Integrated Watershed Management Programme (IWMP)

Detailed Project Report (DPR)

IWMP III/2011-12

Kattappana Block Panchayath

January 2015

Technical Support Organization

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ABBREVIATIONS

APL	Above Poverty Line
AAP	Annual Action Plan
ATMA	Agricultural Technology Management Agency
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
MGNREGS	Mahatma Gandhi National Rural Employment Guarantee Scheme
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

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.

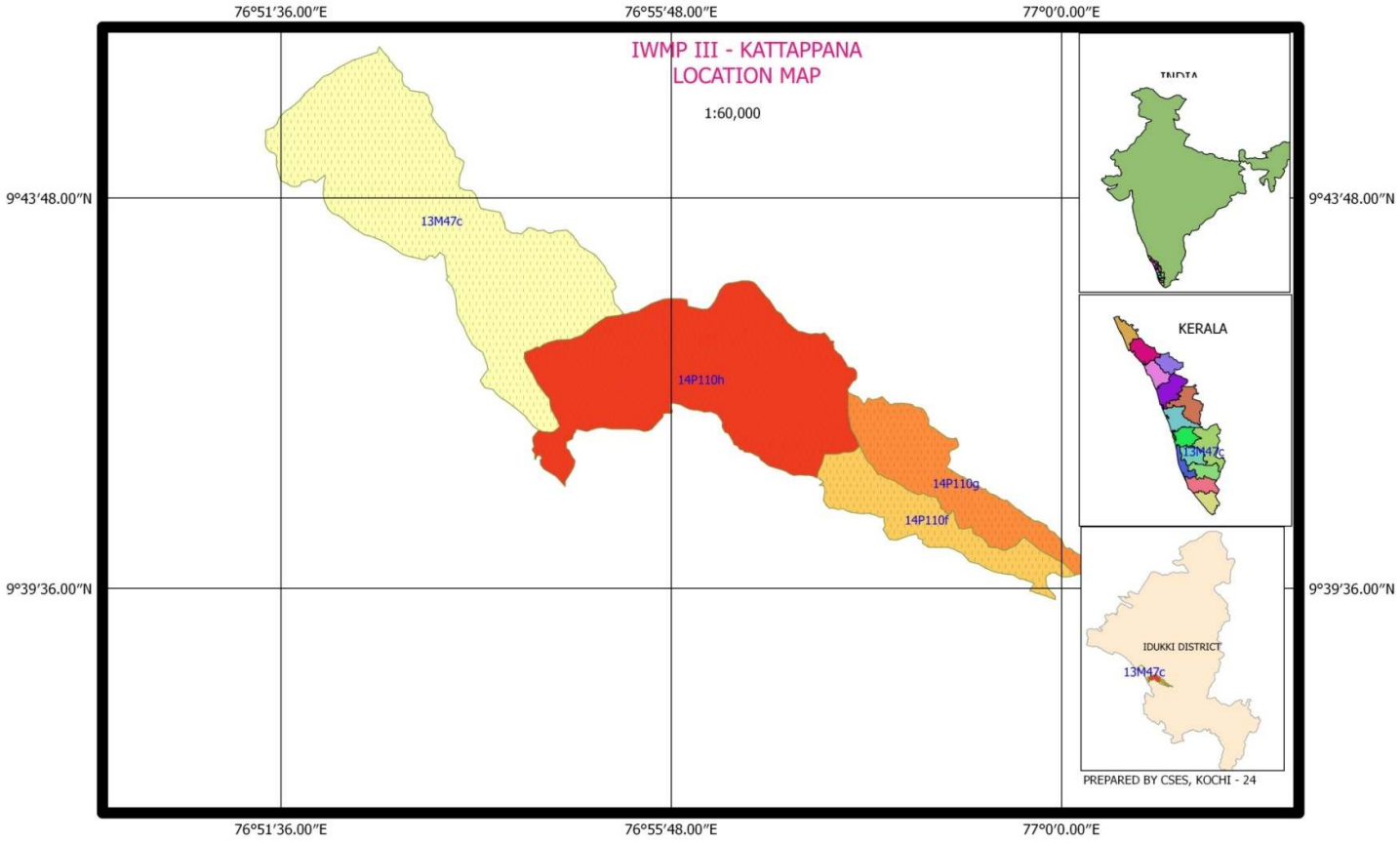
Project Background

IWMP III/2011-12 Kattappana watershed project is located in Azhutha, Idukki and Kattappana Block Panchayath of Idukki district. The project comprises of four micro-watersheds namely Thangakkanam (13M47c), Kottamala (14P110h), Erumpadam (14P110f) and Pasuppara-Cheenthalar (14P110g). The project, with a total treatable area of 4630 hectares has been selected for treatment under the Integrated Watershed Management Programme (IWMP). The project area covers the grama panchayats of Arakkulam, Elappara, and Upputhara. The details of the project area are given below. There are 2761 households in the project area and the total population is 10432. The total cost of the project is Rs.694.5 lakhs. Three watersheds except thangakkanam are the microwatersheds of Periyar. Thangakkanam is the catchment area of Muvattupuzhayar. The project area lies in between the longitudes of 76032' 26.88" to 76040' 26.88"and latitudes of 9°40'41.49" to 9°45'25.77"N

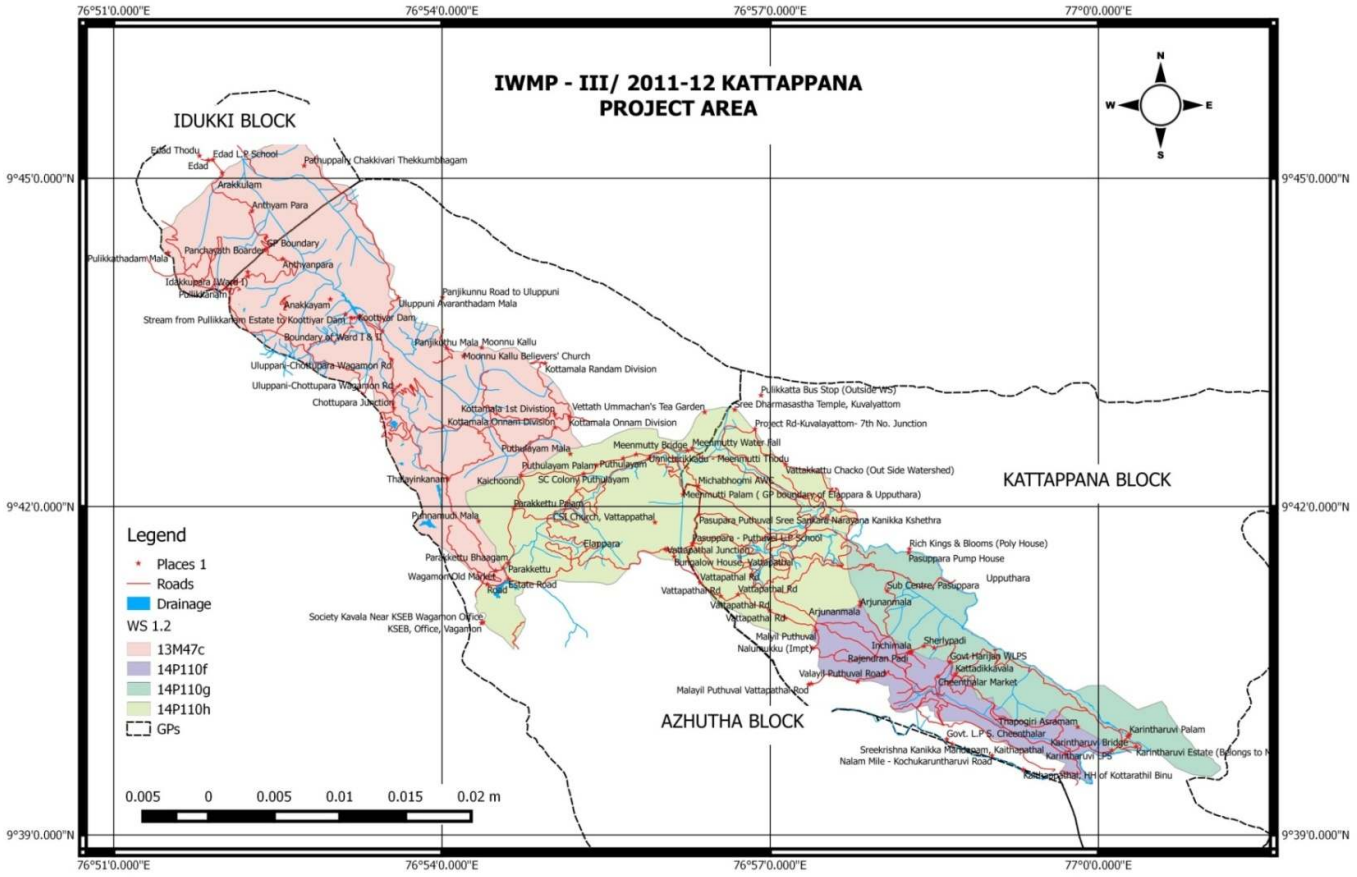
Table: 1: Project Back Ground of IWMP III/2011-12

Location	Micro Watersheds		GP	Total Area (in ha)	Treatable Area (in ha)	Project Amount (in Lakh)
	WS	Code No.				
State: Kerala District- Idukki Block: Kattappana, Azhutha, Idukki	Thankakkanam	13M47c	Arakkulam	2273.48	2207	331.05
			Elappara			
	Kottamala	14P110h	Elappara	1594.26	1547	232.05
			Upputhara			
	Erumpadam	14P110f	Upputhara	410.66	400	60.00
	Pasuppara - Cheenthlar	14P110g	Upputhara	490.14	476	71.40
Total				**4768.54**	**4630**	**694.50**

Location Map



Project Area



Physiography, Relief and Drainage

Project area falls in the hill ranges of Western Ghats. The average elevation ranges from 326 – 1100 M above mean sea level. Major part of the area having a slope of 30% and above. Project area is incised by a number of deep cut streams. Water in the area drains into *Periyar and Muvattupuzhayar.*

Table 2: Physiography

Name of Project	Physiography	Elevation Range (M)	Relief (M)	Major Drainage
IWMP III/2011-12 Kattappana	Highrange	326 to 1100	800	Periyar & Muvattupuzha

Criteria for Selection of the Project

The scores and criteria for selection of the watershed management programme is given in Table 3. The weightage under different criteria for IWMP III/2011-12 Kattappana 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 than10% 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: Scores as per SPSP

Name of Project	Score													
IWMP III/ 2011-12 Idukki	i	ii	iii	iv	v	vi	vii	viii	ix	X	xi	xii	xiii	**Total**
	7.5	5	0	10	3	0	15	5	5	10	10	0	10	80.5

Source: Primary Project Report

Climate

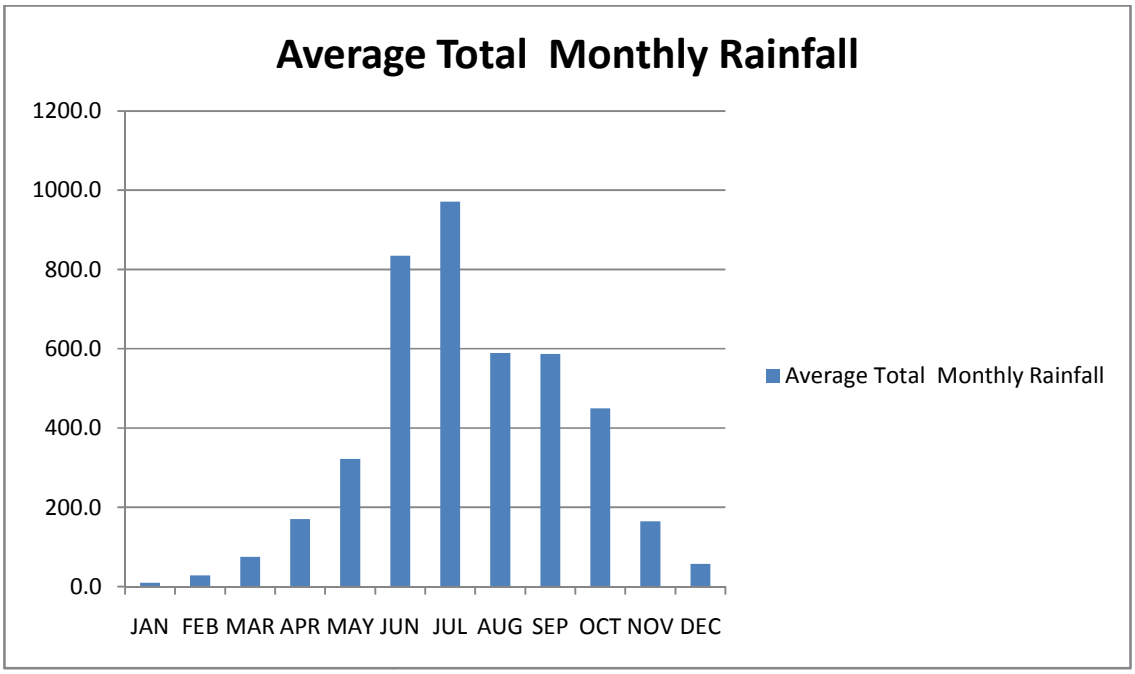
Rainfall

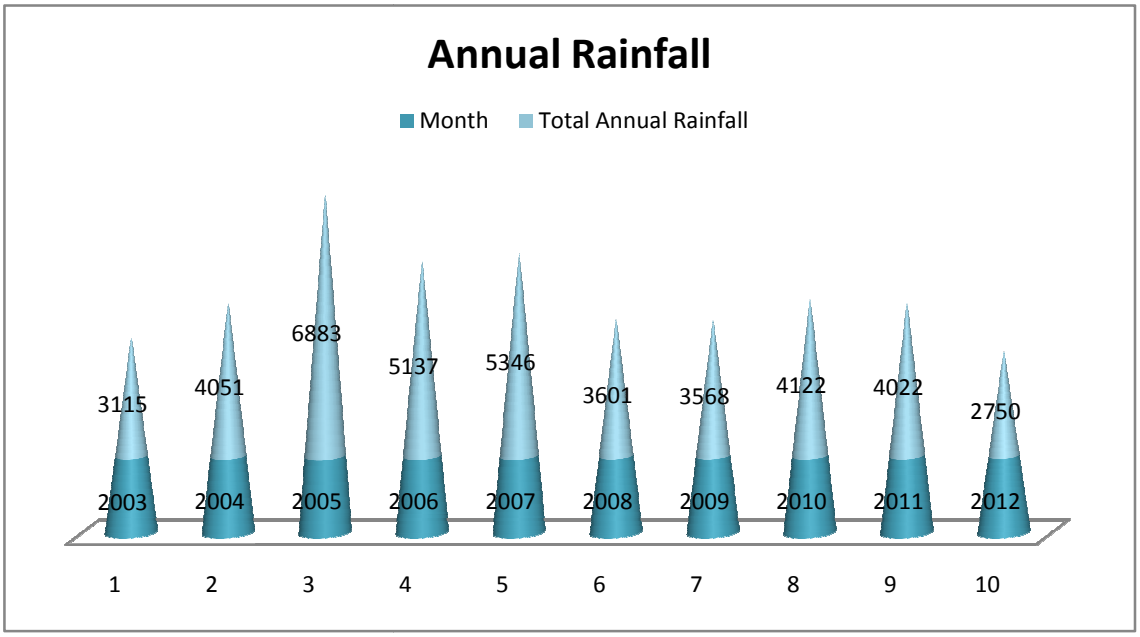
The project area experiences humid tropical climate with a bountiful rainy season through the northeast and southwest monsoons and mild summer. The hot season is from March to May and it is followed by South West monsoon season from June to September. South west monsoon contributes the major part of the annual rainfall. Average annual rainfall is 4259mm.There is no drought or dry spells. The South-West monsoon contributes nearly 70% of annual rainfall followed by 16% of North-Eatst monsoon. Summer showers contribute remaining 14%. The humidity is higher during the monsoon period (from June to September). Though the district did not experience severe or most severe drought the deficient summer showers had badly affected the crops and drinking water availability.

Table 5: Monthly Rainfall from 2003 to 2012 (in mm)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Total Annual Rainfall	Average Annual Rainfall	Average Monthly Rainfall
2003	0.0	52.4	128.0	161.0	76.0	506.0	568.0	593.0	167.0	828.0	35.5	0.0	**3115**	**4259**	**260**
2004	0.0	14.0	33.0	138.0	787.7	966.0	604.0	623.7	452.0	348.7	82.0	2.0	**4051**		**338**
2005	19.3	42.0	97.0	280.0	208.3	844.8	1995.2	525.8	1759.4	457.0	349.0	305.0	**6883**		**574**
2006	1.0	0.0	91.0	140.0	1144.0	906.0	1156.0	422.0	569.3	564.0	144.0	0.0	**5137**		**428**
2007	0.0	28.3	1.0	254.0	227.0	1162.0	1606.0	700.0	677.0	555.0	95.2	40.0	**5346**		**445**
2008	20.0	96.0	166.0	44.0	131.0	634.0	858.5	617.0	556.5	358.0	120.0	0.0	**3601**		**300**
2009	7.0	0.0	129.0	15.0	234.0	562.0	1011.0	318.0	638.0	290.0	234.0	130.0	**3568**		**297**
2010	5.0	0.0	53.0	161.8	218.5	1131.0	800.0	667.0	282.0	492.2	280.0	31.0	**4122**		**343**
2011	15.0	51.0	25.0	241.0	127.2	1055.0	632.5	763.0	453.0	411.0	190.0	58.0	**4022**		**335**
2012	32.0	0.0	30.0	268.0	65.0	579.0	482.0	671.0	316.0	191.0	115.6	0.0	**2750**		**229**
% of Rainfall	14%					70%				16%			**100%**		

Source: Indian Meteorological Department, Government of India, Thiruvananthapuram. (Peermade Station)





Meteorological Parameters

Since the project area does not have full fledged climatic stations, the details from Department of Ground water, Thodupuzha and Pampadumpara station maintained by Kerala Agricultural University are given below.

Temperature

The minimum temperature ranges from 18.2^0 C to 22.6^0 C where as the maximum temperature ranges from 22.6^0 C to 29^0 C.

Table 6: Temperature °C 2003 to 2013

Years	January		February		March		April		May		June		July		August		September		October		November		December	
	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	Min	max	min	max	min	max	min	max
2003	18.5	27.8	20.3	28.1	20.7	27.5	21.6	27.0	20.9	25.1	19.8	24.1	18.6	22.1	18.8	22.6	19.1	24.1	19.0	24.2	19.1	24.1	18.9	26.2
2004	18.6	27.4	19.2	28.8	20.2	27.6	20.2	27.6	18.7	23.9	17.9	22.8	17.9	22.2	17.5	22.2	17.7	23.7	18.9	24.9	17.7	23.7	20.3	26.3
2005		27.2		28.2		28.6		26.9		26.4		23.4		22.2		23.1		23.0		24.6		24.9		25.6
2006		30.7		28.2		27.7		26.4		25.0		23.7		22.1		22.8		23.2		24.7		23.2		26.1
2007		27.0		27.5		29.1	26.0	27.7		26.0		23.4		21.6		22.5		22.6		24.0		22.6		25.4
2008		27.0		26.8		26.4		27.2		27.1		24.5		23.0		23.6		24.9		26.5		24.9		27.9
2009		29.2		30.6		29.4		28.3		27.1		24.7		22.5		24.0		26.1		26.5		25.0		28.0
2010		28.8		31.2		31.6		29.4		27.6		24.9		23.5		22.6		24.7		24.9		24.7		26.6
2011		28.1		29.3		30.0		28.5		28.0		23.7		23.1		23.2		24.4		27.8		24.4		27.9
2012		29.0		30.8		29.7		28.6		26.8		24.0		23.4		23.3		24.5		26.7		24.5		27.3
2013		30.8		29.5		28.4		28.4		26.8		22.8		22.4		23.5		23.6				23.6		
Average	18.6	28.5	19.8	29	20.5	28.7	22.6	27.8	19.8	26.3	18.9	23.8	18.3	22.6	18.2	23	18.4	24.1	19	25.5	18.4	24.1	19.6	26.7

Source: Department of Ground Water, Thodupuzha

Relative Humidity

The relative humidity is more during the morning hours and is less during evening hours. During morning hours it ranges from 85.0 to 98.45% and during evening hours it ranges from 40.8 to 87.3%.

Evaporation

Evaporation is more during summer months of March to May. In general it ranges from 1.11 to 5.0 mm/day. During the south west monsoon it ranges from 1.11 to 2.13 mm/day.

Sunshine Hours

Sunshine ranges from 1.8 to 9.5 hrs/day. Maximum sunshine is during the month of February. The months of June to August record the minimum sunshine due to cloudy sky. Generally good sunshine hours are recorded in the months of December to May.

Wind

The wind speed ranges from 3.90 to 7.95 km/hour. The wind speed is high during the months of March to July and November to January.

Geology

As per geological survey of India the project area falls completely in the Archaen to lower proterozoic, MigmatiteComplex: Composite Gneisses and Schist (PGC-II)

Ground Water

Ground water is mainly extracted through open dug wells and bore wells. Open dug wells are the main drinking water resources in the watershed area.Tthere are 815 open dug wells, 315 bore wells and 144 ponds *(Oli)* are existing in the project area. Depth of the open dug well ranges betwenn 5 m to 20m from the ground level and the diameter between 1.75 m to 3.50m. The open dug wells in hilly area will dry up during summer season. In 35 of the total open dug wells, the water availability duration is less than 6 months. Water availability duration is up to 11 months in 301 open wells. 479 open dug wells are providing drinking water throughout the year. Details of the water sources in the project area are given in the following tables.

Table 8: Number of water sources in the project area

Watershed	borewell	pond	Open Dug Well	Total
13M47c	70	27	197	294
14P110f	57	11	105	173
14P110g	127	40	226	393
14P110h	61	66	287	414
Total	315	144	815	1274

Source: Baseline Survey

Table 9: Water availability in Open Well

Watershed	Less than 6 months	6 to 11 months	Throughout the year	Total
13M47c	15	81	101	197
14P110f	6	36	63	105
14P110g	5	84	137	226
14P110h	9	100	178	287
Total	35	301	479	815

Source: Baseline Survey

Table 10 : Ground Water Resource of Kattappan Block as on 31st December 2004

Net Annual GW Availability	14.13
Existing Gross GW Draft for irrigation	7.04
Existing Gross GW Draft for domestic and industrial water supply	6.49
Existing Gross GW Draft for all uses	13.53
Allocation for domestic and industrial requirement supply up to next 25 years	7.69
Net GW Availability for future irrigation development	-0.60
Stage of GW development (%)	95.75
Is there a significant decline of pre-monsoon water table levels	Yes
Is there a significant decline of post–monsoon water table levels	Yes
Categorization	**Critical**

Source: Ground Water Information Booklet of Idukki District, Central Ground Water Board, Ministry of Water Resources, Government of India.

As per the categorisation of blocks based on 2004 data computations, Kattapana block has became critical

Surface Water Resources and Irrigation

The project area has a number of public and private ponds and streams which are the main source of irrigation. Tea plantation is the main crop in the project area which is being irrigated from perennial streams and open dug wells. Mixed crops like coffy, areca nut, rubber, etc are need not be irrigated.

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.

Table 11: Details of the Population in the Project Area

Watershed Code	Male	Female	Total
13M47c	1765	1751	3516
14P110g	953	948	1901
14P110f	1147	1162	2309
14P110h	1367	1339	2706
Total	5232	5200	10432

Source: Baseline Survey

Table 12: Details of the Population in the Project Area – SC, ST& Others

Watershed Code	SC		ST		Others		Total	
	Male	Female	Male	Female	Male	Female	Male	Female
14P110g	235	213	14	10	704	725	953	948
13M47c	426	473	133	121	1206	1157	1765	1751
14P110h	289	269	33	34	1045	1036	1367	1339
14P110f	157	164	9	9	981	989	1147	1162
	1107	1119	189	174	3936	3907	5232	5200

Table 13: Agewise 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
13M47c	658	350	2508	3516
14P110f	386	311	1204	1901
14P110g	421	319	1569	2309
14P110h	519	206	1981	2706
Total	1984	1186	7262	10432

Source: Baseline Survey

Table 14: Number of Households in the Project Area

Watershed	Gramapanchayath			
	Upputhara	Elappara	Arakkulam	Total
13M47c	0	825	124	949
14P110f	507	0	0	507
14P110g	577	0	0	577
14P110h	335	393	0	728
Total	1419	1218	124	2761

Source: Baseline Survey

Table 15: Social Classification of Households in the Project Area *(Nos)*

Code	SC	ST	OBC	General	Total
13M47c	216	73	302	358	949
14P110f	116	5	146	240	507
14P110g	78	4	126	369	577
14P110h	155	18	299	256	728
Total	565	100	873	1223	2761

Source: Baseline Survey

Table 16: Poverty status of households

Watershed Code	BPL		APL		Total	
	No.	%	No.	No.	%	No.
13M47c	490	51.63	459	48.37	949	100.00
14P110f	288	56.80	219	43.20	507	100.00
14P110g	281	48.70	296	51.30	577	100.00
14P110h	391	53.71	337	46.29	728	100.00
Total	1450	52.52	1311	47.48	2761	100.00

Source: Baseline Survey

Table 17: Main Source of Income of Households in the Project Area

Watershed Code		13M47c	14P110f	14P110g	14P110h	Bsl
Agriculture	No.	163	64	93	177	497
	%	17.18	12.62	16.12	24.31	18.00
Fishing related	No.	3	41	3	41	88
	%	0.32	8.09	0.52	5.63	3.19
Daily labour	No.	651	252	422	432	1757
	%	68.60	49.70	73.14	59.34	63.64
Agriculture labour	No.	15	12	12	14	53
	%	1.58	2.37	2.08	1.92	1.92
Salary - Govt.	No.	20	7	14	10	51
	%	2.11	1.38	2.43	1.37	1.85
Salary - Private	No.	16	9	4	4	33
	%	1.69	1.78	0.69	0.55	1.20
Self employed/ Business	No.	37	9	5	16	67
	%	3.90	1.78	0.87	2.20	2.43
Income from abroad	No.	1	2	5	4	12
	%	0.11	0.39	0.87	0.55	0.43
Pension	No.	2	24	14	2	42
	%	0.21	4.73	2.43	0.27	1.52
Plantation Labour	No.	30	77	1	25	133
	%	3.16	15.19	0.17	3.43	4.82
Others	No.	11	10	4	3	28
	%	1.16	1.97	0.69	0.41	1.01
Total	No.	949	507	577	728	2761
	%	100.00	100.00	100.00	100.00	100.00

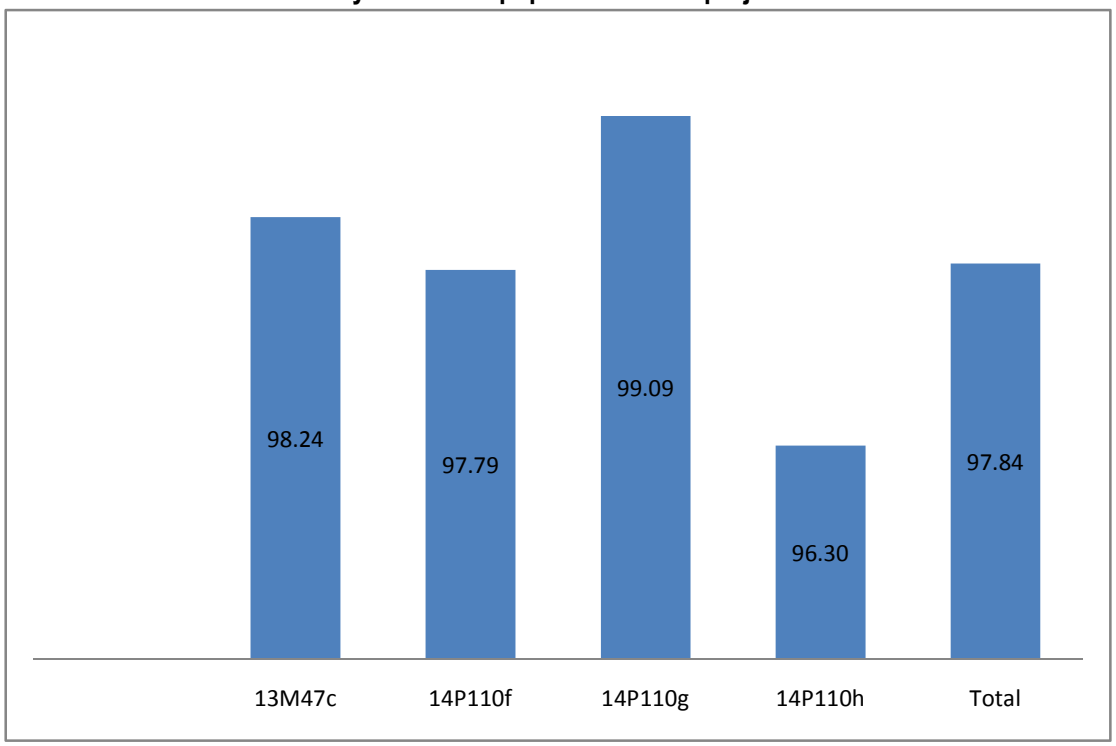
Source: Baseline Survey

Table 18: Details of landless Households in the project area

Watershed Code	No.	% to Total
13M47c	17	1.79
14P110f	31	6.11
14P110g	5	0.87
14P110h	0	0
ആകെ	53	1.92

Source: Baseline Survey

Literacy rate of the population in the project area



Source: Baseline Survey

Table 19: Proportion of households with electric connection

Watershed Code	Yes		No		Total	
	No.	%	No.	%	No.	%
13M47c	909	95.79	40	4.21	949	100.00
14P110f	494	97.44	13	2.56	507	100.00
14P110g	566	98.09	11	1.91	577	100.00
14P110h	693	95.19	35	4.81	728	100.00
Total	2662	96.41	99	3.59	2761	100.00

Source: Baseline Survey

Table 20: Main fuel used for cooking in the households

Watershed Code	Main fuel									
	LPG		Electricity		Wood		Others		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
13M47c	164	17.28	11	1.16	726	76.50	48	5.06	949	100.00
14P110f	19	3.75	14	2.76	460	90.73	14	2.76	507	100.00
14P110g	48	8.32	1	0.17	399	69.15	129	22.36	577	100.00
14P110h	28	3.85	5	0.69	693	95.19	2	0.27	728	100.00
Total	259	9.38	31	1.12	2278	82.51	193	6.99	2761	100.00

Source: Baseline Survey

Table 21: Toilet facilities of families in the project area

Watershed Code	Type of latrine								Total	
	Septic tank		Pit Toilet		Public Toilet		No toilet			
	No.	No.	No.	%	No.	%	No.	%	No.	%
14P110f	370	72.98	46	9.07	48	9.47	43	8.48	507	100.00
13M47c	716	75.45	148	15.60	5	0.53	80	8.43	949	100.00
14P110h	310	42.58	347	47.66	4	0.55	67	9.20	728	100.00
14P110g	471	81.63	90	15.60	0	0	16	2.77	577	100.00
Total	1867	67.62	631	22.85	57	2.06	206	7.46	2761	100.00

Source: Baseline Survey

Table 22: Number of families joined in Self Help Group

Watershed Code	Kudumbasree		Block SHG		Others		No membership		Total	
	No.	%	No.	%	No.	%		No.	%	No.
13M47c	526	55.43	9	0.95	22	2.32	392	41.31	949	100.00
14P110f	221	43.59	1	0.20	4	0.79	281	55.42	507	100
14P110g	441	76.43			7	1.21	129	22.36	577	100.00
14P110h	505	69.37	7	0.96	6	0.82	210	28.85	728	100.00
Total	1693	61.32	17	0.62	39	1.41	1012	36.65	2761	100

Source: Baseline Survey

Table 23: Main source of drinking water in the project area

Watershed Code	13M47c		14P110f		14P110g		14P110h		ആകെ	
	No.	%	No	%	No.	%	No.	%	No.	%
Own Water Connection	48	5.06	43	8.48	68	11.79	11	1.51	170	6.16
Public Tap	114	12.01	142	28.01	12	2.08	7	0.96	275	9.96
Well (Pvt)	257	27.08	141	27.81	218	37.78	303	41.62	919	33.29
Public Well	108	11.38	68	13.41	46	7.97	47	6.46	269	9.74
Bore well	57	6.01	33	6.51	93	16.12	49	6.73	232	8.40
ട്യലമാറ	215	22.66	19	3.75	16	2.77	68	9.34	318	11.52
Buying	14	1.48			10	1.73			24	0.87
Rain Water Harvesting Tank			1	0.20	1	0.17	4	0.55	6	0.22
Pond	22	2.32	5	0.99	15	2.60	71	9.75	113	4.09
From streams	16	1.69	8	1.58	43	7.45	112	15.38	179	6.48
Others	98	10.33	47	9.27	55	9.53	56	7.69	256	9.27
Total	949	100.00	507	100.00	577	100.00	728	100.00	2761	100.00

Source: Baseline Survey

Table 24: Details of livestock and poultry in the project area

Watershed Code	Cow/She-Buffalo	Oxen/Buffalo	Duck	Chicken	Goat	Total
13M47c	332	51	86	542	176	1187
14P110f	72	2	41	530	78	723
14P110g	108	7	27	578	307	1027
14P110h	414	22	55	865	168	1524
Total	926	82	209	2515	729	4461

Source: Baseline Survey

Table 25: Institutions in the project area

Institutions	Nos
Anganwadi	16
L.P School	2
U.P School	2
High School	3
HSS	2
College	1
Sub Cnetre	3
Dispensary	1
Pvt. Hospital	1
Telephone Exchange	2
Post Office	4
Library	1
Ration Shops	6
Banks	2
Panchayat Office	3
Grave Yard	5
Nanma Stores	1
Water Tank	3
KSEB Office	1
Club	2
Pump House	4
Village Office	1
Spinning Mill	1
Vanitha Vyavasaya Kendram	2
Maveli Store	3

Source: Baseline Survey

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Table 26: Educational institutions in the project area

Watershed Code	Name of School	LP/UP/HS/HSS	No of Students		No of Teachers		Sufficient Toilet(Yes/No)	Drinking water fecility(Yes/No)	Electrified(Yes/No)	Smokeless chool a(Yes/No)
			M	F	M	F				
14P110f	EKM LP School	LP	111	102	2	5	Y	N	Y	N
14P110f	CSI ST. Thomas school	LP	8	8	1	3	N	N	Y	N
14P110f	Govt. UPS Karunthirivy	UP	72	51	6	8	Y	N	Y	Y
13M47c	Govt. HSS Wagamon	HSS	120	80	4	7	Y	Y	Y	N
13M47c	Govt. HS Wagamon	HS	218	179	10	13	Y	Y	Y	N
13M47c	ST.Thomas HS pullikkanam	HS	63	58	0	9	Y	Y	Y	N
14P110g	Govt.Harigen Welfare UPS,kaattadykavala	UP	61	60	5	8	N	Y	Y	N
14P110g	ST.Sebastian HSS kaappipathal	HSS	156	158	5	12	Y	Y	Y	N
14P110g	ST.Sebastian HS kaappipathal	HS	385	328	17	19	N	Y	Y	N

Source: Baseline Survey

Agriculture and Present Land Use

Four major estates are including in the project area. More than 50 percent of the project area is tea plantation, which is a millennium crop, effectively preventing the soil erosion. Remaining portion of the area is mainly under the category of mixed crop. Coffee, Cardamom, Pepper, Areca nut, tapioca, plantain, Ginger, Turmeric, Varieties of vegetables, other spices etc. are being grown.

Major Soils in the Project Area

As per the Soil association map, Department of soil survey and soil conservation, Government of Kerala and Kerala state Land Use Board the soil association, Land Capability Class and limitations are as follows.

Soil Association	Watershed	Land Capability Class*	Land Capability Sub Class Limitations
Erattayar – Kochara	1. Erumbadam 2. Thankakkanam	II &III	Wetness
Minmutty-Pampadumpara-Kulamavu	1.Erumbadam 2. Pasuppara-Cheenthalar 3.Thankakkanam	VI	Erosion
Pampadumpara- Elappara-Amrithamedu	1.Erumbadam 2. Pasuppara-Cheenthalar 3. Thankakkanam	VI	Erosion
Vandiperiyar-Elappara-Kallar	1.Erumbadam 2. Pasuppara-Cheenthalar	IV VI	Erosion Erosion
Cheenikkuzhy-Peringasserry-Inchathotty	Thankakkanam	IV V	Erosion Erosion
Elappara-Kanjikkuzhy-Kalyanathandu	Thankakkanam	IV V	Erosion Erosion
Kattappana-Pampadumpara	Thankakkanam	IV V	Erosion Erosion
Koovappally-Chempakappara-Mamalakandam	Thankakkanam	IV VI	Erosion Erosion
Velur-Venmani-Koovappally	Thankakkanam	VI	Erosion

Source: Soil association map, Department of soil survey and soil conservation, GOK. (Watersheds except Kottamala) For Kottamala, Bench Mark of Soils of Kerala, Soil Survey Organisation, GOK.

*II- Good cultivable land

III- Moderately cultivable land

IV- Fairly good cultivable land suited for occasional or limited cultivation

VI- Well suited for grazing or forestry suited for minimum tillage.

Description of Soil Series

Erattayar- Kochara: Soils of this series are very deep, imperfectly drained. Erattayar series are fine textured, dark yellowish brown and very strongly acidic. These soils are developed from alluvial and colluvial deposits. They occur on narrow valleys between steeply sloping fidges and hills. The texture is sandy clay loam to clay. Soils of Kochara series are loamy sand to moderately textured, light grey and medium acidic. These soils are developed from fluvial deposits and occum on valleys.

Minmutty-Pampadumpara-Kulamavu: Soils of these series are very deep well drained forest soils. Very dusky read and strongly acidic. Soils of pampadumpara series are moderately well drained dark reddish brown to brown and very strongly acidic. They occur on steep slopin hills and hill tops. Soils of kulamavu series are well drained, fine textured and strongly acidic. They occur on hills and mounds of high ranges.

Pampadumpara- Elappara-Amrithamedu: Pampadumpara series described above. Elappara series are deep, well drained, medium textured, dar reddish brown and very strongly acidic. They occur on tea growing areas. Soils of Amritamedu series are moderately deep, well drained and strongly acidic. They occur on very steeply sloping and steeply sloping rocky and stony ridges and mountain tops.

Vandiperiyar-Elappara-Kallar: Soils of Vandiperiyar series are very deep, well drained, moderately fine to fine textured and medium acidic. They occur pn very steeply sloping mountain slopes. Soils of kallar series are very deep,well drained, gravelly, fine textured, dark reddish brown and strongly acidic. They occur on hill valleys of steeply sloping hills.

Cheenikkuzhy-Peringasserry-Inchathotty: Soils of Cheenikkuzhy series are deep, well drained, fine texturredm reddish brown and strongly acidic. They occur on steep to very steep mounts and hill slopes. Soils of Peringasserry are moderately fined textured, dark brown and strongly acidic. Soils of Inchathotty series are shallow, well drained moderately coarse forest soils. The are black and medium acidic. The occur on steeply slopping hills and hill tops.

Elappara-Kanjikkuzhy-Kalyanathandu: Soils of Kanjikkuzhy series are deep, well drained, moderately coarse to moderately fine textured black and strongly acidic. These are found in strongly slopping hill slopes and mounds of central highranges. Soils of Kulayanathandu series are very deep, well drained, medium textured, dark brown and strongly to very strongly acidic. They occur on ridge tops and summits.

Kattappana-Pampadumpara: Soils of Kattappana series are deep, well drained, fine texture, dar greyish brown cloured and very strongly acidic. These are classified as fairly good cultivable land. And occur on very steeply sloping hill slopes.

Koovappally-Chempakappara-Mamalakandam: Koovappally series are deep well drained, gravelly, moderately fine textured, reddish blackand and very strongly acidic. They have developed from gnessic parent material. They occur in hilly regions of the central high ranges. Chempakappara series is very deep, well drained, moderately fine textured and slightly acidic. They occur on steeply to very steeply sloping hill slopes. Soils of mamalakandam series are also very deep and well drained forest soils. The are dusky red and strongly acidic.

Velur-Venmani-Koovappally: Soils of Velur series are very deep and well drained, medium to fine textured and very strongly acidic. They are occurred on steeply sloping hill slopes and hill tops. Soils of Venmani series are very deep, well drained and very strongly acidic. They occur moderately sloping to steeply side slopes of hills.

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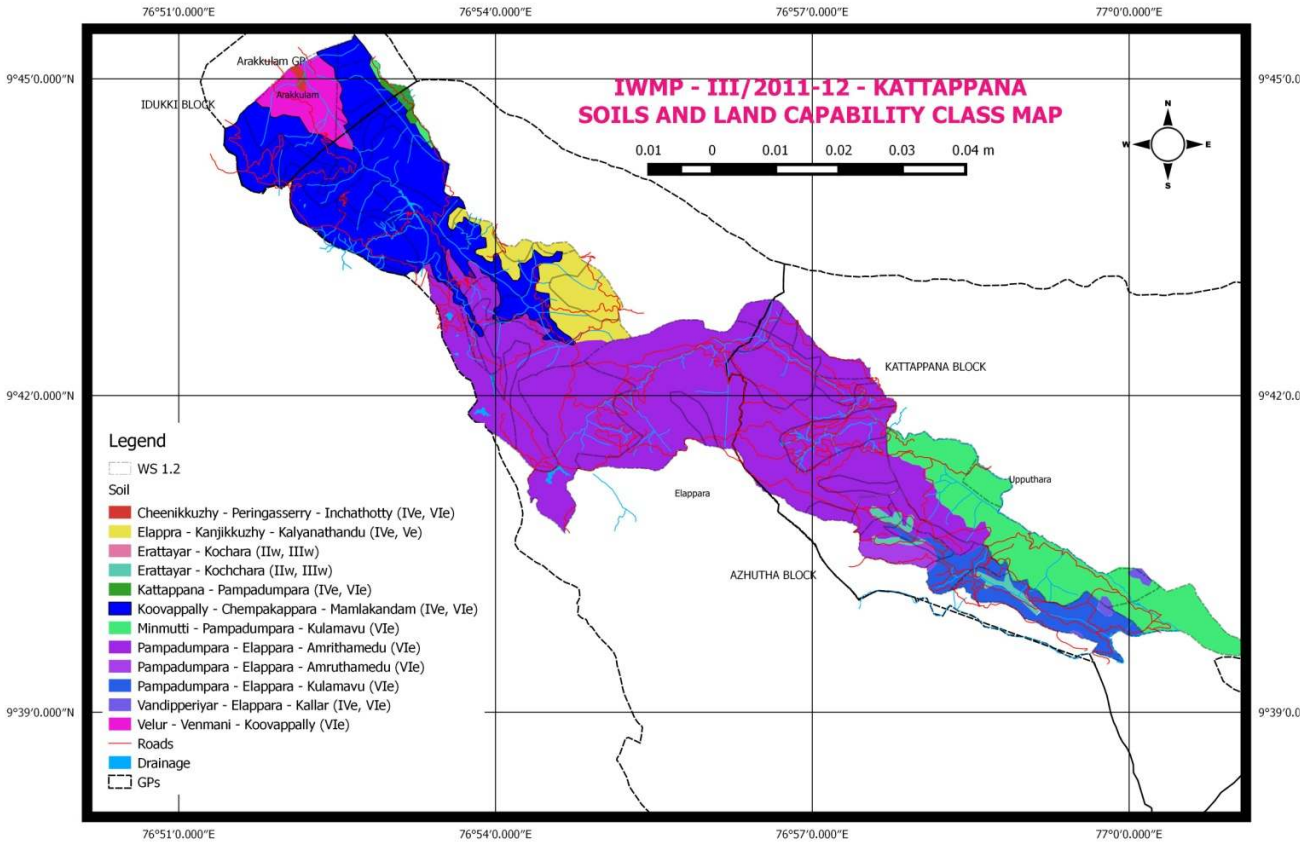


Approach and Methodology of Preparing the Detailed Project Report (DPR)

The project area lies in Kattappana Block Panchayat of Idukki 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/2011-12 of Idukki District is outlined below:

- The project comprises of four 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 microenterprisers 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, Focused 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

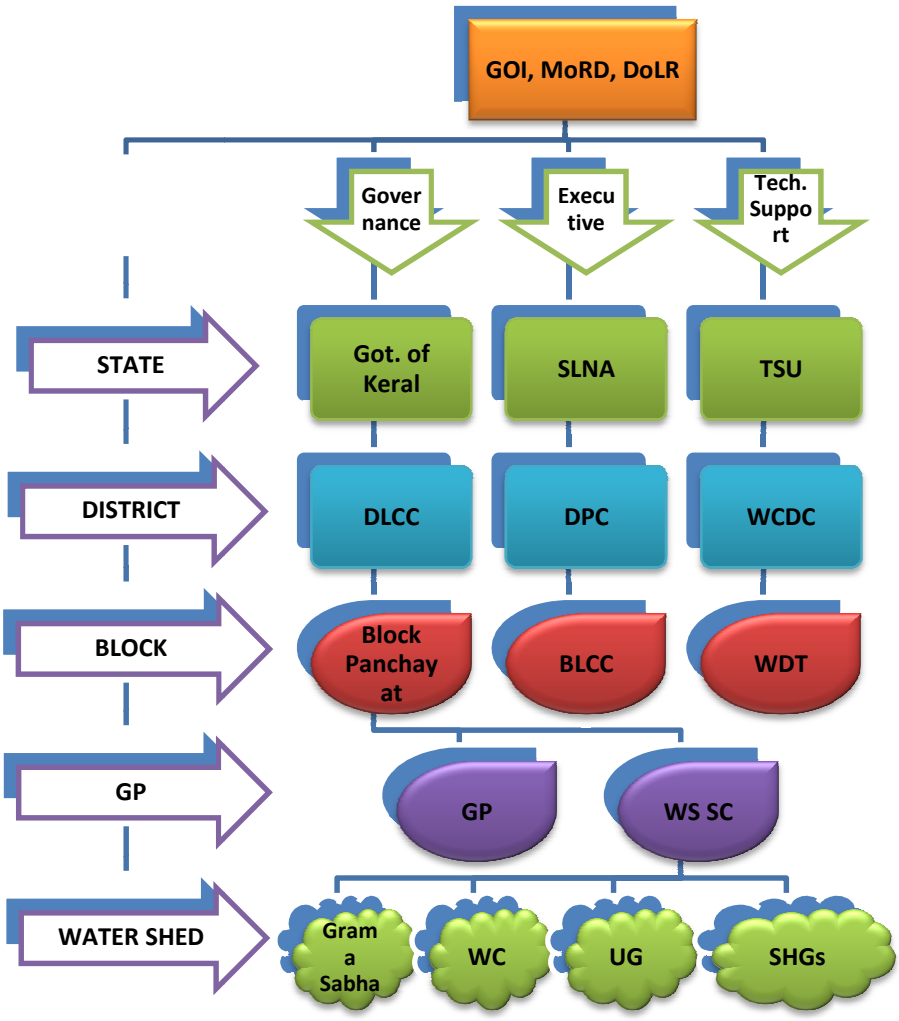
Table 27 : Financial Plan

No.	Head	Amount (Rs)
1	Administrative (10%)	6946500
2	Capacity Building(5%)	3473250
3	Monitoring (1%)	694650
4	Preparation of DPR(1%)	694650
5	Entry Point Activities (4%)	2778600
6	Evaluation (1%)	694650
7	Watershed Development Works (56%)	38900400
8	Production System and Micro-enterprises (10%)	6946500
9	Livelihood Activities for assetless Persons (9%)	6251850
10	Consolidation (3%)	2083950
Total		69465000

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, Idukki.

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

Kattappana 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. Watershed Development Team (WDT) has been formed and started working under the PIA. Details of PIA are given below.

Table 28: Details of Project Implementation Agency (PIA)

Name of the Project	IWMP III/ 2011-12
Programme Implementation Agency	Kattappana Block Panchayat
Implementation Officer	Block Development Officer, Kattappana Block Panchayat
Address of PIA	Kattappana Block Panchayat, Kattappana PO, Kattappana, Idukki – 685 508
Telephone	04868 - 272482
Email	bdoktpn@gmail.com

Table 29: Details of Watershed Development Team (WDT)

No.	Name	Age	Sex	Designation	Qualification
1	Reenu Cherian	22	Female	WDT Civil Engineer	B Tech in Civil Engineering
2	Chinchu Catherine	26	Female	Social Mobiliser	MSW-Rural Development
3	Chinchu Sasidharan	24	Female	Agriculture Assistant	VHSC Agriculture
4	Lini Das	32	Female	Data Entry Operator	B Com, PGDCA

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 30 : Dates of Neerthada Gramasabha

Sl.No	Code of Micro Watershed	Date of Watershed Grama sabha
1	13M47c	31/08/14
2	14P110f	16/08/14
3	14P110g	24/08/14
4	14P110h	31/08/14

Self Help Groups (SHGs)

There are 143 SHGs working in the project area already. Under IWMP III/ 2011-12 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.

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 31: 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 Builiding and IEC ativities.
- 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 32: List of Entry Point Activities in the Project Area

SL. NO.	NAME OF ACTIVITY	WATERSHED	GRAMAPANCHAYATH	ESTIMATE AMOUNT
1	*INCHIMALA-MARKETKULAM RENOVATION AND CONSTRUCTION OF SEWER*	*ERUMPADOM*	*UPPUTHARA*	*Rs. 4,72,347/-*
2	*RAINWATER HARVESTING TANK AT GOVT. LPS VATTAPATHAL - 30,000 L*	*KOTTAMALA*	*UPPUTHARA*	*Rs. 92,000/-*
3	*PUNNAMUDI WELL RENOVATION*	*KOTTAMALA*	*ELAPPARA*	*Rs. 6,83,915/-*
4	*WELL RECHARGE UNITS*	*ERUMPADOM*	*UPPUTHARA*	*Rs. 2,05,150-*
5	*WELL RECHARGE UNITS*	*ERUMPADOM*	*UPPUTHARA*	*Rs. 2,98,400/-*
6	*WELL RECHARGE UNITS*	*KOTTAMALA*	*UPPUTHARA*	*Rs. 93,250/-*
7	*MALANKARA ESTATE OWNED POND RENOVATION*	*PASUPPARA - CHEENTHALAR*	*UPPUTHARA*	*Rs. 9,32,938/-*

Major Problems Identified

The four 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, 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) Construction of ferrocement rain water harvesting tanks

(b) Maintenance of wells and ponds for the availability of fresh water

(c) Construction of silpaulin tanks

(d) Contour bunding

(e) Stream protection

(f) Nursery formation

(g) Construction of subsurface dyke in the drainage

(h) Bio fencing to protect stream bank

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.

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. (i) improve livelihood opportunities by promoting homemade food processing units, supply of cow, goat, duck, chicks etc..

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, Diary, 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.

Scope of Convergence

Table 33: Scope of Convergence

Sl. No.	Type of intervention	Department/Schemes which can be converged with IWMP
1.	Renovation of Pond	1. MGNREGA
2.	Bund Strengthening of Paddy fields	1. MGNREGA
3	Rain water harvesting Pit	1. MGNREGA
4	Afforestration	1. MGNREGA 2. LSGI 3. Department of Social Forestry
5	Horticulture	1. Department of Agriculture 2. MGNREGA 3. LSGI 4. Vegetable and Fruit Promotion Council
5.	Dairy development	1. Department of Dairy development 2. LSGI
6.	Waste Management Activities	1. Total Sanitation Campaign 2. Nirmal Bharat Abhiyan 3. NRHM 4. LSGI
7.	Exposure Visit	1. ATMA

Table 34: Financial Plan Yearwise

Item	(%)	Year I	Year II	Year III	Year IV	Amount in Lakhs
MANAGEMENT COST						
Administration	10	20.84	20.84	13.89	13.89	69.47
Monitoring	1	1.74	1.74	1.74	1.74	6.95
Evaluation	1	1.74	1.74	1.74	1.74	6.95
Preparatory Phase						
Entry point activities	4	27.79	0.00	0.00	0.00	27.79
Institutions & Capacity Building	5	11.03	10.35	8.11	5.24	34.73
Preparation of Detailed Project Report	1	5.21	0.69	0.69	0.35	6.95
Watershed Works Phase						
Watershed Development Works	56	315.77	28.09	23.53	21.62	389.00
Production System and Micro-enterprises	9	11.31	10.85	20.21	19.21	62.51
Livelihood Activities for assetless Persons	10	20.41	17.71	16.94	7.74	69.46
Consolidation Phase	3				20.84	20.84

Table 35: IEC Plan

Activity	Estimated Amount (Rs)				
	Year 1	Year 2	Year 3	Year 4	Total
IEC	337730	178350	147370	151600	815050

Training & Capacity Building for NRM Activities

Programme1: Empowering Elected Representatives for IWMP

1	Rationale	Awareness among the elected representatives on the need for watershed based development programme, concepts involved in watershed management, IWMP - its objectives, steps involved in the implementation of the programme, financial management, technological know how etc. is essential for the success of the programme.					
2	Objectives	To create awareness among the elected representatives on (a). The need for watershed based development programmes. (b). Concept of IWMP. (c). Projects involved in the programmes. (d). Scope of projects. (e). Roles and responsibilities. (f). Financial Management aspects.					
3	Target Group	District, Block and Grama Panchayat members of the project area.					
4	Duration	1 day					
5	No. of Participants	70					
6	No. of Batches	16					
7	Plan	Year	Year I	Year II	Year III	Year IV	Total
		Physical Plan	4	4	4	4	16
		Financial Plan (Lakh)	0.288	0.288	0.288	0.288	1.152
8	Expected Outcomes	Smooth and effective implementation of the projects, through solving any issues pop up while implementation, with regard to financial transparency, peoples participation etc.					
9	Area of Training	Watershed Management					

Programme 2: Training Programme on IWMP

1	Rationale	The watershed community must be made aware of the programme, its concepts, the need of the hour and motivate them to become part of the programme.					
2	Objectives	(a). To familiarize the concept of watershed. (b). The scope of watershed development in the area. (c). To familiarize the concept of IWMP. (d). Various activities proposed under NRM, PS&M and LSS. (e). To ensure participation of the people. (f). Provide need based training as and when required.					
3	Target Group	Watershed Community (Progressive Farmers, Kudumbasree members, Other SHGs,MGNREGS workers, Club/ Residence Association / School Students etc.)					
4	Duration	1 Day					
5	No. of Participants	125 Per batch					
6	No. of Batches	35					
7	Plan	Year	Year I	Year II	Year III	Year IV	Total
		Physical Plan	10	10	10	5	35
		Financial Plan (Lakh)	1.5	1.5	1.5	0.75	5.25
7	Expected Outcomes	Increased community awareness and people's participation					
8	Area of Training	Watershed Management					

Programme3: Training Programme for Watershed Committee Members

1	Rationale	Impart awareness among the watershed committee members regarding the concept of watershed management, roles and responsibilities, operational guidelines, financial management etc. is essential for effective implementation.					
2	Objectives	(a). To create awareness among the WC members regarding the concept of watershed management. (b). To make aware the roles and responsibilities of WC. (c). To train on the aspects of financial management of the project. (d). To train on the management of WDF.					
3	Target Group	WC members					
4	Duration	1 day					
5	No. of Participants	32 per batch					
6	No. of Batches	42					
7	Plan	Year	Year I	Year II	Year III	Year IV	Total
		Physical Plan	14	14	7	7	42
		Financial Plan (Lakh)	1.26	1.26	0.63	0.63	3.78
7	Expected Outcomes	Empowered of watershed committee which is necessary for effective implementation of the project and proper maintenance of created common assets under the programme.					
8	Area of Training	Watershed Management					

Programme 4: Training Programme for User Groups

1	Rationale	Creating awareness among UGs regarding the mode of creation of common assets is essential for the success of the programme.					
2	Objectives	(a). Create awareness on responsibility of UGs. (b). The need for establishing common assets. (c). Mode of operation in establishing common assets. (d). Financial procedures involved in the process. (e). Account Maintenance and Book Keeping (f). Future conservation of assets					
3	Target Group	UGs					
4	Duration	1 day					
5	No. of Participants	30					
6	No. of Batches	34					
7	Plan	Year	Year I	Year II	Year III	Year IV	Total
		Physical Plan	10	10	10	4	34
		Financial Plan (Lakh)	1.00	1.00	1.00	0.40	3.40
7	Expected Outcomes	Awareness among the UGs to take up the responsibility of creating common assets as well as their future maintenance					
8	Area of Training	Watershed Management					

Programme 5: Training programme on (PS&M)

1	Rationale	The beneficiary groups /farmers are need to aware about various innovative methods farming . Provide in time consultation on various opportunities and threats in the field					
2	Objectives	a) To introduce best practices of farming b) Introduction of innovative technologies in the various farming activities (Integrated farming/zero budget farming/Organic farming etc) c) To train them on Lease farming and vegetable cultivation d) To train them on mushroom cultivation e) To train them on fisheries					
3	Target Group	SHGs: Cattle management, fodder preservation, Pisciculture, Horticulture, etc.					
4	Duration	1 Day					
5	No. of Participants	100 per batch					
6	No. of Batches	14					
7	Plan	Year	Year I	Year II	Year III	Year IV	Total
		Physical Plan	4	4	4	2	14
		Financial Plan (Lakh)	1.00	1.00	1.00	0.50	3.50
7	Expected Outcomes	Increase the standard of living through increase in per capita income, attain self sustainability etc.					
8	Area of Training	Livelihood					

Programme 6: Training for Beneficiaries of Seed Money on Livelyhood Activities

1	Rationale	To train the livelihood beneficiaries on various job opportunities and to give on hand training to ensure a sustainable income.					
2	Objectives	a) To train the beneficiaries on selected livelihood activities which are suitable for the locality b) To generate additional income from such activities. c) To attain self sustainability. d) To train them on marketing e) To train them on value addition f) Women empowerment.					
3	Target Group	SHGs: Cattle management, fodder preservation, Pisciculture, Horticulture, Ornamental Fish farming, etc.					
4	Duration	1 Day					
5	No. of Participants	100					
6	No. of Batches	19					
7	Plan	Year	Year I	Year II	Year III	Year IV	Total
		Physical Plan	5	5	5	4	19
		Financial Plan (Lakh)	1.00	1.00	1.00	0.80	3.80
7	Expected Outcomes	Increase the standard of living through increase in per capita income, attain self sustainability etc.					
8	Area of Training	Livelihood					

Programme 7: Training Programmeon Major livelihood Activities

1	Rationale	Indepth understanding of market and feasibility of the selected Major livelihood livelihood activity and its operation.					
2	Objectives	(a). Introduce innovative technologies suitable to our environment (b). Introduce out put oriented work culture (c). Develop good managerial skill (d). Future planning to develop the started major livelihood activity.					
3	Target Group	Cluster/Federation Members					
4	Duration	3 Days					
5	No. of Participants	10					
6	No. of Batches	10					
7	Plan	Year	Year I	Year II	Year III	Year IV	Total
		Physical Plan	4	4	2	0	10
		Financial Plan (Lakh)	1.00	1.00	0.50	0	2.50
7	Expected Outcomes	Improved standard of living through increase in per capita income, attain self sustainability, protection of natural resources and better practice for plastic waste management.					
8	Area of Training	Livelihood					

Programme 8: Training on Accounting and Book Keeping

1	Rationale	Maintenance of documents are necessary for transparency .					
2	Objectives	To create awareness among the user groups a. Roles and responsibilities. b. Financial Management aspects.					
3	Target Group	User group members					
4	Duration	1 day					
5	No. of Participants	10					
6	No. of Batches	20					
7	Plan	Year	Year I	Year II	Year III	Year IV	Total
		Physical Plan	5	6	6	3	20
		Financial Plan (Lakh)	0.60	0.72	0.72	0.36	2.40
8	Expected Outcomes	Smooth and effective implementation of the projects, with regard to financial transparency.					
9	Area of Training	Accounting and Book Keeping					

Table 37: Livelihood Action Plan

	Water Shed	**13M47c**		**14P110f**		**14P110g**		**14P110h**		**Total**
	Total Livelihood Share	**2979450**		**541350**		**642600**		**2088450**		**6251850**
	Seed Money (70%)	**2085615**		**378945**		**449820**		**1461915**		***4376295***
	Grant in aid to Enterprising SHGs (30%)	**893835**		**162405**		**192780**		**626535**		***1875555***
NO	**Livelihood Activities**	**Finance**	**Beneficiary Groups**	**Finance**	**Beneficiary Groups**	**Finance**	**Beneficiary Groups**	**Finance**	**Beneficiary Groups**	
1	Vegetable Retail Shop	75000	3	25000	1	0	0	50000	2	25000
2	Food Processing Unit - Jack Fruit/Tapioca etc	460000	20	69000	3	92000	4	322000	14	23000
3	Backyard Poultry	410835	20	82167	4	102709	5	287584.5	14	
4	Backyard Duckery	200000	8	0	0	25000	1	125000	5	25000
5	Goat Rearing/Calves Rearing	200000	8	25000	1	25000	1	125000	5	25000
6	Piggerry	625000	25	125000	5	125000	5	450000	18	25000
7	Artefacts Paaneythu	100000	4	75000	3	75000	3	100000	4	25000
	Total Amnt	**2085615**	**88**	**378945**	**17**	**449820**	**19**	**1461915**	**62**	**4376295**

No	Livelihood Action Plan 13M47c											
			Year 1		Year 2		Year 3		Year 4		Total	
	Activity	Unit Cost	Physical	Financial	Physical	Financial	Physical	Financial	Physical	Financial	Physical	Financial
1	Vegetable Retail Shop	25000	1	25000	1	25000	1	25000		0	3	75000
2	Food Processing Unit - Jack Fruit/Tapioca etc	23000	5	115000	5	115000	5	115000	5	115000	20	460000
3	Backyard Poultry	20541.75	5	102709	5	102708.8	5	102708.8	5	102708.8	20	410835
4	Backyard Duckery	25000	2	50000	2	50000	2	50000	2	50000	8	200000
5	Goat Rearing / Calves rearing	25000	2	50000	2	50000	2	50000	2	50000	8	200000
6	Piggerry	25000	7	175000	6	150000	6	150000	6	150000	25	625000
7	Artefacts Paa neythu	25000	1	25000	1	25000	1	25000	1	25000	4	100000

No	Livelihood Action Plan 14P110f											
			Year 1		Year 2		Year 3		Year 4		Total	
	Activity	Unit Cost	Physical	Financial	Physical	Financial	Physical	Financial	Physical	Financial	Physical	Financial
1	Vegetable Retail Shop	25000	1	25000		0					1	25000
2	Food Processing Unit - Jack Fruit/Tapioca etc	23000		0	1	23000	1	23000	1	23000	3	69000
3	Backyard Poultry	20541	1	20541.8	1	20541.75	1	20541.8	1	20541.8	4	82167
4	Backyard Duckery	25000	0	0	0	0	0	0	0	0	0	0
5	Goat Rearing / Calves rearing	25000	0	0	1	25000	0	0	0	0	1	25000
6	Piggerry	25000	1	25000	1	25000	2	50000	1	25000	5	125000
7	Artefacts Paa neythu	25000	1	25000	0	0	1	25000	1	25000	3	75000

No	Livelihood Action Plan 14P110g											
			Year 1		Year 2		Year 3		Year 4		Total	
	Activity	Unit Cost	Physical	Financial	Physical	Financial	Physical	Financial	Physical	Financial	Physical	Financial
1	Vegetable Retail Shop	25000	0	0	0	0		0	0	0	0	0
2	Food Processing Unit - Jack Fruit/Tapioca etc	23000	1	23000	1	23000	1	23000	1	23000	4	92000
3	Backyard Poultry	20541.75	2	41083.5	1	20541.75	1	20541.75	1	20541.75	5	102708.8
4	Backyard Duckery	25000	1	25000	0	0	0	0	0	0	1	25000
5	Goat Rearing / Calves rearing	25000	0	0	1	25000	0	0	0	0	1	25000
6	Piggerry	25000	1	25000	1	25000	2	50000	1	25000	5	125000
7	Artefacts Paa neythu	25000	1	25000	0	0	1	25000	1	25000	3	75000

No	Livelihood Action Plan 14P110h											
			Year 1		Year 2		Year 3		Year 4		Total	
	Activity	Unit Cost	Physical	Financial	Physical	Financial	Physical	Financial	Physical	Financial	Physical	Financial
1	Vegetable Retail Shop	25000	1	25000	1	25000	0	0	0	0	2	50000
2	Food Processing Unit - Jack Fruit/Tapioca etc	23000	4	92000	4	92000	3	69000	3	69000	14	322000
3	Backyard Poultry	20541.75	3	61625.25	3	61625.25	4	82167	4	82167	14	287584.5
4	Backyard Duckery	25000	1	25000	2	50000	1	25000	1	25000	5	125000
5	Goat Rearing / Calves rearing	25000	1	25000	1	25000	2	50000	1	25000	5	125000
6	Piggerry	25000	5	125000	5	125000	4	100000	4	100000	18	450000
7	Artefacts Paa neythu	25000	1	25000	1	25000	1	25000	1	25000	4	100000

Table 46: Proposed Activities under Grant in Aid

Activity	Expected Unit Cost (Rs.)	Amount From IWMP (Rs.)	Other Sources(Bank) (Rs.)	Beneficiary Contribution (Rs.)	Convergence
Kopra Processing Unit	450000	200000	100000	150000	Khadi & Village Industries
Milk Collection and Selling Centre	619300	200000	1257900	125790	Khadi & Village Industries
Production of artefacts and marketing	564000	200000	454910	45491	Animal Husbandry/ Bank

No	Annual Action Plan for Production System & Micro Enterprises 13M47c											
	Activity	Unit Cost	Year 1		Year 2		Year 3		Year 4		Total	
			Physical	Financial	Physical	Financial	Physical	Financial	Physical	Financial	Physical	Financial
1	Nursery formation with the facilties for Budding, Tissue Culture (Converge with MGNREGAv)	30000		0		0	1	30000	1	30000	2	60000
2	Horticulture – Distribution of Orange seedlings (1 Ha 150 Nos = 1 unit)	15000	1	15000	1	15000	1	15000	1	15000	4	60000
3	BioManure/Bio Pesticide production	30000	1	30000	1	30000	1	30000	1	30000	4	120000
4	Assistance to High tech farm	30000	2	60000	2	60000	3	90000	3	90000	10	300000
5	Assistance to Poultry farm	30000	2	60000	2	60000	2	60000	2	60000	8	240000
6	Fodder Cultivation (10 cents)	6461	25	161525	25	161525	25	161525	25	161525	100	646100
7	Production of Earth worm compost	30000	3	90000	3	90000	2	60000	2	60000	10	300000
8	Aqua Ponics, Polyfarming etc (Modern agriculture practices)	30000	6	180000	6	180000	5	150000	5	150000	22	660000
9	Assistance to drip irrigation and for distribution of sprinkler etc (support to acquire modern agricultural implements)	10000	6	60000	5	50000	5	50000	4	40000	20	200000
10	Distribution of trico card	1000	200	200000	100	100000	150	150000	70	70000	520	520000
11	Mushroom Cultivation	6800	12	81600	8	54400	5	34000	5	34000	30	204000
	Total Amount										730	3310100

No	Annual Action Plan for Production System & Micro Enterprises 14P110f											
	Activity	Unit Cost	Year 1		Year 2		Year 3		Year 4		Total	
			Physical	Financial	Physical	Financial	Physical	Financial	Physical	Financial	Physical	Financial
1	Nursery formation with the facilties for Budding, Tissue Culture (Converge with MGNREGAv)	30000	1	30000	1	30000		0		0	2	60000
2	Horticulture – Distribution of Orange seedlings (1 Ha 150 Nos = 1 unit)	15000	1	15000	2	30000	1	15000	1	15000	5	75000
3	BioManure/Bio Pesticide production	30000	0	0		0		0		0	0	0
4	Assistance to High tech farm	30000		0	1	30000	1	30000		0	2	60000
5	Assistance to Poultry farm	30000	2	60000	1	30000	1	30000	1	30000	5	150000
6	Fodder Cultivation (10 cents)	6461	0	0	0	0	1	6461	1	6461	2	12922
7	Production of Earth worm compost	30000	1	30000	1	30000		0		0	2	60000
8	Aqua Ponics, Polyfarming etc (Modern agriculture practices)	30000	2	60000	1	30000	1	30000	1	30000	5	150000
10	Assistance to drip irrigation and for distribution of sprinkler etc (support to acquire modern agricultural implements)	10000		0		0	1	10000		0	1	10000
11	Distribution of trico card	1000	2	2000	1	1000		0		0	3	3000
12	Mushroom Cultivation	6800		0	1	6800	1	6800	1	6800	3	20400
	Total Amount										**30**	**601322**

No	Annual Action Plan for Production System & Micro Enterprises 14P110g											
	Activity	Unit Cost	Year 1		Year 2		Year 3		Year 4		Total	
			Physical	Financial	Physical	Financial	Physical	Financial	Physical	Financial	Physical	Financial
1	Nursery formation with the facilties for Budding, Tissue Culture (Converge with MGNREGAv)	30000	1	30000	1	30000	0	0	0	0	2	60000
2	Horticulture – Distribution of Orange seedlings (1 Ha 150 Nos = 1 unit)	15000	1	15000	1	15000	1	15000	0	0	3	45000
3	BioManure/Bio Pesticide production	30000	0	0	1	30000	0	0	1	30000	2	60000
4	Assistance to High tech farm	30000	0	0	0	0	1	30000	1	30000	2	60000
5	Assistance to Poultry farm	30000	1	30000	0	0	0	0	0	0	1	30000
6	Fodder Cultivation (10 cents)	6461	2	12922	2	12922	1	6461	2	12922	7	45227
7	Production of Earth worm compost	30000	2	60000	1	30000	1	30000	1	30000	5	150000
8	Aqua Ponics, Polyfarming etc (Modern agriculture practices)	30000	1	30000	1	30000	2	60000	1	30000	5	150000
9	Assistance to drip irrigation and for distribution of sprinkler etc (support to acquire modern agricultural implements)	10000	2	20000	2	20000	1	10000	1	10000	6	60000
10	Distribution of trico card	1000	5	5000	5	5000	5	5000	5	5000	20	20000
11	Mushroom Cultivation	6800	1	6800	1	6800	2	13600	1	6800	5	34000
	Total Amount										**58**	**714227**

No	Annual Action Plan for Production System & Micro Enterprises 14P110h											
			Year 1		Year 2		Year 3		Year 4		Total	
	Activity	Unit Cost	Physical	Financial	Physical	Financial	Physical	Financial	Physical	Financial	Physical	Financial
1	Nursery formation with the facilties for Budding, Tissue Culture (Converge with MGNREGAv)	30000	0	0	1	30000	0	0	0	0	1	30000
2	Horticulture – Distribution of Orange seedlings (1 Ha 150 Nos = 1 unit)	15000	5	75000	5	75000	5	75000	5	75000	20	300000
3	BioManure/Bio Pesticide production	30000	1	30000	1	30000	1	30000	1	30000	4	120000
4	Assistance to High tech farm	30000	2	60000	1	30000	1	30000	1	30000	5	150000
5	Assistance to Poultry farm	30000	2	60000	2	60000	2	60000	1	30000	7	210000
6	Fodder Cultivation (10 cents)	6461	10	64610	8	51688	7	45227	5	32305	30	193830
7	Production of Earth worm compost	30000	1	30000	1	30000	1	30000	1	30000	4	120000
8	Aqua Ponics, Polyfarming etc (Modern agriculture practices)	30000	3	90000	5	150000	4	120000	3	90000	15	450000
9	Assistance to drip irrigation and for distribution of sprinkler etc (support to acquire modern agricultural implements)	10000	21	210000	10	100000	10	100000	10	100000	51	510000
10	Distribution of trico card	1000	9	9000	12	12000	7	7000	5	5000	33	33000
11	Mushroom Cultivation	6800	10	68000	5	34000	10	68000	5	34000	30	204000
	Total Amount										**200**	**2320830**

Table 55: Watershedwise&YearwiseFund Allocation

Watershed	Year I	Year II	Year III	Year IV	Total
13M47C	16533436	904560	583731	517073.5	**18538800**
14P110h	9235239	1355443	989996	1414122	**12994800**
14P110f	2519976	192855	594459	61111	**3368400**
14P110g	3287851	356578	184673	169299	**3998400**
Total	**31576501**	**2809435**	**2352859**	**2161605**	**38900400**

Table 56: NRM Annual Action Plan 13M47c

	Category of NRM	Year 1	Year 2	Year 3	Year 4
1	Ground water recharge - Open Well	583200			
2	Pond Renovation	35263.83	702611.94	147986.12	40049.99
3	Drainageline treatment	220657.3	201947.66	394576.85	477023.5
4	Roof water harvesting tanks	3000000			
5	Renovation of Water Extracting Units	168136.56		41169.01	
6	Contour Bunding	12526178			
	Total Amount	**16533435.69**	**904559.6**	**583731.98**	**517073.49**

Table 57: NRM Annual Action Plan 14P110h

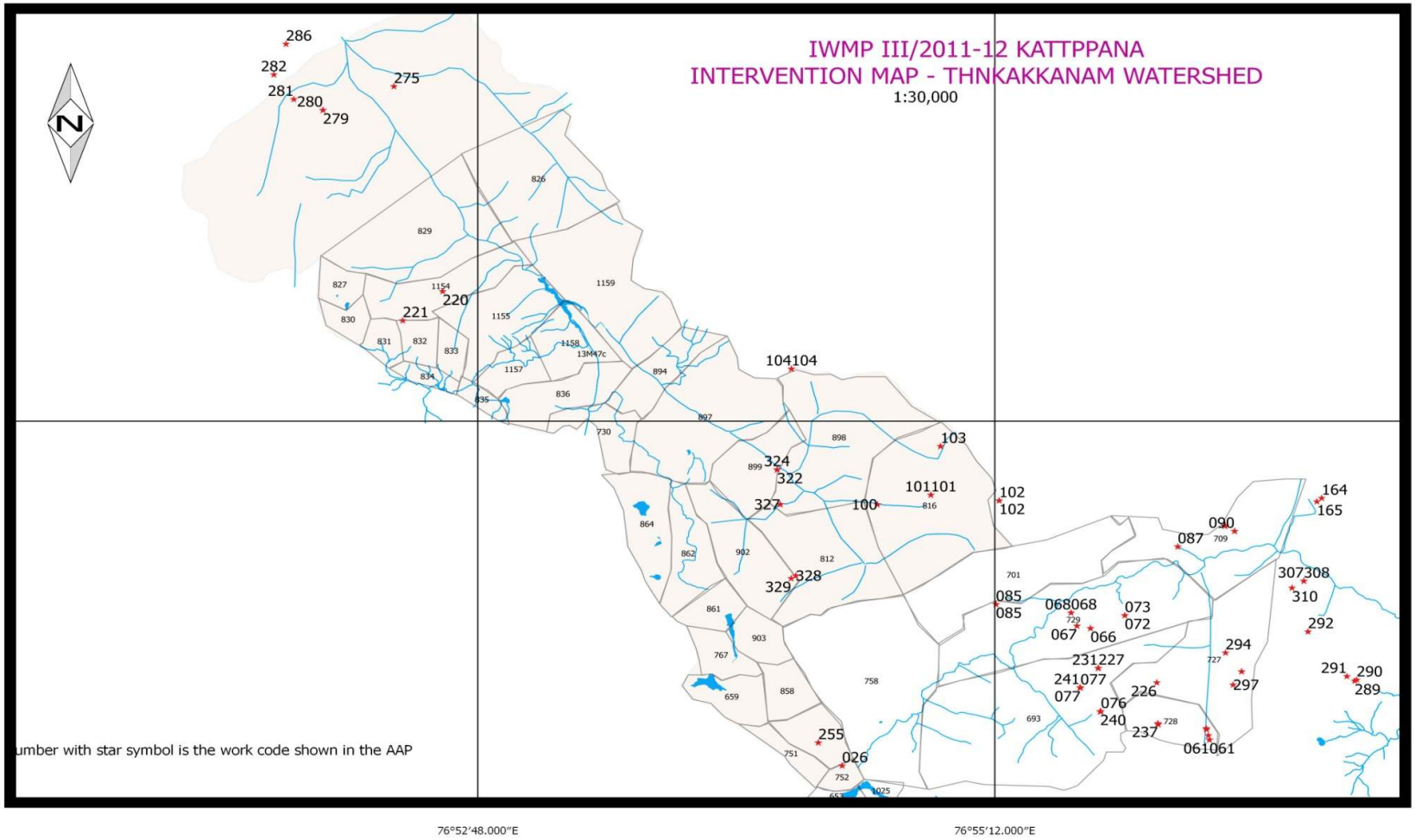
	Category of NRM	Year 1	Year 2	Year 3	Year 4
1	Ground water recharge - Open Well	395096.196	80236.94		40549.93
2	Pond Renovation	878418.6	217713.3	269851	558644.84
3	Drainageline treatment	64896.93	565048.693	643399	814926.9
4	Roof water harvesting tanks	2350000			
5	Renovation of Water Extracting Units	148264.5	131880.12	76746	
6	Sub Surface dyke	39820.22	291614.1		
7	Contour Bunding	5358743			
8	Afforestation		68950		
	Total Amount	**9235239.446**	**1355443.153**	**989996**	**1414121.67**

Table 58: NRM Annual Action Plan 14P110f

	Category of NRM	Year 1	Year 2	Year 3	Year 4
1	Ground water recharge - Open Well	178834			
2	Pond Renovation	91970	51844	10526.03	16672
3	Drainageline treatment		77858	533164	44438
4	Roof water harvesting tanks	843000			
5	Renovation of Water Extracting Units	6672	63151	50768	
5	Contour Bunding	1399498			
	Total Amount	**2519975**	**192854**	**594458**	**61110**

Table 59: NRM Annual Action Plan 14P110g

	Category of NRM	Year 1	Year 2	Year 3	Year 4
1	Ground water recharge - Open Well	91118			
2	Pond Renovation	602533	145863		
3	Drainageline treatment		37926	173459	169299
4	Roof water harvesting tanks	600000			
6	Renovation of Water Extracting Units	31376	102161	11214	
9	Sub Surface dyke		70627		
10	Contour Bunding	1962824			
	Total Amount	**3287851**	**356577**	**184673**	**169299**

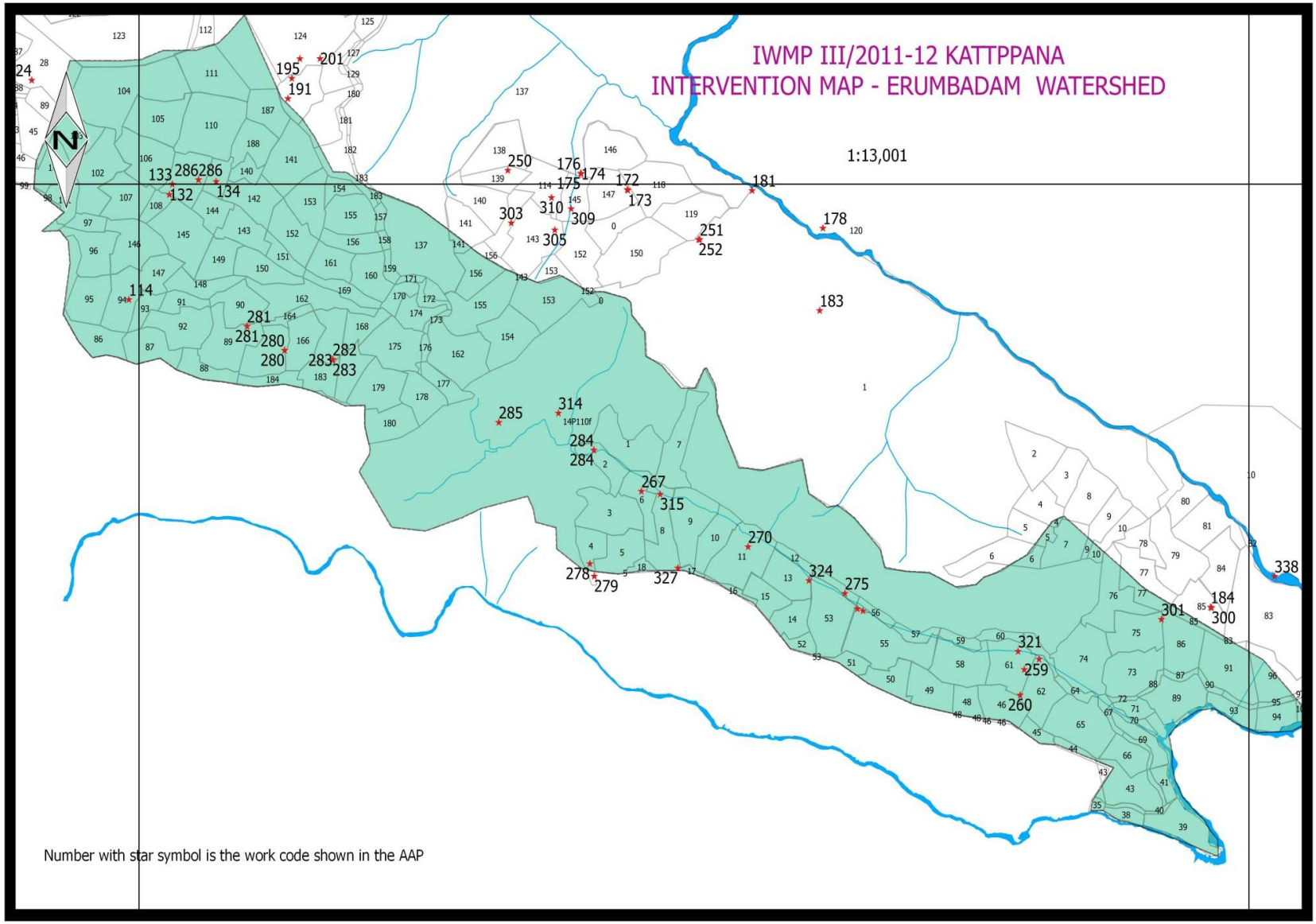

IWMP III/2011-12 KATTPPANA
INTERVENTION MAP - THNKAKKANAM WATERSHED
1:30,000
N
76°52'48.000"E
76°55'12.000"E
9°43'12.000"N
9°43'12.0
umber with star symbol is the work code shown in the AAP

76°57'36.000"E

77°0'0.000"E

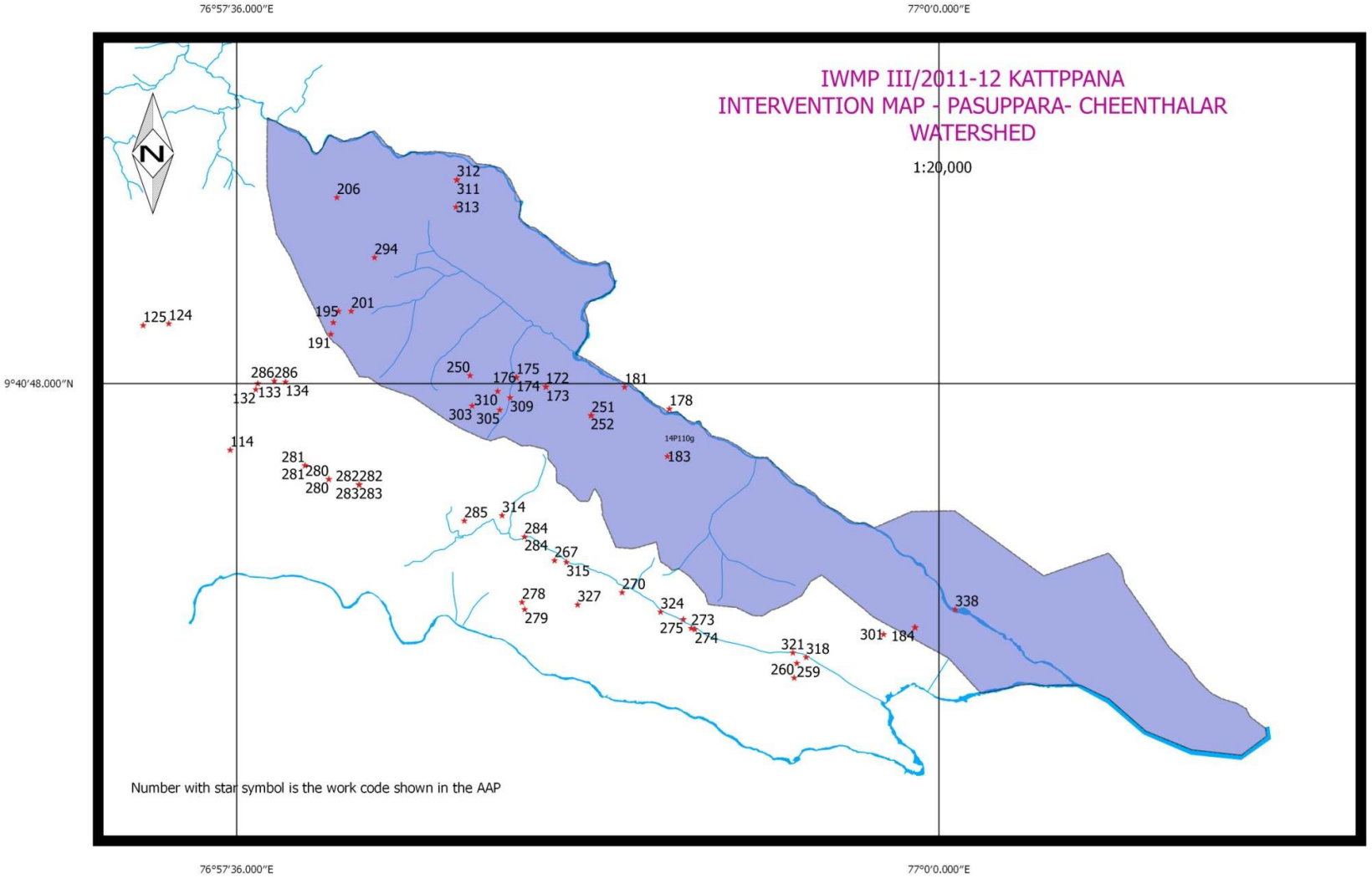
9°40'48.000"N

9°40'48.0



76°57'36.000"E

77°0'0.000"E


IWMP III/2011-12 KATTPPANA
INTERVENTION MAP - PASUPPARA- CHEENTHALAR
WATERSHED
1:20,000
N
76°57'36.000"E
77°0'0.000"E
9°40'48.000"N
9°40'48.0
312
311
313
206
294
125
124
195
201
191
250
176
175
174
172
173
181
178
310
309
303
305
251
252
14P110g
183
286
286
132
133
134
114
281
281
280
280
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283
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285
314
284
284
267
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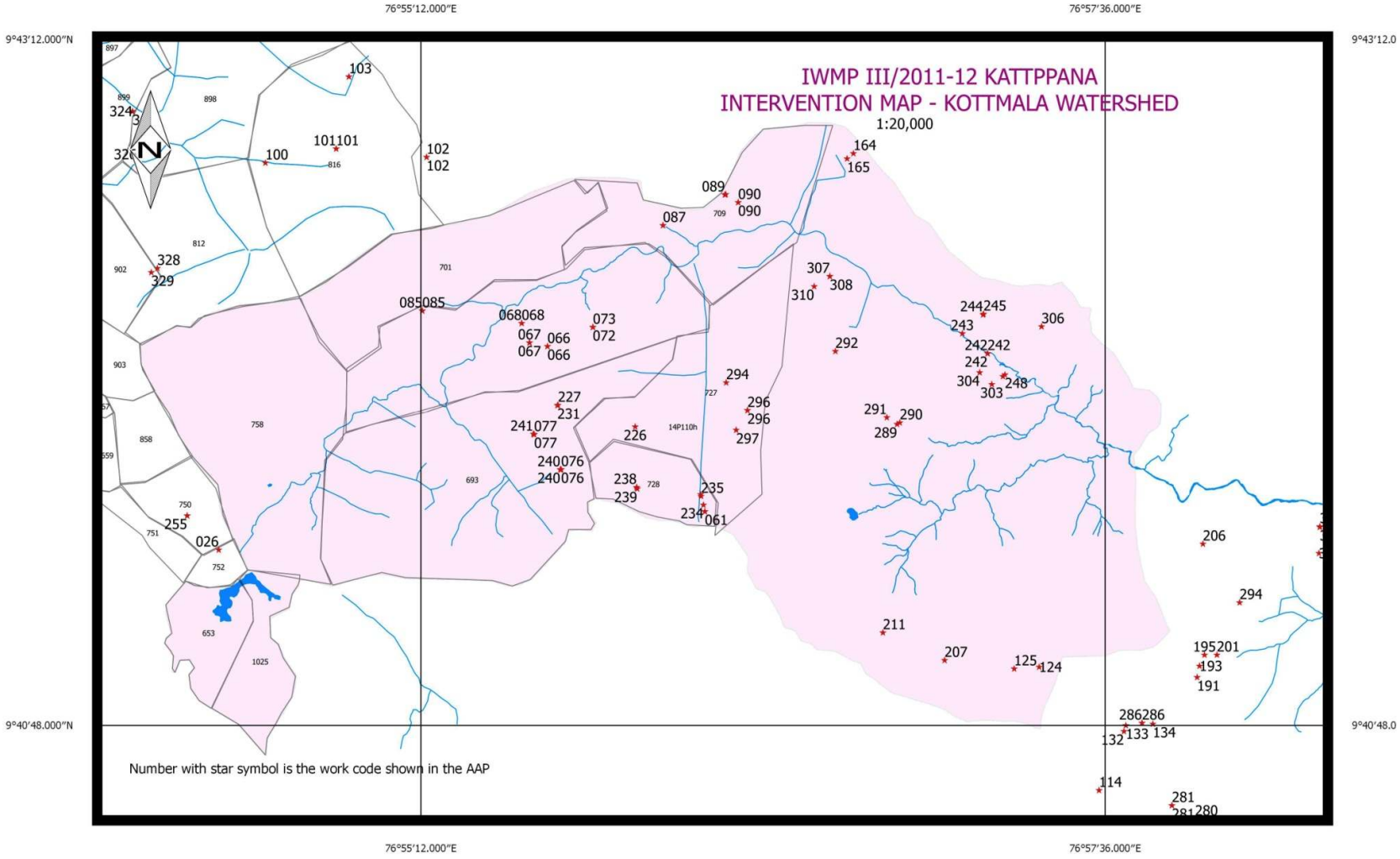
275
273
274
301
184
321
318
260
259
338
Number with star symbol is the work code shown in the AAP


IWMP III/2011-12 KATTPPANA
INTERVENTION MAP - KOTTMALA WATERSHED
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76°55'12.000"E
76°57'36.000"E
9°43'12.000"N
9°40'48.000"N
N
Number with star symbol is the work code shown in the AAP

Table 57: Expected Outcomes

Sl. No	Activity	Target Group	Pre project period status	Post project period Status
1	Stone bunding	Farmers	• Severe soil erosion at slope and ridges of soil	• 1,63,468 m2 stone bunding will prevent the soil erosion • Moisture conservation • Enhanced productivity by preventing loss of fertile top soil • Increased availability of fodder
2	Construction of Sub surface dyke	Farmers	• Lack of adequate waterconservation measures	• 32 Nos of the sub surface dyke will bring the following benefit: • Water Conservation • Ground water recharging
3	Management of water resources	Watershed community	• Limited availability of water for irrigation	• Rainwater Harvesting Ferrocement Tank (90 Nos), and construction of 280 silpaulin tanks ensuring the following; • Water availability in summer season (12 Months) • Availability of water for irrigation of homesteads from 280 silpaulin tanks. It will be use full to 280 farmers. • Silpaulin tanks can be used to grow fish • Renovation of water extracting wells and streams ensure safe drinking water for 230 families.
4	Bio-fencing	Watershed community	• Soil erosion along the bank of stream	• About 20 KM of bio fencing will protect the stream bank
5	Livelihood activities	Poor people (landless or asset less)	• About 50% per cent of families live below poverty line.	• Atleast 187 SHGs will get aid for strengthening their livelihood activities every year. • Generate employment

				opportunities (At least for 935Households) • Empowerment of land less, asset less poor people especially women who are home makers without having any monetory benefit.
6	Production system	Small and marginal farmers, asset less households	• Shortage Agricultural production	• Rise in production of paddy, milk, , eggs, vegetables etc

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.