INTEGRATED WATERSHED MANAGEMENT PROGRAMME (IWMP)

Wayanad-IWMP-5/2012-13

KALPETTA Block Panchayat

DETAILED PROJECT REPORT (DPR)

Prepared and Submitted by T S O – ARSHABHARATH

PREFACE

I am happy to present the Detailed Project Report (DPR) of the Kalpetta Block Panchayath IWMP Project for approval and follow up action.

Preparation of DPR is the most important activity of IWMP. DPR gives the justification, direction as well as road map of IWMP. Integration is the key concept in IWMP. DPR is the guide for integration.

DPR preparation is no easy task. It requires extensive study/research for data generation and the production of various types of maps and diagrams. Extensive knowledge and fine - tuned skills are necessary for its preparation.

A variety of PRA methods and tools were used, including FGD, SHG discussion, baseline survey, transect walk, mapping, problem tree analysis, for generating relevant socio-economic data, with focus on people's local knowledge and preferences. This base of popular knowledge was supplemented and strengthened with scientific and technical inputs.

Every effort has been made to make the Report substantial comprehensive and error free. We are happy with the final outcome. We hope this will serve the purpose of establishing a solid knowledge base for purposefully and effectively implementing the action programme.

ARSHABHARATH is gratified and grateful for having been entrusted with this formidable task by the Block Panchayath. I express my sincere thanks to one and all who have participated in this process and contributed to its successful finale.

M.M. Augustine
General Secretary & Director
ARSHABHARATH

Acknowledgement

This Detailed Project Report (DPR) is prepared and submitted as a basic inventory for the formation of development programmes in Kalpetta Block Panchayath from 2010 - 2011 onwards. The ARSHABHARATH, (TSO) with the support and co-operation of Kalpetta Block Panchayath, the PIA had made sincere attempts to adhere to the guidelines for the preparation of DPR and to incorporate all relevant details and data regarding the watershed in this report. We employed various PRA tools and collected details from key informants, social activists, individuals, institutions and all others.

In this context, ARSHABHARATH take this opportunity to acknowledge the service and co-operation of the following personnel/organizations/institutions and individuals for their valuable suggestions, support, assistance, contribution and co-operation for the successful completion and presentation of this report.

1. Directorate of Land Resources Govt. of India
2. Department of Rural Development Govt. of Kerala
3. State Level Nodal Agency (SLNA) Kerala
4. Project Director, PAU Wayanad
5. President , Secretary & Governing Body - *Kalpetta Block Panchayath*
6. Block Level Co-ordination Committee of IWMP
7. President , Secretary & Governing Body - *Meppadi Grama Panchayath*
8. President , Secretary & Governing Body – *Moopainad Grama Panchayath*
9. Assistant Director – *Soil Survey Wayanad*
10. Kerala State Land Use Board

11. Director KILA , Mulamkunnathukavu, Thrissur
12. Regional Agricultural Research Station, Ambalavayal
13. Assistant Director Survey and Land Records, Mananthavady
14. All related Line Departments Govt. of Kerala
15. Agriculture Officers – *Meppadi, Moopainad*
16. Members and Staffs of Kalpetta Block Panchayat
17. Elected members of *Meppadi, Moopainad* Grama Panchayaths
18. President , Secretary, Treasurer and members of all SHG's
19. CDS – Chairperson – *Meppadi, Moopainad* Grama Panchayaths
20. ADS – Presidents – *Meppadi, Moopainad* Grama Panchayaths
21. Kudumbasree Members – *Meppadi, Moopainad* Grama Panchayaths
22. WDT - ARSHABHARATH
23. The PRA team and all other staffs of ARSHABHARATH
24. The Watershed Community of *Meppadi, Chooralmala, Soochipara, Kalladi, Kanthampara, Meenakshipuzha, Vattathuri (Valathur), Kadachikunnu, Vattathuvayal and Choladi* Watersheds.

About the TSO

(Technical Support Organization)

ARSHABHARATH

ARSHABHARATH (Arshabharath Bahujana Bodhavalkarana Grama Vikasana Samithi) is a voluntary development mission for sustainable development. The main aim is promotion of holistic and spiritual values, concern and a care of nature, sustainable development of women, rural poor and weaker sections of the society. The organization was started in 1987 and registered under Indian charitable society Act-1860. ARSHABHARATH is has 'A'-grade affiliation with the State Commission for Women in Kerala and also a selected accredited NGO and Programme Implementing Agency (PIA) by Government and local body for watershed development projects. The organization having wide range of experience in the field of implementation of grass root level developmental projects, especially watershed based projects in the participatory manner. The organization has 26 years of practical experience especially in sustainable development activities.

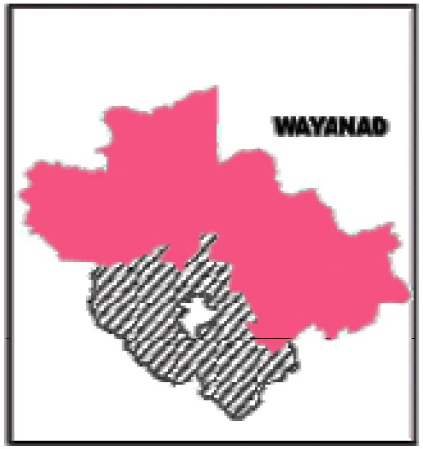
CONTENTS

PROJECT LOCATION

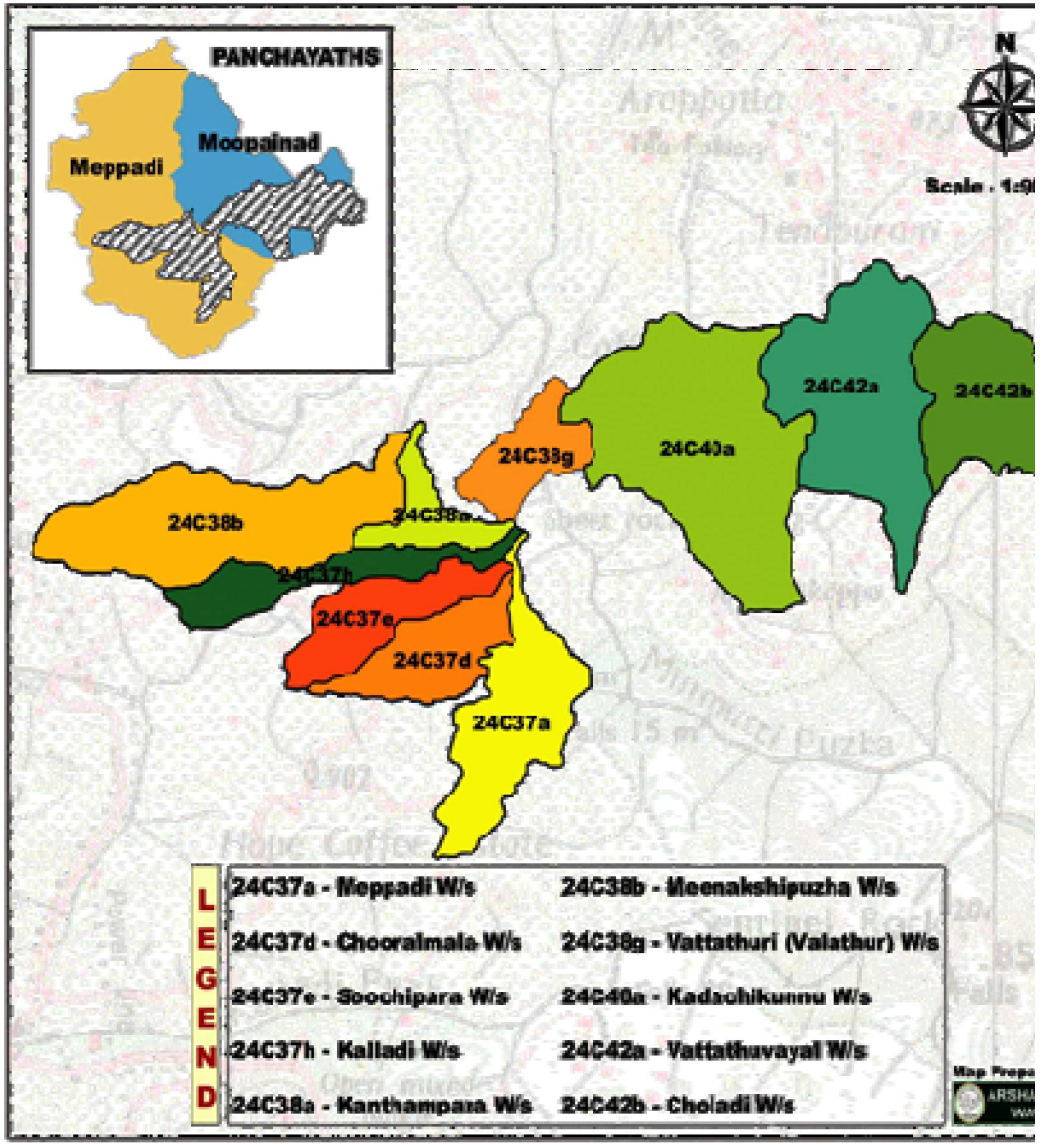
INTEGRATED WATERSHED MANAGEMENT PROGRAMME

IWMP 5

PIA - Kalpetta Block Panchayath



State	:	Kerala
District	:	Wayanad
Taluk	:	Vythiri
Block	:	Kalpetta
Panchayath	:	Meppadi, Moopainad
Village	:	Vellarimala, Moopainad
Total Area	:	4983 Ha
Treatable Area	:	3347 Ha



CHAPTER - 1

INTRODUCTION AND BACKGROUND

Introduction and Background

Project Background

Integrated Watershed Management Programme (IWMP) is a centrally sponsored scheme under the Ministry of Land Resources, Department of Rural Development, Government of India. In Kerala the scheme is implemented through Department of Rural Development. All the watershed development programmes like IWDP, Hariyali, NWDPRA etc are now under one watershed development programme viz., IWMP, following the New Common Guidelines published by GoI.

The main objective of IWMP project is judicious utilization of every drop of rainwater received, for domestic consumption, agriculture, horticulture, livestock rearing etc thereby attaining self sufficiency in drinking water, increase in employment opportunities, increase the standard of living etc. A holistic approach is envisaged in this programme. Unlike other watershed development projects here there is space for providing assistance to livelihood activities, assistance for enhancing production system and also provision for microenterprises.

The project area is a cluster of micro watersheds with an area of 1000 to 5000ha rather than individual micro watersheds. There would be dedicated implementing agencies with multi-disciplinary professional teams at the national, state and district level for managing the watershed programmes.

At the state level there is the State Level Nodal Agency (SLNA) with Agricultural Production Commissioner as the chairperson. At the district level there is the Watershed Cell cum Data Centre (WCDC) which will oversee the implementation of watershed programmes in each district. At the project level there is the Project Implementing Agency (PIA). In the project implementation level, Block Panchayat is the PIA. At the watershed level there is the Watershed Committee (WC), constituted from Gama Sabha. The actual implementation of the scheme in the field is done by WC.

Duration of the programme is in the range of 4 years to 7 years depending upon nature of activities spread over 3 distinct phase viz., preparatory phase, works phase and consolidation phase.

The project aims to restore the ecological balance by harnessing, conserving and developing degraded natural resources such as soil, vegetative cover and water. The outcomes are prevention of soil run-off, regeneration of natural vegetation, rain water harvesting and recharging of the ground water table. This enables multi-cropping and the introduction of diverse agro-based activities, which help to provide sustainable livelihoods to the people residing in the watershed area.

Government of India have issued common guidelines for watershed development in order to have a unified perspective by all stake holders. The key features of common guidelines include innovativeness in the approach, delegation of powers, strengthening dedicated institutions, social, gender and economic equity in sharing enhanced productivity and livelihood, multi-tier ridge to valley system approach and centrality of community participation. The IWMP is a holistic project with all essential components such as capacity building, lively-hood activities, Production system, natural resource management, and a dedicated institutional system for effective and comprehensive implementation.

Kerala is the only state where IWMP is being implemented exclusively and through the complete involvement of local self government organizations and involving maximum participation of local population right from planning through all stages of implementation and monitoring.

Need and Scope for Watershed Development

In the context of severe depletion of natural resources, watershed development approach has been proposed as the core strategy for rural development. Only conservation and restoration of the natural resource base can ensure sustainable grass root development. A watershed is a geographical area which drains into a common point. Watershed approach aims at augmentation and stabilization of production and productivity, minimizing ecological degradation and generating as well as maintaining sustainable rural development in rain-fed areas. Watershed management activities integrate different development sectors to provide a foundation for sustainable development model. Watershed development is increasingly seen as the lynchpin of the rural development programme and is recognized as a strategy to meet the increasing demand agricultural production. Watershed management provides an opportunity for optimum utilization of natural resources and it provides for an opportunity to generate employment and hence it is widely taken as a rational unit for the grass root level development. It was in this context that Govt. of India decided to implement watershed development projects in the distressed districts in India. Wayanad is among the 31 districts declared by the central government as distressed.

Project at a Glance

Name of the State	Kerala
Name of the project	IWMP 5
Name of the District	Wayanad
Names of the Blocks	Kalpetta Block
Names of Gram Panchayats	Meppadi, Moopainad
Names & Census Code of Villages covered	1. Moopainad – 00023700 2. Vellarymala – 00023800
Four major reasons for selection of watershed	1. Vulnerability of agriculture. 2. Climate Change. 3. Presence of SC and ST agriculture labourers. 4. Scope of improving productivity.
Name, Address & Phone No. of the PIA(s)	Block Development Officer Kalpetta Block Panchayath Wayanad, Kerala Phone: 04936 202265
Area of the Project (ha.)	4983 Ha
Area proposed to be treated (ha.)	3347 Ha
Financial Year of sanction	2011 - 2012
Project Cost (Rs. in Lakhs)	502.05 lakh

Criteria and weightage for selection of Watershed

No	Criteria	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)	

Watershed Information

Sl No	Name of Watershed	Code	**Total area** (in Ha)	**Treatable area** (in Ha)	Watershed Type
1	Meppadi	24C37a	517	333	Micro
2	Chooralmala	24C37d	283	275	
3	Soochipara	24C37e	316	223	
4	Kalladi	24C37h	215	157	
5	Kanthanpara	24C38a	165	144	
6	Meenakshipuzha	24C38b	795	440	
7	Vatatturi (Valathur)	24C38g	209	193	
8	Kadachikunnu	24C40a	1125	586	
9	Vattathuvayal	24C42a	848	589	
10	Choladi	24C42b	510	407	
Total			**4983**	**3347**	

CHAPTER - 2

GENERAL DESCRIPTION OF PROJECT AREA

General Description of Project Area

Location:

Sl. No	Name of Project	State	District	Taluk	Block	Name of microwatersheds	Longitude	Latitude	Villages Covered	Panchayath	Wards Covered	Approach road	Land mark
1.	IWMP 5	Kerala	Wayanad	Vythiri	Kalpetta	Meppadi	76° 09' 11.0" E - 76° 10' 36.6" E	11° 28' 13.6" N - 11° 31' 1.4" N	Vellarmala	Meppadi	8, 13	Meppadi, Chooralmala – Mundakai Road	Mundakai Tea Factory, Mudakai Temple
2.						Chooralmala	76° 07' 58.5" E - 76° 09' 54.7" E	11° 29' 33.2" N - 11° 30' 41.5" N			10, 12	Chooralmala – Meppadi Road	Chooralmala BSNL Exchange
3.						Soochipara	76° 07' 47.3" E - 76° 09' 54.7" E	11° 29' 40.6" N - 11° 30' 47.5" N			9, 10	Chooralmala – Meppadi Road	Puthumala School
4.						Kalladi	76° 06' 40.3" E - 76° 10' 0"E	11° 30' 10.7" N - 11° 31' 4.0" N			8	Chooralmala – Meppadi Road	Kalladi Anganwadi
5.						Kanthanpara	76° 08' 24.2" E - 76° 09' 55.4" E	11° 30' 51.2" N - 11° 31' 58.0" N			8	Kalladi – Vellappankandi Road	Vellappankadi
6.						Meenakshipuzha	76° 05' 27.5" E - 76° 08' 57.2" E	11° 30' 32.4" N - 11° 31' 53.2" N			8, 13	Chooralmala – Meppadi Road	Govt. Poly Technique
7.						Vatathuri (Valathur)	76° 09' 22.5" E - 76° 10' 39.1" E	11° 31' 4.4" N - 11° 32' 20.7" N	Moopainad	Muppainad	10, 12, 13	Rippon – Puthukad , Valathur - Anadikappu Road	Aramangalamchal Anganawadi
8.						Kadachikunnu	76° 10' 20.4" E - 76° 12' 41.7" E	11° 30' 19.4" N - 11° 32' 5." N			9, 10, 11, 12	Rippon – Kadachikunnu Road	Kadachikunnu Waterfall
9.						Vattathuvayal	76° 12' 11.3" E - 76° 13' 48.4" E	11° 30' 30." N - 11° 33' 20.7" N			7, 8, 9	Meppadi – Vaduvanchal Road	Vattathuvayal 60 Anganawadi
10.						Choladi	76° 13' 34.7" E - 76° 15' 9.0" E	11° 31' 20.0" N - 11° 32' 54.0" N			6, 7	Vaduvanchal – Choladi Road	Neelimala

Area:

Sl.No.	Name ofwat ershe ds	Name of village	Geographical area	Forest area	Land underagricultural use	Rainfed area	Permanentpastures	Wasteland	
								Cultiv able	Non-cultiva ble
1.	Meppadi	Vellerimala	517	106	333	333	0	2	16
2.	Chooralmala	Vellerimala	283	30	275	275	0	7	7
3.	Soochipara	Vellerimala	316	108	223	223	0	14	12
4.	Kalladi	Vellerimala	215	83	157	157	0	36	8
5.	Kanthanpara	Vellerimala	165	11	144	144	0	10	0
6.	Meenakshipuzh a	Vellerimala	795	417	440	440	0	135	1
7.	Vatatturi (Valathur)	Moopainad	209	40	193	193	0	12	5
8.	Kadachikunnu	Moopainad	1125	49	586	586	0	40	27
9.	Vattathuvayal	Moopainad	848	270	589	589	0	33	11
10.	Choladi	Moopainad	510	21	407	407	0	39	14
Total			**4983**	**1135**	**3347**	**3347**	**0**	**329**	**102**

Physiography:

Sl.no.	Name of watershed	Elevation (MSL)	Slope range (%)	Order of watershed	Major stream	Toposequence
1.	Meppadi	700 m - 1420 m	11.51° [20.37%]	3rd Order	Attamala 13th No. Thodu, Punna Puzha	58A/2, 58A/3
2.	Chooralmala	800 m - 1240 m	9.36° [16.48%]	3rd Order	Neelikkappu - Chooralmala Thodu	58A/2, 58A/3
3.	Soochipara	720 m - 1280 m	12.78° [22.67%]	3rd Order	Pachakkad - Elavayal thodu	58A/2, 58A/3
4.	Kalladi	460 m - 1320 m	15.31° [27.38%]	1st Order	Kalladi Puzha	58A/2
5.	Kanthanpara	460 m - 940 m	15.37° [27.49%]	1st Order	Vellappankandi thodu, Kanthanpara Puzha	58A/2
6.	Meenakshipuzha	800 m - 1960 m	16.26° [29.16%]	3rd Order	Meenakshi Puzha	58A/2
7.	Vatatturi (Valathur)	460 m - 920 m	12.78° [22.69%]	3rd Order	Aramangalamchal Thodu	58A/2
8.	Kadachikunnu	160 m - 920 m	14.67° [26.19%]	4th Order	Kadachikunnu Thodu, Pottan Thodu, Anakundu Thodu	58A/2
9.	Vattathuvayal	100 m - 1000 m	15.12° [27.02%]	3rd Order	Sekharankundu Thodu, Manjalam Thodu	58A/2
10.	Choladi	340 m - 1000 m	13.26° [23.57%]	2nd Order	Choladi Puzha, Velleri Thodu, Edakkodu Thodu	58A/2, 58A/6

Climate:

Sl. No.	Name of watershed	Year	Average annual rainfall (in MM)	Temperature (in ^{O}C)	
				Maximum	Minimum
1.	Meppadi	2003 - 2013	2900	30	18
2.	Chooralmala				
3.	Soochipara				
4.	Kalladi				
5.	Kanthanpara				
6.	Meenakshipuzha				
7.	Vatatturi (Valathur)				
8.	Kadachikunnu				
9.	Vattathuvayal				
10.	Choladi				

Watershed characteristics:

Sl. No.	Name of watershed	Shape index	Name of Main Stream	Length of main stream (in Km)	Average slope	Watershed relief	Perimeter
1.	Meppadi	0.54	Attamala 13th No. Thodu,	1.5	11.51° [20.37%]	700 m - 1420 m	15.198 km
2.	Chooralmala	0.60	Neelikkappu - Chooralmala Thodu	2.5	9.36° [16.48%]	800 m - 1240 m	10.367 km
3.	Soochipara	0.61	Pachakkad - Elavayal thodu	2	12.78° [22.67%]	720 m - 1280 m	10.298 km
4.	Kalladi	0.41	Kalladi Puzha	6	15.31° [27.38%]	460 m - 1320 m	14.38 km
5.	Kanthanpara	0.51	Vellappankandi thodu,	1.3	15.37° [27.49%]	460 m - 940 m	9.19 km
6.	Meenakshipuzha	0.61	Meenakshi Puzha	3.1	16.26° [29.16%]	800 m - 1960 m	16.615 km
7.	Vatatturi (Valathur)	0.67	Aramangalamchal Thodu	1.6	12.78° [22.69%]	460 m - 920 m	8.187 km
8.	Kadachikunnu	0.69	Kadachikunnu Thodu,	2.2	14.67° [26.19%]	160 m - 920 m	17.332 km
9.	Vattathuvayal	0.65	Sekharankundu Thodu,	1.7	15.12° [27.02%]	100 m - 1000 m	15.745 km
10.	Choladi	0.74	Velleri Thodu,	1.3	13.26° [23.57%]	340 m - 1000 m	11.096 km

CHAPTER - 3

BASELINE SURVEY

Baseline Survey

Socio-Economic conditions

Sl, No.	Name of Watershed	Area(in Ha)	Total Families	House Holds			BPL Families	Land holding/Family (in Ha)
				SC	ST	Others		Total treatable area/total HH
1.	Meppadi	517	351	20	11	320	34	0.47
2.	Chooralmala	283	719	81	20	618	263	0.38
3.	Soochipara	316	416	16	8	392	114	0.53
4.	Kalladi	215	58	12	2	44	42	1.35
5.	Kanthanpara	165	14	0	0	14	0	5.1
6.	Meenakshipuzha	795	373	12	78	283	178	1.18
7.	Vatatturi (Valathur)	209	849	35	25	789	328	0.27
8.	Kadachikunnu	1125	999	86	74	839	306	0.58
9.	Vattathuvayal	848	521	9	29	483	250	1.13
10.	Choladi	510	395	23	15	357	188	1.03
Total		**4983**	**4695**	**294**	**262**	**4139**	**1703**	

Population

Sl. No.	Name of Watershed	Population							
		SC		ST		Others		Total	
		M	F	M	F	M	F	M	F
1.	Meppadi	40	36	22	22	556	515	618	573
2.	Chooralmala	143	127	27	20	745	877	915	1024
3.	Soochipara	31	26	7	19	639	603	677	648
4.	Kalladi	25	22	3	3	55	50	83	75
5.	Kanthanpara	0	0	0	0	0	0	0	0
6.	Meenakshipuzha	21	19	146	142	490	454	657	615
7.	Vatatturi (Valathur)	64	60	51	54	1247	1195	1362	1309
8.	Kadachikunnu	153	161	140	136	1614	1497	1907	1794
9.	Vattathuvayal	21	16	54	53	545	531	620	600
10.	Choladi	23	54	24	35	623	640	670	729
Total		**521**	**521**	**474**	**484**	**6514**	**6362**	**7509**	**7367**

Details of land holding pattern in the project area

Sl. No.	Name of the Watershed	Type of Farmer	No. of households	No. of BPL households	Land holding (ha)		
					Irrigated	Rainfed	Total
1.	Meppadi	Landless	306	34	NA	NA	NA
		Small	42			84	84
		Marginal	2			5	5
		Large	1			244	244
		Sub-Total	**351**			**333**	**333**
2.	Chooralmala	Landless	407	263	NA	NA	NA
		Small	264			144	144
		Marginal	42			101	101
		Large	6			30	30
		Sub-Total	**719**			**275**	**275**
3.	Soochipara	Landless	254	114	NA	NA	NA
		Small	131			118	118
		Marginal	21			60	60
		Large	10			45	45
		Sub-Total	**416**			**223**	**223**
4.	Kalladi	Landless	35	42	NA	NA	NA
		Small	21			97	97
		Marginal	2			60	60
		Large	0			0	0
		Sub-Total	**58**			**157**	**157**
5.	Kanthampara	Landless	0		NA	NA	NA
		Small	0			0	0
		Marginal	12			24	24
		Large	2			120	120
		Sub-Total	**14**			**144**	**144**
6.	Meenakshipuzha	Landless	92	92	NA	NA	NA

		Small	181	86		210	210
		Marginal	40			130	130
		Large	60			100	100
		Sub-Total	**373**			**440**	**440**
7.	Vatatturi (Valathur)	Landless	507	328	NA	NA	NA
		Small	292			102	102
		Marginal	47			52	52
		Large	3			39	39
		Sub-Total	**849**			**193**	**193**
8.	Kadachikunnu	Landless	508	306	NA	NA	NA
		Small	407			336	336
		Marginal	70			130	130
		Large	14			120	120
		Sub-Total	**999**			**586**	**586**
9.	Vattathuvayal	Landless	225	225	NA	NA	NA
		Small	206	25		249	249
		Marginal	67			210	210
		Large	23			130	130
		Sub-Total	**521**			**589**	**589**
10.	Choladi	Landless	99	99	NA	NA	NA
		Small	214	89		192	192
		Marginal	76			171	171
		Large	6			44	44
		Sub-Total	**395**			**407**	**407**
Total		**Landless**	**2434**	**1250**	**NA**	**NA**	**NA**
		Small	**1758**			**1532**	**1532**
		Marginal	**381**			**943**	**943**
		Large	**122**			**872**	**872**
		4695		**1703**		**3347**	**3347**

Details of infrastructure in the project area

Sl. No.	Name of Watershed	Major road	School			Distance from nearest PHC	Distance from Post office	Distance from nearest Banks	Distance from nearest market	No. of milk collection centre
			LP	UP	HS					
1.	Meppadi	Meppadi, Chooralmala – Mundakai Road	1			3	2	16	16	2
2.	Chooralmala	Chooralmala – Meppadi Road			1	1	1	14	14	2
3.	Soochipara	Chooralmala – Meppadi Road	1			2	2	13	13	2
4.	Kalladi	Chooralmala – Meppadi Road				2	3	11	11	1
5.	Kanthanpara	Kalladi – Vellappankandi Road				2	3	9	9	
6.	Meenakshipuzha	Chooralmala – Meppadi Road	1			1	4	8	8	2
7.	Vatatturi (Valathur)	Rippon – Puthukad , Valathur - Anadikappu Road				1	1	5	5	2
8.	Kadachikunnu	Rippon – Kadachikunnu Road			1	1	2	5	5	3
9.	Vattathuvayal	Meppadi – Vaduvanchal Road				2	2	3	3	3
10.	Choladi	Vaduvanchal – Choladi Road	1			1	2	2	2	3

Soil and Land Use

Sl. No.	Name of the Watershed	Sand	Major soil types (in Ha)				Major crops (in Ha)				
			Sandy clay loam	Sandy loam	Silt clay loam	Total	Tea	Coffee	Cardamom	Mixed	Total
1.	Meppadi	0	517	0	0	517	250	45	15	23	333
2.	Chooralmala	0	283	0	0	283	85	138	14	38	275
3.	Soochipara	0	316	0	0	316	63	112	27	21	223
4.	Kalladi	0	215	0	0	215	0	34	86	37	157
5.	Kanthanpara	0	165	0	0	165	0	128	0	16	144
6.	Meenakshipuzha	0	717	78	0	795	18	228	72	122	440
7.	Vatatturi (Valathur)	0	209	0	0	209	6	108	2	77	193
8.	Kadachikunnu	0	1125	0	0	1125	138	241	9	198	586
9.	Vattathuvayal	0	848	0	0	848	0	382	29	178	589
10.	Choladi	0	445	65	0	510	0	234	38	135	407
Total		**0**	**4840**	**143**	**0**	**4983**	**560**	**1650**	**292**	**845**	**3347**

Agriculture

Sl. No.	Name of watershed	Agricultural area	Major crops	Summer			Winter		
				Area	Production (In Tonne)	Productivity (Tonne/Ha)	Area	Production	Productivity
1.	Meppadi	333	Tea	250	400	1.6	250	425	1.7
			Coffee	45	29	0.8	0	0	0
			Cardamom	15	0	0	15	3	0.2
			Mixed Crop	23	9.2	0.4	0	0	0
2.	Chooralmala	275	Tea	85	136	1.6	85	144.5	1.7
			Coffee	138	27.6	0.2			
			Cardamom	14	0	0	14	2.8	0.2
			Mixed Crop	38	45.6	1.2			
3.	Soochipara	223	Tea	63	100.8	1.6	63	171.36	1.7
			Coffee	112	89.6	0.8			
			Cardamom	27	0	0	27	5.4	0.2
			Mixed Crop	21	25.2	1.2	0	0	0
4.	Kalladi	157	Tea	0	0	0	0	0	0
			Coffee	34	27.2	0.8			
			Cardamom	86	0	0	86	17.2	0.2
			Mixed Crop	37	44.4	1.2	0	0	
5.	Kanthanpara	144	Tea	0	0	0	0	0	0
			Coffee	128	102.4	0.8			
			Cardamom	0	0	0	0	0	0
			Mixed Crop	16	19.2	1.2	0	0	0
6.	Meenakshipuzha	440	Tea	18	28.8	1.6	18	30.6	1.7
			Coffee	228	182.4	0.8	0	0	0

			Cardamom	72	0	0	72	14.4	0.2
			Mixed Crop	122	158.6	1.3	0	0	0
7.	Vatatturi (Valathur)	193	Tea	6	9.6	1.6	6	10.2	1.7
			Coffee	108	86.4	0.8	0	0	0
			Cardamom	2	0	0	2	0.4	0.2
			Mixed Crop	77	92.4	1.2	0	0	0
8.	Kadachikunnu	586	Tea	138	220.8	1.6	138	234.6	1.7
			Coffee	241	192.8	0.8	0	0	0
			Cardamom	9	0	0	9	1.8	0.2
			Mixed Crop	198	277.2	1.4	0	0	0
9.	Vattathuvayal	589	Tea	0	0	0	0	0	0
			Coffee	382	305.6	0.8	0	0	0
			Cardamom	29	0	0	29	5.8	0.2
			Mixed Crop	178	249.2	1.4	0	0	0
10.	Choladi	407	Tea	0	0	0	0	0	0
			Coffee	234	187.2	0.8	0	0	0
			Cardamom	38	0	0	38	7.6	0.2
			Mixed Crop	135	175.5	1.3	0	0	0
Total		**3347**	**Tea**	**560**	**896**	**1.6**	**560**	**952**	**1.7**
			Coffee	**1650**	**1320**	**0.8**	**0**	**0**	**0**
			Cardamom	**292**	**0**	**0**	**292**	**58.4**	**0.2**
			Mixed Crop	**845**	**1098.5**	**1.3**	**0**	**0**	**0**

Horticulture

Sl. No.	Name of watershed	Major crops	Area (in ha.)
1.	Meppadi	Mango, Guava	0.20
2.	Chooralmala	Mango, Guava, Sapota, Gooseberry, lemon	0.80
3.	Soochipara	Mango, Guava, Sapota, Gooseberry, lemon	0.50
4.	Kalladi	Mango, Guava	0.20
5.	Kanthanpara	Mango	0.20
6.	Meenakshipuzha	Mango, Guava, Sapota, Gooseberry, lemon	1.20
7.	Vatatturi (Valathur)	Mango, Guava, Sapota, Gooseberry, lemon	0.85
8.	Kadachikunnu	Mango, Guava, Sapota, Gooseberry, lemon	1.20
9.	Vattathuvayal	Mango, Guava, Sapota, Gooseberry, lemon	0.95
10.	Choladi	Mango, Guava, Sapota, Gooseberry, lemon	0.40

Livestock and Fisheries

Sl.No.	Name of watershed	Cow		Buffalo		Goat		Total milk (Cow+Buffalo+Goat) milk/day	Hen	Pig	Others
		Nos.	Milk (in litres)	Nos.	Milk (in litres)	Nos.	Milk (in litres)				
1.	Meppadi	3	12	0	0	0	0	12	13	0	2
2.	Chooralmala	30	150	0	0	48	12	162	129	0	169
3.	Soochipara	13	52	0	0	16	5	57	46	0	10
4.	Kalladi	4	12	0	0	4	2	14	9	0	10
5.	Kanthanpara	0	0	0	0	0	0	0	0	0	
6.	Meenakshipuzha	15	62	5	0	34	11	73	327	0	26
7.	Vatatturi (Valathur)	39	152	2	0	65	15	167	454	0	131
8.	Kadachikunnu	127	481	16	0	321	115	596	588	0	182
9.	Vattathuvayal	25	85	1	0	71	25	110	187	0	304
10.	Choladi	75	280	8	0	108	30	310	446	0	64

Forests and Grass land

Sl. No.	Name of watershed	Forest area (in Ha)
1.	Meppadi	106
2.	Chooralmala	30
3.	Soochipara	108
4.	Kalladi	83
5.	Kanthanpara	11
6.	Meenakshipuzha	417
7.	Vatatturi (Valathur)	40
8.	Kadachikunnu	49
9.	Vattathuvayal	270
10.	Choladi	21
Total		**1135**

Livelihood Status

Sl. No.	Name of watershed	Total no. of Population	Agriculture	Animal husbandry	Casual labour	Govt.	Private	Others
1	Meppadi	1191	90	14	755	6	35	291
2	Chooralmala	1939	942	80	601	16	15	285
3	Soochipara	1325	445	45	401	7	41	386
4	Kalladi	158	36	12	48	2	1	59
5	Kanthanpara	0	0	0	0	0	0	0
6	Meenakshipuzha	1272	503	34	491	4	6	234
7	Vatatturi (Valathur)	2671	545	120	1140	10	132	724
8	Kadachikunnu	3701	1034	220	1602	5	74	766
9	Vattathuvayal	1220	321	216	501	7	33	142
10	Choladi	1399	575	314	288	9	38	175
Total		**16498**	**4491**	**1055**	**7051**	**66**	**375**	**3460**

Hydrology and Water Resources

Sl. No.	Name of watershed	Sources	Ground water table (in metre)	Availability (in months)	Quality
1.	Meppadi	Open Well	9	8	Moderate
		Bore Well	90	12	Moderate
		Others	5	6	Moderate
2.	Chooralmala	Open Well	10	8	Moderate
		Bore Well	105	12	Moderate
		Others	6	6	Moderate
3.	Soochipara	Open Well	8	8	Moderate
		Bore Well	95	12	Moderate
		Others	6	6	Moderate
4.	Kalladi	Open Well	6	8	Moderate
		Bore Well	85	12	Moderate
		Others	4	6	Moderate
5.	Kanthanpara	Open Well	7	8	Moderate
		Bore Well	100	12	Moderate
		Others	5	6	Moderate

6.	Meenakshipuzha	Open Well	8	8	Moderate
		Bore Well	115	12	Moderate
		Others	6	6	Moderate
7.	Vatatturi (Valathur)	Open Well	9	8	Moderate
		Bore Well	130	12	Moderate
		Others	7	6	Moderate
8.	Kadachikunnu	Open Well	7	8	Moderate
		Bore Well	120	12	Moderate
		Others	5	6	Moderate
9.	Vattathuvayal	Open Well	5	8	Moderate
		Bore Well	110	12	Moderate
		Others	3	6	Moderate
10.	Choladi	Open Well	6	8	Moderate
		Bore Well	125	12	Moderate
		Others	4	6	Moderate

Irrigation

Sl.No.	Name of watershed	Existing area under irrigation					
		Source of Irrigation					
		Well (Domestic)	**Tank**	**Pond**	**Canal**	**Check Dam**	**Total**
1	Meppadi	13	0	1	0	1	**15**
2	Chooralmala	280	0	1	0	0	**281**
3	Soochipara	88	0	1	0	0	**89**
4	Kalladi	12	0	0	0	1	**13**
5	Kanthanpara	2	0	0	0	0	**2**
6	Meenakshipuzha	121	0	0	0	0	**121**
7	Vatatturi (Valathur)	646	0	0	0	0	**646**
8	Kadachikunnu	494	0	1	0	0	**495**
9	Vattathuvayal	161	0	0	0	0	**161**
10	Choladi	176	1	0	0	0	**177**
Total		**1993**	**1**	**4**	**0**	**2**	**2000**

Soil and Moisture Conservation and Efficient use of Water

Problems and Needs

Problems Identified	Solutions	Outcomes
Soil erosion and heavy surface run off	a. Soil and Moisture conservation b. Land Development c. Formation and Renovation of Vegetative and Engineering structures	Conservation of water, reduction in soil erosion, improvement in soil fertility and productivity, ground water recharge, reduction in water scarcity, enhanced economic capacity of the farmers
Water scarcity	a. Ground water recharge through soil and water conservation methods b. Formation and Renovation of water harvesting structures	Improvement in drinking water availability Increase in water table Regeneration of water sources/springs, streams
Breakdown of agriculture	a. Promotion of multi tier cropping system b. maintaining optimum plant density c. popularization of bio-diversity d. optimum utilization of land and water e. Formation and Renovation of water harvesting structures	Increased and assured production in quality and quantity. Economic improvement of farmers, farm workers and families
Insufficient income	a. Livelihood enhancement programmes such as backyard poultry and cow rearing. b. Production enhancement programmes such as homestead vegetable cultivation, indigenous banana cultivation, cardamom planting etc.	Improvement in the economic status of the stakeholders, employment opportunities created, and health promotion. Economic improvement of farmers, farm workers and families

Dwindling bio-mass	a. Cultivation of plants of multiple use/fruit trees and timber trees/ medicinal plants etc. in farms	Improvement in the availability of green manure, fuel wood, fodder food and medicine. Development of micro climate, humus, reduction in soil erosion and increase in ground water level
Low Capacity of the people/low awareness, low motivation, low skill	a. Training at regular intervals, exposure visits to various places, b. organization of demonstrative plots and IEC etc.	Improvement in information, knowledge, skills and wisdom of the farmers and development of the spirit of healthy competition.
Low status of women	a. Promotion of women's groups b. Counselling c. Awareness generation d. Training	Improvement in awareness, collective power, skills and decrease in atrocities against women

Details of flood and drought in the project area

1	2	3	4		5
Sl. No.	Particulars	Villages	Periodicity		Not affected
			Annual	Any other	
1	Flood	No. of villages	0	Nil	Nil
		Name(s) of villages	Nil	Nil	Nil
2	Drought	No. of villages	2 (6 – 8 months)	Nil	Nil
		Name(s) of villages	Vellerimala, Moopainad	Nil	Nil

Details of soil erosion in the project area

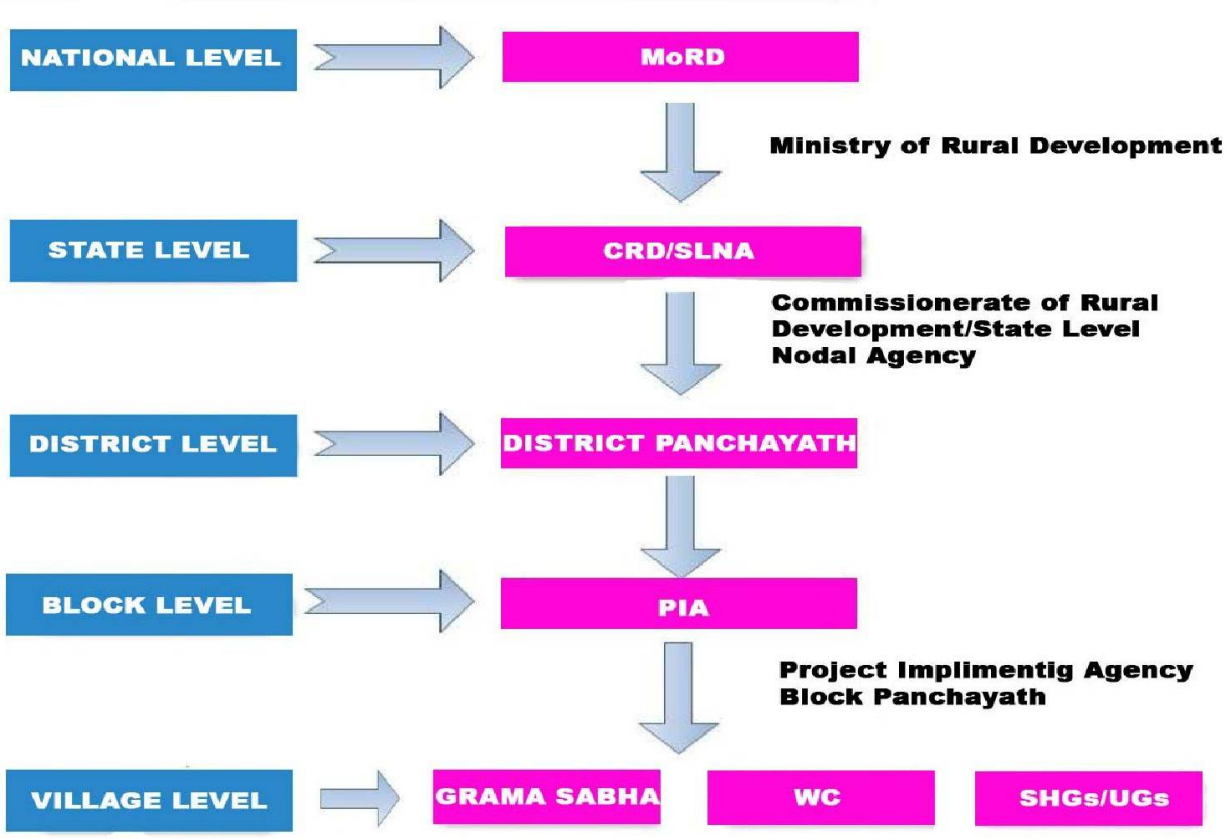
1		2	3	4	5
Cause		**Type of erosion**	**Area affected (ha)**	**Run off (mm/ year)**	**Average soil loss (Tonnes/ ha/ year)**
Water erosion					
	a	Severe	836	NA	NA
	b	Moderate	2452		
	c	Slight	1695		
Sub-Total			4983		
Wind erosion			NA	NA	NA
Total			**4983**		

CHAPTER - 4

INSTITUTION BUILDING AND PROJECT MANAGEMENT

Institution Building and Project Management

Institutional Arrangements at a Glance



Institutional Arrangements at State and District Levels

Appropriate institutional arrangements are made at various levels for effective and professional management of watershed development projects. People's organizations coupled with the smooth functioning of the government institutions hold the key to the successful implementation and completion of the project. NRAA has formed a State Level Nodal Agency to coordinate and look after the progress of the program. The various institutional arrangements at the state level are as following:

State Level Nodal Agency

A dedicated State Level Nodal Agency (SLNA is constituted by the State Government having an independent bank account. The state should be given the flexibility to utilize or strengthen an existing state level agency/department/organization. Central assistance for SLNA will be transferred directly to the account of SLNA and not into the State Government budget. There would be multi-disciplinary professional support team at the State level to implement the programme. The Agricultural Production Commissioner is nominated by the State Government as the Chairpman of the SLNA. The State Level Nodal Agency will have a full-time CEO in order to ensure the smooth functioning of the program

Watershed Cell cum Data Centre (WCDC)

A separate Cell, called the Watershed Cell cum Data Centre (WCDC) is established at the district level, which will oversee the implementation of watershed programme in the district and will have separate independent accounts for this purpose. WCDC will function in close co-ordination with the District Planning Committee.

Institutional Arrangements at Project Level

Project Implementing Agency (PIA)

The Block Panchayath in which the project lies is selected as the Project Implementing Agency (PIA) by the SLNA for IWMP in Kerala. PIAs are implementing the project. For IWMP 5, Kalpetta Block is selected as the Project Implementing Agency. The Project Implementing Agency (PIA) is constituted to provide necessary technical guidance to the Gram Panchayath for preparation of development plans for the watershed through Participatory Rural Appraisal (PRA) exercise, undertake community organization and training for the village communities, supervise watershed development activities, inspect and authenticate project accounts, encourage adoption of low cost technologies and build upon indigenous technical knowledge, monitor and review the overall project implementation and set up institutional arrangements for post-project operation and maintenance and further development of the assets created during the project period. The PIA, after careful scrutiny, shall submit the Action Plan for Watershed Development Project for approval of the WCDC/PAU and other arrangements.

The PIA shall submit the periodical progress report to WCDC. The PIA shall also arrange physical, financial and social audit of the work undertaken. It will facilitate the mobilization of additional financial resources from other government programmes, such as MGNREGA, BRGF, SGRY, National Horticulture Mission, Tribal Welfare Schemes, Artificial Ground Water Recharging, Greening India, etc.

Details of Project Implementing Agency

Particulars of PIA	
Type of organization	Intermediate Panchayath
Name of organization	Block Panchayath, Kalpetta
Designation & Address	The Block Development Officer/Secretary

	Kalpetta Block Panchayath, Wayanad, Kerala - 673121
Telephone	04936 202265
E-mail	bdokpta@gmail.com

Watershed Development Team

The WDT is an integral part of the PIA and will be set up by the PIA. Each WDT should have at least four members, broadly with knowledge and experience in agriculture, soil science, water management, social mobilization and institutional building. At least one of the WDT members should be a woman it must be ensured that the WDT should function in close collaboration with the team of experts at the district and state level. The expenses towards the salaries of the WDT members shall be charged from the administrative support to the PIA. The WDT will guide the Watershed Committee (WC) in the formulation of the watershed action plan and assist Gram Panchayat / Gram Sabha in constitution of the Watershed Committee and their functioning. They are also entrusted with the duty of organizing and nurturing User Groups and Self-Help Groups and Mobilizing women to ensure that the perspectives and interests of women are adequately reflected in the watershed action plan. They undertake engineering surveys, prepare engineering drawings and cost estimates for any structures to be built. Other duties of the WDT include monitoring, checking, assessing, undertaking physical verification and measurements of the work done.

Details of Watershed Development Team (WDT) in the project area

Name of the PIA	Name of WDT member	M/F	Age	Qualification /Experience	Designation	Description ofprofessionaltraining	Role/ Function	Date of appointmentofWDTmember
KalpettaBlock Panchayath	Aswani M.K	F	21	BSW			1.To assist Gram Sabha/Panchayath/ Village Authority in constitution of the Watershed Committee (WC) and facilitate their functioning 2.To organize and nurture Self Help Groups (SHGs), User Groups (UGs) or Farmer Groups (FGs). 3.To conduct participatory base-line surveys, training and capacity building.etc. 4.To provide technical guidance to the Watershed Committees in the formulation of watershed action plan.	
	Sujitha P.S	F	23	VHSE	AgricultureSocial MobilizerExpert	-	1. To prepare detailed resource development plan including water and soil conservation or reclamation etc. to promote sustainable livelihoods at household level. 2. To participate all works related to agricultural	4.11.201319.09.2013

	Ardra Valsaraj	F	23	B.Tech Civil	Civil Engineer	-	1. To conduct participatory base-line surveys, training and capacity building. 2. To undertake engineering surveys, prepare engineering drawings and cost estimates for any structures to be built. 3. To undertake monitoring, assessing, undertaking physical verification and measurements of the work done. 4. The WDT should function in close collaboration with the experts at the district and state level.	6.11.2013
	Faisal A.V	M	25	BA Economics	Data Entry Operator	-	1. To take up all kind of data entry works related to the programme 2. Day to day uploading of all the necessary reports to the MIS 3. To attend/assist the WCDC/PIA in all kinds of communication in e-form 4. Downloading of all the necessary information about the programme from the official websites and bring it to the notice of the WCDC/PIA 5. Forwarding of all the necessary reports to the SLNA.	19.09.2013

Watershed Committee (WC)

The Gram Sabha will constitute the Watershed Committee (WC) to implement the Watershed project with the technical support of the WDT in the village. The Gram Sabha may elect/appoint any suitable person from the village as the Chairman of Watershed Committee. The secretary of the Watershed Committee (WC) will be a paid functionary of the Watershed Committee (WC). In Kerala it is decided that the President of Gram Panchayat will act as the Chairman and Village Extension Officer (VEO) as the Secretary. The Watershed Committee (WC) will comprise of at least 9 members, half of the members shall be representatives of SHGs and User Groups, SC/ST community, women and landless persons in the village. One member of the WDT shall also be represented in the Watershed Committee (WC). Where the Panchayat covers more than one village, they would constitute a separate subcommittee for each village to manage the watershed development project in the concerned village. Where a watershed project covers more than one Gram Panchayat, separate committees will be constituted for each Gram Panchayat. In IWMP 5 ten watershed committees have been formed in the gramasabhas. The Watershed Committee has a separate bank account to receive funds for watershed projects and will utilize the same for completing the activities.

Institutional Arrangements at the Village Level

Self Help Groups

The Watershed Committee has constituted SHGs in the watershed area with the help of WDT from amongst poor, small and marginal farmer households, landless/asset less poor agricultural laborers, women, and SC/ST persons. These Groups shall be homogenous groups having common identity and interest who are dependent on the watershed area for their livelihood. Each Self Help Group will be provided with a revolving fund of an amount to be decided by the Nodal Ministry. With a view of developing the

capacities of the above said groups, Steps have been taken place to form these stakeholders in to SHGs and planned to impart trainings at various levels for the integrated development of the community.

User Groups

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

List of Watershed Records to be maintained:

Records/ Registers to be maintained at PIA Level:

1. Register for Grant received
2. UC Register (UC to be submitted)
3. UC Register (UC received from Committee)
4. Cheque Register
5. Bank Reconciliation Register
6. Cash Book
7. Advance Ledger
8. Honorarium Register

9. Meeting Register at PIA Level
10. Training Register- Block Level (PIA Level)
11. Training Register (Individual WS Wise)
12. Project Control Register
13. Stock Register (i) Consumable (ii) Permanent
14. Letter received Register
15. Letter Issue Register
16. Money Receipt
17. MB
14. Distribution Register
15. Contingency bill Register
16. Community Mobilization
17. Plan and Estimate
18. Register of Registers
19. Physical and Financial progress register

Records/ Registers to be maintained at WC Level:

1. Cash Book
2. Stock Book i. Consumable stock ii. Permanent stock
3. Contingency bill Register
4. Project Control Register
5. Voucher Register
6. Bank Reconciliation Register
7. Advance/Adjustment Register
8. Bank cheque book Register

9. Asset Register
10. UC Register (UC submitted)
11. Income Register showing income coming from watershed asset
12. WDF Account Register
13. Revolving fund Register
14. Physical & Financial progress Register
15. Grant received Register
16. Letter Receive Register
17. Letter Issue Register
18. Register of Register

CHAPTER – 5

MANAGEMENT/ ACTION PLAN

Management/Action Plan

I. PREPARATORY PHASE

1. Entry point activity

Entry point activities are taken up under watershed projects to build a rapport with the village community at the beginning of the project; generally, certain important works which are in urgent demand of the local community are taken up. A group discussion was conducted with watershed development committee regarding the EPA, it was conveyed to the WC that an amount of Rs. 20.082 Lakh was allotted for EPA, which was 4 per cent of total allocated budget. The villagers discussed various activities which they felt is important but after a brief discussion it was conveyed to them that only those activities can be taken, which revive the common natural resources.

Details of Entry Point Activity

S. No.	Name of Watershed	Amount earmarked for EPA	Entry Point Activities planned		Estimated cost	Name of agency which selected the EPA
1.	Meppadi	199,800	i	Renovation of Water tank and Well - HML 16th No. Division	199,800	Gramasabha
2.	Chooralmala	165000	i	Check dam construction - Koinamkulam	165000	
3.	Soochipara	133800	i	Stream embankment Puthumala thodu	133800	
4.	Kalladi	94200	i	Stream embankment – Kalladi Michabhoomi, nearby Chami's land to Sarojini's land	94200	
5.	Kanthanpara	86400	i	Check dam construction - Vellapmkandi	86400	
6.	Meenakshipuzha	264000	i	Stream embankment - Mini colony thodu	264000	
7.	Vattaturi (Valathur)	115800	i	Stream embankment - Aramangalamchal Anganwadi thodu	115800	
8.	Kadachikunnu	351600	i	Pond construction - Alinkavalayil Velayudhan's house	175800	
			ii	Stream embankment at Anakundu thodu	175800	
9.	Vattathuvayal	353400	i	Stream side protection – 60 Anganwadi thodu	353400	
10.	Choladi	244200	i	Formation of irrigation pond – Neelimala	244200	

2. Detailed Project Report (DPR)

Scientific Planning:

i) Cluster Approach

This envisages a broader vision of Geo-hydrological unit which involves treating a cluster of micro-watershed. The IWMP 5 Project consists of 10 micro- watersheds namely Meppadi, Chooralmala, Soochipara, Kalladi, Kanthampara, Meenakshipuzha, Vattathuri (Valathur), Kadachikunnu, Vattathuvayal and Choladi as their respective 24C37a, 24C37d, 24C37e, 24C37h 24C38a, 24C38b, 24C38g, 24C40a, 24C42a and 24C42b codes.

ii) Base line Survey

To access the impact of any watershed development programme a detailed baseline survey has to be conducted. This acts a benchmark for any intervention during and post implementation of any development programme. As part of the Detailed Project Report (DPR) preparation, a detailed socio-economic survey of the watersheds was conducted in all the watershed areas. The main objective of the survey is to collect basic socio-economic data of the watersheds for facilitating the preparation of the DPR as well as set a bench mark for later assessing the progress and results of the project interventions. The data generation work was done by the members of the WCs and SHGs, volunteers, people representatives etc in the watersheds, assisted by the WDT with the support of TSO Survey Team. Specialized training was imparted to the members of the investigation team. Data were gathered on the basis of a well-structured format/questionnaire. Major data collected from the survey such as:

- Demographic Details
- Details of Land Holding

- Existing crop cultivation
- Existing soil and water conservation structures
- Animal husbandry requirements
- Previous Project Aids
- Housing, Drinking and Sanitation
- Existing Income and Expenditure
- Existing credits and Loans
- Proposing needy programs
- Plot Sketches
- Existing local Facilities etc.

iii) Participatory Rural Appraisal

A detailed PRA was conducted in each micro watershed with the maximum involvement of the watershed community, in collaboration with development experts, WDT, TSO and WC members. Social mapping, transect walk in the watershed, focus group discussion, other different mappings, flow chart, seasonal calendar, diagramming, matrix ranking methods etc. were used to develop a detailed project report. Some of the major tools are discussed below;

a). Social Mapping

Social mapping revealed how the institutions and civic amenities were unevenly distributed across the watershed, indicating a clear social imbalance, which needs to be corrected.

b). Focus Group Discussion

Focus group discussions were conducted for identifying the major problems and their remedies as observed by the people. The participants came up with observations and new understanding they developed as a result of the exercise. The important learning, consolidated by the facilitator, included: Natural resources of the watershed are being severely depleted. Water scarcity in the area is becoming increasingly acute by the day.

c). Flow Chart

It was an exercise in charting the inflow and outflow patterns of the watershed. The patterns emerged that helped the team to identify the imbalances in the watershed, namely the preponderance of inflow of commodities into the watershed over the outflow of resources from the watershed.

d). Transect Walk

The PRA team was taken on a walk across the watershed. This exercise was aimed at rechecking the findings of the previous exercises by physically verifying them. Transect walk was made along the drainage line and across the watershed with key informants, farmers, watershed committee members, PRI members, social leaders, volunteers, and PRA experts and elected representatives.

e). Google Mapping

As part of the PRA exercises, advanced modern technology was used even in the remote areas of all the watersheds. Introduction of satellite imageries with the help of Google Earth and delineation of watershed with the help of GPS. Google Earth imagery was widely used in all the watersheds in the group meetings, SHG meetings and in Gramasabha also.

f). Grama Sabha

As a prelude to the preparation of the Detailed Project Report special Gramasabhas (Neerthada Samooha Sabhas) especially for IWMP were convened in all the 10 watersheds in the project area. The important agendas discussed in those Gramasabhas were regarding;

i). Project introduction

ii). Watershed Delineation

iii). Formation of CBO's

iv). Watershed Committee formation

v). Detailed household survey etc.

g). Formation of CBOs

The Grama Sabha formed SHGs and UGs in the project area with the help of WDT and TSO from amongst poor, small and marginal farmer households, land/asset less poor agriculture laborers, women and SC/ST persons. The Gramasabha has constituted the watershed committee in all the watersheds to implement the project with the technical support of the WDT. The majority of the watershed committee members are the office bearers of the SHGs who are of the representatives from SC/ST communities, women and landless persons in the villages.

iv) Use of GIS and GPS for planning

GIS (Geographical Information System) and GPS (Global Positioning System) techniques are extensively used in the entire project preparation processes for ensuring the accuracy of the details given in the Detailed Project Report (DPR). Identification and delineation of the proposed watershed boundaries was the initial GIS and GPS applications. Toposheets and cadastral maps were used as the base maps for these purposes. Both of these applications are used to understand the nature of the topographical features such as relief, slope, land use/land cover, Land Capability Classification (LCC), shape index of the watershed, stream flow and stream direction, order of stream, order of watersheds etc. Almost all details analyzed using GIS tools which are helped to address the present socio – economic and geographical situations in the proposed watershed areas. All primary and secondary data were collected from concerned Govt. departments and also from continuous field visit. The collected details brought into the GIS platform for the mapping and analysis phases. The advanced GPS (Global positioning System) device is also used for identifying and locating geographical locations and suggested watershed development interventions in the proposed watershed areas. Among the prepared maps, land use/land cover maps prepared by the available landuse details collected from the Kerala State Land Use Board to understand the present landuses in the project area. Relief, drainage and slope maps prepared using base map like toposheet and ASTERDEM imageries which is downloaded from the website of NRSA. Slope classification done by manually using a mathematical equation. Shape index of watersheds are calculated using field calculator in GIS.

v) Preparation of Various Maps

Various maps have prepared as part of the preparation of DPR. The important maps among them are following:

- Watershed Maps
- Cluster Maps
- Google Maps
- Watershed Boundary Maps
- GIS Maps such as
    - Location Map
    - Relief and Drainage Map
    - Slope Map
    - LCC Map
    - Land Use and Land Cover Map
    - Digital Elevation Map
    - Cadastral Map and
    - Intervention Map

3. Institution and Capacity building

Capacity building support is a crucial component to achieve the desired results from watershed development projects. Various awareness and training programs were organized as part of the DPR preparation, Organization of SHGs and UGs and Entry point activities. Themes like importance of watershed development in the present scenario, Natural resource management, Entrepreneurship development etc were discussed in the awareness and training programmes. A detailed plan is also prepared with the participation of WDT, WC, SHGs and UGs with an aim of enhancing the skills and capacities of the stakeholders of the project. It is planned to conduct these training and awareness programs in the second, third and final year of the project.

Important aspects will be touched upon, such as:

- Concept of watershed and integrated watershed development
- Urgency for NRM activities
- Roles and responsibilities of participants/beneficiaries
- Group dynamics
- Community participation and community organization
- Leadership role of W.C.
- Communication and leadership development
- Gender mainstreaming and development
- Project accounting
- Social auditing

II. WORKS PHASE

1. Watershed Development Works

A. Land Development

i. **Planting of agro-horticultural plants:** Despite having very favorable climate and soil conditions the local people do not take to food crop cultivation and have to contend with consuming pesticide-ridden vegetables and fruits brought from other states. A number of factors such as high labor cost, low productivity as well as non-availability of farm workers discouraged the people from horticulture. Majority of the farmers in the project area come under small and marginal farmer category and landless plantation workers. The small and marginal farmers are willing and they have land for raising horticulture crops. People are convinced about the wisdom of horticulture, which will safeguard their food security as well as bring additional income from sale of surplus.

ii. **Planting of shade trees:** Shade trees can be planted on both sides of the village roads as well as in public lands. Some of the watersheds such as Meenakshipuzha,Choladi are close to tourist centers. The trees also will help in preventing soil erosion and strengthening the road sides which are prone to land slip. Beautifying the roads with choice trees will add to the attractiveness of the area.

B. Soil and Moisture Conservation

i. **Stream embankment:** The main drainage lines are eroded due to the river bank agricultural practices of the farmers. Agricultural practices on the stream banks during rainy months add to sedimentation in the streams and lead to lowering of water table and create several environmental problems. Stabilization of stream banks with vegetative methods is needed to conserve the precious flora and fauna in and around the streams. Planting bamboo, screw pines, vetiver grass is a way of protecting the soil against erosion through their non-invasive nature and deep roots. It may become an additional income source for the watershed stakeholders as vetiver is one of the major medicinal plants. Construction of retaining walls, stone pitching, DR packing etc may be done wherever necessary.

ii. **Wet land conservation:** Marshy lands and wetlands are found in Meppadi, Chooralmala and Sochippara watershed. The local people depend on the water sources in these lands for their domestic needs. These lands are in a state of neglect. Vegetation capable of conserving and storing water has been destroyed due to grazing by cattle and encroachment. It is proposed to plant water conserving vegetation such as screw-pine, bamboo, ferns etc. which will improve the water retaining capacity of the land and yield quality water to the inhabitants.

iii. **Planting of bamboo, screw pines:** Since almost all the areas in the watershed have moderate to high gradient, strengthening the bunds with bamboo, screw-pine, vetiver etc. is preferable to material construction methods. This will prevent soil erosion, help the rain water percolate deep into the soil and increase the ground water level, thus making clean water available to all.

iv. **Formation of coffee platform:** Coffee plantations are ubiquitous in the watershed. Making platforms around coffee plants is a traditional method for soil and water conservation, which will increase yield and bring more income to the farmers

v. **Earthen contour bunding:** The earthen bunds will check soil erosion by reducing the erosive velocity of water. The focus of water conservation structures must be to make water walk rather than run.

vi. **Formation of compost pit:** Composting is a traditional way of producing high quality organic fertilizers. Reviving this practice will ensure bio-fertilizers for use in their vegetable and horticulture farms. This is also a healthy way of disposing of bio-wastes adding to the hygiene of homes and public places. As it is for want of proper waste disposal people contract contagious diseases, which can be prevented by adopting this waste management method.

vii. **Mulching:** Mulching can be done for in-situ conservation of soil moisture. Locally available materials like leaves, tree branches or any suitable organic waste materials can be spread in thick layers on soil surface, especially around the trees and crops. Mulching will also help in the absorption of morning dew drops, thus enriching the soil moisture.

viii. **Stone pitched bunding:** In some areas like Kalladi and Meenakshipuzha stones and pebbles occur naturally and removal of them may be desirable for establishing alternate land use systems. In such areas, stone bunds could be made with the removed materials, thus serving two purposes of land reclamation and bunding for soil and water conservation.

ix. **Cardamom Platform formation:** Just like in the case of coffee making platforms around cardamom plants is a traditional practice, which by helping to conserve soil and water, increases yield and income.

x. **Fodder grass planting on bunds:** Strengthening the bunds by planting fodder grass has the double advantage of conserving soil and water and providing quality green fodder to the cattle.

C. Vegetative and Engineering Structures

i. **Earthen checks:** Since the lands are undulating, most of the rain water rushes down the slopes. Constructing earthen check dams will arrest the run off of rain water, prevent soil erosion and contribute to the fertility of the land. Water in the check dams can be used for irrigation and for domestic needs.

ii. **Gully plugs:** Gullies are formed by the force of run off and due to unscientific farming practices. This can be prevented by making gully plugs in places where erosion is high and no other preventive measure is possible

iii. **Drainage line protection by locally available stones:** Encroachment of streams/canals leads to flooding of the nearby farms. To prevent these streams can be protected with bunds made of locally available stones. This will help prevent flooding, stream bank erosion and crop loss.

iv. **Loose boulder checks:** Since almost all the lands are sloping gully formation is very common. Loose boulder checks can be constructed across the gullies with small stones found in the fields. Stopping the channel erosion through gully beds is the main purpose of this activity. Also as the gully heads get stabilized the run off rate will be reduced.

v. **Brushwood checks:** Since the watershed areas are characterized by undulating topography and high rain fall, run off rate increases leading high soil erosion. This deprives the soil of fertility as well as reduced ground water recharging. Therefore small gullies can be filled with branches of tree and stems of bushy vegetations.

D. Water Harvesting Structures

i. **Renovation and Construction of irrigation well and Canal:** In order to overcome the challenges like water shortage, faced by the farmers in the micro watershed level, there are numerous programmes are proposed in the project such as renovation and construction of irrigation well, irrigation ponds and irrigation canals in all micro watersheds in the project.

ii. **Well recharging:** The run-off water from rooftops can be led into the existing well through pipes and a small settling pit to filter the turbidity and pollutants. In this cost-effective process we not only conserve the precious rainwater but also help to increase the local ground water table. Even an abandoned well can be used for this purpose.

iii. **Rain Water Harvesting:** Rain water harvesting is the technique through which rain water is captured from the roof catchments and stored in ferro-cement tanks. The main objective of rain water harvesting is to make water available for future use.

iv. **Renovation and Construction of check dam:** Check dams reduce erosion and gully formation in the stream and allow sediments and pollutants to settle. They also lower the speed of water flow during storm events. In order to fulfill the above purpose there are number of activities related to the renovation and construction of check dams have proposed in all micro watersheds in the project area.

v. **Renovation of pond:** There are existing farm ponds which have perished due to non-maintenance by the people and these ponds could be a good source for irrigation. Ground water recharge will also be done through these programs.

2. Production System and Micro Enterprises

I. Homestead vegetable cultivation

Introduction/Rationale

Vegetables constitute a major chunk of healthy food. In the project area majority of people depends on supplies from other states for meeting its vegetable consumption needs. Add to this the fact that most of the vegetable items are sprayed with deadly pesticides, posing serious threat to the health of the populations. Encouraging small scale home-based vegetable cultivation is the best answer to this challenge. Besides bringing much needed income for the families steeped in poverty and financial insecurity, the project will also help improve food security as well as health of the people.

Objectives

- To help the farmers to improve their family income through the sale of vegetables
- To help mitigate the growing problemof food insecurity in the watershed
- To promote healthy eating habits and ensur protection from the side-effects of consuming chemically grown vegetables

Activities

The activities contemplated in the project consist of:

- Training in organic vegetable cultivation
- Planting of seeds
- Monitoring and supervision of vegetable gardens

II. Indigenous banana cultivation

Rationale

Banana is an unavoidable element in our daily food. Once upon a time indigenous varieties like Nhalipoovan, Charapoovan, Kadhali, Poojakadhali etc. are very common in the farm lands. But now number of those varieties is decreasing day by day. Presently banana is a cash crop than food crop. Farmers are using poisonous pesticides and fertilizers for its cultivation. Indigenous banana cultivation is proposed in the project in order to bring back those traditional varieties and to promote organic farming.

Objectives

- To motivate farmers to conserve and propagatethe native varieties of banana found in the district
- To help improve the earnings of farmers
- To promote organic farming

Activities

- Orientation and training for farmers
- Procurement of seeds
- Planting and care ofselected banana varieties

Methodology

Proper farmer education and motivation will be the foundation of the project. Selection and procurement of seeds will be done under the supervision of experts. Constant monitoring will ensure best results.

Management

The Watershed Committee, supported by the WDT, will organize and supervise the operations.

III. Cardamom planting

Cardamom is one of the major cash crop in the project area. It generates much income to the farmers in the area. Presently high yield varieties of cardamom is only cultivating in the lands of big farmers. This project is proposed on the basis of cultivation of high yield varieties of cardamom in the lands of small and marginal farmers. Through this the project aims additional income generation for small and marginal farmers.

3. Livelihood Activities for the asset – less persons

Detailed Action Plan of Livelihood Support for Landless

Introduction

One of the key features of Integrated Watershed Management Programme (IWMP) includes focused priority on livelihood activities for landless/assets persons. Nine percent of the total project cost has been assigned to support the livelihood activities for landless/assetless households. This component aims to maximize the utilization of potential generated by watershed activities and creation of sustainable livelihoods and enhanced incomes for households within the watershed area. This will facilitate inclusiveness through enhanced livelihood opportunities for the poor through investment into assets, improvements in productivity and income, and access of the poor to common resources and benefits and augment the livelihood strategy at household level.

Mode of Operation

1. The livelihood action plan will be implemented through Self Help Groups and/or their federation. However financial support to enterprising individuals could also be considered subject to a maximum of 10% of the funds under the livelihood component.

2. Livelihood activities can be carried either through the existing SHGs having good performance or new SHGs formed with a group of 5-20 persons.

3. SHGs selected for implementing livelihood activities should be homogenous in-terms of their existing livelihood capitals, common interest and need.

4. SHGs can undertake livelihood activities jointly as a group or the group may decide to support individual(s) for the activities under the umbrella of the main SHG. In case of individual support under the SHGs, the individuals will be accountable to the main SHG for finances and performance.

5. Support to individuals should not exceed a maximum of 10% of funds under the livelihood component.

Selection of Beneficiaries

1. The beneficiaries should be marginalized communities, including SC/ST, landless/asset less people, women, etc., among which preference will be given to women, specially female headed households, ST&SCs.

2. It may be ensured that the selected SHG does not have more than one member from a household.

3. Priority may be given to women SHGs.

Funding

1. 9% of the total project fund is earmarked as the livelihood component for the benefit of marginalized communities, including SC/ST, landless/asset less people, women, etc.

2. This earmarked amount shall be taken out of the total project fund as a grant to WC in its bank account, which in turn will be used to provide financial assistance, (seed money for revolving fund to SHGs and a grant-in-aid for enterprising SHGs/SHG federations to undertake major livelihood activities).

3. At least 70% of this livelihood fund will be used to support revolving fund for SHGs, including support to enterprising individuals, and a maximum of 30% for supporting grant – in – aid to enterprising SHGs/SHG federations.

4. The availability of fund for livelihood enhancement in each of the watershed is following;

Sl.No.	Name of Watershed	Amount earmarked for livelihood *(in Rs)*
1	Meppadi	4,49,550
2	Chooralmala	3,71,250
3	Soochippara	3,01,050
4	Kalladi	2,11,950
5	Meenakshipuzha	5,94,000
6	Kanthanpara	1,94,400
7	Valathur (Vattathur)	2,60,550
8	Kadachikunnu	7,91,100
9	Vattathuvayal	7,95,150
10	Choladi	5,49,450
	Total	**45,18,450**

Seed Money for Revolving Fund

a). Seed Money for SHGs

1. Each SHG shall make an application for financial assistance to the WC. WC in its regular meeting will consider these applications and pass resolution regarding its approval of financial assistance to SHGs based on merit of the case. The representatives of applicant SHGs may also be present in such meetings of the WC. The resolution will clearly rank the approved cases, based on the priorities and preferences, so that the support may be extended to all the eligible SHGs in order of ranking.

2. The initial amount up to Rs. 25000 may be given as seed money to a SHG as the revolving fund after their proposed activity has been approved by the WC in its meeting and included in the resolution.

3. The SHGs will return the seed money on monthly basis and that could be reinvested in the same or other SHGs as per the resolution passed in meeting of WC. The amount and number of installments may be decided by the WC based on the type of activity, capacity of the group and their savings. The amount may be returned in a maximum of 18 months.

4. The payment will be made by cheque after the respective SHG has opened a joint bank account with two signatories from the SHG members.

5. The SHGs may use the amount for a combined activity and/or shall provide the above amount to the concerned members as individual loan against a specific activity for improving income. In case of individual support under the SHGs, the individual will be accountable to the main SHGs for finances and performance.

b). Seed Money for Enterprising Individuals

1. The enterprising individual shall apply for financial assistance to the WC, along with a viable livelihood proposal. WC in its regular meeting will consider such applications and recommend to WCDC, through PIA, the amount to be provided as seed money to such individual(s) as the revolving fund after their activity has been approved by the WC in its meeting and included in the resolution based on the merits of the case.

2. The applicants may also be present in such meetings of the WC. The resolution will clearly rank the approved cases, based on the priorities and preferences, so that the support may be extended to all the eligible enterprising individuals in order of ranking.

3. The WC may release financial assistance to these enterprising individuals after approval by WCDC. Such individuals will return the seed money on monthly basis and that could be reinvested further as per the resolution passed in meeting of WC. The amount

and number of monthly installments may be decided by the WC based on the type of activity and capacity of the individual. The amount may be returned in a maximum of 18 months.

Capacity Building for Beneficiaries

1. The capacity building component will be planned by the livelihood expert of the WDT in consultation with WC.

2. The expenditure for the training for livelihood component may be met from 5% of the budget component of the project cost earmarked for institution and capacity building.

3. The trainings will include skill based trainings on the following components apart from the other training needs expressed by SHGs:

a. Book keeping (cash book and ledger registers, preparing budget, maintenance of account etc.)

b. Minutes of meeting (proceedings) an follow up.

c. Exposure visits and discussions in the specialized areas.

d. Knowledge of market and pricing, value addition, alternate institutions including Farmers Production Companies etc.

e. Other related aspects.

Proposed livelihood activities in the project area

1. Backyard Poultry

Introduction/ Rationale

Backyard poultry has been identified as a highly profitable, woman-friendly as well as environment-friendly occupation that can be promoted among the poor women-folk in the watershed, with focus on the most needy, such as destitute women and women-headed families. Besides eggs and meat the poultry will also produce high quality organic manure, not only ensuring steady income and economic security, but also boost agricultural productivity as well as contribute to food security. It is a well-known fact that in the project area people are heavily dependent on other states for eggs and other poultry products. This project at promoting back yard poultry has several socio-economic advantages and will be critical in ensuring the economic security of poor women and their families.

Objectives

• To encourage back yard poultry micro-enterprise among the most vulnerable women in the watershed as an effective measure of promoting their economic security

• To help mitigate the acute problem of food insecurity, in the area of poultry products

• To contribute to the promotion of organic farming by way of producing high quality organic fertilizers

Activities

The contemplated activities include:

• Construction of chicken cage

• Procurement and distribution of good quality fowls

• Management of the poultry units

Budget for Backyard Poultry (aprox.)

Sl.No	Particulars	Unit	Rate	Quantity	Unit Cost of Labor	Unit Cost of Materials	Total Labor Cost	Total Material Cost
1.	Cost of Pullets/fowls	No	80	25	-	80	-	2000
2.	Cage (25sgf x 200/1sgf)	No	200/sqf	1	168	4415	504	4415
3.	Feeds	Kg	15/Kg	15 Kg	-	15/Kg		225
4.	Vaccination	1	2	25	-	2/Pullet	-	50
5.	Plastic Net	M2	200	15		3000		3000
6.	Insurance cost (6% of the total Material cost)					110		110
	Total						504	9800

Pullet Variety

Gramasree – 40 days old

Total Project Cost of one unit of Backyard Poultry - 9800

2. Cow Rearing

Rationale

Landlessness, in the rural setting, begets several issues of poverty- unemployment/under employment, food insecurity, low educational status and so forth. The landless are basically asset-less, with no assured source of income. Normally they depend on seasonal farm labor for their sustenance. In the absence of farm work in the locality, they are compelled to migrate or starve.

A blessing in the project area is that even the landless/asset-less can eke out a living, given a chance to take to farmrelated alternative occupations. Small dairying is such an occupation. Milk and milk products are in high demand and the rural folk have the know-how on small dairy management. In fact, the project area largely depends on milk brought from other neighboring watershed areas to meet its domestic requirement. Fodder, both green and concentrate, are locally available. The efficient milk marketing network in the district assures prompt sale and good price. The project will also effectively address the issue of food insecurity and scarcity of bio-manure. In every way this project is feasible and worthy.

Objectives

1. To help the beneficiaries to augment their income and tide over persisting economic insecurity
2. To improve the availability of milk and milk products in the watershed
3. To help generate high quality organic fertilizer
4. To improve the socio-economic condition of the beneficiaries of the watershed

Participatory Livelihood Planning

This plan has the merit of having been prepared in full participation of the concerned people. As part of the PRA, conducted by the PIA, group learning exercises, including resource mapping, focus group discussion, were conducted for identifying and prioritizing the feasible livelihood options. The ideas for this plan evolved during these intensive sessions of participatory learning.

Expected Results

1. Income from the sale of Milk, Cow- Dung and Calf
2. Milk and milk products for the family
3. Availability of organic manure
4. Increased soil fertility
5. Enhanced health status for the family
6. Enhanced living standard for the family
7. Controlled cash outflow from the project area

Conclusion

This is a highly need-based and feasible plan, scoring high on relevance and sustainability. Multiple benefits are expected from this eco-friendly and gender-sensitive plan. The watershed approach in itself has the potential to generate the spirit of cooperation, sharing, self help, and self reliance and would be helpful in the integration of social resource management and natural resource management. The livelihood plan will cover the needed beneficiaries of the watershed and this will pave the way to increase their self reliance capacity and also this will add to the protection of natural resources especially soil and biomass.

III. CONVERGENCE

Introduction

The policy decision to undertake convergence of different rural development schemes of the Government of India with Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) is one of the most significant steps towards comprehensive rural development. This will specifically help the Integrated Watershed Management Programme (IWMP) to reach its logical impact level with complementary funds from MGNREGS. Today, MGNREGS is the biggest programme of rural development in terms of scope and fund base.

Need for convergence

a) Saturation approach and filling the fund gap: Watershed development involves treatment of natural resource base as well as creating meaningful livelihood opportunities. Thus there is a perceivable gap in demand for and supply of funds. Integrate Watershed Management Programme (IWMP) has been implemented throughout India since 2009-10 after the commencement of the new watershed guidelines, 2008. Prior to the Integrated Watershed Management Programme (IWMP), unit cost of a watershed project was Rs. 6000 per hectare (approximately Rs.4500 was available for watershed treatment). Under IWMP, it has been increased to Rs. 12,000 - Rs. 15,000 per hectare depending upon the characteristic of the project area (out of the total project cost, 56% is available for watershed treatment, which amounts to Rs. 6700 to Rs. 8500). Though this increase is a great initiative, the amount is still not enough.

b) Covering 100% population of the project area: In earlier watershed projects, selective households got the benefits of the programme. So, a number of needy households had to be left out due to lack of sufficient funds. This can now be amended by covering all the needy households and all the needy survey numbers.

c) Holistic development: A watershed approach can be holistic when it is undertaken in three stages- (i) augmentation/conservation of natural resource base, (ii) building livelihood options based on the natural resource augmentation and then (iii) establishing linkages for sustaining the activities taken up. It requires integration with different agencies working on rural development and convergence with other schemes.

d) To stop duplication of works: Since a number of departments of the government are working for rural development and carry out similar kinds of activities, it is often observed that works are being duplicated. To stop this duplication, proper convergence of projects should be done at project implementation level.

e) Post project management: For long term benefit from a watershed development programme, appropriate post-project management has to be in place. It involves largely repair and maintenance of structures made under the programme. This in turn requires substantial money after the project period. Post- project management can be smooth if convergence takes place with a programme like MGNREGS.

Scope for convergence

a) Water conservation and water harvesting

b) Drought proofing, including afforestation and plantation

c) Irrigation canals, including micro and minor irrigation works

d) Provision of irrigation to poor households

e) Renovation of traditional water bodies

f) Land development

g) Flood control and protection works

h) Rural connectivity

Strategy for convergence

For facilitating the process of convergence, committees at different levels (state, district and Block) representing different departments can be formed. These committees oversee the planning process. The following steps can include in the process of convergence for its effectiveness:

- Issuing required circulars
- Regular information sharing mechanism
- Common workshops and training programmes
- Sharing of human resources
- Supplying GIS based thematic maps to the functionaries and the villagers
- Establishing consortium of institutions

Institutional mechanism for convergence

Under IWMP micro-planning is done at village/project level by the Watershed Development Team (WDT) and Watershed Committee together. After net planning (process is briefly discussed below), the convergence plan is shared with the concerned responsible authority at Block level, which then goes to the district level for approval. For example, once the activities for convergence with MGNREGS are identified, it is placed before the Gram Sabha for approval. This approved plan then moves

through the Block Panchayath to the district level where it is approved and incorporated in the Labour Budget of MGNREGS for the district.

Convergence planning of IWMP

IWMP gives utmost importance to convergence. This has been made mandatory by making convergence an integral part of every Detailed Project Report (DPR). Necessary circulars have been issued to the district levels regarding the same. While preparing the DPR, the project management team has to study the total fund requirement of the village or the project area. As stated above, the DPR preparation process is comprehensive enough to estimate the total fund requirement of the village; because it ensures every household and each survey number is surveyed. Once the survey and the net planning are completed, the physical measures required are converted into financial figures. Thus the total financial requirement comes into picture. The gap in fund requirement is calculated by deducting the funds available from the funds required. The Watershed Committee and the Watershed Development Team then identify options for convergence.

Activities can be taken up for convergence in IWMP 5

1. Construction and renovation of check dams
2. Deepening and desilting of ponds
3. Extension and renovation of existing irrigation projects
4. Desilting and embankment of streams
5. Construction and maintenance of other NRM works such as earthen bunding, stone pitched bunding,etc.

CHAPTER – 6

CAPACITY BUILDING PLAN

Capacity Building Plan

The effective delivering of required services in any project basically depends upon the human capacity along with the capacity to manage appropriately such inputs and their dynamics. Capacity endowment at institutional and personal front is always regarded as vital for accelerating the process of a project and initiating the successful criteria in achieving all the necessary spheres of project activities. Capacity, inherited or acquired plays a significant role in performing the activities and succeeding amicably in the work front. In the changing scenario and emerging trend it is highly essential for the development facilitators and for the community to cope with the changing face and challenges and acquire necessary capacity to address the required needs of the project environment. Besides skill formation, skill up gradation, skill perfection of human capital as primary stakeholders of the project is essential to drive the efforts towards achieving development agenda.

Capacity building primarily thrust upon developing human resources associated with project at different level. It is a process of key intervention for strengthening and overall improvement of the skill in implementation of the plan in a meaningful way. Social mobilization, trainings, group discussion, exposure and demonstration are the basic processes of the Capacity building. Various trainings focus on building the confidence of the communities and creating an environment bringing the communities to the forefront.

The Capacity building strategy thus focuses on facilitating process that help to build a positive approach to peoples knowledge in technology ,management , sensitivity to equity and gender issue, peoples' empowerment, understanding the programme language and developing skill necessary for project implementation.

Fund Allocation for Capacity Building in IWMP 5

Sl. No.	Name of Micro Watershed	Fund Allocated (in Rs.)
1	Meppadi	249750.00
2	Chooralamala	206250.00
3	Soochipara	167250.00
4	Kalladi	117750.00
5	Meenakshipuzha	330000.00
6	Kanthanpara	108000.00
7	Vattathoori(Valathoor)	144750.00
8	Kadachikunnu	439500.00
9	Vattathuvayal	441750.00
10	Choladi	305250.00
Total		**2510250.00**

Strategic Action Plan for Capacity Building

Level of Stake holders	During the Year 2013-14	During the Year 2014-15	During the Year 2015-16	Total
	Target	Target	Target	
SLNA	2	1	1	4
WCDC	2	2	2	6
WDT	3	3	3	9
WC	4	4	4	12
SHG	4	4	4	12
UG	4	4	4	12

Topics of training	Level for which it is meant (SLNA,WCDC,WDT,WC etc)	Name of institution
Project planning, Implementing and Monitoring	WDT	SLNA
Record keeping of the project	WDT	SLNA
Community participation and community organization	WDT	SLNA
Empowering peoples representatives for IWMP	District, block and gramapanchayath members	WCDC, PIA
Awareness programme of IWMP	WC	PIA, WDT
Concept of watershed management, roles and responsibilities	WC	PIA, WDT
Roles and responsibilities of participants/beneficiaries Leadership role of W.C.	WC	PIA, WDT
Social auditing	WC	PIA, WDT
Project accounting	WC	PIA, WDT
Planning and implementation of project related to creation of common assets	SHGs, UGs	PIA, WDT
Awareness program on Production System and Microenterprises (PS&M) and Livelihood Support System (LSS)	SHGs	WC, PIA, WDT
Gender mainstreaming and development	SHGs, UGs	PIA, WDT
Communication and leadership development	SHGs, UGs	PIA, WDT
Group dynamics	SHGs, UGs	PIA, WDT

Details of important trainings as planned are following:

I. Empowering peoples representatives for IWMP

1.	Title of the training programme	Empowering peoples representatives for IWMP
2.	Rationale	The need for watershed based development programs, concepts involved in watershed development, IWMP – its objectives, steps involved in the implementation of the program, financial management etc.
3.	Objectives	1. To create awareness among the peoples representatives regarding the need for watershed based development programs 2. Concept of IWMP 3. Project involved in the programs 4. Scope of the project 5. Roles and responsibilities 6. Financial management
4.	Target group	District, block and gramapanchayath members
5.	Duration	2 days
6.	No. of participants	200
7.	No. of batches	5 batches
8.	Expected outcomes	Ensure smooth implementation of the projects, interfere with issue if any while implementation, financial transparency, ensure peoples participation etc.

Number of participants (One batch) : 40
Total Programs : 5

II. Awareness programme of IWMP

1.	Title of the training program	Awareness programme of IWMP
2.	Rationale	The watershed community must be made aware of the programme, its concept, the need of the hour, motivate them to become part of the programme
3.	Objectives	a. To familiarize the concept of IWMP b. To familiarize the basics of watershed c. The scope of watershed development in their area. d. Various activities proposed under NRM, PSM and LSS. e. To ensure their participation for the success of the project
4.	Target group	Watershed community
5.	Duration	1 day
6.	No. of participants	50/60
7.	No. of batches	10
8.	Expected outcomes	Community awareness and ensure peoples participation.

Target Group : Members of Watershed Committee
Duration : One Day
Number of Participants : 60
Number of Batches : 10

III. Concept of watershed management, roles and responsibilities

1.	Title of the training program	Concept of watershed management, roles and responsibilities
2.	Rationale	Impart awareness among the watershed committees regarding the concept of watershed management, roles and responsibilities, operational guidelines, financial management etc.
3.	Objectives	1. To create awareness among the WCs regarding the concept of watershed management 2. To define the roles and responsibilities of WC 3. Financial management of the project 4. Management of WDF

4.	Target group	WCs
5.	Duration	1 day
6.	No. of participants	30 per batch
7.	No. of batches	2
8.	Expected outcomes	Empowerment of WCs proper for effective implementation of the project and proper maintenance of commonly created assets

IV. Planning and implementation of project related to creation of common assets

1.	Title of the training program	Planning and implementation of project related to creation of common assets
2.	Rationale	Create awareness among UGs regarding the mode of creation of common assets
3.	Objectives	1. Make aware the UGs regarding their responsibility 2. The need for establishing common assets 3. The mode of operation in establishing common assets 4. Financial procedures involved
4.	Target group	UGs
5.	Duration	1 day
6.	No. of participants	2-3 persons from each UG
7.	No. of batches	One per watershed
8.	Expected outcomes	Empower the UGs to take up the responsibility of creating common assets as well as their future maintenance

Number of participants for one programme 15 x 3 = 45

V. Awareness program on Production System and Microenterprises (PS&M) and Livelihood Support System (LSS)

1.	Title of the training program	Awareness program on Production System and Microenterprises (PS&M) and Livelihood Support System (LSS)
2.	Rationale	The watershed community must be made aware of the various PS&M and LSS programs envisaged in the project, group formation, credit support through banks, Accounting procedures etc.
3.	Objectives	a. To motivate the community to initiate various PS&M b. To generate additional income from such activities c. To attain self sustainability d. To ensure women empowerment
4.	Target group	SHGs: rearing cattle, fodder cultivation, Pisiculture, Apiculture, Horticulture, Mushroom cultivation, food processing etc
5.	Duration	1 day
6.	No. of participants	10-25
7.	No. of batches	For each of the above group one batch (10 batch or more)
8.	Expected outcomes	Increase the standard of living through increase in per capita income, attain self sustainability etc.

Number of participants : 25

Exposure Visit

No. of programme : 1

Number of participants : 35

Target group : Block Panchayat members, Panchayat Presidents, WDT members, WC Members, SHG/UG Members etc

Duration : 4 days

CHAPTER - 7

PHASING OF PROGRAMME AND BUDGETING

Allocation of funds under IWMP 5

Fund allocated for development activities						
Sl. No.	Name of Watershed	Watershed Development Works (56%)	Production System & Micro Enterprises (10%)	Livelihood activities for the assetless persons (9%)	Entry Point Activity (4%)	Total
1	Meppadi	2797200	498500	449550	199800	3946050
2	Chooralmala	2310000	412500	371250	165000	3258750
3	Soochipara	1873200	334500	301050	133800	2642550
4	Kalladi	1318800	235500	211950	94200	1860450
5	Meenakshipuzha	3696000	660000	594000	264000	5214000
6	Kanthampara	1209600	216000	194400	86400	1706400
7	Vattathuri (Valathur)	1621200	289500	260550	115800	2287050
8	Kadachikunnu	4922400	879000	791100	351600	6944100
9	Vattathuvayal	4947600	883500	795150	353400	6979650
10	Choladi	3418800	610500	549450	244200	4822950
	Total for IWMP 5	28114800	5020500	4518450	2008200	39561950

Fund allocated for other heads		
Sl. No.	Name of Head	Fund Available
1	Administration (10%)	5020500
2	Capacity Building (5%)	2510250
3	Consolidation (3%)	1506150
4	Monitoring (1%)	502050
5	Evaluation (1%)	502050
6	Detailed Project Report (1%)	502050
Total for IWMP 5		10543050

Allocation of total fund		
Fund Allocated for Development activities	Fund Allocated for other heads	Total Fund for the project
39661950	10543050	50205000

IWMP 5 - Total Budget

Sl. No.	Activities	Unit	1st Year		2nd Year		3rd Year		4th Year		Total Quantity	IWMP Share	Total Amount
			Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount			
A	**Watershed Development Works**												
i	**Land Development**												
	Planting of agro-horticultural plants	nos	7024	442465		0		0		0	7024	442465	442465
	Planting of shade trees	nos		0	2	76900	2	76000	1	55000	5	207900	207900
	Total			**442465**		**76900**		**76000**		**55000**	0	**650365**	**650365**
ii	**Soil & Moisture Conservation**												
	Stream embankment	nos	12	1166200	2	88000	6	436000	3	119900	23	1810100	1810100
	Wet land conservation	nos	3	113600		0		0		0	3	113600	113600
	Planting of bamboo, screw pines	nos		0	5	130350	1	110000		0	6	240350	240350
	Formation of coffee platform	m^2	48598	3450475	18500	1313500	19500	1384500		0	86598	6148475	6148475
	Earthen contour bunding	m^3	4870	399340		0		0		0	4870	399340	399340
	Formation of compost pit	nos	818	449900	404	222200		0		0	1222	672100	672100
	Mulching	Cent	155502	3887550	64200	1605000	64347	1608675		0	284049	7101225	7101225
	Stone pitched bunding	m^2	10500	1312500	3900	487500		0		0	14400	1800000	1800000
	Cardomom Platform formation	m^2	12150	862650		0		0		0	12150	862650	862650
	Fodder grass planting on bunds	nos	12729	50916	12728	50911		0		0	25457	101827	101827
	Farmland protection	nos	1	45000		0		0		0	1	45000	45000
	Total			**11738131**		**3897461**		**3539175**		**119900**	0	**19294667**	**19294667**
iii	**Vegetative and Engineering Structure**												
	Earthen checks	nos		0	4	128000	1	32000		0	5	160000	160000
	Gully plugs	nos		0	50	37500		0		0	50	37500	37500
	Drainage line protection by locally available stones	m	3750	468750	800	82593		0		0	4550	551343	551343
	Loose boulder checks	nos	100	125000		0		0		0	100	125000	125000
	Brushwood checks	nos		0		0		0	10	12500	10	12500	12500
	Total			**593750**		**248093**		**32000**		**12500**	0	**886343**	**886343**
iv	**Water Harvesting Structure (New created)**												
	Construction of irrigation well	nos	1	168525		0	1	270000		0	2	438525	438525
	Well recharging	nos	115	1023500	80	712000	91	819900	55	489500	341	3044900	3044900
	Rain Water Harvesting	nos		0	5	150000	7	250000	15	1200000	27	1600000	1600000
	Construction of check dam	nos		0		0	2	315000	5	800000	7	1115000	1115000
	Total			**1192025**		**862000**		**1654900**		**2489500**	0	**6198425**	**6198425**
v	**Water Harvesting Structure (Renovated)**												
	Renovation of pond	nos		0	2	150000		0	2	290000	4	440000	440000
	Renovation of check dam	nos		0		0		0	4	330000	4	330000	330000
	Renovation of irrigation well	nos		0		90000	1	65000	3	130000	4	285000	285000
	'Keni' Renovation	nos		0	1	30000		0		0	1	30000	30000
	Total			**0**		**270000**		**65000**		**750000**	0	**1085000**	**1085000**
	Detailed **Sub Total** Project **-Watershed** Report **Development Works**			**13,966,371**		**5,354,454**		**5,367,075**		**3,426,900**	0	**28114800**	**28114800**

B	**Production System & Micro Enterprises**												
	Homestead vegetable farming	nos	231	623,700	231	623,700	211	569,700	187	504,900	860	2322000	2322000
	Indigenous banana cultivation	nos	29	478,500	29	478,500	29	478,500	20	330,000	107	1765500	1765500
	Cardomom planting	nos	7675	460,500	4,825	289,500	1,500	90,000	1,550	93,000	15550	933000	933000
	Sub Total Production System & Micro Enterprises			**1,562,700**		**1,391,700**		**1,138,200**		**927,900**	0	**5020500**	**5020500**
C			**Livelihood activities for the asset less persons**										
	Homestead backyard poultry	nos	47	463,974	47	463,984	33	325,866	20	197,726	147	1451550	1451550
	Cow rearing	nos	29	1,134,950	29	1,131,950	20	800,000		-	78	3066900	3066900
	Sub Total - Livelihood activities for the asset less persons			**1,598,924**		**1,595,934**		**1,125,866**		**197,726**	0	**4518450**	**4518450**
D	**Entry Point Activity**	nos	12	**2,008,200**		**-**		**-**		**-**	12	**2008200**	**2008200**
E	**Consolidation**									**1,506,150**		**1506150**	**1506150**
F	**Administration**			**1,255,125**		**1,255,125**		**1,255,125**		**1,255,125**		**5020500**	**5020500**
G	**Capacity Building**			**1,255,125**		**655,125**		**600,000**				**2510250**	**2510250**
H	**Detailed Project Report**			**502,050**								**502050**	**502050**
I	**Monitoring**			**125,513**		**125,513**		**125,513**		**125,513**		**502050**	**502050**
J	**Evaluation**							**125,500**		**376,550**		**502050**	**502050**
	Grand Total (A+B+C+D+E+F+G+H+I+J)			**22,274,008**		**10,377,851**		**9,737,279**		**7,815,864**		**50205000**	**50205000**

Total Budget - Meppadi Micro Watershed													
Sl. No.	Activities	Unit	1st Year		2nd Year		3rd Year		4th Year		Total Quantity	IWMP Share	Total Amount
			Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount			
A	Watershed Development Works												
i	**Land Development**												
	Planting of agro-horticultural plants	nos	3214	202435							3214	0	
	Total			**202435**		**0**		**0**		**0**	0	**202435**	**202435**
ii	**Soil & Moisture Conservation**												
	Stream side Protection at 13th no. Thodu near Chooralmala	nos	1	55000							1	55000	55000
	Stream embankment, desiltation at Mundakkai	nos	1	44000							1	44000	44000
	Planting of bamboo, screw pines etc. at 13th no. thodu	nos	1	203500							1	203500	203500
	Sub Total			**302500**		**0**		**0**		**0**	0	**302500**	**302500**
	Wet land conservation - Planting screw pines, ferns	nos	1	51250							1	51250	51250
	Planting bamboo, screw pines etc. near Chooralamala Sivakshethram	nos			1	33000					1	33000	33000
	Planting of bamboo, screw pines etc. near Muslim burrial land Mundakkai	nos			1	24750					1	24750	24750
	Planting of bamboo, screw pines etc. near Hindu burrial land Mundakkai	nos			1	23100					1	23100	23100
	Planting of bamboo, screw pines etc. near Sri Mariyamman Kshethram, Mundakkai	nos			1	22000					1	22000	22000
	Planting of bamboo, screw pines etc. near GLP school, Mundakkai	nos			1	27500					1	27500	27500
	Sub Total			**0**		**130350**		**0**		**0**	0	**130350**	**130350**
	Formation of coffee platform	m^2	7700	546700							7700	546700	546700
	Earthen contour bunding	m^3	4870	399340							4870	399340	399340
	Formation of compost pit	nos	183	100650							183	100650	100650
	Mulching	Cent	2563	64075							2563	64075	64075
	Total			**1464515**		**130350**		**0**		**0**	0	**1594865**	**1594865**
iii	**Vegetative and Engineering Structure**												
	Construction of earthen check dam using mud bag near 13th no. bridge	nos			1	32000					1	32000	32000
	Construction of earthen check dam using mud bag near Chooralmala Chappupura Padi	nos			1	32000					1	32000	32000
	Construction of earthen check dam using mud bag near Poolappadi, Chooralmala	nos			1	32000					1	32000	32000
	Construction of earthen check dam using mud bag near 13th no. Engine shed, Chooralmala	nos			1	32000					1	32000	32000
	Total			**0**		**128000**		**0**		**0**	0	**128000**	**128000**
iv	**Water Harvesting Structure (New created)**												
	Construction of irrigation well near Mundakkai Anganwadi	nos					1	270000			1	270000	270000
	Well recharging	nos					21	186900			21	186900	186900
	Total			**0**		**0**		**456900**		**0**	0	**456900**	**456900**

Total Budget - Chooralmala Micro Watershed

Sl. No.	Activities	Unit	1st Year		2nd Year		3rd Year		4th Year		Total Quantity	IWMP Share	Total Amount
			Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount			
A	**Watershed Development Works**												
i	**Land Development**												
	Planting shade trees for GVHSS, Vellarmala	nos		0		0		0	1	55000	1	0	55000
	Total			**0**		**0**		**0**		**55000**	0	**55000**	**55000**
ii	**Soil & Moisture Conservation**												
	Stream Embankment using bamboo near GVHSS, Vellarmala	nos	1	33000							1	33000	33000
	Stream Embankment and desiltation using bamboo, screw pines etc at Neelikappu thodu	nos	1	154000							1	154000	154000
	Stream Embankment and desiltation using bamboo, screw pines etc at Appunair – Chooralmala thodu	nos	1	33000							1	33000	33000
	Sub Total			**220000**		**0**		**0**		**0**	0	**220000**	**220000**
	Wetland conservation using bamboo, Screw pine, Vetiver etc	nos	1	31800							1	31800	31800
	Mulching	Cent	39500	987500							39500	987500	987500
	Coffee platform	m^2	9700	688700							9700	688700	688700
	Total			**1928000**		**0**		**0**		**0**	0	**1928000**	**1928000**
iii	**Vegetative and Engineering Structure**												
	Earthen check dam using mud bag at Appunair – Chooralmala thodu	nos					1	32000			1	32000	32000
	Total			**0**		**0**		**32000**		**0**	0	**32000**	**32000**
iv	**Water Harvesting Structure (New created)**												
	Well recharging at HS road near Sarada/Marar Gopi	nos					1	10000			1	10000	10000
	Rain Water Harvesting tank for GVHSS, Vellarmala	nos					1	100000			1	100000	100000
	Total			**0**		**0**		**110000**		**0**	0	**110000**	**110000**
v	**Water Harvesting Structure (Renovated)**												
	Renovation of irrigation well near village road ST colony	nos			1	45000					1	45000	45000
	Renovation of irrigation well at Neelikappu 85	nos			1	45000					1	45000	45000
	Sub Total			**0**		**90000**		**0**		**0**	0	**90000**	**90000**
	Renovation of pond at Neelikappu	nos			1	65000					1	65000	65000
	'Keni' Renovation near Koinamkulam Ambedkar colony	nos			1	30000					1	30000	30000
	Total			**0**		**185000**		**0**		**0**	0	**185000**	**185000**
	Sub Total - Watershed Development Works			**1,928,000**		**185,000**		**142,000**		**55,000**	0	**2310000**	**2310000**
B	**Production System & Micro Enterprises**												
	Homestead vegetable farming	nos	15	40,500	15	40,500	15	40,500	10	27,000	55	148500	148,500
	Indigenous banana cultivation	nos	4	66,000	4	66,000	4	66,000	4	66,000	16	264000	264,000
	Sub Total - Production System & Micro Enterprises			**106,500**		**106,500**		**106,500**		**93,000**	0	**412500**	**412,500**
C	**Livelihood activities for the asset less persons**												
	Homestead backyard poultry	nos	4	39,928	4	39,928	4	39,928	5	51,466	17	**0**	
	Cow rearing	nos	2	80,000	3	120,000					5	**0**	
	Sub Total - Livelihood activities for the asset less persons			**119,928**		**159,928**		**39,928**		**51,466**	0	**371250**	**371,250**
D	**Entry Point Activity**												
	Construction of checkdam at Koinamkulam			165,000							0	**0**	
	Sub Total - Entry Point Activity			**165,000**		**-**		**-**		**-**	0	**165000**	**165,000**

Total Budget - Soochippara Micro Watershed													
Sl. No.	Activities	Unit	1st Year		2nd Year		3rd Year		4th Year		Total Quantity	IWMP Share	Total Amount
			Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount			
A			Watershed Development Works										
i	**Land Development**												
	Planting shade trees at Govt. LP School, Puthumala	nos		0			1	21000			1	21000	21000
	Total			**0**		**0**		**21000**		**0**	0	**21000**	**21000**
ii	**Soil & Moisture Conservation**												
	Farmland protection near Govt. LP School, Puthumala	nos	1	45000							1	45000	45000
	Wetland conservation using screw pines near Puthumala school	nos	1	30550							1	30550	30550
	Mulching	Cent	35392	884800							35392	884800	884800
	Formation of compost pit	nos	285	156750							285	156750	156750
	Stream enbankment by bamboo, screw pines etc. at Pachakkad-Elavayal thodu			133100							0	133100	133100
	Total			**1250200**		0		0		0	0	**1250200**	**1250200**
iii	**Vegetative and Engineering Structure**												
	Total										0	0	
iv	**Water Harvesting Structure (New created)**												
	Rain Water Harvesting Tank for Govt. LP School, Puthumala	nos							1	50000	1	50000	50000
	Construction of check dam at Elavayal – Pachakkadu Thodu	nos							1	200000	1	200000	200000
	Well recharging	nos							30	267000	30	267000	267000
	Total			**0**		**0**		**0**		**517000**	0	**517000**	**517000**
v	**Water Harvesting Structure (Renovated)**												
	Renovation of irrigation pond at Elavayal	nos			1	85000					1	85000	85000
	Total			**0**		**85000**		**0**		**0**	0	**85000**	**85000**
	Sub Total - Watershed Development Works			**1,250,200**		**85,000**		**21,000**		**517,000**	0	**1873200**	**1873200**
B	**Production System & Micro Enterprises**												
	Homestead vegetable farming	nos	15	40,500	15	40,500	10	27,000	10	27,000	50	135000	135,000
	Cardomom planting	nos		-	3,325	199,500					3325	199500	199,500
	Sub Total - Production System & Micro Enterprises			**40,500**		**240,000**		**27,000**		**27,000**	0	**334500**	**334,500**
C	Livelihood activities for the asset less persons												
	Homestead backyard poultry	nos	5	50,525	5	50,525					10	101050	101,050
	Cow rearing	nos		-			5	200,000			5	200000	200,000
	Sub Total - Livelihood activities for the asset less persons			**50,525**		**50,525**		**200,000**		**-**	0	**301050**	**301,050**
D	**Entry Point Activity**												
	Stream embankment at Puthumala thodu	nos	1	133,800							1	133800	**133,800**
	Sub Total - Entry Point Activity			**133,800**		**-**		**-**		**-**	0	**133800**	**133,800**

Total Budget - Kalladi Micro Watershed													
Sl. No.	Activities	Unit	1st Year		2nd Year		3rd Year		4th Year		Total Quantity	IWMP Share	Total Amount
			Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount			
A				Watershed	Development	Works							
i	**Land Development**												
	Planting of agro-horticulture plants	nos	389	24,507							389	24,507	24,507
	Total			**24,507**		**-**		**-**		**-**	0	**24,507**	**24,507**
ii	**Soil & Moisture Conservation**												
	Stone pitched bunding	m^2	6600	825,000							6600	825,000	825,000
	Cardomom Platform formation	m^2	3750	266,250							3750	266,250	266,250
	Mulching	Cent	3318	82,950							3318	82,950	82,950
	Total			**1,174,200**		**-**		**-**		**-**	0	**1,174,200**	**1,174,200**
iii	**Vegetative and Engineering Structure**												
	Gully plugs	nos			50	37,500					50	37,500	37,500
	Drainage line protection by locally available stones	m			800	82,593					800	82,593	82,593
	Total			**-**		**120,093**		**-**		**-**	0	**120,093**	**120,093**
iv	**Water Harvesting Structure (New created)**												
	Total			-		-		-		-	0	**-**	-
v	**Water Harvesting Structure (Renovated)**												
	Total										0	**-**	
	Sub Total - Watershed Development Works			**1,198,707**		**120,093**		**-**		**-**	0	**1,318,800**	**1,318,800**
B	**Production System & Micro Enterprises**												
	Homestead vegetable farming	nos	15	40,500	15	40,500					30	81,000	81,000
	Cardomom planting	nos	2575	154,500							2575	154,500	154,500
	Sub Total - Production System & Micro Enterprises			**195,000**		**40,500**		**-**		**-**	0	**235,500**	**235,500**
C	**Livelihood activities for the asset less persons**												
	Cow rearing	nos			6	211,950					6	211,950	211,950
	Sub Total - Livelihood activities for the asset less persons			**-**		**211,950**		**-**		**-**	0	**211,950**	**211,950**
D				**Entry**	**Point**	**Activity**							
	Stream embankment at Kalladi thodu	nos		94,200							0	94,200	94,200
	Sub Total - Entry Point Activity			**94,200**		**-**		**-**		**-**	0	**94,200**	**94,200**

Total Budget - Meenakshipuzha Micro Watershed													
Sl. No.	Activities	Unit	1st Year		2nd Year		3rd Year		4th Year		Total Quantity	IWMP Share	Total Amount
			Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount			
A				Watershed	Development	Works							
i	**Land Development**												
	Planting shade trees near Govt. Poly Technique	nos					1	55,000			1	55,000	55,000
	Agro-horticulture planting	nos	2921	184,023							2921	184,023	184,023
	Total			**184,023**		**-**		**55,000**		**-**	0	**239,023**	**239,023**
ii	**Soil & Moisture Conservation**												
	Stream side protection near Govt. Poly Technique	nos					1	65,000			1	65,000	65,000
	Stream Embankment at Kalladi Makham Thodu	nos					1	75,000			1	75,000	75,000
	Sub Total			**-**		**-**		**140,000**		**-**	0		**140,000**
	Stone pitched bund	m^2	3900	487,500	3,900	487,500					7800	975,000	975,000
	Fodder grass planting on bunds	nos	12729	50,916	12,728	50,911					25457	101,827	101,827
	Cardomom plat form formation	m^2	8400	596,400							8400	596,400	596,400
	Mulching	Cent	11700	292,500	11,700	292,500	11,600	290,000			35000	875,000	875,000
	Total			**1,427,316**		**830,911**		**430,000**		**-**	0	**2,688,227**	**2,688,227**
iii	**Vegetative and Engineering Structure**												
	Drainage line protection by locally available stones	m	3750	468,750							3750	468,750	468,750
	Loose boulder checks	nos	100	125,000							100	125,000	125,000
	Total			**593,750**		**-**		**-**		**-**	0	**593,750**	**593,750**
iv	**Water Harvesting Structure (New created)**												
	Construction of check dam at Kalladi Makham thodu near Mammikunnu colony	nos							1	175,000	1	175,000	175,000
	Total			**-**		**-**		**-**		**175,000**	0	**175,000**	**175,000**
v	**Water Harvesting Structure (Renovated)**												
	Total										0	-	
	Sub Total - Watershed Development Works			**2,205,089**		**830,911**		**485,000**		**175,000**	0	**3,696,000**	**3,696,000**
B	**Production System & Micro Enterprises**												
	Homestead vegetable farming	nos	25	67,500	25	67,500	25	67,500	35	94,500	110	297,000	297,000
	Cardomom planting	nos	1500	90,000	1,500	90,000	1,500	90,000	1,550	93,000	6050	363,000	363,000
	Sub Total - Production System & Micro Enterprises			**157,500**		**157,500**		**157,500**		**187,500**	0	**660,000**	**660,000**
C	**Livelihood activities for the asset less persons**												
	Homestead backyard poultry	nos	5	48,500	5	48,500	5	48,500	5	48,500	20	194,000	194,000
	Cow rearing	nos			5	200,000	5	200,000			10	400,000	400,000
	Sub Total - Livelihood activities for the asset less persons			**48,500**		**248,500**		**248,500**		**48,500**	0	**594,000**	**594,000**
D	**Entry Point Activity**												
	Stream embankment at mini colony thodu	nos	1	264,000							1	-	
	Sub Total - Entry Point Activity			**264,000**		**-**		**-**		**-**	0	**264,000**	**264,000**

Total Budget - Kanthanpara Micro Watershed													
Sl. No.	Activities	Unit	1st Year		2nd Year		3rd Year		4th Year		Total Quantity	IWMP Share	Total Amount
			Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount			
A	**Watershed Development Works**												
i	**Land Development**												
	Agro-horticulture planting	nos	500	31,500							500	31,500	31,500
	Total			**31,500**		**-**		**-**		**-**	0	**31,500**	**31,500**
ii	**Soil & Moisture Conservation**												
	Coffee plat form formation	m^2	12275	871,525							12275	871,525	871,525
	Mulching	Cent	8279	206,975							8279	206,975	206,975
	Stream embankment by bamboo at Vellappankandi thodu	nos	1	99,600							1	99,600	99,600
	Total			**1,178,100**		**-**		**-**		**-**	0	**1,178,100**	**1,178,100**
iii	**Vegetative and Engineering Structure**												
	Total										0	**-**	
iv	**Water Harvesting Structure (New created)**												
	Total										0	**-**	
v	**Water Harvesting Structure (Renovated)**												
	Total										0	**-**	
	Sub Total - Watershed Development Works			**1,209,600**		**-**		**-**		**-**	0	**1,209,600**	**1,209,600**
B	**Production System & Micro Enterprises**												
	Cardomom planting		3600	216,000							3600	216,000	216,000
	Sub Total - Production System & Micro Enterprises			**216,000**		**-**		**-**		**-**	0	**216,000**	**216,000**
C	**Livelihood activities for the asset less persons**												
	Cow rearing		5	194,400							5	194,400	194,400
	Sub Total - Livelihood activities for the asset less persons			**194,400**		**-**		**-**		**-**	0	**194,400**	**194,400**
D	**Entry Point Activity**												
	Construction of check dam at Vellappankandy			86,400							0	86,400	86,400
	Sub Total - Entry Point Activity			**86,400**		**-**		**-**		**-**	0	**86,400**	**86,400**

Total Budget - Valathoor Micro Watershed													
Sl. No.	Activities	Unit	1st Year		2nd Year		3rd Year		4th Year		Total Quantity	IWMP Share	Total Amount
			Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount			
A	Watershed Development Works												
i	**Land Development**												
	Total												
ii	**Soil & Moisture Conservation**												
	Stream embankment at Aramagalamchal – Anadikappu Thodu	nos			1	55000					1	55000	55000
	Stream embankment at Cheeramattom Thodu	nos			1	33000					1	33000	33000
	Sub Total			**0**		**88000**		**0**		**0**	0	**88000**	**88000**
	Mulching	Cent	12500	312500	12500	312500	12187	304675			37187	929675	929675
	Total			**312500**		**400500**		**304675**		**0**	0	**1017675**	**1017675**
iii	**Vegetative and Engineering Structure**												
	Brushwood checks at Cheeramattom Thodu	nos							10	12500	10	12500	12500
	Total			**0**		**0**		**0**		**12500**	0	**12500**	**12500**
iv	**Water Harvesting Structure (New created)**												
	Construction of check dam at Aramangalamchal – Valathur road	nos							1	75000	1	75000	75000
	Construction of mini check dam - Aramangalamchal, near Cheenikkal Hamza	nos							1	125000	1	125000	125000
	Sub Total			**0**		**0**		**0**		**200000**	0	**200000**	**200000**
	Construction of irrigation well at Mundakankunnu near Cheruparambil Suneera	nos	1	168525							1	168525	168525
	Well recharging	nos	25	222500							25	222500	222500
	Total			**391025**		**0**		**0**		**200000**	0	**591025**	**591025**
v	**Water Harvesting Structure (Renovated)**												
	Total										0	**0**	**-**
	Sub Total - Watershed Development Works			**703,525**		**400,500**		**304,675**		**212,500**	0	**1621200**	**1,621,200**
B	Production System & Micro Enterprises												
	Homestead vegetable farming	nos	25	67,500	25	67,500	25	67,500	32	87,000	107	289500	289,500
	Sub Total - Production System & Micro Enterprises			**67,500**		**67,500**		**67,500**		**87,000**	0	**289500**	**289,500**
C	Livelihood activities for the asset less persons												
	Cow rearing	nos	7	260,550							7	260550	260,550
	Sub Total - Livelihood activities for the asset less persons			**260,550**		**-**		**-**		**-**	0	**260550**	**260,550**
D	Entry Point Activity												
	Stream embankment at Aramangalamchal-Anganvadi thodu			115,800		-		-		-	0	**115800**	**115,800**
	Sub Total - Entry Point Activity			**115,800**		**-**		**-**		**-**		**115800**	**115,800**

Total Budget - Vattathuvayal Micro Watershed													
Sl. No.	Activities	Unit	1st Year		2nd Year		3rd Year		4th Year		Total Quantity	IWMP Share	Total Amount
			Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount			
A	Watershed Development Works												
i	**Land Development**												
	Total												
ii	**Soil & Moisture Conservation**												
	Stream embankment with bamboo, reed at Pallithazhe – Sekharankundu thodu	nos							1	55000	1	55000	55000
	Stream embankment with bamboo, reed at Kadassery thodu 1	nos							1	33000	1	33000	33000
	Stream embankment with bamboo, reed at Kadassery thodu 2	nos							1	31900	1	31900	31900
	Sub Total			**0**		**0**		**0**		**119900**	0	**119900**	**119900**
	Mulching	Cent	15000	375000	15000	375000	15000	375000			45000	1125000	1125000
	Formation of compost pit	nos	100	55000	106	58300					206	113300	113300
	Formation of coffee platform	m^2	9245	656400	9000	639000	9000	639000			27245	1934400	1934400
	Total			**1086400**		**1072300**		**1014000**		**119900**	0	**3292600**	**3292600**
iii	**Vegetative and Engineering Structure**												
	Total										0		
iv	**Water Harvesting Structure (New created)**												
	Construction of check dam at Vattathuvayal near 60 Anganawadi	nos					1	165000			1	165000	165000
	Roof Water Harvesting tank for 60 Anganawadi	nos							1	100000	1	100000	100000
	Roof Water Harvesting tank for CSI church, Vaduvanchal	nos							1	100000	1	100000	100000
	Roof Water Harvesting tank for Padivayal Makham	nos							1	100000	1	100000	100000
	Roof Water Harvesting tank for Kadassery Mosque	nos							1	100000	1	100000	100000
	Roof Water Harvesting tank for Kadassery Anganawadi	nos							1	100000	1	100000	100000
	Roof Water Harvesting tank for Kadassery Alternate school	nos							1	100000	1	100000	100000
	Sub Total			**0**		**0**		**0**		**600000**	0	**600000**	**600000**
	Well recharging	nos	25	222,500	25	222,500	25	222,500	25	222,500	100	890000	890000
	Total			**222,500**		**222,500**		**387,500**		**822,500**	0	**1655000**	**1655000**
v	**Water Harvesting Structure (Renovated)**												
	Total										0		
	Sub Total - Watershed Development Works			**1,308,900**		**1,294,800**		**1,401,500**		**942,400**	0	**4947600**	**4,947,600**
B	Production System & Micro Enterprises												
	Homestead vegetable farming	nos	40	108,000	40	108,000	40	108,000	24	64,500	144	388500	388,500
	Indigenous banana cultivation	nos	10	165,000	10	165,000	10	165,000			30	495000	495,000
	Sub Total - Production System & Micro Enterprises			**273,000**		**273,000**		**273,000**		**64,500**	0	**883500**	**883,500**
C	Livelihood activities for the asset less persons												
	Homestead backyard poultry	nos	10	97,570	10	97,580					20	195150	195,150
	Cow rearing	nos	5	200,000	5	200,000	5	200,000			15	600000	600,000
	Sub Total - Livelihood activities for the asset less persons			**297,570**		**297,580**		**200,000**		**-**	0	**795150**	**795,150**
D	Entry Point Activity												
	Stream embankment at Vattathuvayal 60 thodu	nos	1	353,400							1	353400	353,400
	Sub T tal - Entry Point Activity	**nos**		**353,400**		**-**		**-**		**-**		**353400**	**353,400**

Total Budget - Choladi Micro Watershed													
Sl. No.	Activities	Unit	1st Year		2nd Year		3rd Year		4th Year		Total Quantity	IWMP Share	Total Amount
			Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount			
A	Watershed Development Works												
i	**Land Development**												
	Planting shade trees at Chithragiri School	nos			1	31900					1	31900	31900
	Total			**0**		**31900**		**0**		**0**	0	**31900**	**31900**
ii	**Soil & Moisture Conservation**												
	Stream Embankment at Edakkodu thodu	nos					1	66000			1	66000	66000
	Stream bunk protection at Meenmutty thodu	nos					1	33000			1	33000	33000
	Stream embankment at Velleri thodu	nos					1	77000			1	77000	77000
	Stream embankment at Kuttankadavu thodu near Sulekha estate	nos					1	120000			1	120000	120000
	Sub Total			**0**		**0**		**296000**		**0**	0	**296000**	**296000**
	Bamboo planting at Neelimala road side	nos					1	110000			1	110000	110000
	Mulching	Cent	12250	306250	10000	250000	10000	250000			32250	806250	806250
	Formation of coffee platform	m^2	4178	296650	4000	284000	4000	284000			12178	864650	864650
	Total			**602900**		**534000**		**940000**		**0**	0	**2076900**	**2076900**
iii	**Vegetative and Engineering Structure**												
	Total										0		
iv	**Water Harvesting Structure (New created)**												
	Construction of check dam at Meenmutty thodu	nos							1	225000	1	225000	225000
	Well recharging	nos	20	178000	15	133500	15	133500			50	445000	445000
	Roof water harvesting tanks				5	150000	5	150000	5	150000	15	450000	450000
	Total			**178000**		**283500**		**283500**		**375000**	0	**1120000**	**1120000**
v	**Water Harvesting Structure (Renovated)**												
	Renovation of check dam and canal at Chellamkodu – Edakkodu thodu	nos							1	65000	1	65000	65,000
	Check dam renovation at Vellerimala thodu	nos							1	60000	1	60000	60,000
	Sub Total			**0**		**0**		**0**		**125000**	0	**125000**	**125,000**
	Renovation of irrigation well at Vellerivaya	nos					1	65000			1	65000	65,000
	Total			**0**		**0**		**65000**		**125000**	0	**190000**	**190,000**
	Sub Total - Watershed Development Works			**780,900**		**849,400**		**1,288,500**		**500,000**	0	**3418800**	**3,418,800**
B	Production System & Micro Enterprises												
	Homestead vegetable farming	nos	25	67,500	25	67,500	25	67,500	29	78,000	104	280500	280,500
	Indigenous banana cultivation	nos	5	82,500	5	82,500	5	82,500	5	82,500	20	330000	330,000
	Sub Total - Production System & Micro Enterprises			**150,000**		**150,000**		**150,000**		**160,500**	0	**610500**	**610,500**
C	Livelihood activities for the asset less persons												
	Homestead backyard poultry	nos	5	49,815	5	49,815	5	49,820			15	149450	149,450
	Cow rearing	nos	5	200,000	5	200,000					10	400000	400,000
	Sub Total - Livelihood activities for the asset less persons			**249,815**		**249,815**		**49,820**		**-**	0	**549450**	**549,450**
D	Entry Point Activity												
	Formation of irrigation pond at Neelimala	nos	1	244,200							1	244200	244,200
	Sub Total - Entry Point Activity			**244,200**		**-**		**-**		**-**		**244200**	**244,200**

Annual Action Plan - IWMP 5														
Sl. No.	Name of Head	Name of Activity	Name of Subactivity	Unit	Target									
					First Year		Second Year		Third Year		Fourth Year		Total	
					Physical	Financial	Physical	Financial	Physical	Financial	Physical	Financial	Physical	Financial
1	Watershed Development Works	Land Development	Afforestation	ha		0	0.809	76900	0.8096	76000	0.4048	55000	**2.0234**	**207900**
			Horticulture	ha	35	442465							**35**	**442465**
		Soil & Moisture Conservation	Straggred trecnching	ha									**0**	**0**
			Countour Bunding	ha	45	1711840	11	487500					**56**	**2199340**
			Others	ha	1080.2	10026291	457	3409961	445	3539175	45	119900	**2027.2**	**17095327**
		Vegetative and Engineering Structure	Earthen Checks	Cubic meter			80	128000	20	32000			**100**	**160000**
			Brushwood Checks	Rmt							500	12500	**500**	**12500**
			Gully plugs	Cubic meter			500	37500					**500**	**37500**
			Loose bolder	Cubic meter	1000	125000							**1000**	**125000**
			Others	nos	75	468750	16	82593					**91**	**551343**
		Water Harvesting Structure (New created)	Farm ponds	nos	0	0	0	0	0	0			**0**	**0**
			Check dams	nos			0	0	2	315000	5	800000	**7**	**1115000**
			Ground Water recharge structure	nos	115	1023500	80	712000	91	819900	55	489500	**341**	**3044900**
			Others	nos	1	168525	5	150000	8	520000	15	1200000	**29**	**2038525**
		Water Harvesting Structure (Renovated)	Farm ponds	nos			2	150000			2	290000	**4**	**440000**
			Check dams	nos							4	330000	**4**	**330000**
			Others	nos			1	120000	1	65000	3	130000	**5**	**315000**
2	Administrative Cost	Others	-	-	-	1255125	-	1255125	-	1255125	-	1255125		**5020500**
3	Monitoring	Monitoring of Projects	-	-	-	125513	-	125513	-	125513	-	125511		**502050**
4	Entry Point Activity	Plan for EPA	-	nos	12	2008200	-		-		-			**2008200**
5	Institution & Capacity Building	SHG Formation	-	-	-		-		-		-			**0**
		Capacity building		-	-	1255125	-	655125	-	600000	-			**2510250**
		Others		-	-		-		-	125500	-	1882700		**2008200**
6	DPR	Preperation of DPR	-			502050	-		-		-			**502050**
7	Livelihood activities for the asset-less persons		No. of activities	nos	2	1598924	2	1595934	2	1125866	2	197726	**2**	**4518450**
8	Production system &micro-enterprises	Others	No. of activities	nos	3	1562700	3	1391700	3	1138200	3	927900	**3**	**5020500**
			No. of Beneficiaries	nos	516		421		290		259		1486	**0**

CHAPTER – 8

CONSOLIDATION / EXIT STRATEGY

Consolidation / Exit Strategy

The last two years of the project are considered as consolidation and withdrawal phase of the Watershed development programme. This is the crucial phase of the project as the local institutions will be trained to manage the project independently after withdrawal of the Government Institutions from the project area.

The activities those will be under taken during this phase are:

1. Completion of various works under taken during work phase.
2. Consensus among the villagers to take up any new works out of any unspent amount.
3. Preparation of project completion report with details about status of each asset.
4. Documentation of successful experiences as well as lessons learnt for future use.
5. Evolving mechanisms to improve the sustainability of various interventions made in the project area.
6. Formulation of mechanisms for allocation of user right over common property resources.
7. Formulation of mechanisms to collect user charges for common property resources.
8. Creation of awareness and building capacity of the community to repair, maintain and protection of common property resources.
9. Training the user groups for optimum utilization of the developed natural resources.
10. Up scaling of successful experiences related to farm production system and off-farm livelihood activities undertaken through revolving fund under the project as well as credit and technical support from external institutions.
11. Evolving marketing arrangements of the farm produce as well as the off- farm and other micro enterprises.

12. Formation of Farmers' Federation for credit, input procurement, sale of local produce etc.
13. Forward and backward linkage of the SHGs and User groups for sustainable livelihoods.
14. Formulating mechanisms for empowering Watershed Committee and its smooth management in a long run.
15. Formulating mechanism for utilizing the Watershed Development Fund.

Withdrawal Mechanism:

At the end of the project, the Watershed Committee is to take the responsibility for post project management. For which the Memorandum of Agreement is to be formulated between the PIA and Watershed Committee basing on the following terms and conditions.

1. The list of assets created under EPA, NRM, Farm production system and Livelihood support system is to be prepared with joint signature of the Chairman, Secretary of the Watershed committee and PIA. The Watershed Committee will retain one copy of the list for future reference.
2. Watershed Committee will be authorized to use only one Bank account i.e. WDF account.
3. Yearly auditing of the accounts by the Chartered Accountant will be mandatory and to be adhered strictly.
4. The office bearer of the Watershed Committee shall involve all the community irrespective of caste, creed and religion.
5. The Gram Sabha shall have the right to decide the user charges to be collected from the beneficiaries which shall be deposited under the watershed development fund.
6. The cost of repair and maintenance of the assets created out of NRM component shall be borne out of Watershed development fund by using maximum 50% of the amount collected in a year.
7. The WDF account will primarily run as revolving fund.

8. No individual beneficiary should be granted any sort of grant or financial assistance in any form.
9. The SHGs and UGs shall have the eligibility to take loan from the WDF with marginal interest as decided by Gram Sabha.
10. The Watershed Committee is also at their liberty to start new profit making ventures by utilizing WDF as security deposit and the profit earned should go to the WDF.
11. The remuneration for the Watershed secretary will be finalized in the Gram Sabha.
12. The Watershed Committee may collect financial assistance from any other sources to augment the WDF. All donations, interests, fines and fees shall be deposited in the WDF.
13. The WDF shall be jointly operated by the Chairman and Secretary of the watershed committee.
14. All the expenditure shall be authenticated by the Watershed committee.
15. Annual meeting of the Gram Sabha is mandatory. However it may meet at any time if required.
16. The Watershed Committee should meet in every quarter to review the income and expenditure.
17. Any change in the Watershed Committee or its office bearer shall be made once it is resolved in the Gram Sabha. The Gram Sabha should believe in rotational leadership.
18. All the group representatives, at least one from each group shall be ensured in the Watershed Committee.
19. The decision approved and resolved in the Gram Sabha will only be implemented by the Watershed Committee.
20. In case of any embezzlement of fund, the Administrative system shall proceed according to Rules and Laws.
21. In the event of Gram Sabha and watershed Committee become defunct, the assets created under the project and WDF will be transferred to the Panchayat.

CHAPTER - 9

EXPECTED OUTCOME

Expected Outcome

Increase in good quality water harvesting structure:

In all the watershed areas in the project there are good quality water harvesting structures have proposed for irrigation and drinking purpose of the watershed community.

Reduction in soil erosion:

There will be a reduction in soil erosion in the watershed areas. However, the variation in the percentage of reduction primarily depended on quality of soil and moisture conservation activities in the respective regions.

Increase in ground water level:

There will be a marginal increase in ground water level after the completion of the soil and water conservation measures such as earthen bunding, platform formation, stone pitched bunding etc. in the project.

Maintaining runoff reduction:

With the help of soil and water conservation measures such as earthen checks, loose boulder checks, gully plugs, check dams etc. we can reduce the level of runoff in the project area.

Positive change in the land use pattern:

There will be a positive change in the land use pattern after the implementation of the project. More waste land will converted for productive use by the farmers. This will result in the increase in net sown area in all the micro watersheds. Further, better land use pattern will help increase in agricultural intensification and thus enhance agricultural production.

Crop diversification increases:

Increase in crop diversification will result out of more irrigation facilities available in the watershed areas. However, the concern is that the people invest more in good class of land. The investment in low quality land has not received much attention.

Reducing the workload of women:

Watershed development programmes will result positively in reducing the workload of women in terms of fetching drinking water, collecting fuel wood and fodder for livestock in all the watershed areas.

Increase in active involvement of the community

The Watershed Committees have actively involved in the implementation of watershed programmes. SHGs are formed in all the watersheds, and their degree of involvement increase. The SHGs will visible in watershed activities after completion of the project. Some other SHGs and UGs seem to have survived after withdrawal of the project. It was realized that participation of local community member is key to success of the watershed projects. Participation also enhances community empowerment. The participation of beneficiaries in planning and execution of the watershed is more appreciable.

Reduction in Migration:

Migration will mostly reduce during the project implementation stage. But further attempt is necessary to stop migration completely.

Increase in women participation:

The women participation is very much adequate in watershed programmes. Mostly, women lack in mobility, voice in decision making at home or in community. Same is the case with landless members. This issue will be reduce and involve the women community in the project at its maximum especially in livelihood programmes.

Improvement in the standard of living of the households:

Majority of the households across all the watershed areas will have significant improvement in their standard of living.

Summarize Table of Expected Outcomes

Sl. No.	Item	Unit of measurement	Pre-project Status	Expected Post-project Status	Remarks
1	Status of water table (Depth to Ground water level)	Meters	8 - 10	10 - 12	Open well in the middle reach
2	Quality of drinking water	-	Moderate	Safe	Increased availability of drinking water in open wells
3	Availability of drinking water	months	6 months	10 – 12 months	Through insitu conservation of rain water
4	Increase in irrigation potential	ha.	-	250 ha	Through renovation and construction of water bodies, new farm ponds, Check Dams etc.
5	Change in cropping/ land use pattern	ha.	100 ha.(Mono)	150 ha(Mixed)	Gross cropped area
6	Area under agricultural crop				
a)	Area under single crop	ha.	100 ha.(Mono)	150 ha(Mixed)	Mixed cropping and 2 tier cropping system in Plantation areas

b)	Net increase in crop production area	ha.	100 ha	150 ha	Through cultivation of food crops such as tubers and vegetables
7	Increase in area under vegetation	ha.	2350 ha	3347 ha	Through area treatments which enables the stability of soil moisture
8	Increase in area under horticulture	ha.	40 ha	60 ha	Planting of horticulture crops
9	Increase in area under fuel	ha.	50 ha	80 ha	Reduction in tree loping
10	Increase in area under Fodder	ha.	150 ha	450 ha	Through fodder cultivation and agrostological measure on constructed bunds
11	Increase in milk production	Litters/ Day	4	10	Importing improved varieties of milch animals
12	No. of SHGs Promoted	nos.	-	50	Through new formation
13	Increase in no.of families in livelihoods	nos.	-	225	Assistance for Milch cow rearing and backyard Poultry
14	Increase in income	Rs.	30000	50000	Average Annual income of the households

15	Migration	%	50% of total laborers	30% of total laborers	Through employment generation by labour oriented works and providing alternate livelihood option.
16	SHG Federations formed	nos.	-	10	Uniting all the SHG under IWMP 5
17	Credit linkage with banks	%	-	100% of formed SHGs	Credit linkage of SHGs with banks for group activities
18	WDF collection & management	Rs.	-	Aprox. 20 lakhs	Contribution by the beneficiaries for different activities in private lands.
19	Employment	nos.	-	75000	75000 nos of man days will be generated during the project period through different activities in the project area.

Conclusion

Watershed development programmes are one of the most popular development programmes implemented across the country. It is widely admitted that watershed development programmes are seen as the panacea. This programme has been directed towards the promotion of overall economic development and improvement of the socio-economic conditions of the resource poor sections of people inhabiting the programme areas through natural resource enhancement.

Water and soil management for more sustainable use of water resources should be considered in two aspects, water quality and quantity because both farmers and consumers are concerned about environment impacts derived from water consumption by agriculture. Therefore, it will be very important to protect water resources from pollution for the supply of water of high quality or to give a right direction for sustainable water use. As for water quantity, policies should be frame to raise the agricultural land in order to reduce a potential risk of soil erosion. For example, it needs to encourage farmers to maintain the shape of the paddy field though the field is idled without cropping. A national project to promote the construction of basic facilities for conservation practices that can reduce soil erosion and run-off will be also available. Watershed management is one of the best strategies for sustainable use of water to maintain the dykes and shapes of farm lands without the destruction of arable land for the construction of facilities not having water storage capacity such as roads, houses and industrial complexes. Conclusively, we think that the first step in order to minimize water scarcity and to acquire water resource for sustainable use is to compartment the watershed based on topographical characteristics of land and species of mother locks, and the second is to seize soil erosion within the watershed, the third is to identify alternate sources, the forth is to categorize land use pattern. The fifth is to assess runoff, drainage in farm land and soil erosion potential in non-paddy land and the sixth is to determine soil conservation practices depending on soil erosion grade in each field of land. The last one is to apply appropriate management practices for water, soil and biomass in each field.