INTEGRATED WATERSHED MANAGEMENT PROGRAMME (IWMP)

IWMP II (Kalpetta F I)

DETAILED PROJECT REPORT (DPR)

P I A

KALPETTA BLOCK PANCHAYATH

Prepared and Submitted by

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CHAPTER - I

INTRODUCTION AND GENERAL DESCRIPTION OF THE PROJECT

INTRODUCTION

Resources are the basis for the development of any country. India, one of the largest countries in the world, is blessed with diverse and abundant resources. Only judicious use of resources will help the development of a country. Over exploitation and unscientific land-use practices will lead to environmental problems and resource depletion. Watershed development approach has been advocated as the best strategy for conserving the natural resources of water, soil and bio-mass. A watershed is a natural unit of sustainable development. Eleventh Five Year Plan has proposed Watershed management activities for ensuring rural development. Watershed approach aims at augmentation and stabilization of production and productivity, minimizing the ecological degradation and generating and maintaining sustainable rural development in rain-fed areas. 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. The IWMP II F I project, comprising seven micro watersheds and covering mainly three Grama Panchayaths and one Municipality in a total of 3663 Ha in Kalpetta Block Panchayat, in the Western Ghat region, is inhabited by 3623 families, mostly of small and marginal farmers. Kalpetta Block Panchayath has been selected as the Implementing Agency of this project. As a prelude to the implementation phase of the project with a view to preparing the Detailed Project Report, a feasibility study has been conducted.

GENERAL DESCRIPTION OF THE PROJECT AREA

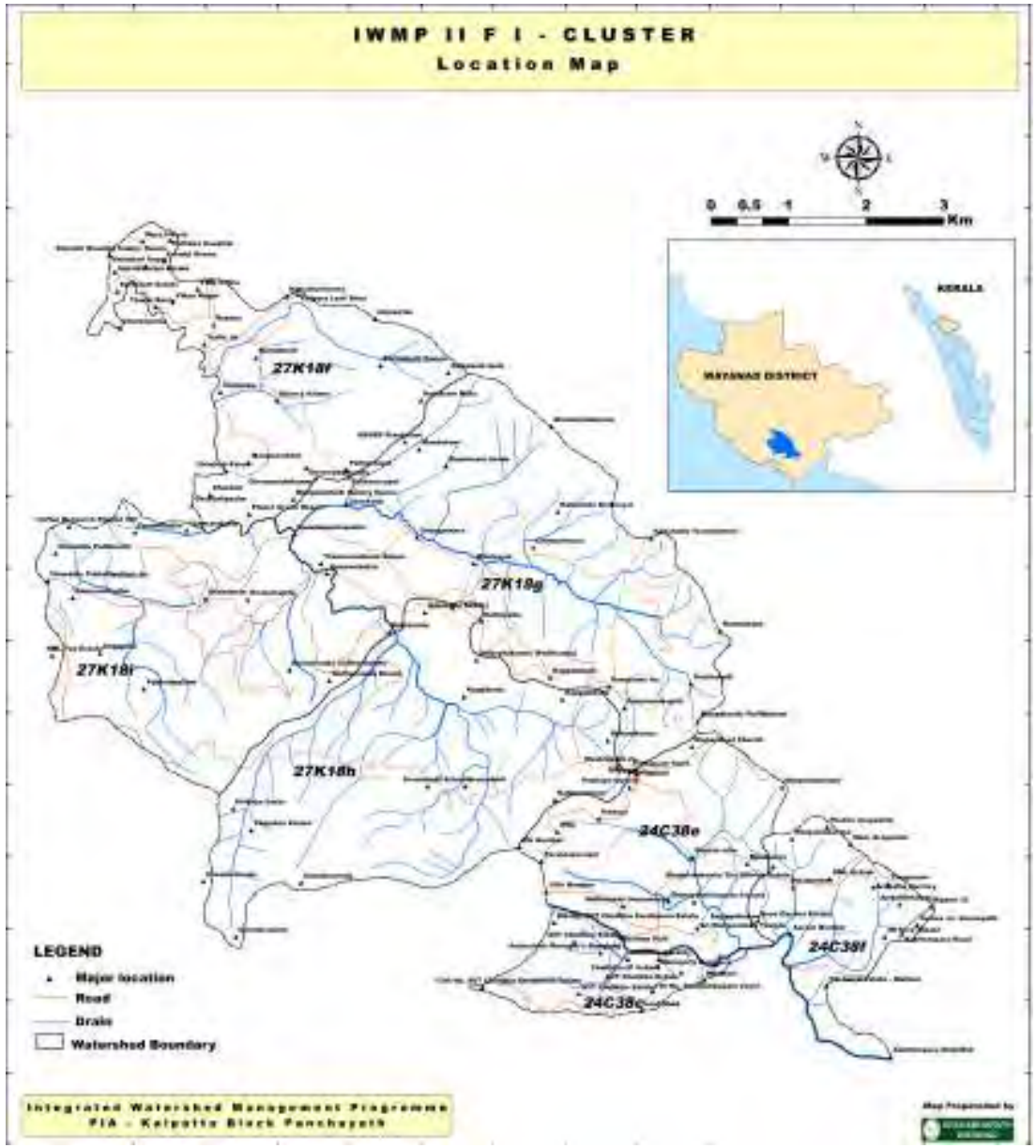
Foreword

Most of the people of the IWMP II F I area are migrants from different parts of Kerala, especially from Central Travancore. The intensity of migration was from 1950 to 1974. No basic amenities were available in the area till recent years. The main livelihood of the people was agriculture. Several people died by starvation, acute diseases and attack of wild animals. Roads and other communication facilities were totally absent in the area at that time.

General Description

Project name	:	IWMP II (Kalpetta F I)
State	:	Kerala
District	:	Wayanad
Block	:	Kalpetta
Taluk	:	Vythiri
Grama Panchayats Covered	:	Moopainad, Meppadi, Vythtiri and Kalpetta Municipality

Wards Included	:	Moopainad-14, 15 Meppadi- 4,5,7,13,15,16,20,21,22,17,18,19 Vythtiri -2 KalpettaMunicipality-17, 18,19,25,26
Total Treatable Area	:	3663 Ha
Latitude	:	11^0 32' 20'' N - 11^0 36' 08'' N
Longitude	:	76^0 04' 11'' E - 76^0 10' 07'' E
Soil	:	Clay loam to Forest soil
Total Households	:	3623
Total Population	:	14500
Major Catchment	:	Kabani and Chaliar Rivers
Highest Elevation	:	1750 m
Lowest Elevation Point	:	752 m
Number of Micro Watersheds	:	Seven


IWMP II F I - CLUSTER
Location Map
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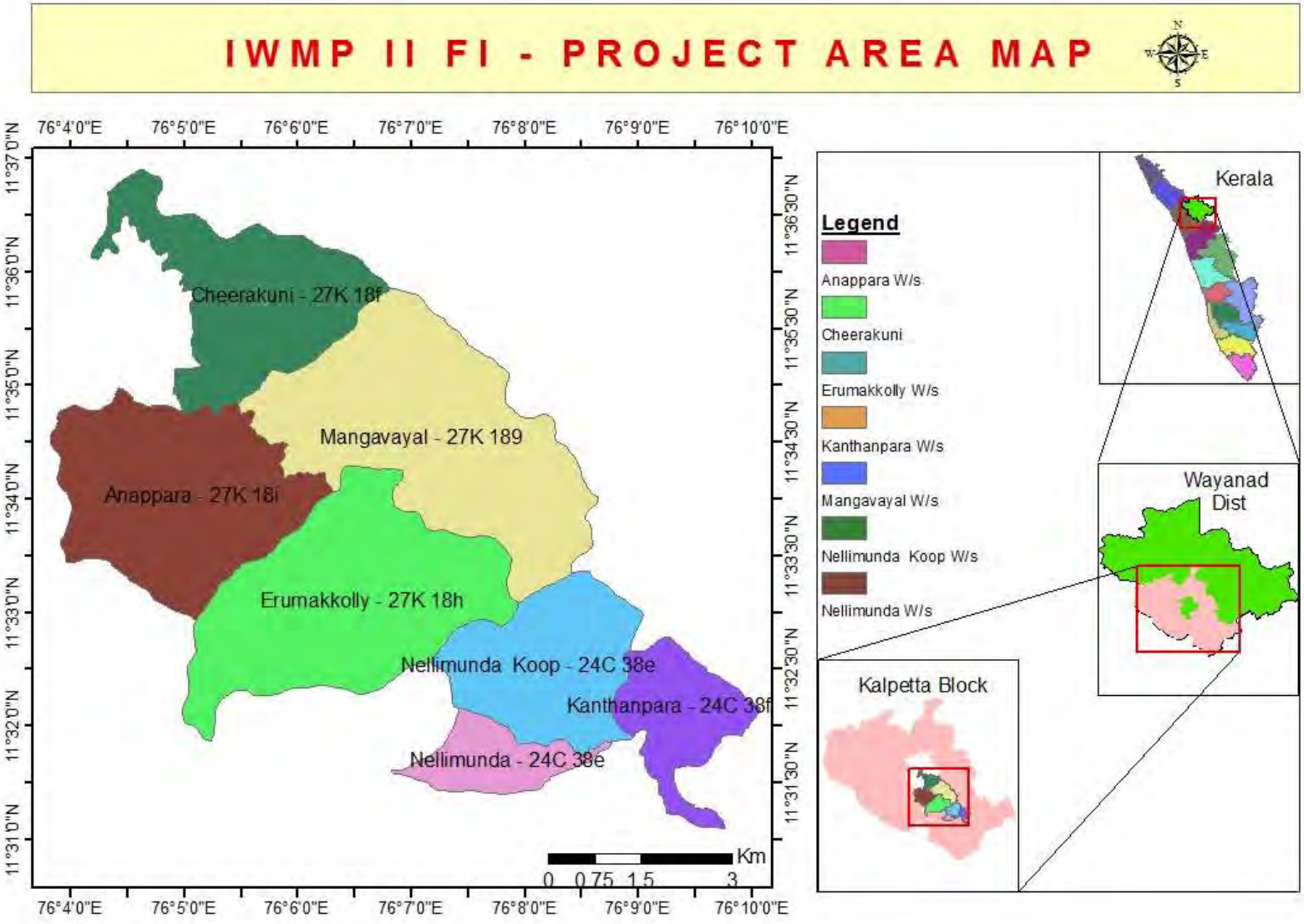
Km
KERALA
WAYANAD DISTRICT
27K18f
27K18g
27K18i
27K18h
24C38e
24C38f
24C38c
LEGEND
Major location
Road
Drain
Watershed Boundary
Integrated Watershed Management Programme
PIA - Kalpetta Block Panchayath

Details of Micro Watersheds coming under the Block

Sl No	Name of Watershed	Code	Total area	Treatable area
1	Kanthanpara	24C38f	388 Ha	350 Ha
2	Nellimunda Koop	24C38e	630 Ha	355 Ha
3	Nellimunda	24C38c	246 Ha	52 Ha
4	Erumakolly	27K18h	1300 Ha	620 Ha
5	Anappara	27K18i	1046 Ha	670 Ha
6	Mangavayal	27K18g	1407 Ha	1066 Ha
7	Cheerakuni	27K18f	644 Ha	560 Ha
Total			**5661 Ha**	**3663 Ha**


IWMP II FI - PROJECT AREA MAP
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76°5'0"E
76°6'0"E
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76°9'0"E
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11°31'30"N
Cheerakuni - 27K 18f
Mangavayal - 27K 189
Anappara - 27K 18i
Erumakkolly - 27K 18h
Nellimunda Koop - 24C 38e
Kanthanpara - 24C 38f
Nellimunda - 24C 38e
Km
0 0.75 1.5 3
Legend
Anappara W/s
Cheerakuni
Erumakkolly W/s
Kanthanpara W/s
Mangavayal W/s
Nellimunda Koop W/s
Nellimunda W/s
Kerala
Wayanad Dist
Kalpetta Block

Location and Area

IWMPII F I is located in the south-central part of Kalpetta Block Panchayath which covers the areas of Moopainad (14,15), Meppadi (4,5,7,13,15,16,20,21,22,17,18,19), Vythtiri (2) and KalpettaMunicipality (17,18,19,25,26) of Wayanad District, Kerala and it spreads over 5661 Ha. The main drainage lines are the Nellimunda Puzha, Kunnambetta-Chuzhali Puzha, Erumakolly Thodu and Kottavayal-Mangavayal Thodu.

Project Area Boundaries

North - Manikunnu Mala

South – Chembra Mala

West – Kunnambetta – Chuzhali Puzha

East - Kanthanpara

Micro Watershed Boundaries

Sl No	Name of Watershed	Watershed boundaries
1	Kanthanpara	North - Mele Arapetta, Thazhe Arapetta Area South - Kanthanpara River West - Manjalamkunnu, Rose Garden Estate Area East - Therasa Jn., 20th Acre Estate Area
2	Nellimunda Koop	North - Moopainad, Meppadi Town Area South - Nellimunda Puzha West - Parakkamvayalkunnu East - Manjalamkunnu, Rose Garden Area
3	Nellimunda	North - Nellimunda Puzha South – Poly Technic Kunnu Chulikka West – Chulikka Forest East - Chulikka Munnoor

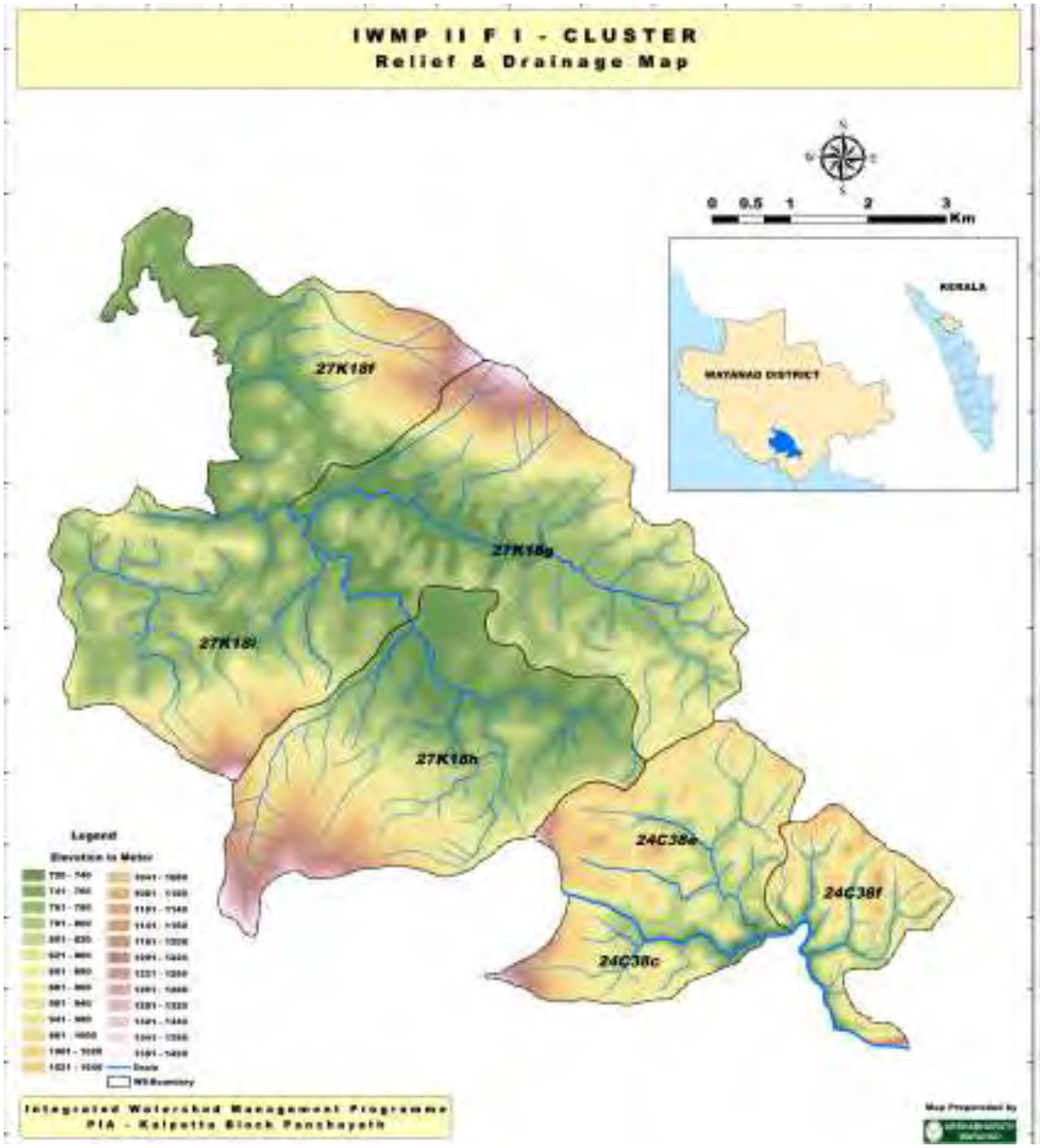
4	Erumakolly	North	–	Meppadi, Kappamkolly, Kottanad Areas
		South	–	Chembra Peak
		West	–	Koottamunda Estate Area
		East	-	Kadoorkunnu
5	Anappara	North	-	Perumthatta, Thamarakolly Area
		South	–	Chembra Peak
		West	–	HML Anappara Estate
		East	-	Kunnambetta, Koottamunda Estate Area
6	Mangavayal	North	-	Manikunnu Mala
		South	–	Kottanad Estate Area
		West	–	Puthoorvayal Area
		East	-	Nedumbala, Meppadi Areas
7	Cheerakuni	North	-	Kalpetta Town, Pulpara Areas
		South	–	Chuzhali, Manjalamkolly Areas
		West	–	Kottaram Estate, Thurkky Basar Area
		East	-	Rattakolly Mala

Physiography

The project area is composed of mountainous regions of Central Sahyadri. The area has rolling to undulating topography in majority of the places and intermittent with narrow valleys and broad valleys in the downstream area. The highest point is Chembra Mala(1750 msl). The lowest point is at Kalpetta Thurky, situated at about 752 meters above mean sea level.

Relief and Drainage

The entire project area is drained by the Kabani River and its tributaries, while 30% is drained by Chaliyar and its tributaries. The relief is normal in the hilly areas and normal to sub normal in the valley portion.


IWMP II F I - CLUSTER
Relief & Drainage Map
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Km
KERALA
WAYANAD DISTRICT
27K18f
27K18g
27K18i
27K18h
24C38e
24C38f
24C38c
Legend
Elevation in Meter
Integrated Watershed Management Programme
PIA - Kalpetta Block Panchayath

Criteria for selection

The following criteria may broadly be used in selection and prioritization of watershed development projects:

a. Acuteness of drinking water scarcity.
b. Extent of over exploitation of ground water resources.
c. Preponderance of wastelands/degraded lands.
d. Contiguity to another watershed that has already been developed/treated.
e. Willingness of village community to make voluntary contributions, enforce equitable social regulations for sharing of common property resources, make equitable distribution of benefits, create arrangements for the operation and maintenance of the assets created.
f. Proportion of scheduled castes/scheduled tribes.
g. Area of the project should not be covered under assured irrigation.
h. Productivity potential of the land.

Climate

The project area has a salubrious climate. The mean average rainfall in this area has been 2900 mm during the past ten years. High velocity winds are common during the southwest monsoon and dry winds blow in March–April. High altitude regions experience severe cold. The mean maximum and minimum temperatures for the last five years were

29°C and 18°C respectively. This place experiences a high relative humidity, which goes even up to 95 per cent during the Southwest Monsoon period. Generally the year is classified in four seasons, namely, cold weather (December–February), hot weather (March–May), Southwest monsoon (June–September) and Northeast monsoon (October–November).

Table: Rainfall data for the past ten years

Sl No	Year	June-Sept	Oct-Dec	Jan-May	Total
1.	2000	2637.2	260.0	188.4	3085.6
2.	2001	1600.2	274.6	525.4	2400.2
3.	2002	1362.6	530.6	409.8	2303
4.	2003	1503.8	318.8	268.1	2090.7
5.	2004	2187.3	297.8	555.4	3040.5
6.	2005	2734.1	421.4	403.0	3558.5
7.	2006	2651.2	347.6	785.8	3784.6
8.	2007	3431.0	304.8	690.1	4425.9
9.	2008	2312.5	489.4	327.0	3128.9
10.	2009	1399.4	505.4	265.8	2170.6
11.	2010	1934.6	489.4	372.4	2796.4
12.	2011	2836.6	367.0	326.4	3530.0
Average		2106.64	395.35	419.983	2921.98
%		70.35	13.91	15.74	100.00

Ground Water

Ground water recharge from rainfall during monsoon in the project area is 79.52 MCM and that during non-monsoon season is 22.43 MCM.

Ground Water Details of the Project Area

Sl. No.	Name of Micro Watershed	Type of Well	Height of Measuring point (In meter)	Water Level	
				Monsoon	Summer
1	Kanthanpara	Dug Well	.72	2.18	2.98
		Bore Well	.40	9.39	9.95
2	Nellimunda Koop	Dug Well	.72	2.18	2.98
		Bore Well	.40	9.39	9.95
3	Nellimunda	Dug Well	.72	2.18	2.98
		Bore Well	.40	9.39	9.95
4	Erumakolly	Dug Well	.72	2.18	2.98
		Bore Well	.40	9.39	9.95
5	Anappara	Dug Well	.75	3.90	5.26
		Bore Well	.40	9.39	9.95
6	Mangavayal	Dug Well	.75	3.90	5.26
		Bore Well	.40	9.39	9.95
7	Cheerakuni	Dug Well	.75	3.90	5.26
		Bore Well	.40	9.39	9.95

(Source: - Kerala State Ground Water Department)

Ground Water Management Strategies

Wayanad, a hilly district, the district, especially Kalpetta Block needs specific and accurate ground water management strategies. Kalpetta Block, categorized as semi-critical and the percentage of run-off is ranked as very high and the ground water levels in the valleys are shallow needs more care and scientific management of resources and there is an emergency to implement appropriate civil structures.

Demographic Details of the Project Area

Sl. No	Reference Year				2012	
1	Total No. of households/families				**3623**	
2	Average Family size				4	
Population						
Age - Group	**O<5**	**5<15**	**15<40**	**40<60**	**60 and above**	**Total**
Males	296	686	2915	2387	678	6962
Females	314	706	3204	2428	886	7538
Total	610	1392	6119	4815	1564	14500
Education						
	Male			**Female**		
Read and write only	124			217		
Primary	2135			2095		
Secondary	2995			3301		
Matriculate	1533			1648		
Graduate and above	175			277		
Details of Households						
Category	**SC**		**ST**	**Other**		**Total**
No. of households	182		381	3060		3623
% to Total	5		11	84		100

Land Holding pattern

Sl. No.	Land Holding Class	House holds		Land held	
		Number	% to Total	Ha.	% to Total
1	Landless	1045	29	0	0
2	0 to <1 ha.	2439	67	2655	72
3	1 to <2 ha.	74	2	614	17
4	2 to <4 ha.	29	1	141	4
5	4 to <8 ha.	20	0.5	134	4
6	More than 8 ha.	16	0.4	119	3
TOTAL		**3623**	**100**	**3663**	**100**
Average gross land holding per household = 1 ha.					

Agriculture and Land Use

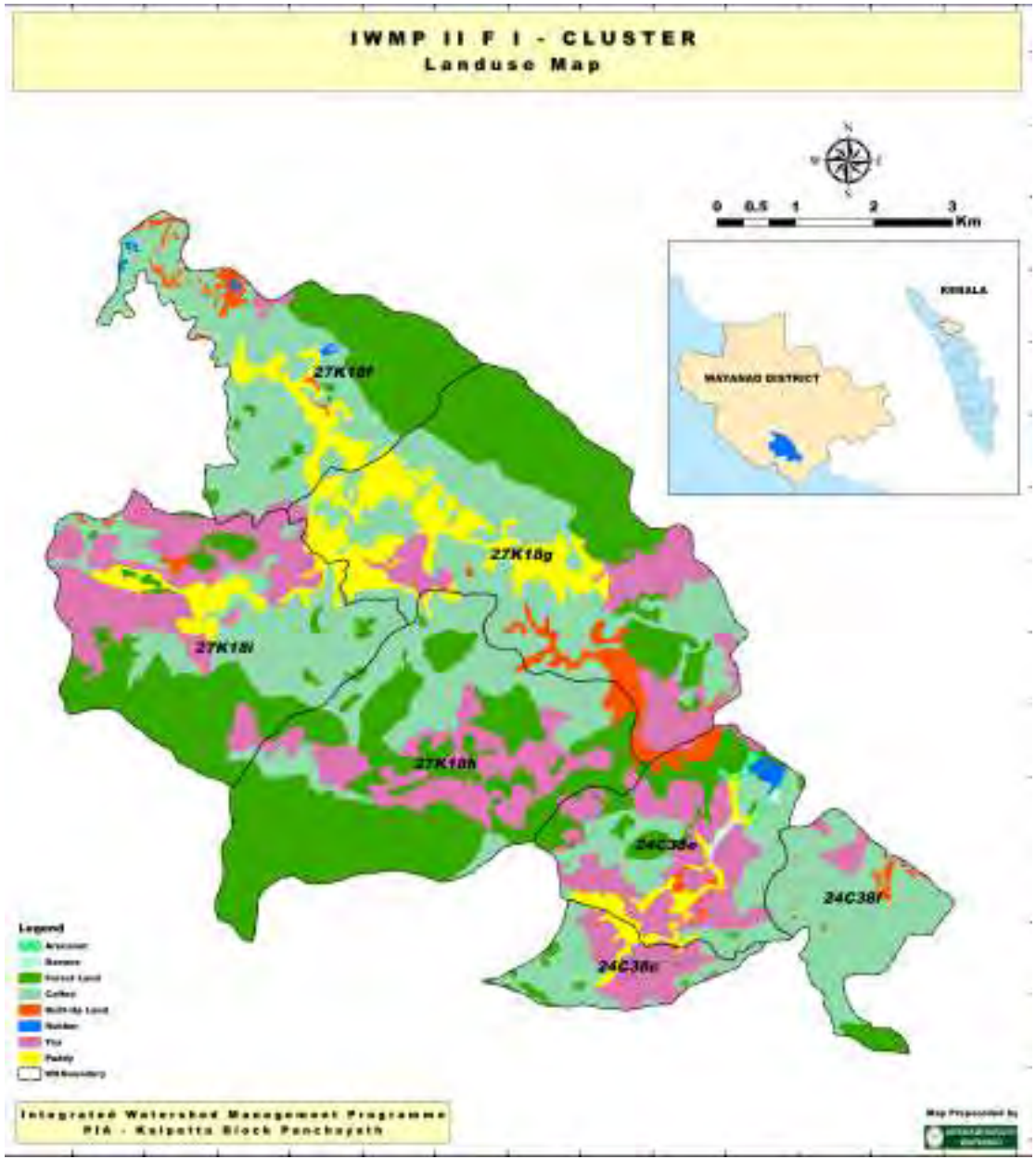
Agriculture is the principal occupation of the people in the project area. The major crops are coffee, tea, paddy, pepper, arecanut etc. The other important cash crops are Rubber, Coffee, Cardamom, Ginger, Turmeric and Arecanut. The back bone of the economy of this district is plantation crops- Tea, Coffee, Pepper, Rubber etc. Coffee based farming system is a notable feature of Wayanad. Coffee is grown both as pure crop and mixed crop along with pepper.

The lowlands of the project area are the valleys formed by hillocks. At present Paddy growing area is remarkably decreasing. Ginger cultivation in the area has substantially increased in recent times. Ginger produced is mainly marketed in the form of green ginger. The frequent drought alternated by flood since 2000 has affected the production of different crops very severely. Banana is cultivated abundantly in this area.

Present Land Use and Agricultural Production of the Project Area

Sl. No.	Name of Micro Watershed	Present Land Use		
		Major Crops	**Extend of Crop** *(Area in ha.)*	**Present Level of Production (**in Quintal)
1	Kanthanpara	Coffee	120	2400
		Banana	3	372
		Jack	1	25
		Arecanut	2	150
		Cocunut	4	1000
		Pepper	2	80
		Mixed Tubers	2	250
		Tea	48	12000
2	Nellimunda Koop	Coffee	118	2360
		Banana	1	124
		Jack	1	25
		Arecanut	2	150
		Cocunut	1	250
		Pepper	4	160
		Mixed Tubers	1	125
		Tea	279	69750
3	Nellimunda	Tea	123	30750
4	Erumakolly	Coffee	102	2040
		Banana	5	620
		Jack	1	25
		Arecanut	5	375
		Cocunut	3	750
		Pepper	2	80

		Mixed Tubers	2	250
		Tea	259	64750
5	Anappara	Coffee	55	1100
		Banana	4	496
		Jack	2	50
		Arecanut	4	300
		Cocunut	3	750
		Pepper	2	80
		Mixed Tubers	2	250
		Tea	341	85250
6	Mangavayal	Coffee	242	4840
		Banana	12	1488
		Jack	5	125
		Arecanut	12	900
		Cocunut	5	1250
		Pepper	5	200
		Mixed Tubers	3	375
		Tea	151	37750
7	Cheerakuni	Coffee	225	4500
		Banana	5	620
		Jack	1	25
		Arecanut	4	300
		Cocunut	3	750
		Pepper	4	160
		Mixed Tubers	2	250
		Tea		


IWMP II F I - CLUSTER
Landuse Map
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Km
KERALA
WAYANAD DISTRICT
27K18f
27K18g
27K18i
27K18h
24C38e
24C38f
24C38d
Legend
Integrated Watershed Management Programme
PIA - Kalpetta Block Panchayath

Soil Types in the Project Area

The soil types in the project area can be classified into five and these five categories may be sub categorized into 12 sub groups. The five categories are Pulpally series, Battuvadi series, Sulthan Bathery, series Periya series and Meppadi Series of Soils.

Soil Depth

The thickness of the soil is more than 150 cm, often limited by water table in Pulpally, Battuwadi, Sulthan Bathery, and Periya series. In Meppadi series the thickness of the solemn is identified as 170 to 200 cm.

Soil Problems and Limitations

Battuwadi soils are very strongly acidic in reaction. The nutrient holding capacity of this soil is generally low. Hence split application of fertilizers at critical stages with controlled irrigation is required. Pulpally soils occurring on moderately sloping to steep hill slopes are susceptible to soil erosion. This series have now become less productive due to intensive cropping. Sulthan Bathery series are acidic in nature and are prone to severe soil erosion. Meppadi series is also prone to severe soil erosion.

Water supply and Irrigation

No major irrigation and water supply programmes are at present in the project area.

Details of area under irrigation

Area in ha.

Sl.No.	Name of watershed	Existing area under irrigation (A)						Additional area expected to be brought under irrigation (B)						Total area (A+B)
		Source of Irrigation						Source of Irrigation						
		Well	Tank	Pond	Canal	Check Dam	Total	Well	Tank	Pond	Canal	Check Dam	Total	
1	Kanthanpara	-	-	-	-	-	-	5	-	15	-	10	30	30
2	Nellimunda Koop	-	-	-	-	-	-	-	-	10	-	10	20	20
3	Nellimunda	-	-	-	-	-	-	-	-	-	-	-	0	0
4	Erumakolly	-	-	-	-	-	-	5	-	-	-	35	40	40
5	Anappara	-	-	-	-	-	-	15	-	-	-	35	50	50
6	Mangavayal	-	-	-	-	-	-	-	-	25	15	45	85	85
7	Cheerakuni	-	-	-	-	-	-	10	-	10	-	10	30	30
Total		**-**	**-**	**-**	**-**	**-**	**-**	**35**	**0**	**60**	**15**	**145**	**255**	**255**

Details of area under paddy cultivation

Area in ha.

Sl. No.	Name of watershed	Area under paddy cultivation				Additional area expected to be brought under paddy cultivation			
		First Crop	Second Crop	Third Crop	Net Area	First Crop	Second Crop	Third Crop	Net Area
1	Kanthanpara	0	-	-	0	-	-	-	0
2	Nellimunda Koop	0	-	-	0	-	-	-	0
3	Nellimunda	0	-	-	0	-	-	-	0
4	Erumakolly	0	-	-	0	-	-	-	0
5	Anappara	0	-	-	0	-	-	-	0
6	Mangavayal	50	-	-	50	75	25	-	100
7	Cheerakuni	8	-	-	8	10	5	-	15
Total		**58**	**-**	**-**	**58**	**85**	**30**	**0**	**115**

CHAPTER - II

METHODOLOGY

METHODOLOGY

Grama Sabha

As a prelude to the preparation of the Detailed Project Report Neerthada Samooha Sabhas were convened in all the four watersheds and in the watershed community meeting SHGs and UGs were constituted.

SHGs and UGs

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. In IWMP II F I, 28 numbers of NHGs have been formed and the watershed wise details are as follows.

Table - Total SHGs in the Project

Sl No	Name of Watershed	Name of Panchayath	No. of SHGs formed
1	Kanthanpara	Moopainad	4
2	Nellimunda-koop	Meppadi, Moopainad	5
3	Nellimunda	Meppadi	1
4	Erumakolly	Meppadi	4
5	Anappara	Meppadi,Vythiry	4
6	Mangavayal	Meppadi	6
7	Cheerakuni	Kalpetta Muncipality	4
	Total		**28**

Watershed Committee

The Gramasabha has constituted the watershed committee in the seven 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 representatives from SC/ST communities, women and landless persons in the villages.

Capacity building

The various capacity building activities will have relevant themes for their content, including:

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

Integrated Approach

People should be involved in all the stages of planning, implementation and post project management. The study was conducted from December 2011 to June 2012 by a team composed of watershed community, members of the SHG, external experts and WDT members as well as T.S.O (ARSHABHARATH) personnel. The study was, we can say "of the people for the people and by the people".

In order to ensure efficiency, transparency and accountability a participatory approach is essential. For ensuring people's participation, the programme should be need-based. Hence the primary step was to initiate PRA to identify the problems and priorities of the community. The process built trust in the participatory people and generated interest in these for managing their problems in a long- term perspective.

Participatory Rural Appraisal

A detailed PRA was conducted with the maximum involvement of the watershed community, in collaboration with development experts, WDT, TSO and WC members. Transect walk in the watershed, focus group discussion, different mappings, timeline, diagramming and ranking methods were used to develop the data regarding the problems and existing methods of agricultural practices. The detailed report on PRA will be discussed in the following chapters.

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.

Flow Chart

It was an exercise in charting the inflow and outflow patterns of the watershed. The patterns that emerged 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.

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.
- Paddy fields are fast disappearing to give way to cash crops and other land uses.
- Water scarcity in the area is becoming increasingly acute by the day.

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.

Micro Planning

After the PRA the next step taken was Micro Planning which included the following components.

Socio Economic and Technical Survey

A socio-economic survey was conducted in the watershed. The primary data and other technical details were collected during the process. Along with this, detailed drainage line survey was also carried out in the watershed. Experts from the line departments also participated in the process.

Preparation of Various Maps

Plot base cadastral map, LCC map, Google maps and other GIS maps, Toposheet of the watershed etc. were collected from the concerned departments. Contour mapping of the watershed was also done. Plot base cadastral map is prepared with the help of surveying experts.

Well Inventory

A well inventory was conducted as part of the socio-economic survey. This was done by the village resource team with the help of SHG and WDT and TSO. About 25% of the total wells were surveyed and the data recorded. The depth, water table level and diameter of wells were checked as part of the survey.

Livelihood Support System Planning

During the PRA Exercise, several livelihood support activities were proposed. Experts in various departments were also consulted, with focus on viable and more sustainable options. Various production system management methods were also proposed like Bio Gas Plants, Homestead mixed tuber crops cultivation, Homestead vegetable cultivation and Paddy threshing yards etc. to make the watershed stakeholders self reliant.

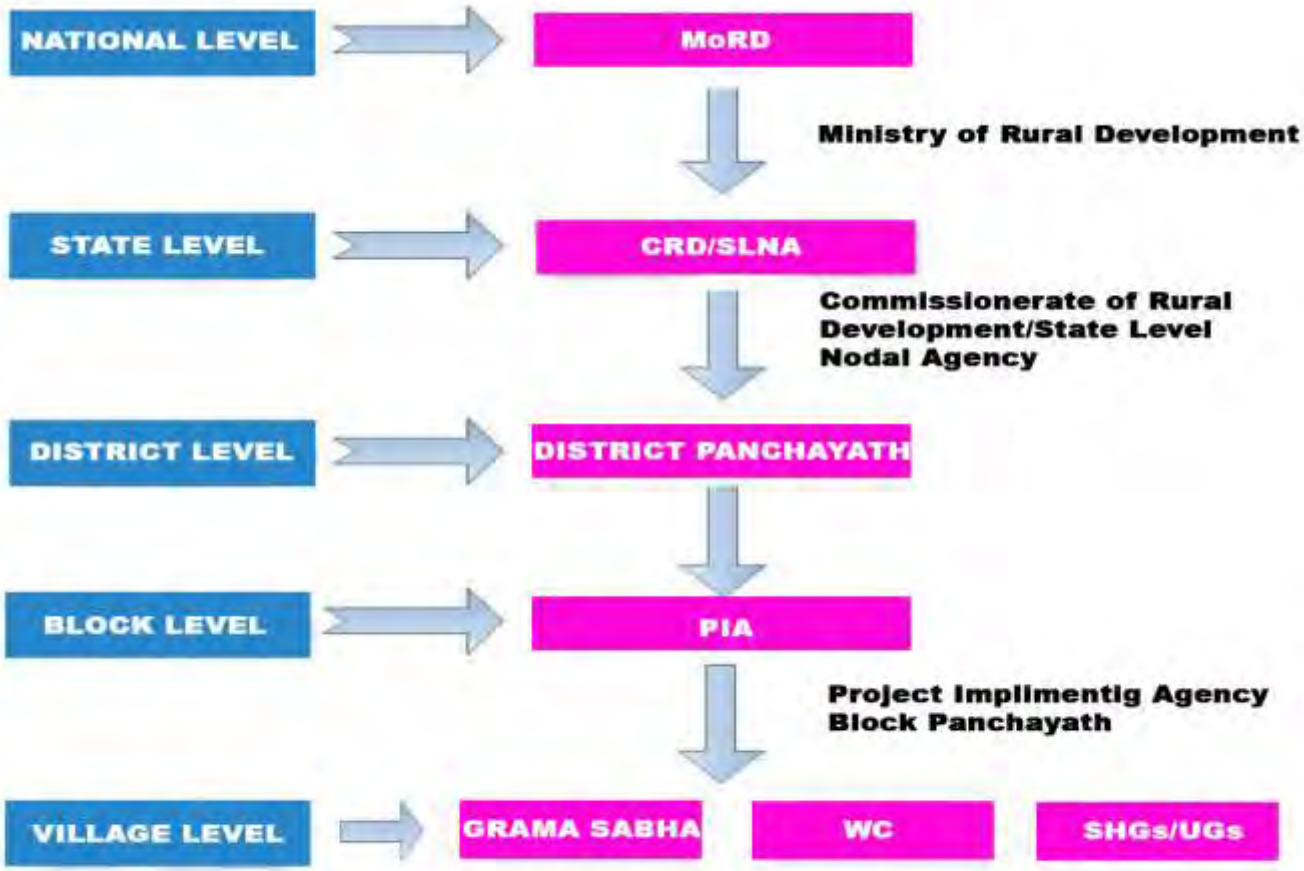
Data Analysis and Report Generation

The collected primary and secondary data were coded, computerized and analyzed. The farmer-wise net plan was prepared with the help of experts. Simultaneously digitization of the various maps was also undertaken.

CHAPTER - III

INSTITUTIONAL ARRANGEMENTS

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. Peoples 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 Chairperson 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 implanting the project. For IWMP II F I, Kalpetta Block is selected as the Project Implementing Agency. The Project Implementing Agency (PIA) is constituted to provide necessary technical guidance to the Gram Panchayat 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.

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.

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 II F I seven 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. Contigency 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 - IV

CAPACITY BUILDING

CAPACITY BUILDING

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.

Capacity Building Strategy

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

Fund Allocation for Capacity Building in IWMP II F I

Sl. No.	**Name of Micro Watershed**	**Fund Allocated** (in Rs.)
1	Kanthanpara	` 255000.00
2	Nellimunda Koop	` 266250.00
3	Nellimunda	`39000.00
4	Erumakolly	` 465000.00
5	Anappara	` 502500.00
6	Mangavayal	` 799500.00
7	Cheerakuni	` 420000.00
Total for IWMP II F I		` **2747250.00**

Strategic Action Plan for Capacity Building

Level of Stake holders	During the Year 2012-13	During the Year 2013-14	During the Year 2014-15	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 was 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 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 Microenterprises (PS&M) and Livelihood Support System (LSS)

1.	Title of the training program	Awareness program on Production System 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, TSO representatives etc

Duration : 4 days

MAJOR PROBLEMS IDENTIFIED

Major problems identified in the study are briefly discussed below.

Soil Erosion and Heavy Surface Run off

Soil erosion and unscientific use of water resources have been identified as the key problems in the watershed area. The small hills on either boundaries of the watershed cause excessive surface runoff, resulting in soil erosion. Most of the farmers have adopted certain primitive and unscientific methods of soil and soil conservation models in a scattered manner and the impact on the area is insignificant and invisible. Large-scale deforestation in the Watershed and introduction of plantation crops in highlands replacing the natural vegetation reduced the storage capacity of soil and resulted in surface soil erosion in watersheds and sedimentation in streams and rivers. Years ago, there were perennial streams and head ponds. Now most of them have dried up or are neglected by the people. A coordinated attempt is required for their rejuvenation and maintenance. Scientific mass programmes are to be launched with maximum participation of the people for the implementation of various water conservation measures including rain water harvesting.

Bio-mass

Break down of agriculture, climate change, unscientific agricultural practices, environmental degradation, deforestation; rising population density, low knowledge level of people and exploitation etc. have increased the rate of depletion of bio-mass. The future of food security depends on the success of our efforts in the conservation of agro-biodiversity. Wayanad

is in the tropical and sub-tropical regions and is home to many indigenous species which are fast becoming extinct and watershed development may support conservation of such resources. Traditional knowledge dissemination will also help to protect and use biodiversity sustainably. The major obstacles to the conservation of biodiversity are under valuation of living natural resources, ruthless exploitation of biological and genetic resources for profit, poor knowledge of species and eco-systems, insufficiency in using applied management practices etc.

Disappearance of Paddy fields

Economically, the area is dominated by the primary sector. More than 80 % of the population directly or indirectly is connected to agriculture. There is a trend in conversion of paddy fields for the construction of residential buildings, commercial establishments etc. in Kerala prices of land under food crops like paddy etc. are found to be relatively lower than the prices of land under cash crops. The mere conversion of land from the cultivation of food crops to cash crops in itself enhances the property value. The comparatively lower prices of land under food crops lead to its widespread conversion for non-agricultural uses. Changes in land use pattern can also be attributed to the growing number of absentee landowners in the state. Since the food crops need more care and personal supervision than cash crops, landowners are more inclined to cultivate the latter which tends to the decline of area under food crops.

Unscientific Cultivation and Growing Cost of Production

Unscientific agricultural practices are a major problem faced by the community. Effective information dissemination and capacity development should be taken up to address these problems.

Poor Soil Fertility

Soil erosion and unscientific use of soil are the main causes behind the poor soil fertility. This will lead to low productivity and many other problems.

Shortage of Agricultural Laborers

Acute shortage of agricultural labourers is severely felt in the area. Attractive wages and social status in other fields force workers to switch their occupation. This compels the farmers to limit their farming options.

Pests and Diseases

Unscientific use of pesticides and chemical fertilizers has led not only to nutrient deficiency of soil and health problems of the farmers, but also to low production and productivity. Non-availability of organic manures is another problem in the area.

Stream Bank Erosion

Wrong agricultural practices by the side of streams and on river banks during rainy season cause stream bank erosion and sedimentation in rivers and lead to lowering of water table and environmental problems. The drainage line must be protected and the treatment deserves first priority under the programme.

Insufficient Income

The area is dominated by small and marginal farmers. Low agricultural productivity and increasing cost of production, rising prices, unemployment are leading to insufficient income. The only way to overcome this issue will be adequate

livelihood support, capacity building of the farmers, promotion of multi tier cropping, farm technology transfer from lab to land etc.

Low Level of Human Resource Development

Low capacity of the stakeholders is another problem which demands more attention in the watershed area. The low level of knowledge base about new technologies, lack of knowledge regarding the protection of environment, and overexploitation of natural resources like Soil, Water and Bio-mass, non availability of frequent trainings and capacity building on new practices in the agricultural sector, lack of interventions by agricultural experts etc. make the farmers more vulnerable.

Low Status of Women

Women are facing growing challenges due to fall in agricultural income, unemployment etc. They are deprived of fundamental needs and rights. Low levels of participation in agricultural practices and increasing atrocities have made them the most vulnerable group. Low levels of social consciousness, participation are the reason behind the backwardness of women community. Awareness and trainings for skill development, formation and strengthening of women groups in the area will surely enhance the status of women stakeholders in the watershed area.

CHAPTER - V

ACTIVITIES PROPOSED

ENTRY POINT ACTIVITY

Entry Point Activity plays a major motivational role in the proper implementation and management of the watershed project. It aims at innovative and needful ideas of EPA are capable to bring about a positive air in the project area.

Sl No.	Name of Micro watershed	Name of Activity	Area Benefitted	No. of Beneficiaries	Total Cost (in Rs)
1	Kanthanpara	Stream Embankment	15 ha	100	` 232800.00
2	Nellimunda	Stream Embankment	30 ha	150	`147600.00
3	Erumakolly	Stream Embankment	15 ha	100	` 780000.00
4	Erumakolly	Stream Embankment	5 ha	50	` 23400.00
5	Anappara	Stream Embankment	30 ha	150	` 627600.00
6	Cheerakuni	Stream Embankment	593 ha	712	`386400.00
Total					**` 2197800.00**

Entry Point Activity - Kanthanpara Watershed

Stream Bank Protection at 8th no. Thodu

Block	:	Kalpetta
Watershed	:	Kanthanpara
Grama Pachayat	:	Moopainad, Meppadi
Entry point Activity	:	Stream Bank Protection at 8th no. Thodu
Total cost	:	`232800/-

Introduction

Based on the wish of the people and the resolution of the concerned neighborhood groups and grama sabhas and the approval of the Watershed Committee, the Panchayath level Committee as well as the Block Panchayath Committee, it has been decided by the Kalpetta Block Panchayath to approve the project for the protection of stream-8 in the Kanthanpara watershed.

Justification

- The stream-8 is in a state of collapse. The sides are giving way, causing erosion of farm lands on both sides of the stream. To protect the stream and save the farms, it is necessary to protect the sides of the stream.

- The implementation of the proposed project will ensure the whole-hearted involvement of the local people in the project activities.

Objectives

- To protect the stream.
- To save the nearby farms.
- To encourage the participation of the people in the project activities.

Beneficiaries

The farmers in the area.

Activities

Strengthening the sides of the stream with DR packing.

Organization

The Block Panchayat Committee approves the project formulated by the watershed committee on the basis of suggestions made by the people and grama sabha. The Block Technical Committee gives technical sanction. The project is implemented by the UG under the supervision of the W.C. and with the guidance of the WDT/TSO.

Monitoring

Monitoring will be done by the WDT.

Budget

Total Cost : ` 232800/-

Entry Point Activity – Nellimunda Watershed

Stream Side Protection near Vellathur Hamsa

Block	:	Kalpetta
Watershed	:	Nellimunda
Grama Pachayat	:	Meppadi
Total Cost	:	` 147600/-

Introduction

Based on the wish of the people and the resolution of the concerned neighborhood groups and grama sabhas and the approval of the Watershed Committee, the Panchayat level Committee as well as the Block Panchayat Committee, it has been decided by the Kalpetta Block Panchayat to go ahead with the side protection of Vellathur stream as Entry Point Activity under the IWMP Project in the Nellimunda Watershed, in Kalpetta Block.

Justification

- The stream is in a state of collapse. The sides are giving way, causing erosion of farm lands on both sides of the stream. To protect the stream and save the farms, it is necessary to protect the sides of the stream.
- The implementation of the proposed project will ensure the whole-hearted involvement of the local people in the project activities.

Objectives

- To protect the stream.
- To save the nearby farms.
- To encourage the participation of the people in the project activities.

Beneficiaries

The farmers in the area.

Activities

Strengthening the sides of the stream with DR packing.

Organization

The Block Panchayat Committee approves the project formulated by the watershed committee on the basis of suggestions made by the people and grama sabha. The Block Technical Committee gives technical sanction. The project is implemented by the UG under the supervision of the W.C. and with the guidance of the WDT.

Monitoring

Monitoring will be done by the WDT.

Budget

Total Cost : `147600/-

Entry Point Activity Erumakolly Watershed

1. Steam Side Protection Work at Kunnamangalam Vayal Thodu

2. Steam Side Protection Work at Anakkad Thodu

Block	:	Kalpetta
Watershed	:	Erumakolly
Grama Pachayat	:	Meppadi
Entry point Activity	:	Steam Side Protection Work at Kunnamangalam Vayal Thode and Anakkad Thodu
Total EPA Cost	:	` 780000/-

Introduction

Based on the wish of the people and the resolution of the concerned neighborhood groups and grama sabhas and the approval of the Watershed Committee, the Panchayath level Committee as well as the Block Panchayath Committee, it has been decided by the Kalpetta Block Panchayath to approve the project for the stream side protection at Kunnamangalam Vayal and Anakkad Thodu in the Erumakolly watershed.

Justification

- The two streams are in a state of collapse. The sides are giving way, causing erosion of farm lands on both sides of the stream. To protect the stream and save the farms, it is necessary to protect the sides of the stream.
- The implementation of the proposed project will ensure the whole-hearted involvement of the local people in the project activities.

Objectives

- To protect the stream.
- To save the nearby farms.
- To encourage the participation of the people in the project activities.

Beneficiaries

The farmers in the area.

Activities

Strengthening the sides of the stream with DR packing.

Organization

The Block Panchayat Committee approves the project formulated by the watershed committee on the basis of suggestions made by the people and grama sabha. The Block Technical Committee gives technical sanction. The project is implemented by the UG under the supervision of the W.C. and with the guidance of the WDT.

Monitoring

Monitoring will be done by the WDT.

Budget

1. Stream Side Protection at Kunnamangalam Vayal Thodu	:	`500000/-
2. Stream side Protection at Anakkadu Thodu	:	`280000/-
Total Cost	:	`780000/-

Entry Point Activity – Anappara Watershed

Stream Bank Protection at Kannanchathu

Block	:	Kalpetta
Watershed	:	Anappara
Grama Pachayat	:	Meppadi, Vythiri
Entry point Activity	:	Stream Bank Protection at Kannanchathu
Total EPA Cost	:	`627600/-

Introduction

Based on the wish of the people and the resolution of the concerned neighborhood groups and Grama sabhas and the approval of the Watershed Committee, the Panchayat level Committee as well as the Block Panchayat Committee, it has been decided by the Kalpetta Block Panchayat to approve the project for the protection of stream at Kannanchathu in the Anappara watershed.

Justification

- The stream Kannanchathu is in a state of collapse. The sides are giving way, causing erosion of farm lands on both sides of the stream. To protect the stream and save the farms, it is necessary to protect the sides of the stream.
- The implementation of the proposed project will ensure the whole-hearted involvement of the local people in the project activities.

Objectives

- To protect the stream.
- To save the nearby farms.
- To encourage the participation of the people in the project activities.

Beneficiaries

The farmers in the area.

Activities

Strengthening the sides of the stream with DR packing.

Organization

The Block Panchayat Committee approves the project formulated by the watershed committee on the basis of suggestions made by the people and grama sabha. The Block Technical Committee gives technical sanction. The project is implemented by the UG under the supervision of the W.C. and with the guidance of the WDT/TSO.

Monitoring

Monitoring will be done by the WDT with the support of the TSO.

Budget

Total Cost : `627600/-

Entry Point Activity - Cheerakuni Watershed

Stream Bank Protection at Chuzhali Puzha

Block	:	Kalpetta
Watershed	:	Cheerakuni
Grama Pachayat	:	Kalpetta Muncipality
Entry point Activity	:	Stream Bank Protection at Chuzhali Thodu
Total EPA Cost	:	` 386400/-

Introduction

Based on the wish of the people and the resolution of the concerned neighborhood groups and Grama sabhas and the approval of the Watershed Committee, the Panchayat level Committee as well as the Block Panchayat Committee, it has been decided by the Kalpetta Block Panchayat to approve the project for the protection of stream at Chuzhali in the Cheerakuni watershed.

Justification

- The stream Chuzhali is in a state of collapse. The sides are giving way, causing erosion of farm lands on both sides of the stream. To protect the stream and save the farms, it is necessary to protect the sides of the stream.

- The implementation of the proposed project will ensure the whole-hearted involvement of the local people in the project activities.

Objectives

- To protect the stream.
- To save the nearby farms.
- To encourage the participation of the people in the project activities.

Beneficiaries

The farmers in the area.

Activities

Strengthening the sides of the stream with DR packing.

Organization

The Block Panchayat Committee approves the project formulated by the watershed committee on the basis of suggestions made by the people and grama sabha. The Block Technical Committee gives technical sanction. The project is implemented by the UG under the supervision of the W.C. and with the guidance of the WDT.

Monitoring

Monitoring will be done by the WDT.

Budget

Total cost : `386400/-

NATURAL RESOURCE MANAGEMENT

Earthen Bund with Vegetative Cover

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. Annual repair of these is very important. These bunds may be stabilized with fodder crops such as guinea grass, Congo Signal and wild vetiver grass. Under no circumstances grazing by live stock should be allowed over the earthen bunds.

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. Mulching will also help in the absorption of morning dew drops, thus enriching the soil moisture.

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 vetiver grass is a way of protecting the soil against erosion through its 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.

Revitalization of Head Ponds

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 for around 120 acres of paddy field in the watershed. Ground water recharge will also be done through these programs.

Farm land Protection

The preservation of farmland is an important issue. Many rural, non-farm residents want to preserve farmland. However, as development increases and agricultural commodity prices decline, the challenges to preserving the farmland become greater. The accelerating loss of farmland due to soil erosion, land sliding and other ecological imbalances is creating a tremendous decrease in the agriculture production in Wayanad especially in its hilly area. In order to control this problem various traditional and scientific methods have to adopt in micro level. So in this project we are trying to preserve our farmlands at its maximum in all micro watershed areas.

Renovation and Construction of Check dams

Check dams are a small dam, which can be either temporary or permanent, built across a minor drainage ditch. Similar to drop structures in purpose, they reduce erosion and gullying in the channel and allow sediments and pollutants to settle. They also lower the speed of water flow during storm events. Check dams can be built with logs, stone, or sandbags.

Many check dams tend to form stream pools. Under low-flow circumstances, water infiltrates into the ground, evaporates, or seeps through or under the dam. Under high flow (flood) conditions, water flows over or through the structure. Coarse and medium-grained sediment from runoff tends to be deposited behind check dams, while finer grains are usually allowed through. Extra nutrients, phosphorus, nitrogen, heavy metals, and floating garbage are also trapped or eliminated by the presence of check dams, increasing their effectiveness as water quality control measures. In nearly all instances, erosion control blankets, which are biodegradable open-weave blankets, are used in conjunction with check dams. These blankets help enforce vegetation growth on the slopes, shorelines and ditch. 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.

Stone Pitched Bunds

Stone Pitched Contour bunds are a simplified form of micro catchments. As its name indicates, the bunds follow the contour, at close spacing, and by provision of small earth ties the system is divided into individual micro catchments. An advantage of Stone Pitched Contour bunds is their suitability to the cultivation of crops or fodder between the bunds. As with other forms of micro catchment water harvesting techniques, the yield of runoff is high, and when designed correctly, there is no loss of runoff out of the system. In some areas 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. In certain cases, if the boulders are fewer and bigger, they can be used to pitch the downstream side of earthen bunds

constructed on steeper slopes providing protection and stability to bunds. In Chepottukunnu micro watershed stones and pebbles occur naturally and its availability is also very high. In order to attain our basic aim in watershed programmes we have proposed stone pitched bunds in this micro watershed area.

Renovation and construction of irrigation wells and Canals

In order to overcome the challenges like water shortage, faced by the farmers in the micro watershed level, 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.

Gully plugging

Gully plugs can be defined as stones placed across gullies. Stones are often embedded into the upper surface of spillway aprons and wells to provide support for the next layer. The principle is to capture runoff from a broad catchment area, thus transferring low rainfall into utilizable soil moisture, and to prevent soil erosion. Slowing of the flow of water helps in settling down organically rich soil. A well maintained gully plug creates a flat, fertile and moist field, where high value crops and trees can be grown. In many areas where gully plugs were built, agricultural production has increased, and farmers have shifted to high value crops. So gully plugging is also included in the project.

PRODUCTION SYSTEM MANAGEMENT

The growth in agriculture could be achieved through mainly by increasing the production and enhancing the production. It is possible through managing and developing new production systems.

Bio-gas Plants

The opportunity to exploit and develop bio gas plants along with the distribution of Milch Cows as part of the livelihood support activities will be enhancing and managing the production from the diary sector. Hence the construction of Bio-gas plants will surely help to develop or increase the productivity and to manage the major production system in the watershed area.

Homestead Mixed Tuber Crop Cultivation

Rationale

Wayanad traditionally was noted for its tuber crops. For instance, the type of turmeric known as 'Waynadan Manjal' is celebrated world-wide for its brilliant color, flavor and high quality medicinal properties. However, tuber crop cultivation has been neglected during the past few decades. Tuber crops include food crops, such as tapioca, yam and cash crops such as ginger and turmeric. From the angles of both food security and economic security, reviving tuber crop cultivation is of paramount importance.

Objectives

The project revolves round objectives, including:

- To revive the cultivation of tuber crops especially food crops such as tapioca, yams, sweet potato etc. for ensuring crop diversity as well as bio-diversity
- To promote local food security
- To ensure additional income for farmers

Activities

Project activities will include:

- Orientation for participating farmers
- Distribution of seeds
- Planting and supervision of cultivation

Methodology

Scientific methods advocated by the State Agricultural Universities will be used in the cultivation of selected tuber crops suited to the agro-climatic conditions of the area.

Management

The Watershed Committee, with the support of the WDT, will organize and supervise the operations.

Budget

1. Land development 2-5 cent of land	=	`350.00
2. Cost of Cultivation		
Cost of seed and seedlings -	=	`1000.00
Labour Charges	=	`625.00
4. Irrigation at 1000/month	=	`200.00
5. Tools and implements	=	`325.00
Total Cost	=	`2500.00
Total Grand 75 %	=	`1875.00
Total Beneficiary Contribution 25 %	=	`625.00
Total Cost for the program including Beneficiary Contribution	=	`2500.00

(Rupees Two Thousand and Five Hundred Only)

Promotion of Endangered Native Rice Varieties

Rationale

Wayanad, once upon a time, was the homeland of varieties of rice plants with high nutritional, medicinal as well as aesthetic value. The much sought after and highly remunerative Jeerkasala and Gandhakasala are examples. These varieties are on the verge of extinction. It is important to conserve them and propagate them with a view to conserving bio-diversity as well as improving the income of rice farmers.

Objectives

The objectives of the project include:

- To motivate farmers to conserve and propagate the special varieties of rice found in Wayanad
- To help improve the earnings of rice farmers

Activities

- Orientation and training for farmers
- Procurement of seeds
- Planting and care of selected rice 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 TSO, will organize and supervise the operations.

Budget

Cost of seed and seedlings -	=	` 380.00
Labour Charges	=	` 700.00
Bullock Labour	=	` 850.00
Fertilizer & Manure	=	` 550.00
Irrigation at 1000/month	=	` 250.00
Total Cost	=	` 2730.00
Total Grand 75 %	=	` 2040.00
Total Beneficiary Contribution 25 %	=	` 690.00
Total Cost for the program including Beneficiary Contribution	=	` 2730.00

(Rupees Two Thousand Seven Hundred and Thirty Only)

Homestead Vegetable Cultivation

Introduction/Rationale

Vegetables constitute a major chunk of healthy food. Not only Kerala, but even Wayanad, with almost ideal agronomic conditions, including fertile soils and adequate water, 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 participants to improve their family income through the sale of vegetables
- To help mitigate the growing problem of food insecurity in the watershed
- To promote healthy eating habits and ensure protection from the side-effects of consuming chemically grown vegetables

Activities

The activities contemplated in the project consist of:

- Training in organic vegetable cultivation

- Distribution of seeds
- Monitoring and supervision of vegetable gardens

Variety of Seedlings

1. Leafy Vegetables (*Amaranthus virids*)

Sl. No	Variety	Special Features
1	Kannara Local	More adaptable to climate
2	CO-1, CO-2	High resistance capacity, Green Leafs
3	Arun	Red Leafs
4	Sreekrishna	Increase Production

2. Ladies Finger (*Hibiscus oscolantus*)

Sl. No	Variety	Special Features
1	Salkeerthi	High Yield
2	Susthira	High resistance capacity
3	Kiran	Adaptable to changing climate

3. Bitter gourd (*Memordia scerncia*)

Sl. No	Variety	Special Features
1	Priya	High resistance capacity
2	Preethi	High resistance capacity

4. Cucumber *(Cucumis melo, Cucumis sativa)*

Sl. No	Variety	Special Features
1	Mudikkod Local	Better Production

5. Brinjal *(Solanum malungna)*

Sl. No	Variety	Special Features
1	Surya	2 year yield
2	Haritha	4 year yield
3	Swetha	3 year yield

6. Tomato *(Lycodersicum esculentum)*

Sl. No	Variety	Special Features
1	HS 101	Big in size
2	Sakthi	High Yield
3	Mukthi	High Yield
4	Anaga	High resistance capacity

7. Chilly *(Capscicum anum*)

Sl. No	Variety	Special Features
1	Jwala	High Yield
2	CO-1, CO-2	High resistance capacity
3	Ujwala	2 year yield
4	Jwalamuki	Better Production

8. Pulses (*Picus setaiva*)

Sl. No	Variety	Special Features
1	Kanakamani	Bush type
2	Kairali	Semi cranes
3	Vyjayanthi	Semi cranes

Budget

1. Land development 2-5 cent of land	=	`250.00
2. Fencing and supporting structures	=	`450.00
3. Cost of Cultivation		
Cost of seed and seedlings -	=	` 650.00
Labour Charges	=	`625.00
4. Irrigation at 1000/month	=	`200.00
5. Tools and implements	=	` 325.00
Total Cost	=	`2500.00
Total Grand 75 %	=	`1875.00
Total Beneficiary Contribution 25 %	=	`625.00

Total Cost for the program including Beneficiary Contribution = ` 2500.00

(Rupees Two Thousand and Five Hundred Only)

LIVELIHOOD SUPPORT SYSTEM

A Detailed Action Plan of Livelihood Support for Landless

Milch 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 watershed in Wayanad is that even the landless/asset-less can eke out a living, given a chance to take to farm-related 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, Wayanad largely depends on milk brought from other neighboring states 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 of our support.

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.

Situational Analysis

The IWMP II F I watershed project has an area of 3663 ha and a population of 14500 of which 6962 is males and 7538 females. The community-wise break-up is as follows:

Table – Category Wise Population								
Sl No	Name of Watershed	Population			Households			
		Male	Female	Total	SC	ST	General	Total Households
1	Kanthanpara	701	759	1460	18	43	304	365
2	Nellimunda Koop	686	744	1430	16	36	305	357
3	Nellimunda	462	498	960	12	0	228	240
4	Erumakolly	1066	1154	2220	27	66	462	555
5	Anappara	1112	1204	2316	28	46	504	578
6	Mangavayal	1773	1921	3694	51	142	730	923
7	Cheerakuni	1162	1258	2420	30	48	527	605
	Total	**6962**	**7538**	**14500**	**182**	**381**	**3060**	**3623**

The average land holding is 1 ha and 70% of the total population is marginal farmers with holdings ranging from 50 to 200 cents. The average rainfall in the watershed is 2921 mm per annum. Of the population, 14% belong to the SC/ST category. There are women-headed families and some distressed families, with a history of ill-treatment of women, suicide case etc.

Beneficiaries/Participants

The beneficiaries belong to the lowest socio-economic strata of the watershed community. Priority has been given to SC/ST, women in general and to women in distress in particular. The selection is done jointly by the watershed general body and by the Watershed Committees with the support of the PIA and WDT on the basis of certain parameters. The selected beneficiaries will be mobilized into Self Help Groups (SHG). The Groups, thus formed will be appraised on the basis of social, technical and economical parameters.

Beneficiary Selection

The beneficiaries of this project are the poor families in the project area

The beneficiaries will be selected on the basis of following criteria including:

- Priority to landless and women, women-headed families.
- Priority will be given to widows.
- Priority to those who are in the BPL category.
- Priority for those who work outside the watershed as agricultural laborers.
- Priority for those who have not got any assistance from any government departments, NGOs or other institutions for Milch Cow rearing.
- Priority for those who have interest, skill and experience in cow rearing.
- Priority for those with unsustainable land holding (below one acre of agricultural land).

Organization

The selected beneficiaries will be organized into small Joint Liability Groups of 5 or 7. The revolving fund assistance will be transferred to a jointly managed account of the SHGs on the basis of certain security documents and a legally binding agreement after the reception of an application in the prescribed format.

Group Appraisal

Groups in the watershed will be appraised on the basis of social, technical and financial parameters. The socially as well as financially backward stakeholders will be given priority. The technical appraisal of the group and the area will also be considered.

Activities

The contemplated activities include:

- Capacity building: Training in micro-enterprise management, with focus on small dairying and other technical matters.
- Purchase of cows: Each beneficiary will be given loan from a revolving fund for purchasing two cows, the second one being supplied after six months of giving the first cow (during the dry period).
- Marketing: The respective groups will organize the marketing of the milk produced by the members of the group. There is a MILMA unit nearby.

Management

A field visit to the scheme area will be undertaken for conducting the feasibility of the programme. The following documents will be maintained for the sake of monitoring and evaluation:

- Application in prescribed format
- Legally binding agreement
- SHG resolution
- WC resolution
- Collateral security as decided by the WC

Financial Management

The required finance will be provided by PIA and the WC by way of loan. The loan will be repaid by the beneficiaries in suitable monthly installments from the income from sale of milk and other products.

Monitoring Strategy and Mechanism

A monitoring committee, composed of representatives of WC, PIA and WDT, will be in charge of monitoring. Monitoring will be conducted on monthly basis.

Repayment Strategy

1. The amount in full has to be repaid in EMI within a maximum of 36 months
2. Normal interest rate will be 5%
3. Defaulters within the time limit will be charged a fine as decided by WC
4. Those who complete the repayment period before the term of 36 months will be given an incentive of 1% reduction in the interest rate.

Total Loan	30,000.00
Rate of Interest (%)	5.00
Interest	1,500.00
Instalment Repay	11,500

Repayment Shedule

Year	Income	Expenses	Gross Surplus	Equated Annual Instalment	Net Surplus
I	79,920.00	62,645.00	17,275.00	11,500	5,775
II	86,580.00	61,675.00	24,905.00	11,500	13,405
III	87,080.00	61,030.00	26,050.00	11,500	14,550

Operation

The repaid amounts will be given to other members of the JLGs in the waiting list. This rotation will continue indefinitely, so that more and more poor people will be able to avail of the benefits.

Sustainability of the Programme

The programme will be appraised on the basis of Institutional, Technical and Economic parameters.

Institutional Sustainability/Feasibility

Involvement of the stakeholders and the cluster committees are ensured by the VWC during the project period. The formed JLGs will be further strengthened, thereby ensuring the equitable distribution of project benefits.

Technical Sustainability/Feasibility

The watershed stakeholders have accessibility to a well equipped veterinary hospital which is situated in the watershed area itself. The basic training and a breeding center are also associated with the hospital. The majority of the stakeholders are small and marginal farmers and they are engaging in farming activities. So the availability of green /dry fodder will not be a problem. There is a milk collection center situated in the watershed area for the effective marketing of their produce.

Table - Economic Feasibility

Cash Flow Analisis				
Sl. No.	Purticulers	Yerars		
		I	II	III
I	Costs			
1	Capital Cost	26,000.00		
2	Recuring Cost			
a	Feeding during Lactation Period			
	Dry Fooder	8,960.00	9,800.00	7,840.00
	Consentrate	22,400.00	22,680.00	21,840.00
	Sub Total	**31,360.00**	**32,480.00**	**29,680.00**
b	Feeding during Dry Period			
	Dry Fooder	7,000.00	7,000.00	7,000.00
	Consentrate	1,360.00	1,445.00	1,275.00
	Sub Total	**8,360.00**	**8,445.00**	**8,275.00**
c	Veterinary Aid	2,500.00	2,500.00	3,000.00
	Transportation	2,500.00		
d	Insurance for 3 Years	1,500.00	-	-
e	Labour cost	16,425.00	18,250.00	20,075.00
	Total	**62,645.00**	**61,675.00**	**61,030.00**
II	Benefits			
1	Milk Yeild (Average 12 Lts/ Day @ Rs. 22/-)	73,920.00	80,080.00	80,080.00
2	Sale of Manure (Cowdung @ Rs. 600/Ton)	6,000.00	6,500.00	7,000.00
	Total	**79,920.00**	**86,580.00**	**87,080.00**
	Totla Benefits	**79,920.00**	**86,580.00**	**87,080.00**
	Total Cost	**62,645.00**	**61,675.00**	**61,030.00**
	Profit	**17,275.00**	**24,905.00**	**26,050.00**

Expected Results

1. Income from the sale of Milk, Cow- Dung and Calf
2. Milk and Milk products for the family
3. 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 watershed

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.

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 Kerala is 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 critcal 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 coups

- Procurement and distribution of good quality fowls
- Management of the poultry units

Table - Budget for Backyard Poultry

Sl. No.	Particulars	Unit	Rate	Quantity	Unit Cost of Labour	Unit Cost of Material	Total Labour Cost	Total Material Cost
1	Cost of Pullets/fowls	No	73	25	-	73	-	1825
2	Cage (25sqf x 200/1sqf)	No	200/sqf	1	168	4496	504	4496
3	Feeds	Kg	15/Kg	12.50 Kg	-	15/Kg		187.5
4	Vaccination	1	2	25	-	2/Pullet	-	50
5	Plastic Net	M2	180	15		2700		2700
6	Insurance cost (6%of the total material cost)					110		110
	Total						504	9318.5

Pullet Variety

Gramasree – 40 days old

Total Project Cost of one unit of Backyard Poultry - 9822.50

CHAPTER - VI

BUDGET

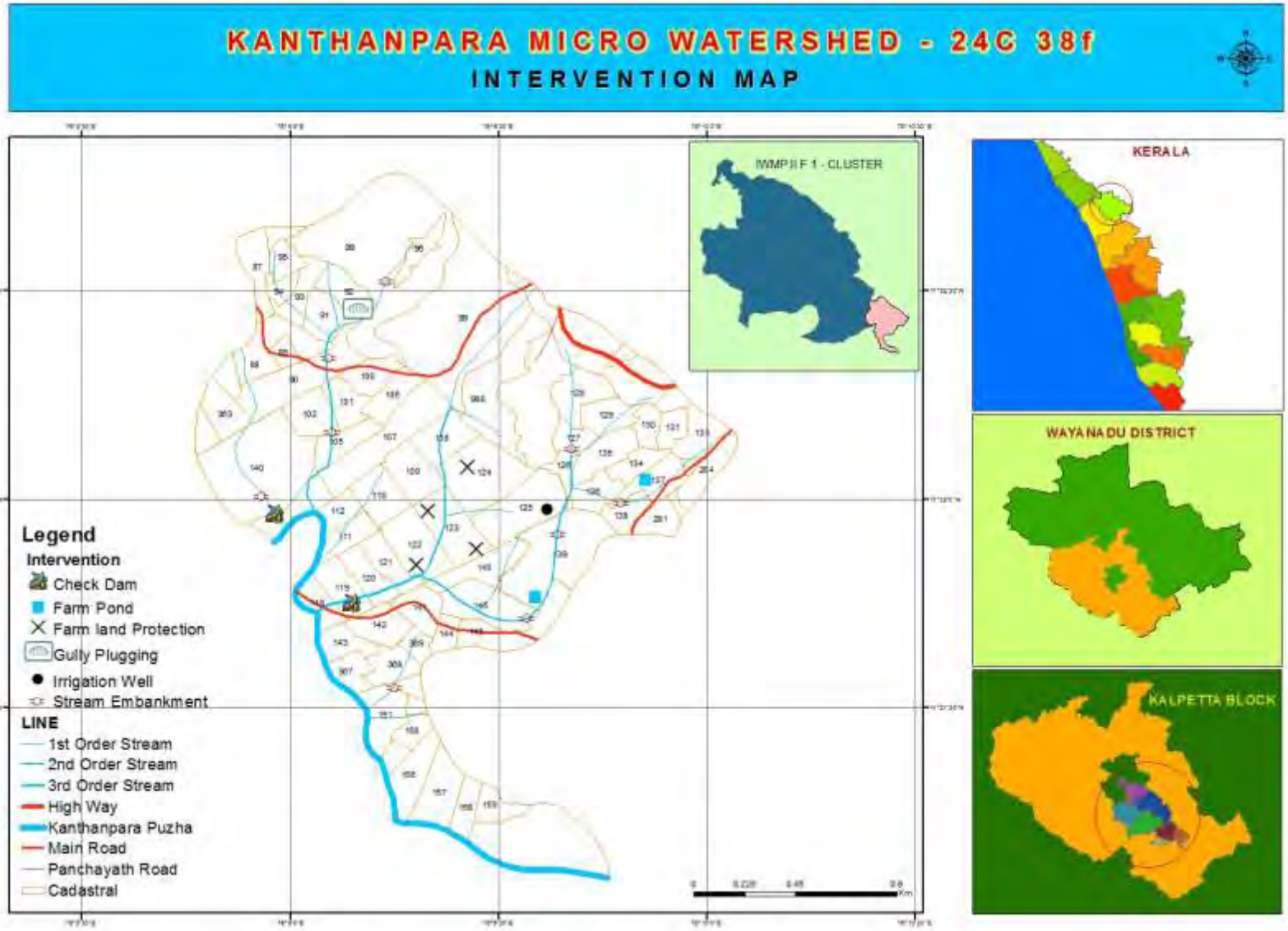
IWMP II F I Total Budget								
Sl. No.	**Activities**	**1st Year**	**2nd Year**	**3rd Year**	**4th Year**	**IWMP Share**	**Total Amount**	**WDF**
A	**Natural Resources Management (56%)**							
1	Earthen Bund	3,124,200				3124200	3124200	312420
2	Agro Horticulture Plants	2,924,600				2924600	2924600	292460
3	Mulching	859100				859100	859100	85910
4	Farm Pond	850000	900,000		548,000	2298000	2298000	229800
5	Stone Pitched Bunds	1667500				1667500	1667500	166750
6	Stream Embankment	7864800				7864800	7864800	786480
7	Farm Land Protection	675000	1,850,000		700,000	3225000	3225000	322500
8	Check Dam		3,350,000	2,300,000	800,000	6450000	6450000	645000
9	Irrigation Canal & Well			1,606,000	600,000	2206000	2206000	220600
10	Gully Plugging	100000				100000	100000	10000
11	Social Forestry	50000				50000	50000	5000
	Sub Total NRM	**18,115,200**	**6,100,000**	**3,906,000**	**2,648,000**	**30,769,200**	**30,769,200**	**3,076,920**
B	**Production System Management (10%)**							
1	Homestead Mixed Tuber Crop Cultivation	252,000	232,500	232,500	206,250	923,250	923,250	92,325
2	Homestead Vegetable Farming	287,250	228,750	228,750	238,125	982,875	982,875	98,288
3	Biogas Plants (2 m3 Capacity)	953,980	953,980	953,975	710,120	3,572,055	3,572,055	357,206
	Ghandhakasala Paddy Cultivation	4,080	4,080	4,080	4,080	16,320	16,320	1,632
	Sub Total PSM	**1,497,310**	**1,419,310**	**1,419,305**	**1,158,575**	**5,494,500**	**5,494,500**	**549,450**
C	**Livelihood Support System (9%)**							
1	Diary Unit	826,373	826,373	826,373	556,731	3,035,850	3,035,850	
2	Homestead Backyard Poultry	552,626	482,426	482,426	391,722	1,909,200	1,909,200	
	Sub Total LHS	**1,378,999**	**1,308,799**	**1,308,799**	**948,453**	**4,945,050**	**4,945,050**	

D	**Entry Point Activity (4%)**	2,197,800				**2,197,800**	**2,197,800**	
E	**Management (21%)**							
1	Consolidation (3%)				1,648,350	1,648,350	1,648,350	
2	Administration (10%)	1,373,625	1,373,625	1,373,625	1,373,625	5,494,500	5,494,500	
3	Capacity Building (5%)	1,373,625	1,373,625			2,747,250	2,747,250	
4	Detailed Project Report (1%)	549,450				549,450	549,450	
5	Monitoring (1%)	137,363	137,363	137,363	137,363	549,450	549,450	
6	Evaluation (1%)				549,450	549,450	549,450	
	Sub Total Management	**3,434,063**	**2,884,613**	**1,510,988**	**3,708,788**	**11,538,450**	**11,538,450**	
	Grand Total (A+B+C+D+E)	**26,623,372**	**11,712,722**	**8,145,092**	**8,463,816**	**54,945,000**	**54,945,000**	**3,626,370**

Kanthanpara Micro Watershed								
Sl. No.	**Activities**	**1st Year**	**2nd Year**	**3rd Year**	**4th Year**	**IWMP Share**	**Total Amount**	**WDF**
A	**Natural Resources Management**							
I	**Farm Pond**							
1	Construction of Farm Pond near Sajitha Ambalakunnu Thinapuram	200,000				200,000	200,000	20,000
2	Construction of farm pond at Anadikkappu near Prince	200,000				200,000	200,000	20,000
3	Construction of farm pond at Anadikkappu near Kilayil Kuttikrishnan	200,000				200,000	200,000	20,000
	Total	**600,000**	**-**	**-**		**600,000**	**600,000**	**60,000**
II	**Stream Embankment**							
1	Stream Embankment at Thinapuram Spices Thodu	200,000				200,000	200,000	20,000
2	Stream Embankment with Bamboo, Screw Pines and Vetiver at Thamburattikavu Thodu	100,000				100,000	100,000	10,000
3	Stream Embankment with Bamboo at Thinapuram Spices thodu	100,000				100,000	100,000	10,000
4	Stream Embankment with Bamboo, Screw Pines and Vetiver at Kanthanpara Cheriya Thodu	100,000				100,000	100,000	10,000
5	Stream Embankment at 6th No near Bridge	100,000				100,000	100,000	10,000
6	Stream Embankment at 8th No. near Devasya Vilayangat and Sasi	100,000				100,000	100,000	10,000
7	Stream Embankment at 8th No.near Johnson	100,000				100,000	100,000	10,000
8	Stream Embankment at 8th No. near Santha	100,000				100,000	100,000	10,000
	Total	**900,000**	**-**	**-**		**900,000**	**900,000**	**90,000**

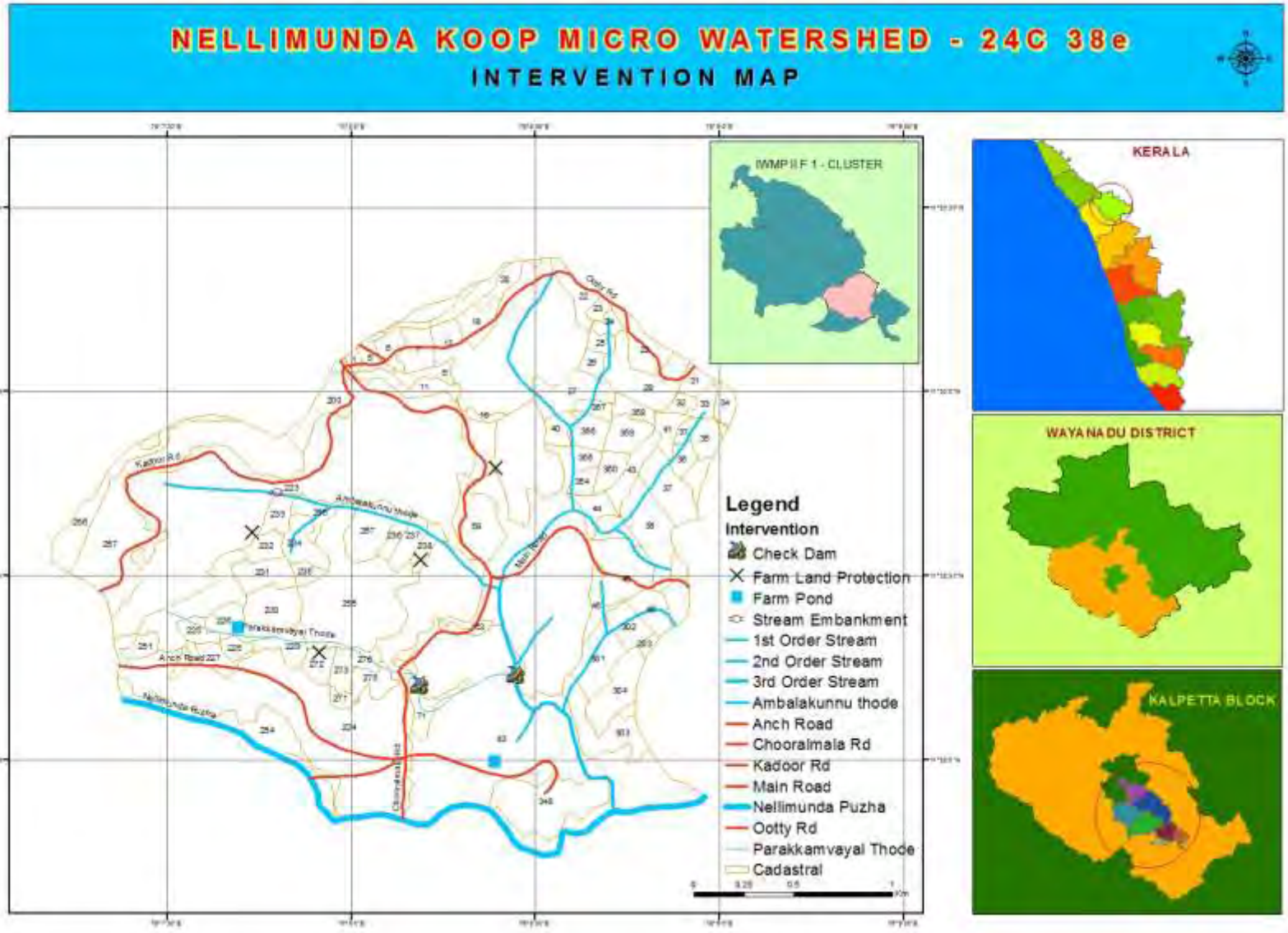
III	**Farm Land Protection**							
1	Farm land protection at 6th No. near Divakara and Sakkaria		200,000			200,000	200,000	20,000
2	Farm Land Protection at 6th No. near Gopalan and O.M. Mohanan		200,000			200,000	200,000	20,000
3	Farm Land Protection at 6th No. near Vittalan Shetty , Rose Garden Estate		200,000			200,000	200,000	20,000
	Total	**-**	**600,000**	**-**		**600,000**	**600,000**	**60,000**
IV	**Check Dam**							
1	Construction of Check Dam at 5th No. Koop Thodu				250,000	250,000	250,000	25,000
2	Construction of Check Dam near 8th no Estate near Haridas				250,000	250,000	250,000	25,000
	Total	**-**		**-**	**500,000**	**500,000**	**500,000**	**50,000**
V	**Irrigation Canal & Well**					-	**-**	-
1	Renovation of Irrigation well at Anadikkappu Lakshamveedu Colony near Pathman			156,000		156,000	156,000	15,600
	Total	**-**		**156,000**		**156,000**	**156,000**	**15,600**
VI	**Gully Plugging**					-	**-**	-
1	Gully Plugging at near Mary Kozhikkara	100,000				100,000	100,000	10,000
	Total	**100,000**	**-**	**-**		**100,000**	**100,000**	**10,000**
	Sub Total NRM	**1,600,000**	**600,000**	**156,000**	**500,000**	**2,856,000**	**2,856,000**	**285,600**
B	**Production System Management**							
I	Homestead Mixed Tuber Crop Cultivation - 55 Units - Rs 1875 per unit	24,375	24,375	24,375	30,000	103,125	103,125	10,313
II	Homestead Vegetable Farming - 55 Units - Rs 1875 per unit	24,375	24,375	24,375	30,000	103,125	103,125	10,313

III	Biogas Plants (2 m3 Capacity)-10 Units - Rs 30375 per unit	91,125	91,125	91,125	30,375	303,750	303,750	30,375
	Sub Total PSM	**139,875**	**139,875**	**139,875**	**90,375**	**510,000**	**510,000**	**51,000**
C	**Livelihood Support System**							
I	Diary Unit - 10 units -Rs 30630 per unit	61,260	61,260	61,260	122,520	306,300	306,300	
II	Homestead Backyard Poultry - 15 units -Rs 10180 per unit	40,720	40,720	40,720	30,540	152,700	152,700	
	Sub Total LHS	**101,980**	**101,980**	**101,980**	**153,060**	**459,000**	**459,000**	
D	**Entry Point Activity**	**232,800**	**-**	**-**		**232,800**	**232,800**	
	Grand Total (A+B+C+D)	**2,074,655**	**841,855**	**397,855**	**743,435**	**4,057,800**	**4,057,800**	**336,600**

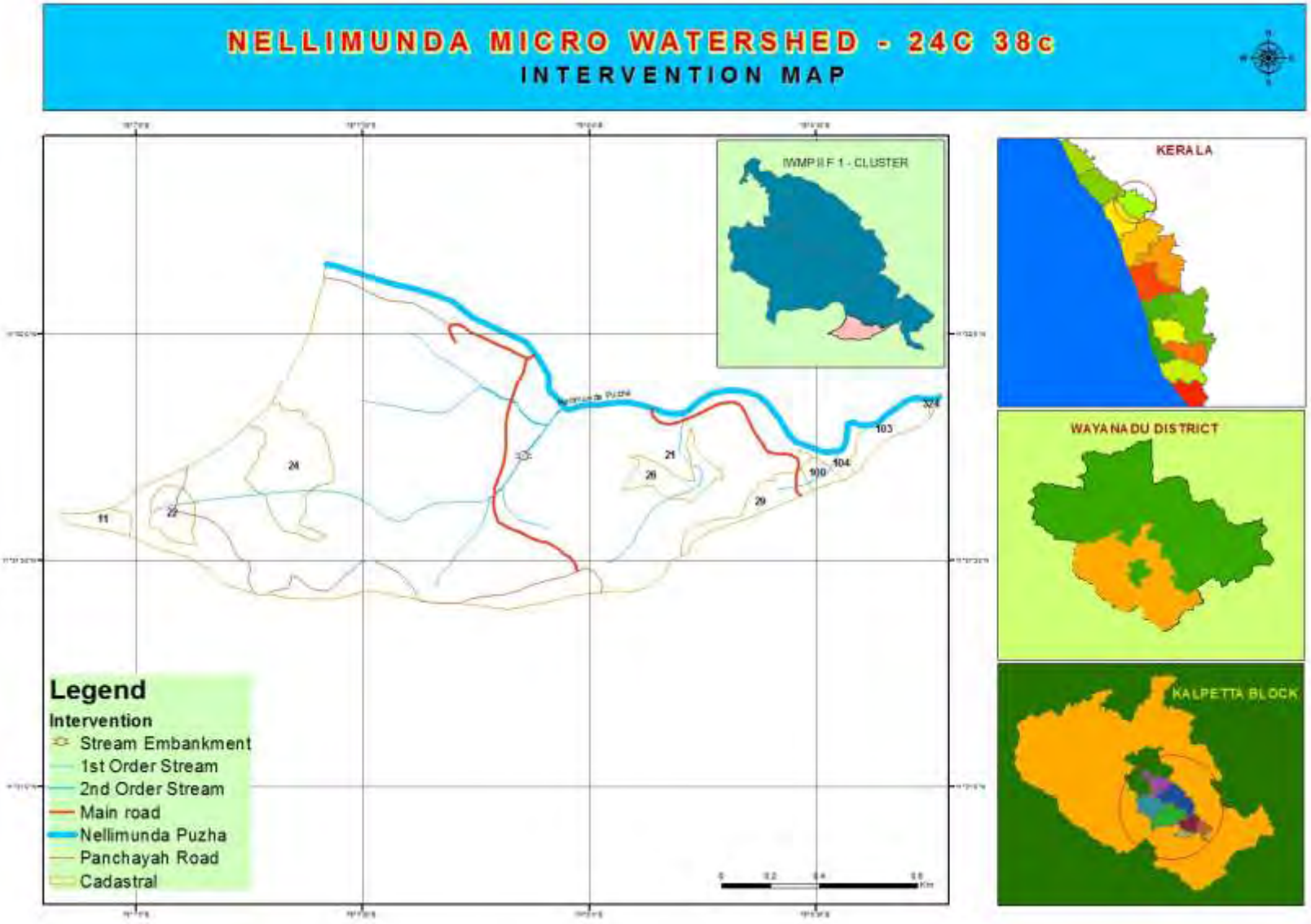

KANTHANPARA MICRO WATERSHED - 24C 38f
INTERVENTION MAP
IWMP II F 1 - CLUSTER
KERALA
WAYANADU DISTRICT
KALPETTA BLOCK
Legend
Intervention
Check Dam
Farm Pond
Farm land Protection
Gully Plugging
Irrigation Well
Stream Embankment
LINE
1st Order Stream
2nd Order Stream
3rd Order Stream
High Way
Kanthanpara Puzha
Main Road
Panchayath Road
Cadastral

Nellimunda Koop Micro Watershed								
Sl. No.	**Activities**	**1st Year**	**2nd Year**	**3rd Year**	**4th Year**	**IWMP Share**	**Total Amount**	**WDF**
A	**Natural Resources Management**							
I	**Agro Horticulture Plants -** 9540 unit Rs 60/Unit	572,400				572,400	572,400	57,240
II	**Mulching** - 4344 Cents - Rs 25 per Cent	108,600				108,600	108,600	10,860
	Total	**681,000**	**-**	**-**		**681,000**	**681,000**	**68,100**
III	**Farm Pond**							
1	Construction of Farm Pond at Nellimunda Kattayil				378,000	378,000	378,000	37,800
2	Construction of Farm Pond at Parakkamvayal				170,000	170,000	170,000	17,000
	Total		**-**	**-**	**548,000**	**548,000**	**548,000**	**54,800**
IV	**Stream Embankment**							
1	Stream Embankment at Quarry thodu	200,000				200,000	200,000	20,000
2	Stream Embankment at Kadoor Ambalakunnu K C Kadu Thodu and Kadoor 4th no. K C Kadu Thodu	178,000				178,000	178,000	17,800
3	Stream Embankment near Kadoor Colony	200,000				200,000	200,000	20,000
	Total	**578,000**	**-**	**-**	**-**	**578,000**	**578,000**	**57,800**
V	**Farm Land Protection**							
1	Farm Land Protection at Nellimunda near Madhavan-Bakakrishnan	150,000				150,000	150,000	15,000
2	Farm Land Protection at Parakkamvayal near C M Assain	100,000				100,000	100,000	10,000
3	Farm Land Protection at Kadoor Tribal Colony	125,000				125,000	125,000	12,500
4	Farm Land Protection at Mappilathottam	200,000				200,000	200,000	20,000
5	Farm Land Protection at Kadoor near Shamsu	100,000				100,000	100,000	10,000

	Total	**675,000**	**-**	**-**		**675,000**	**675,000**	**67,500**
VI	**Check Dam**							
1	Construction of Check Dam and side protection at Nellimunda Quarry near P P Ibrahim		250,000			250,000	250,000	25,000
2	Construction of Check Dam and side protection at Nellimunda Quarry near K K Kunjan		250,000			250,000	250,000	25,000
	Total	**-**	**500,000**	**-**		**500,000**	**500,000**	**50,000**
	Sub Total NRM	**2,482,000**	**500,000**	**-**		**2,982,000**	**2,982,000**	**298,200**
B	**Production System Management**							
I	Homestead Mixed Tuber Crop Cultivation - 54 Units - Rs 1875 per unit	24,375	24,375	24,375	28,125	101,250	101,250	10,125
II	Homestead Vegetable Farming - 50 Units - Rs 1875 per unit	22,500	22,500	22,500	26,250	93,750	93,750	9,375
III	Biogas Plants (2 m3 Capacity)-11 Units - Rs 30682 per unit	92,045	92,045	92,045	61,365	337,500	337,500	33,750
	Sub Total PSM	**138,920**	**138,920**	**138,920**	**115,740**	**532,500**	**532,500**	**53,250**
C	**Livelihood Support System**							
I	Diary Unit - 10 units -Rs 30682 per unit	61,370	61,370	61,370	122,740	306,850	306,850	
II	Homestead Backyard Poultry - 14 units -Rs 10141 per unit	50,706	50,706	50,706	20,282	172,400	172,400	
	Sub Total LHS	**112,076**	**112,076**	**112,076**	**143,022**	**479,250**	**479,250**	
	Grand Total (A+B+C)	**2,732,996**	**750,996**	**250,996**	**258,762**	**3,993,750**	**3,993,750**	**351,450**

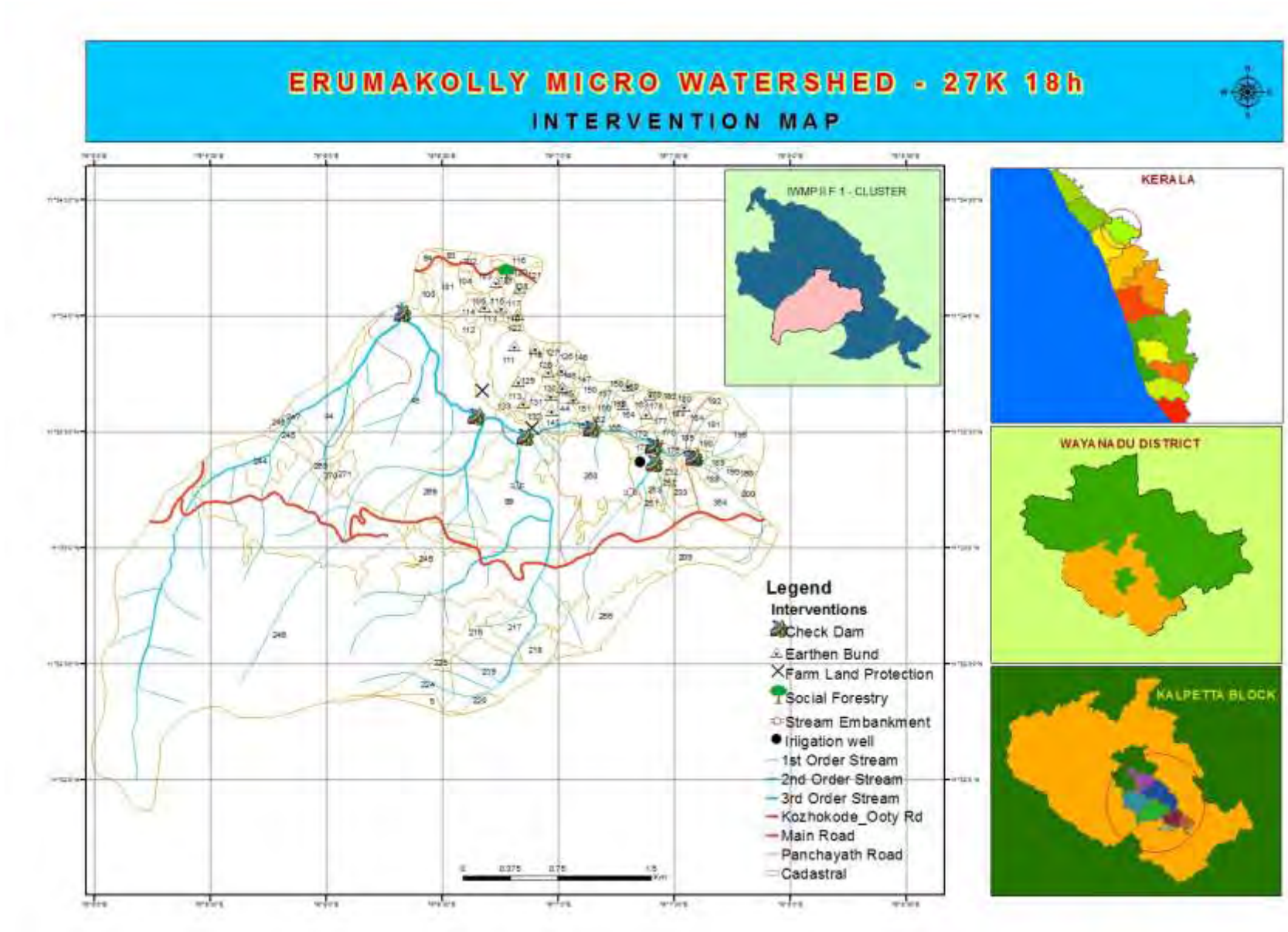

NELLIMUNDA KOOP MICRO WATERSHED - 24C 38e
INTERVENTION MAP
IWMP II F 1 - CLUSTER
KERALA
WAYANADU DISTRICT
KALPETTA BLOCK
Legend
Intervention
Check Dam
Farm Land Protection
Farm Pond
Stream Embankment
1st Order Stream
2nd Order Stream
3rd Order Stream
Ambalakunnu thode
Anch Road
Chooralmala Rd
Kadoor Rd
Main Road
Nellimunda Puzha
Ootty Rd
Parakkamvayal Thode
Cadastral

Nellimunda Micro Watershed								
Sl. No.	**Activities**	**1st Year**	**2nd Year**	**3rd Year**	**4th Year**	**IWMP Share**	**Total Amount**	**WDF**
A	**Natural Resources Management**							
I	**Agro Horticulture Plants -1987 unit Rs 60/Unit**	119,200				119,200	119,200	11,920
	Total	**119,200**	**-**	**-**		**119,200**	**119,200**	**11,920**
II	**Stream Embankment**							
1	Stream Embankment at Chulikka Factory Cheriya Thodu	200,000				200,000	200,000	20,000
2	Stream Embankment at Nellimunda Puzha	117,600				117,600	117,600	11,760
	Total	**317,600**	**-**	**-**		**317,600**	**317,600**	**31,760**
	Sub Total NRM	**436,800**	**-**	**-**	**-**	**436,800**	**436,800**	**43,680**
B	**Production System Management**							
I	Homestead Mixed Tuber Crop Cultivation - 10 Units - Rs 1950 per unit	19,500				19,500	19,500	1,950
II	Homestead Vegetable Farming - 30 Units - Rs 1950 per unit	58,500				58,500	58,500	5,850
	Sub Total PSM	**78,000**	**-**	**-**	**-**	**78,000**	**78,000**	**7,800**
C	**Livelihood Support System**							
I	**Homestead Backyard Poultry -** 5 units -Rs 10260 per unit	70,200				70,200	70,200	
	Sub Total LHS	**70,200**	**-**	**-**		**70,200**	**70,200**	
D	**Entry Point Activity**	**147,600**	**-**	**-**		**147,600**	**147,600**	
	Grand Total (A+B+C+D)	**732,600**	**-**	**-**	**-**	**732,600**	**732,600**	**51,480**


NELLIMUNDA MICRO WATERSHED - 24C 38c
INTERVENTION MAP
IWMP II F 1 - CLUSTER
KERALA
WAYANADU DISTRICT
KALPETTA BLOCK
Legend
Intervention
Stream Embankment
1st Order Stream
2nd Order Stream
Main road
Nellimunda Puzha
Panchayah Road
Cadastral

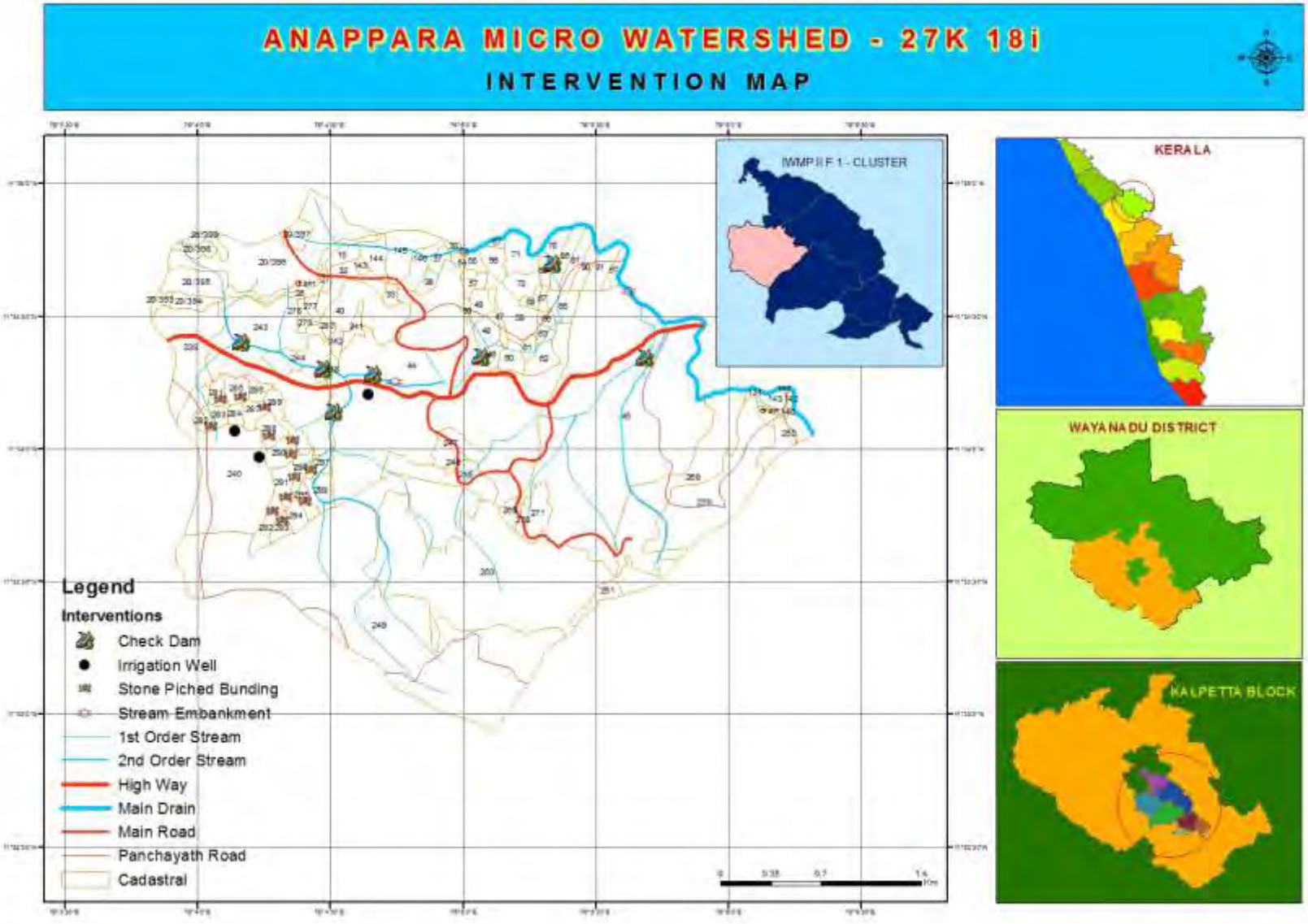
Erumakolly Micro Watershed								
Sl. No.	**Activities**	**1st Year**	**2nd Year**	**3rd Year**	**4th Year**	**IWMP Share**	**Total Amount**	**WDF**
A	**Natural Resources Management**							
I	**Agro Horticulture Plants -11000 unit Rs 60/Unit**	660,000				660,000	660,000	66,000
II	**Earthen Bund - 19000 m3 -Rs 82/m3**	1,558,000				1,558,000	1,558,000	155,800
III	**Mulching** - 11600 Cents - Rs 25 per Cent	290,000				290,000	290,000	29,000
	Total	**2,508,000**	**-**	**-**		**2,508,000**	**2,508,000**	**250,800**
IV	**Stream Embankment**					-	-	-
1	Stream Embankment at Mannathikundu	100,000				100,000	100,000	10,000
2	Stream Embankment with Bamboo, Srew Pines and Vetiver at Erumakolly-Kappikkad Thodu	100,000				100,000	100,000	10,000
	Total	**200,000**	**-**	**-**		**200,000**	**200,000**	**20,000**
V	**Farm Land Protection**					-	-	-
1	Farm Land Protection at Kottanad Schoool Thazhe				200,000	200,000	200,000	20,000
2	Farm Land Protection at Kappikkad near K K Antony				300,000	300,000	300,000	30,000
	Total		**-**	**-**	**500,000**	**500,000**	**500,000**	**50,000**
VI	**Social Forestry**					-	-	-
1	Social Forestry at Kottanad School Compound	50,000				50,000	50,000	5,000
	Total	**50,000**	**-**	**-**		**50,000**	**50,000**	**5,000**
VII	**Check Dam**					-	-	-
1	Construction of Check Dam at Kunnamangalamvayal		300,000			300,000	300,000	30,000
2	Construction of Check Dam and Side Protection at Kunnamangalamvayal near Moolakkal Hamsa		250,000			250,000	250,000	25,000
3	Construction of Check Dam and Side Protection at Kunnamangalamvayal near Ummar		250,000			250,000	250,000	25,000

4	Construction of Check Dam at Erumakollly Pallithazhe		200,000			200,000	200,000	20,000
5	Construction of Check Dam at Kunnamangalamvayal near Anganvady		200,000			200,000	200,000	20,000
6	Construction of Check Dam at Thazhe Kappikkad		200,000			200,000	200,000	20,000
7	Construction of Check Dam and Side Protection at Puzhamoola		250,000			250,000	250,000	25,000
	Total	**-**	**1,650,000**	**-**		**1,650,000**	**1,650,000**	**165,000**
VIII	**Irrigation Canal & Well**					-	-	-
1	Construction of Irrigation Well at Mele Kunnamangalamvayal			300,000		300,000	300,000	30,000
	Total	**-**		**300,000**		300,000	**300,000**	**30,000**
	Sub Total NRM	**2,758,000**	**1,650,000**	**300,000**	**500,000**	**5,208,000**	**5,208,000**	**520,800**
B	**Production System Management**							
I	Homestead Mixed Tuber Crop Cultivation - 70 Units - Rs 1875 per unit	33,750	33,750	33,750	30,000	131,250	131,250	13,125
II	Homestead Vegetable Farming - 100 Units - Rs 1875 per unit	46,875	46,875	46,875	46,875	187,500	187,500	18,750
III	Biogas Plants (2 m3 Capacity)-20 Units - Rs 30563 per unit	152,815	152,815	152,810	152,810	611,250	611,250	61,125
	Sub Total PSM	**233,440**	**233,440**	**233,435**	**229,685**	**930,000**	**930,000**	**93,000**
C	**Livelihood Support System**							
I	Diary Unit - 15 units -Rs 29540 per unit	147,700	147,700	147,700	-	443,100	443,100	
II	Homestead Backyard Poultry - 39 units -Rs 10100 per unit	101,000	101,000	101,000	90,900	393,900	393,900	
	Sub Total LHS	**248,700**	**248,700**	**248,700**	**90,900**	**837,000**	**837,000**	
D	**Entry Point Activity**	**780,000**	**-**	**-**		**780,000**	**780,000**	
	Grand Total (A+B+C+D)	**4,020,140**	**2,132,140**	**782,135**	**820,585**	**7,755,000**	**7,755,000**	**613,800**


ERUMAKOLLY MICRO WATERSHED - 27K 18h
INTERVENTION MAP
IWMP II F 1 - CLUSTER
KERALA
WAYANADU DISTRICT
KALPETTA BLOCK
Legend
Interventions
Check Dam
Earthen Bund
Farm Land Protection
Social Forestry
Stream Embankment
Irrigation well
1st Order Stream
2nd Order Stream
3rd Order Stream
Kozhokode_Ooty Rd
Main Road
Panchayath Road
Cadastral

Anappara Micro Watershed								
Sl. No.	**Activities**	**1st Year**	**2nd Year**	**3rd Year**	**4th Year**	**IWMP Share**	**Total Amount**	**WDF**
A	**Natural Resources Management**							
I	**Agro Horticulture Plants - 11250 unit - Rs 60/Unit**	675,000				675,000	675,000	67,500
II	**Stone Pitched Bunds - 16189 m2 -Rs 103/m3**	1,667,500				1,667,500	1,667,500	166,750
III	**Mulching** - 18419 Cents - Rs 25 per Cent	460,500				460,500	460,500	46,050
	Total	**2,803,000**	**-**	**-**		**2,803,000**	**2,803,000**	**280,300**
IV	**Stream Embankment**					-	-	-
1	Stream Embankment with Bamboo, Screw Pines and Vetiver at Kunnambetta-Mangavayal Thodu	275,000				275,000	275,000	27,500
2	Stream Embankment at Odathodu near Jaleel-Ayishakutty	400,000				400,000	400,000	40,000
3	Stream Embankment at Pakkalipallam Ezhuthachan Colony	200,000				200,000	200,000	20,000
	Total	**875,000**	**-**	**-**		**875,000**	**875,000**	**87,500**
V	**Farm Land Protection**					-	-	-
1	Farm Land Protection at Kannachathu - Anappara Side				200,000	200,000	200,000	20,000
	Total		**-**	**-**	**200,000**	**200,000**	**200,000**	**20,000**
VI	**Check Dam**					-	-	-
1	Construction of Mini Check Dam at Kannanchath		150,000			150,000	150,000	15,000
2	Construction of Check Dam at Pakkalipallam Ezhuthachan Colony		250,000			250,000	250,000	25,000
3	Construction of Check Dam at Kunnambetta-Mangavayal Thodu		200,000			200,000	200,000	20,000
4	Construction of Check Dam at Odathodu near Puthiyapady Marakkar		150,000			150,000	150,000	15,000

5	Construction of Check Dam at Odathodu near K P Abdulla		150,000			150,000	150,000	15,000
6	Construction of Check Dam at Odathodu near Engine House		150,000			150,000	150,000	15,000
7	Construction of Check Dam at Odathodu near C Alavi		150,000			150,000	150,000	15,000
	Total	**-**	**1,200,000**	**-**		**1,200,000**	**1,200,000**	**120,000**
VII	**Irrigation Canal & Well**					-	-	-
1	Renovation of Irrigation well at Pakkalipallam near Anganvady			100,000		100,000	100,000	10,000
2	Renovation of Nayikkankolly Irrigation Programme at Anappara			150,000		150,000	150,000	15,000
3	Constrction of Irrigation well at Odathodu near C K Musthafa			300,000		300,000	300,000	30,000
	Total		**-**	**550,000**		**550,000**	**550,000**	**55,000**
	Sub Total NRM	**3,678,000**	**1,200,000**	**550,000**	**200,000**	**5,628,000**	**5,628,000**	**562,800**
B	**Production System Management**							
I	Homestead Mixed Tuber Crop Cultivation - 100 Units - Rs 1875 per unit	46,875	46,875	46,875	46,875	187,500	187,500	18,750
II	Homestead Vegetable Farming - 88 Units - Rs 1875 per unit	41,250	41,250	41,250	41,250	165,000	165,000	16,500
III	Biogas Plants (2 m3 Capacity)-20 Units - Rs 32625 per unit	163,125	163,125	163,125	163,125	652,500	652,500	65,250
	Sub Total PSM	**251,250**	**251,250**	**251,250**	**251,250**	**1,005,000**	**1,005,000**	**100,500**
C	**Livelihood Support System**							
I	Diary Unit - 20 units -Rs 31725 per unit	158,625	158,625	158,625	158,625	634,500	634,500	
II	Homestead Backyard Poultry - 27 units -Rs 10000 per unit	70,000	70,000	70,000	60,000	270,000	270,000	
	Sub Total LHS	**228,625**	**228,625**	**228,625**	**218,625**	**904,500**	**904,500**	
D	**Entry Point Activity**	**627,600**	**-**	**-**		**627,600**	**627,600**	
	Grand Total (A+B+C+D)	**4,785,475**	**1,679,875**	**1,029,875**	**669,875**	**8,165,100**	**8,165,100**	**663,300**

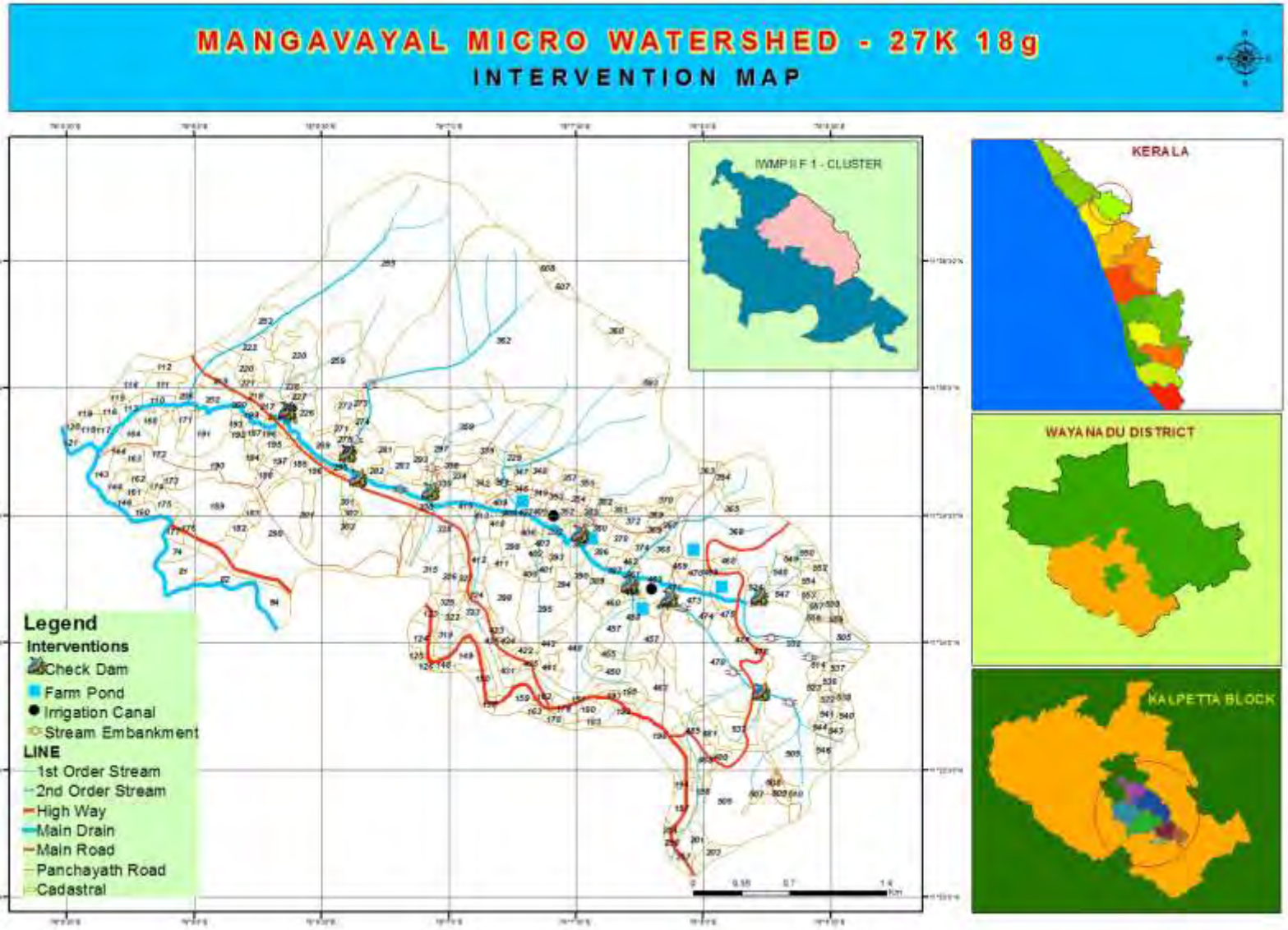

ANAPPARA MICRO WATERSHED - 27K 18i
INTERVENTION MAP
IWMP II F 1 - CLUSTER
KERALA
WAYANADU DISTRICT
KALPETTA BLOCK
Legend
Interventions
Check Dam
Irrigation Well
Stone Piched Bunding
Stream Embankment
1st Order Stream
2nd Order Stream
High Way
Main Drain
Main Road
Panchayath Road
Cadastral

Mangavayal Micro Watershed								
Sl. No.	**Activities**	**1st Year**	**2nd Year**	**3rd Year**	**4th Year**	**IWMP Share**	**Total Amount**	**WDF**
A	**Natural Resources Management**							
I	**Agro Horticulture Plants -9700 unit Rs 60/Unit**	582,000				582,000	582,000	58,200
II	**Earthen Bund - 10100 m3 -Rs 82/m3**	**828,200**				828,200	828,200	82,820
	Total	**1,410,200**	**-**	**-**		**1,410,200**	**1,410,200**	**141,020**
II	**Farm Pond**					-	-	-
1	Renovation of Farm Pond at Chembothara near Mohandas		150,000			150,000	150,000	15,000
2	Renovation of Farm Pond at Kottatharavayal		150,000			150,000	150,000	15,000
3	Construction of Farm Pond at Chembothara near Mohandas		200,000			200,000	200,000	20,000
4	Construction of Farm Pond at Chembothara near Anil		200,000			200,000	200,000	20,000
5	Construction of Farm Pond at Kottavayal near Ramakrishnan		200,000			200,000	200,000	20,000
	Total		**900,000**	**-**		**900,000**	**900,000**	**90,000**
III	**Stream Embankment**					-	-	-
1	Stream Embankment at Manivayal Thodu near Thankachan	500,000				500,000	500,000	50,000
2	Stream Embankment at Kottavayal Thodu near Vasudevan	344,200				344,200	344,200	34,420
3	Stream Embankment at Poothakolly Thodu near Vasu - Subramanian	200,000				200,000	200,000	20,000
4	Stream Embankment at Chembothara Thodu	00,000				200,000	200,000	20,000
6	Stream Embankment at Poothakolly Thodu near Sankaran-Ummachu	200,000				200,000	200,000	20,000
7	Stream Embankment at Puthukkudy Thodu near A K Saith-Ramaswamy	200,000				200,000	200,000	20,000

8	Stream Embankment with Bamboo at Puthukkudy-Vithukad Thodu	100,000				100,000	100,000	10,000
9	Stream Embankment at Puthukkudy Thodu near C Hamsa-Lawrence	200,000				200,000	200,000	20,000
10	Stream Embankment at Kottavayal Thodu near Abdulla	200,000				200,000	200,000	20,000
11	Stream Embankment at Manivayal Thodu near Kunjumuhammed	200,000				200,000	200,000	20,000
12	Stream Embankment at Kottavayal Thodu near Kamal	200,000				200,000	200,000	20,000
13	Stream Embankment at Manivayal Thodu near Kumaran	200,000				200,000	200,000	20,000
14	Stream Embankment at Manivayal Thodu near Shajahan	200,000				200,000	200,000	20,000
15	Stream Embankment at Meppadi at MeppadivayalVithukadThodu	200,000				200,000	200,000	20,000
16	Stream Embankment with Bamboo at MeppadivayalVithukadThodu	200,000				200,000	200,000	20,000
17	Stream Bank Protection near Chenkutty Colony	200,000				200,000	200,000	20,000
18	Stream Bank Protection at Kottavayal-Chenkutty Thodu	200,000				200,000	200,000	20,000
	Total	**3,744,200**	**-**	**-**	**-**	**3,744,200**	**3,744,200**	**374,420**
IV	**Check Dam**					-	-	-
1	Construction of Mini Check Dam at Kallumala Thodu			200,000		200,000	200,000	20,000
2	Construction of Mini Check Dam at Karpoorakkad-Chembothara Thodu			200,000		200,000	200,000	20,000
3	Construction of Mini Check Dam at Kottatharavayal Thodu			200,000		200,000	200,000	20,000

4	Renovation of check Dam at Nedumbala 7th Number			200,000		200,000	200,000	20,000
5	Construction of Check Dam at Poothakolly near Ramaswamy			300,000		300,000	300,000	30,000
6	Construction of Check Dam at Kottavayal			300,000		300,000	300,000	30,000
7	Construction of Check Dam at Kottavayal near Pathmanabhan			300,000		300,000	300,000	30,000
8	Construction of Check Dam near by Chembothara Mosque			300,000		300,000	300,000	30,000
9	Construction of Check Dam at Mandokkuni			300,000		300,000	300,000	30,000
	Total	**-**		**2,300,000**		**2,300,000**	**2,300,000**	**230,000**
V	**Irrigation Canal & Well**					-	-	-
1	Renovation of Irrigation Canal at Vilakkathara Colony				200,000	200,000	200,000	20,000
2	Renovation of Irrigation Canal at Kottatharavayal				200,000	200,000	200,000	20,000
3	Renovation of Irrigation Canal at Chembotharavayal				200,000	200,000	200,000	20,000
	Total		**-**	**-**	**600,000**	**600,000**	**600,000**	**60,000**
	Sub Total NRM	**5,154,400**	**900,000**	**2,300,000**	**600,000**	**8,954,400**	**8,954,400**	**895,440**
B	**Production System Management**							
I	Homestead Mixed Tuber Crop Cultivation - 150 Units - Rs 1875 per unit	75,000	75,000	75,000	56,250	281,250	281,250	28,125
II	Homestead Vegetable Farming - 125 Units - Rs 1875 per unit	56,250	56,250	56,250	65,625	234,375	234,375	23,438
III	Ghandhakasala Paddy Cultivation -8 Units - Rs 2040 per unit	4,080	4,080	4,080	4,080	16,320	16,320	1,632

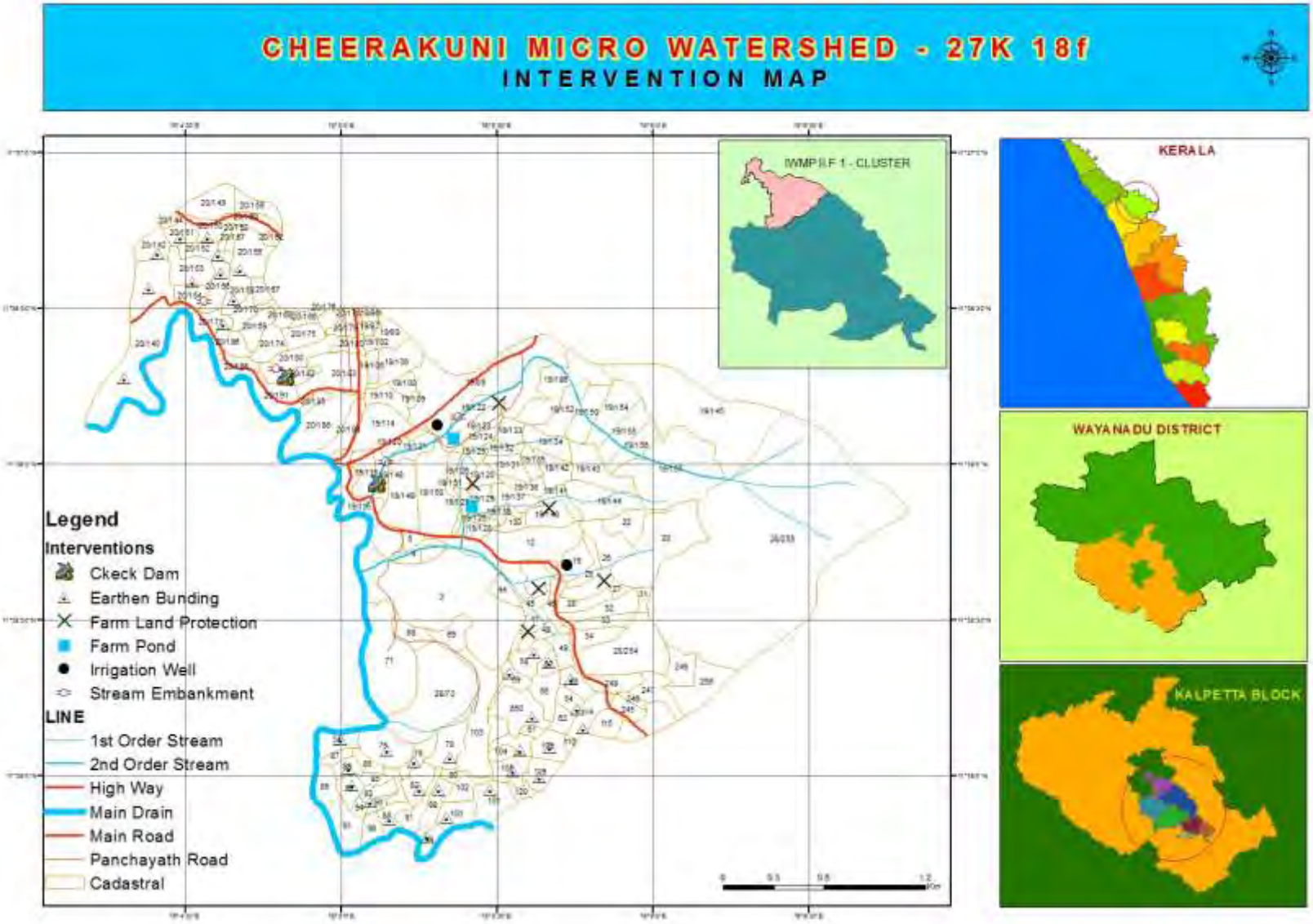
IV	Biogas Plants (2 m3 Capacity)-35 Units - Rs 30487 per unit	304,870	304,870	304,870	152,445	1,067,055	1,067,055	106,706
	Sub Total PSM	**440,200**	**440,200**	**440,200**	**278,400**	**1,599,000**	**1,599,000**	**159,900**
C	**Livelihood Support System**							
I	Diary Unit - 34 units -Rs 30562 per unit	305,618	305,618	305,618	122,246	1,039,100	1,039,100	
II	Homestead Backyard Poultry - 40 units -Rs 10000 per unit	100,000	100,000	100,000	100,000	400,000	400,000	
	Sub Total LHS	**405,618**	**405,618**	**405,618**	**222,246**	**1,439,100**	**1,439,100**	
	Grand Total (A+B+C)	**6,000,218**	**1,745,818**	**3,145,818**	**1,100,646**	**11,992,500**	**11,992,500**	**1,055,340**


MANGAVAYAL MICRO WATERSHED - 27K 18g
INTERVENTION MAP
IWMP II F 1 - CLUSTER
KERALA
WAYANADU DISTRICT
KALPETTA BLOCK
Legend
Interventions
Check Dam
Farm Pond
Irrigation Canal
Stream Embankment
LINE
1st Order Stream
2nd Order Stream
High Way
Main Drain
Main Road
Panchayath Road
Cadastral

Cheerakuni Micro Watershed								
Sl. No.	**Activities**	**1st Year**	**2nd Year**	**3rd Year**	**4th Year**	**IWMP Share**	**Total Amount**	**WDF**
A	**Natural Resources Management**							
I	**Agro Horticulture Plants -5267 unit Rs 60/Unit**	316,000				316,000	316,000	31,600
II	**Earthen Bund - 9000 m3 -Rs 82/m3**	738,000				738,000	738,000	73,800
	Total	**1,054,000**	**-**	**-**		**1,054,000**	**1,054,000**	**105,400**
III	**Farm Pond**					-	-	-
1	Renovation of Farm Pond at Vellikandi	80,000				80,000	80,000	8,000
2	Construction of Irrigation Pond at Rattakolly near Nasar	170,000				170,000	170,000	17,000
	Total	**250,000**	**-**	**-**		**250,000**	**250,000**	**25,000**
IV	**Stream Embankment**					-	-	-
1	Stream Embankment at Rattakolly Thodu	500,000				500,000	500,000	50,000
2	Stream Embankment at Eranhjivayal-Thurkky Thodu	300,000				300,000	300,000	30,000
3	Stream Embankment at Rattakolly Thodu near Ramani	150,000				150,000	150,000	15,000
4	Stream Embankment at Vattakkarivaya Cheriya Thodu near Ramani	300,000				300,000	300,000	30,000
	Total	**1,250,000**	**-**	**-**		**1,250,000**	**1,250,000**	**125,000**
V	**Farm Land Protection**					-	-	-
1	Farm Land Protection at Puthoorvayal near Chundayil Krishnan, Janaki		150,000			150,000	150,000	15,000

2	Farm Land Protection at Puthoorvayal near Erakunnath Mani, Balakrishnan		100,000			100,000	100,000	10,000
3	Farm Land Protection at Puthoorvayal Colony near Ravunni, Sumithra, Mani, Meenakshi		200,000			200,000	200,000	20,000
4	Farm Land Protection at Kalapurakkal Colony		250,000			250,000	250,000	25,000
5	Farm Land Protection near by Rattakolly Paniya Colony		200,000			200,000	200,000	20,000
6	Farm Land Protection at Rattakolly near Nadakasseri Koya, Murali, Jamaludheen, Nasar and Sainabha		250,000			250,000	250,000	25,000
7	Farm Land Protection at Rattakolly near Kunjayisha, Joy		100,000			100,000	100,000	10,000
	Total	**-**	**1,250,000**	**-**		**1,250,000**	**1,250,000**	**125,000**
VI	**Check Dam**					-	-	-
1	Construction of Mini Check Dam at Eranhjivayal Cheriya Thodu				100,000	100,000	100,000	10,000
2	Construction of Check Dam at Rattakolly Thodu				200,000	200,000	200,000	20,000
	Total	**-**		**-**	**300,000**	**300,000**	**300,000**	**30,000**
VII	**Irrigation Canal & Well**					-	-	-
1	Construction of Irrigation Well at Pulpara			300,000		300,000	300,000	30,000
2	Construction of Irrigation Well at Vazhakundu			300,000		300,000	300,000	30,000
	Total		**-**	**600,000**		**600,000**	**600,000**	**60,000**

	Sub Total NRM	**2,554,000**	**1,250,000**	**600,000**	**300,000**	**4,704,000**	**4,704,000**	**470,400**
B	**Production System Management**							
I	Homestead Mixed Tuber Crop Cultivation - 53 Units - Rs 1875 per unit	28,125	28,125	28,125	15,000	99,375	99,375	9,938
II	Homestead Vegetable Farming - 75 Units - Rs 1875 per unit	37,500	37,500	37,500	28,125	140,625	140,625	14,063
III	Biogas Plants (2 m3 Capacity)-20 Units - Rs 30000 per unit	150,000	150,000	150,000	150,000	600,000	600,000	60,000
	Sub Total PSM	**215,625**	**215,625**	**215,625**	**193,125**	**840,000**	**840,000**	**84,000**
C	**Livelihood Support System**							
I	Diary Unit - 10 units -Rs 30600 per unit	91,800	91,800	91,800	30,600	306,000	306,000	
II	Homestead Backyard Poultry - 45 units -Rs 10000 per unit	120,000	120,000	120,000	90,000	450,000	450,000	
	Sub Total LHS	**211,800**	**211,800**	**211,800**	**120,600**	**756,000**	**756,000**	
D	**Entry Point Activity**	**386,400**	**-**	**-**		**386,400**	**386,400**	
	Grand Total (A+B+C+D)	**3,367,825**	**1,677,425**	**1,027,425**	**613,725**	**6,686,400**	**6,686,400**	**554,400**


CHEERAKUNI MICRO WATERSHED - 27K 18f
INTERVENTION MAP
IWMP II F 1 - CLUSTER
KERALA
WAYANADU DISTRICT
KALPETTA BLOCK
Legend
Interventions
Ckeck Dam
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Irrigation Well
Stream Embankment
LINE
1st Order Stream
2nd Order Stream
High Way
Main Drain
Main Road
Panchayath Road
Cadastral

CHAPTER - VII

CONVERGENCE

COVERGENCE UNDER IWMP II F I

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. Other sectoral programmes relating to rural development with limited fund base can benefit immensely by converging with MGNREGS and in turn, can help MGNREGS fulfill its stated objective of providing assured wage employment to the rural poor along with creating rural infrastructure.

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. According to a study conducted by ICRISAT (International Crops Research Institute for the Semi-Arid Tropics), scientific and holistic development of an area on watershed basis requires at an average Rs. 20,000 per hectare.

This gap can be filled by convergence with different other schemes of the government, especially, MGNREGS. MGNREGS, after becoming an act, is here to stay and has significantly large fund-base. Huge amount of fund can be released depending upon the requirement of the village community, and the labour budget. MGNREGS is very much open for convergence purpose; IWMP should take the opportunity and undertake all round development of the projects areas.

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

A look at the above permissible works shows that most of the watershed works under IWMP can be taken up under MGNREGS.

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

Planning for convergence will be much more comprehensive if done in the above manner. So, we can decide to undertake a number of pilot projects in the area. This has been done in collaboration with the IWMP.

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.

ACTIVITES CAN BE TAKEN UP FOR CONVERGENCE IN IWMP II F I

1. Construction and renovation of check dams
2. Deepening and desilting of ponds
3. Extension and renovation of existing irrigation projects

4. Flood protection works
5. Lift irrigation works
6. Construction of new drains and renovation of existing drains
7. Construction and maintenance of other NRM works such as earthen bunding, stone pitched bunding, staggered trenching, centri pit trenching etc.

CHAPTER – VIII

ANNUAL ACTION PLAN

Annual Action Plan - IWMP II F I													
Sl. No.	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
I	Land Development	Afforestation	ha									0	0
		Horticulture	ha	2083	2924600							2083	2924600
		Agriculture	ha									0	0
		Pasture	ha									0	0
		Others	ha									0	0
II	Soil & Moisture Conservation	Straggred trecnching	ha									0	0
		Countour Bunding	ha	378	4791700							378	4791700
		Graded Bunding	ha									0	0
		Bench Terracing	ha									0	0
		Others	ha	725	9548900	150	1850000			45	700000	920	12098900
III	Vegetative and Engineering Structure	Earthen Checks	Cubic meter									0	0
		Brushwood Checks	Rmt									0	0
		Gully plugs	Cubic meter									0	0
		Loose bolder	Cubic meter									0	0
		Gabian structure	Cubic meter									0	0
		Others	nos									0	0
IV	Water Harvesting Structure (New created)	Farm ponds	nos	4	770000	3	600000			2	548000	9	1918000
		Check dams	nos			16	3350000	8	2100000	4	800000	28	6250000
		Nallah Bunds	nos									0	0
		Percolation tanks	nos									0	0

		Ground Water recharge structure	nos									0	0
		Others	nos					7	1606000	3	600000	10	2206000
	Water Harvesting Structure (Renovated)	Farm ponds	nos	1	80000	2	300000					3	380000
		Check dams	nos					1	200000			1	200000
		Nallah Bunds	nos									0	0
		Percolation tanks	nos									0	0
		Ground Water recharge structure	nos									0	0
		Others	nos									0	0
V	Livelihood activities for the asset-less persons	No. of farm activities	nos	2		2		2		2		2	0
		No. of Beneficiaries	nos	82	1378999	75	1308799	75	1308799	57	948453	289	4945050
		No. of off farm activities	nos									0	0
		No. of Beneficiaries	nos									0	0
VI	Production system &micro-enterprises	Area	ha									0	0
		No. of Beneficiaries	nos	319	1497310	279	1419310	279	1419305	262	1158575	1139	5494500

CHAPTER – IX

WATERSHED DEVELOPMENT FUND

WATERSHED DEVELOPMENT FUND

One of the mandatory conditions for selection of villagers in Watershed Development Programme is people's contribution towards Watershed Development Fund (WDF). The contribution to WDF shall be a minimum 10% of the cost of works executed in individual lands. However, in case of SC/ST and persons identified below the poverty line, the minimum contribution shall be 5% of the cost of works executed on their lands. Contribution to the Fund in respect of community properly may come from all the beneficiaries, which shall be a minimum of 5% of the development cost incurred. It should be ensured that the contribution comes from the beneficiary farmers and is not deducted from the wages paid to the laborers who are engaged to treat the private lands. These contributions would be acceptable either in cash/voluntary labor or material.

A sum equivalent to the monetary value of the voluntary labour and materials would be taken from the watershed project account and deposited in this Fund. The Watershed Committee shall maintain the Watershed Development Fund separately. The Chairman and Secretary, Watershed Committee will operate the WDF account jointly, Individuals as well as charitable institutions should be encouraged to contribute generously to this Fund. The proceeds of this Fund shall be utilized in maintenance of assets created on community land or for common use after completion of project period Works taken up for individual benefit shall not be eligible for repair/maintenance out of this Fund.

User Charges

The Watershed Committee shall impose user charges on the User Groups for use of common utilities like water for irrigation from village tanks/ponds, grazing from community pastures etc. While one – half of the user charges so collected may be credited to the WDF for maintenance of assets of the projects, the remaining one –half may be utilized by the Watershed Committee for any other purpose as it may deem fit.

CHAPTER – X

EXPECTED OUTCOME

EXPECTED OUTCOMES

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, staggered trenching, stone pitched bunding etc. in the project.

Maintaining runoff reduction:

With the help of soil and water conservation measures such as earthen bunding, staggered trenching, stone pitched bunding 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 process 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 majority of 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 almost all the watershed areas.

Increase in active involvement of the community

The Watershed Committees are actively involved in the implementation of watershed programmes. NHGs are formed in all the watersheds, and their degree of involvement increase. The NHGs will visible in watershed activities after completion of the project. Some other NHGs, 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	Open well in the middle reach
2	Quality of drinking water	-	Moderate	Safe	Increased availability of drinking in open wells
3	Availability of drinking water	months	8 months	12 months	Through insitu conservation of rain water
4	Increase in irrigation potential	ha.	-	300 ha	Through renovation and construction of water bodies, new farm ponds.
5	Change in cropping/ land use pattern	ha.	300ha.(Mono)	500 ha(Mixed)	Gross cropped area
6	Area under agricultural crop				
	Area under single crop	ha.	300 ha.(Mono)	500 ha(Mixed)	Mixed cropping and 2 tier cropping system in Plantation areas
	Area under double crop	ha.	-	30 ha	Paddy , Banana and vegetable in winter.
	Area under multiple crop	ha.	-	50 ha	Mixed cropping and 2 tier cropping system in Plantation areas
	Net increase in crop production area	ha.	100 ha	200 ha	Through cultivation of food crops such as tubers and vegetables
7	Increase in area under vegetation	ha.	2500 ha	3000 ha	Through area treatments which enables the stability of soil moisture
8	Increase in area under horticulture	ha.	10 ha	200 ha	Plantation of horticulture crops

9	Increase in area under fuel	ha.	20 ha	100 ha	Reduction in tree loping
10	Increase in area under Fodder	ha.	100 ha	200 ha	Through fodder cultivation as the agrostological measure on bunds
11	Increase in milk production	Liters/ Day	5	10	Importing improved varieties of milch animals
12	No. of SHGs Promoted	nos.	-	175	Through new formation
13	Increase in no. of livelihoods	nos.	-	200	Assistance for Milch cow rearing and backyard Poultry
14	Increase in income	Rs.	25000	30000	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.	-	7	Uniting all the SHG under IWMP IVH 5
17	Credit linkage with banks	%	-	100% of formed SHGs	Credit linkage of SHGs with banks for group activities
18	WDF collection & management	Rs.	-	3626370	Contribution by the beneficiaries for different activities in private lands.
19	Employment	nos.	-	65000	65000 nos of man days will be generated during the project period through different activities in the project area.

CHAPTER – XI

EXIT PROTOCOL

EXIT PROTOCOL

The last two years are the 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. The amount lying unspent as on closing date will be transferred to the Watershed Development Fund.
3. Watershed Committee will be authorized to use only one Bank account i.e. WDF account.

4. Yearly auditing of the accounts by the Chartered Accountant will be mandatory and to be adhered strictly.
5. The office bearer of the Watershed Committee shall involve all the community irrespective of caste, creed and religion.
6. 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.
7. 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.
8. The WDF account will primarily run as revolving fund.
9. No individual beneficiary should be granted any sort of grant or financial assistance in any form.
10. The SHGs and UGs shall have the eligibility to take loan from the WDF with marginal interest as decided by Gram Sabha.
11. 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.
12. The remuneration for the Watershed secretary will be finalized in the Gram Sabha.
13. 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.
14. The WDF shall be jointly operated by the Chairman and Secretary of the watershed committee.
15. All the expenditure shall be authenticated by the Watershed committee.

16. Annual meeting of the Gram Sabha is mandatory. However it may meet at any time if required.
17. The Watershed Committee should meet in every quarter to review the income and expenditure.
18. 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.
19. All the group representatives, at least one from each group shall be ensured in the Watershed Committee.
20. The decision approved and resolved in the Gram Sabha will only be implemented by the Watershed Committee.
21. In case of any embezzlement of fund, the Administrative system shall proceed according to Rules and Laws.
22. 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.

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. Over the years there is much visible impact of watershed development programmes among different communities across various regions.

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.