64870	9980	24950	19960	24950	79840
10	Poultry farming	1030	0	1700	0	2730	3090	0	2060	1860	7010
11	Pisciculture	6000	0	4800	0	10800	1200	6000	0	7200	14400
12	Mushroom cultivation	27100	135500	13550	67750	243900	0	27100	27100	13550	67750
13	Pisciculture and floriculture in abandoned quarries	0	40000	0	20000	60000	0	0	20000	20000	40000
	<b>Total</b>	<b>160580</b>	<b>240990</b>	<b>240530</b>	<b>160700</b>	<b>802800</b>	<b>164270</b>	<b>256050</b>	<b>237120</b>	<b>164560</b>	<b>822000</b>

Continue...

Sl. No.	Activity	Vadakkera WS					Mallappally WS				
		Y1	Y2	Y3	Y4	Total	Y1	Y2	Y3	Y4	Total
1	Nursery	0	0	0	0	0	200000	0	0	0	200000
2	Rain shelter	0	100500	100500	67000	268000	0	167500	201000	100500	469000
3	Distribution of agriculture equipments	30000	4500	4500	3000	42000	30000	7500	9000	6000	52500
4	Distribution of bio-fertilizers and pesticides	100000	15000	5000	10000	130000	100000	25000	30000	15000	170000
5	Production of vermin compost	6400	0	0	8000	14400	4000	4000	4800	2400	15200
6	Promotion of innovative irrigation facilities	0	109500	0	73000	182500	0	182500	109500	109500	401500
7	Fallow land cultivation	10000	10000	10000	10000	40000	10000	10000	30000	20000	70000
8	Dairy development	12000	0	30000	12000	54000	12000	30000	30000	24000	96000
9	Fodder cultivation	9980	0	24950	0	34930	9980	24950	24950	19960	79840
10	Poultry farming	1030	0	2060	2060	5150	4120	0	0	0	4120
11	Pisciculture	1200	6000	0	5020	12220	4800	6000	0	8640	19440
12	Mushroom cultivation	0	40650	67750	0	108400	0	67750	81300	67750	216800
13	Pisciculture and floriculture in abandoned quarries	20000	0	40000	0	60000	0	40000	40000	0	80000
	<b>Total</b>	<b>190610</b>	<b>286150</b>	<b>284760</b>	<b>190080</b>	<b>951600</b>	<b>374900</b>	<b>565200</b>	<b>560550</b>	<b>373750</b>	<b>1874400</b>

Continue....

Sl. No.	Activity	Keezhvaypur WS				
		Y1	Y2	Y3	Y4	Total
1	Nursery	200000	0	0	0	<b>200000</b>
2	Rain shelter	0	167500	167500	167500	<b>502500</b>
3	Distribution of agriculture equipments	15000	7500	7500	7500	<b>37500</b>
4	Distribution of bio-fertilizers and pesticides	50000	25000	25000	25000	<b>125000</b>
5	Production of vermin compost	8000	4000	4000	4000	<b>20000</b>
6	Promotion of innovative irrigation facilities	0	182500	219000	182500	<b>584000</b>
7	Fallow land cultivation	40000	10000	20000	0	<b>70000</b>
8	Dairy development	30000	24000	30000	24000	<b>108000</b>
9	Fodder cultivation	29940	19960	24950	19960	<b>94810</b>
10	Poultry farming	3090	2400	0	0	<b>5490</b>
11	Pisciculture	6000	6000	6000	0	<b>18000</b>
12	Mushroom cultivation	27100	135500	81300	0	<b>243900</b>
13	Pisciculture and floriculture in abandoned quarries	20000	60000	60000	0	<b>140000</b>
	<b>Total</b>	<b>429130</b>	<b>644360</b>	<b>645250</b>	<b>430460</b>	<b>2149200</b>

## EXPECTED OUTCOME

**Table 45: Expected outcomes from the project area**

Sl. No	Activity	Target Group	Pre project period status	Post project period Status
1	Renovation of irrigation canals/Ponds	Farmers	<ul style="list-style-type: none"> <li>• Irrigation canals filled with sediment deposit</li> </ul>	<ul style="list-style-type: none"> <li>• 57 drainages and 21 ponds are deepen resulting in the following benefits</li> <li>• Smoothen water flow</li> <li>• Storage of excess water resulting ground water recharge</li> <li>• Expansion of area irrigated</li> <li>• Production enhancement(5%)</li> </ul>
2	Construction of Check Dam/VCB	Farmers	<ul style="list-style-type: none"> <li>• Lack of adequate waterconservation measures</li> </ul>	<ul style="list-style-type: none"> <li>• 20 Nos of the Check Dam/VCB will bring the following benefit:</li> <li>• Water Conservation</li> <li>• Sufficient water availability</li> <li>• Easy movement of agricultural implements and machines</li> </ul>
3	Management of water resources	Watershed community	<ul style="list-style-type: none"> <li>• Inadequate water</li> <li>• Water resources are polluted</li> </ul>	<ul style="list-style-type: none"> <li>• Recharging of 401 open wells and Rainwater Harvesting Ferro cement Tank (12 Nos) will ensure the following results:</li> <li>• Water availability in summer season (12 Months)</li> <li>• Increasing of ground water table</li> </ul>
4	Stone/Earthen Bund	Watershed community	<ul style="list-style-type: none"> <li>• Weak/Insufficient Soil Conservation measures</li> </ul>	<ul style="list-style-type: none"> <li>• 59631 running metre Stone and Earthen bund will prevent soil erosion and conserve moisture</li> </ul>

5	Livelihood activities	Poor people (landless or asset less)	<ul style="list-style-type: none"> <li>37.9 per cent of families live below poverty line.</li> </ul>	<ul style="list-style-type: none"> <li>At least 204 SHGs will get aid for strengthening their livelihood activities every year.</li> <li>Generate employment opportunities (At least for 1020 Households)</li> <li>Empowerment of land less, asset less poor people especially women who are home makers without having any monetary benefit.</li> </ul>
6	Production system	Small and marginal farmers, asset less households	<ul style="list-style-type: none"> <li>Shortage Agricultural production</li> </ul>	<ul style="list-style-type: none"> <li>Rise in production of paddy, milk, , eggs, vegetables etc</li> </ul>

#### **WATERSHED DEVELOPMENT FUND & EXIT PROTOCOL**

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

For other cost intensive farming system based livelihood activities/interventions such as Aquaculture, Horticulture, Agro-Forestry, Animal Husbandry etc. on private land directly benefiting the individual farmers, the contribution of farmers will be 20 percent for general category and 10 percent for SC/ST beneficiaries and the project funds will meet the cost of farming system activity to a maximum limit of an amount equal to double of the unit cost of the project for watershed development (i.e. Rs 12,000/15,000 per ha, as the case may be). Farmers' contribution i.e. 20 percent for general category and 10 percent

for SC/ST of this amount (i.e. a maximum of Rs 4800/6000 and Rs 2400/3000 as the case may be, respectively for general category and SC/ST beneficiaries) will go to WDF.

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

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

## **CONCLUSION**

The Pathanamthitta (IWMP- III /2013-14-Mallapally) projects aims to make significant changes in the life of the people in the watershed area. The project envisages improvement in productivity by controlling soil erosion and harvesting water through stone pitched contour walls (*kallukayyala*), bio-fencing etc. The acute shortage of water experienced in parts of the project area will be addressed by increasing the water table through roof top well rechargeing and rain pits. Better agricultural production will be realised by increasing water availability in the agriculture lands through conservation of ground water resources like springs, drains, ponds, check dams etc. Through interventions under the project, production of vegetables, banana and coconut will improve. Livelihood opportunities by promoting manufacturing and marketing of eco-friendly alternative products, collection and marketing of local products, value added production, cattle rearing, back yard poultry, pisciculture, production unit of pickles, squash, jam etc., practice bush clearance and coconut climbing with machines etc. The scopes for convergence with other schemes and programmes have been examined in identifying interventions under IWMP. The interventions under IWMP are expected to help in restoring the ecological balance of the project area, conserving the natural resources and in improving the livelihood opportunities of the people.