INTEGRATED WATERSHED MANAGEMENT PROGRAMME

IWMP-VI, KASARAGODE (BATCH-4)

DETAILED PROJECT REPORT

Kasaragode Block Panchayath

Technical Supporting Organization

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PART - I

CHAPTER -1

INTRODUCTION

1. PROJECT BACKGROUND

A watershed can be simply defined as an area where the water from rainfall is drained to a common outlet. Apart from the abstract factors that the watershed experiences, it is comprised of land, water and biomass. Certain delicate balances are maintained in the ever varying interactions among the environmental factors that each individual watershed is exposed to sustain the well-being of it. Every watershed has to be identified as a unique watershed ecosystem. These balances are jeopardized due to disproportionate and irrational interventions of the watershed community. Man spearheads and thus watershed deterioration begins. This basically inflicts upon the water cycle. This has resulted in drinking water scarcity, agricultural drought, fall in farm production, denial of hydel power generation, crisis in industries and ecological problems. Main reasons are topography, intensity and duration of rainfall, land use pattern and population. Watershed development is an integration of technology within the natural boundary of a drainage area for optimum development of land, water and plant resources to meet the basic minimum needs of people in a sustained manner. A developed watershed provides food, fuel, fiber, fodder, fruits,

drinking water and employment. Thus scientific water management approach is the only tool to develop a watershed.

Watershed management, the process of guiding &organizing, land and other resource usage in a watershed ensuring the sustenance of the environment (mainly the soil and water resources) i.e. Need to recognize the interrelationships between, land use, soil-water, and slope of terrain. Unifying focus in watershed management is in how various human activities affect the relationship between water and other natural resources .Watershed management provides a basis for actions concerning the development and conservation.

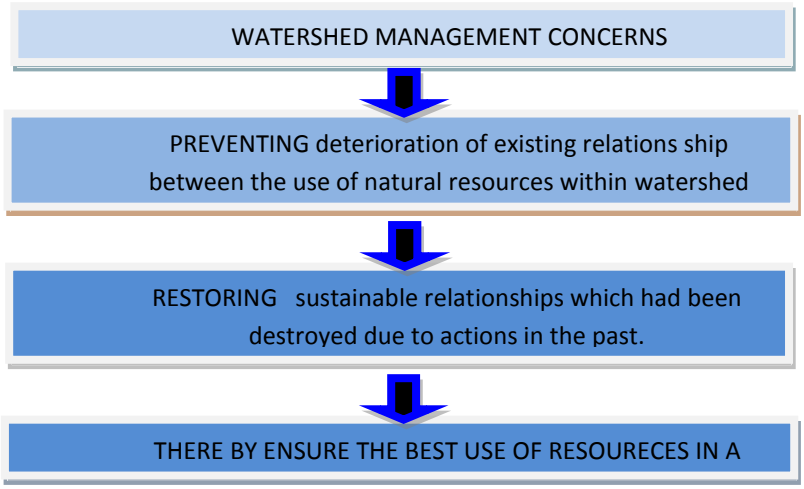
Watershed management is a single window, integrated area development programme. Integrated watershed management cannot perhaps be achieved just by following integration of resources using multidisciplinary approach with the funding or support provided alone under any watershed programme. This may also involve harmonized use of resources available from other ongoing or existing sectoral and development schemes in the area or district. Such resources can be fit together with the watershed programme that will not only help useful convergence of various schemes and programmes for overall development of the area but also in effective monitoring.

Watershed management is the study of relevant character of a watershed aimed at the sustainable distribution of its resources and the process of creating and implementing plans, programmes, and projects to sustain and enhance watershed functions that affect the plant, animal, and human community within watershed boundaries. Features of a watershed that agencies seek to manage include water supply, water quality, drainage, storm water runoff water rights and the overall planning and utilization of watershed.

Watershed management implies the wise use of soil, water, and bio resources in a watershed to obtain optimum production with minimum disturbance to environment. The basic objective of watershed management is to solve the problems of soil and water based on the concept that all the resources are interdependent and must therefore be considered together. Among all the interventions envisaged in watershed management measures, water resource development and management gain primary importance.

A new concept of training and capacity building in integrated watershed management is most important both for field level project staff and officers. Apart from enhancing technical skill of project staff, this would also provide opportunities for community members to develop their capacity to sustain the programme as the future custodians of the programme at the time of withdrawal.

Programme will be sustainable only if it continues to operate after the withdrawal of monetary or technical supports. In Integrated Watershed Management Programme the participation of local community is assured since the different works on private as well importance of "participation" for sustainability in watershed management programmes.



Collective participation of people is very important due to inter dependence of beneficiaries. Transfer of responsibility within their community is a key mandatory for ensuring the sustainability.

2 NEED AND SCOPE FOR WATERSHED DEVELOPMENT

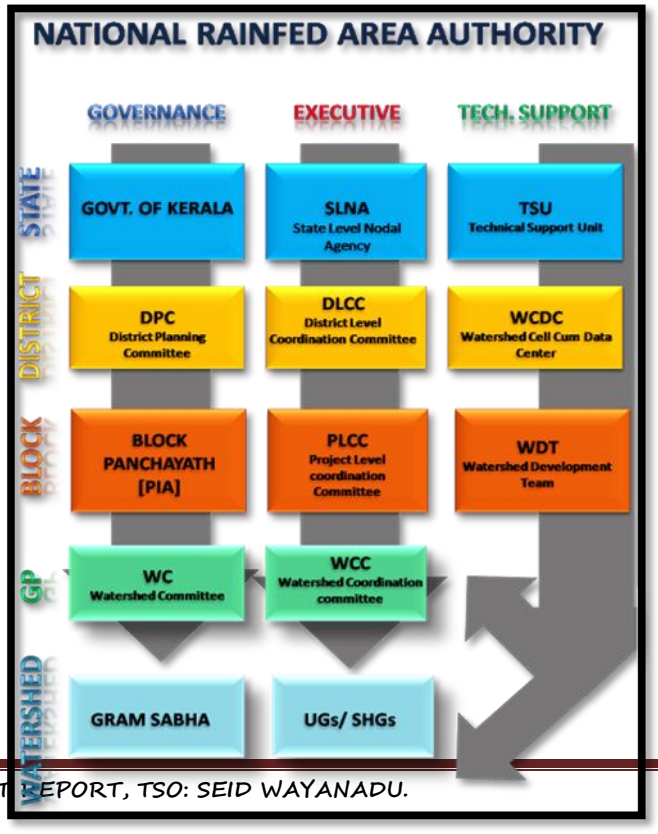
Loss of vegetative cover following by soil degradation through various forms of erosion has resulted into lands which are thirsty in terms of water as well as hungry in terms of soil nutrients. All these regions have predominantly livestock centered farming systems; less biomass for animals not only reduces animal productivity but also deteriorates the ecological balance.

Watershed management has therefore emerged as a new paradigm for planning, development and management of land water and biomass resources with a focus on social and institutional aspects apart from biophysical aspects. Watershed management becomes increasingly important as a way to improve livelihood of people while conserving and regenerating there natural resource. The role and importance of community participation is now accepted. Watershed management programmes therefore should be intimately linked with the people whose socio economic and cultural backgrounds play a decisive role in meaningful planning, implementation and operations of watershed programmes.

2.1 MAIN OBJECTIVES

1. Main objective of IWMP is to preserve and conserve the ecology, restore and develop degraded natural resources by arresting soil loss, improving soil health and soil moisture.
2. Rain water harvesting and recharging of ground water enables multi cropping and introduction of diverse agro based activities help to provide sustainable livelihood to the people residing in watershed area.
3. To promote livestock development, fishery management, and to encourage dairying and marketing of dairy products.
4. Improving the capacity of community to manage common natural resource.
5. Enhancing the efficiency and effectiveness of rain water and runoff use, improve vegetative cover and reduce soil erosion through better rain water management.
6. Conserving as much rain water as possible in the place where it falls and also increasing the ground water level to get water throughout the year and maintaining it for sustainability.
7. Utilizing the available land to its maximum productivity by adopting various suitable measures according to the land capability and without any environmental degradation.

3. ORGANIZATIONAL SET UP



SLNA- State Level Nodal Agency
TSU- Technical Support Unit
DPC- District Planning Committee
DLCC- District Level Coordination Committee
WCDC- Watershed Cell cum Data Centre
PIA- Programme Implementing Agency
BLCC- Block Level Coordination Committee
WDT- Watershed Development Team
WC- Watershed Committee
WCC- Watershed Coordination Committee
UG- User Groups
SHGs- Self Help Groups

4. FUNDING FLOW

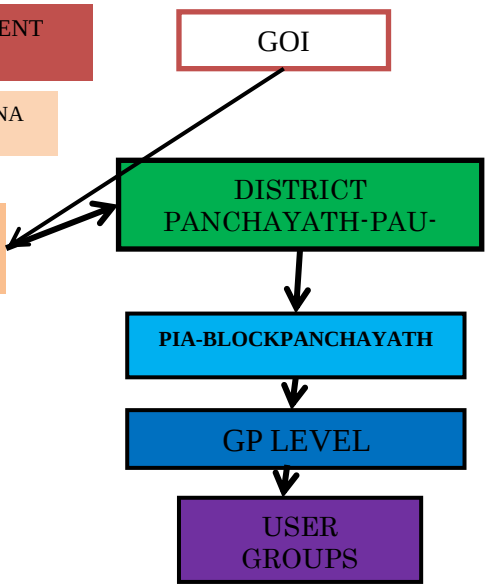
INSTITUTIONAL STRUCTURE

NODAL DEPARTMENT-LOCAL SELF GOVERNMENT DEPARTMENT

PRINCIPAL SECRETARY (LSGD)/CHAIRPERSON OF SLNA

CEO, SLNA COMMISSIONER OF RURAL DEVELOPMENT

FUND FLOW



5. FUNDINGPATTERN

Table.1.1: Funding pattern

Sl. No.	Particulars	Percentage of Fund	Amount(Rs.)
01.	Administration Cost	10.00	36,61,200
02.	Monitoring	1.00	3,66,120
03.	Evaluation	1.00	3,66,120
04.	Entry Point Activities	4.00	14,64,480
05.	Institution & Capacity Building	5.00	18,30,600
06.	DPR	1.00	3,66,120
07.	Watershed Development Works	56.00	2,05,02,720
08.	Livelihood Activities	9.00	32,95,080
09.	Production System & Micro Enterprises	10.00	36,61,200
10.	Consolidation Phase	3.00	10,98,360
	Total	**100%**	**3,66,12,000**

6. APPROACH AND METHODOLOGY OF PREPARING THE DETAILED PROJECT REPORT (DPR)

The project comprises of six micro watersheds. A cluster approach has been followed in the preparation of DPR. The common guidelines provide a flexible framework for the preparation of the Detailed Project Report of the projects under IWMP. The methodology for the preparation of the Detailed Project Report of IWMP-VI Batch-4 of Kasaragode District is outlined below:

Following steps were followed for the preparation of the plan:

- Delineation of watershed map from the Toposheet
- Collection of cadastral map from revenue department
- Boundary identification
- Transect walk
- Identification of EPA activities
- Baseline data collection or survey
- Watershed based PRA
- Identification of public works and field level measurement

- Secondary data collection from various departments
- Consolidation of the data collected from the field
- Preparation of the DPR
- Submission of the DPR to SLNA

6.1. BASELINE SURVEY

A detailed baseline survey was conducted covering all households in the project area. The database thus created is expected to facilitate the assessment of the watershed development programme on the project area during and after the implementation of the project.

- **Boundary Identification in watershed Area**

- **Survey training for survey team members**

To access the impact of any watershed development programme a detailed baseline survey has to be conducted. This acts a benchmark for any intervention during and post implementation of any development programme. A detailed baseline survey was undertaken which involved household census survey, Bio-physical survey and Village level data collection from all villages. Household census survey includes a detailed questionnaire which had been filled by visiting each and every household in the village. This gave in the details of the demographic profile of the village, the literacy percentage, SC/ST population, number of BPL household, cattle population, and net consumption rate in the village, average milk production of the cattle and various schemes running and their benefits.

Secondary Data: The DPR has to be based on a situation analysis of secondary data and information available from various sources. Basic information about the watershed such as History, Climates and rainfall, temperature, location, topography, hydrology, geology, Geomorphology, soils, demographic and socio-economic characteristics of the population, land-use pattern, Cropping pattern and productivity, irrigation, livestock etc. were collected from different sources such as Census of India, development reports, publications of government departments etc.

6.2. PARTICIPATORY RURAL APPRAISAL

The past experience of watershed has given tremendous input to focus on creating accountability of the stakeholders towards the programme. This has created an emphasis to include

all the stakeholder communities and their local and indigenous Technological Knowledge (ITK) while planning for any activity. Participatory approach provides a new path for planning, implementing, and monitoring and post- withdrawal activities with a complete accountability of the stakeholders. Various PRA techniques like resource mapping, social mapping, and season calendars were used to realize the physical and social orientation of the village in general and watershed in specific. These tools put the villagers in simplicity than the complicated questionnaires. Various tools like Matrix ranking, Venn diagram were used to identify various local vegetation (apt for afforestation), Fodders crops, various institutions and their significance in the life of the farmers.

PRA programmes were the significant and enthusiastic exercise to enhance the village level planning of IWMP. These exercises were conducted in all watersheds for the internal support to extending and carry out of the progressive characteristics of IWMP programmes. Its initiation has been helped to internalize the features like people cantered Project through the Participatory approach. It has also envisaged the present needs and future thrusts of society. Other noteworthy tips are the Watershed community has realized their strength and capacity to take up such projects without external supports. The following tools were applied in the process of DPR Preparation.

6.2.1 SIGNIFICANCE OF THE PARTICIPATORY RURAL APPRAISAL (PRA)

The study mainly aims to discover the potentials of the area and local needs of the people. It has also internalized the existing crucial issues and constraints in the watershed area. Few drainage line areas of the watersheds is considered as critical area because of its undulating topography, soil erosion, degradation of the agriculture sector, poor livelihood system and water shortage and unscientific waste management etc. There is only a bare minimum effort to tackle the issues. So IWMP aims to bring up an integrated approach in the restoration of the ecosystem and environment and finally sustainable development in all sectors. Participatory planning, formulation of the strategies, implementation, monitoring and evaluation are the major strategy to be adopted. To initiate the corrective measures we have to mobilize the baseline information from the ground level.

This information is the main source to finalize the intervention strategies. Apart from these peoples participation can be ensured to analyze the ground reality. First hand and secondary data collection will help us the strategy formulation.

6.2.2 SUSTAINABILITY ASSURANCE STRATEGIES

The term sustainability describes the ability of a project to maintain and acceptable level of benefit flows through its life. A programme is sustainable of that continue to operate after

withdrawal of monitoring or technical support of the project Transfer of responsibility of running with in their communities is key requisite for ensuring the sustainability.

6.2.3 STEPS OF PEOPLE'S PARTICIPATION IN WATERSHED DEVELOPMENT PROGRAMME

- Take grass root level approach in planning and mobilizing, peoples contribution for the project
- Discus plans and options with the leaders have influence in the communities
- Discus plans and options with the leaders have influence in the communities
- Appeal to people individual or collective interest
- Organize the stake holders in to a water users association ensure active involvement by making beneficiary contribute their time and money
- Involve all stake holders in the planning, implementation, monitoring and evaluation

6.2.4 BENEFITS OF PARTICIPATORY APPROACH

- Access to indigenous expertise or local knowledge
- Tacking in to conservation needs of different groups and individual in the project proposal
- Awareness of financial or other limitation to prepare a plan suitable to all
- Identification sensitive issues and ways to avoid the harmful effects
- Overcoming conflicts to reach a consciousness on project components

6.2.5 SOME PICTURES OF PREPARATORY PHASE ACTIVITIES:-

GRAMA SABHA PHOTOS


24/10/2013


24/10/2013


26/10/2013


26/10/2013

PARTICIPATORY RURAL APPRAISAL (P R A)

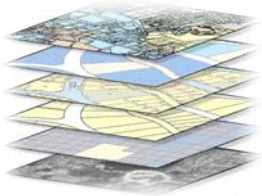

05/12/2013


04/12/2013

6.3. USE OF GIS AND REMOTE SENSING FOR PLANNING

Use of various high science tools has been promoted at various stages of watershed development.

6.3.1 GIS



Geographical Information System (GIS) has been used for prioritization process. Various layer maps were created like Geo-morphological, Soil, Drainage, land use, Ground water Status, Drinking water situation and Slope percent. These were all given proper weight age according to the DoLR specification. This helped in prioritization of various watershed areas.

6.3.2 GPS

Global Positioning System (GPS) has been used for boundary identification and the major bench mark of the watersheds area. After using the GPS, it can connect to Google earth and we can derive data which is taken from the field.

6.3.3 REMOTE SENSING IMAGERIES AND TOPOSHEET

Remote sensing imageries are used for the identification of physical and antropogenetic changes in the watershed areas, the temporal changes can be identified with the help of Toposheet and imageries.

6.3.4. PLANNING

An action plan matrix was been formulated by taking into account various features like the slope percent, soil depth, soil texture, soil erosion in the area for wasteland, forest land and agricultural land. Global positioning System (GPS) was used to identify each and every water conservation structures available in the project area. This was used to create a map.

6.3.5. HYDROLOGICAL MODELLING

Hydrology modeling technique was used for locating drainage, stream length, flow direction, sink, and Flow accumulation. This model overlaid over cadastral map to calculate the catchment area of each structures like the check dam etc. This has helped to remove the human error which generally occurs while calculating the catchment area of a check dam.

6.3.6. DETAILS OF SCIENTIFIC PLANNING AND INPUTS IN IWMP PROJECTS

Table.1.2.Details of scientific planning and inputs in IWMP projects

List of scientific criteria/ inputs used	Whether scientific criteria was used
(A)Planning	
Cluster approach	Yes
Whether technical back-stopping for the project has been arranged? If yes, mention the name of the Institute.	Yes
Baseline survey	Yes
Hydro-geological survey	Yes
Participatory Net Planning (PNP)	Yes
Remote sensing data-especially soil/ crop/run-off cover	
Ridge to Valley treatment	Yes
Online IT connectivity between Project and DRDA cell/ZP	Yes
Availability of GIS layers	
1. Cadastral map	Yes
2. Village boundaries	Yes
3. Drainage	Yes
4. Soil (Soil nutrient status)	Yes
5. Land use	Yes
6. Ground water status	Yes
7. Watershed boundaries	Yes
8. Activity	Yes

CHAPTER –II

GENERAL DESCRIPTION OF THE PROJECT AREA

1. BRIEF HISTORY

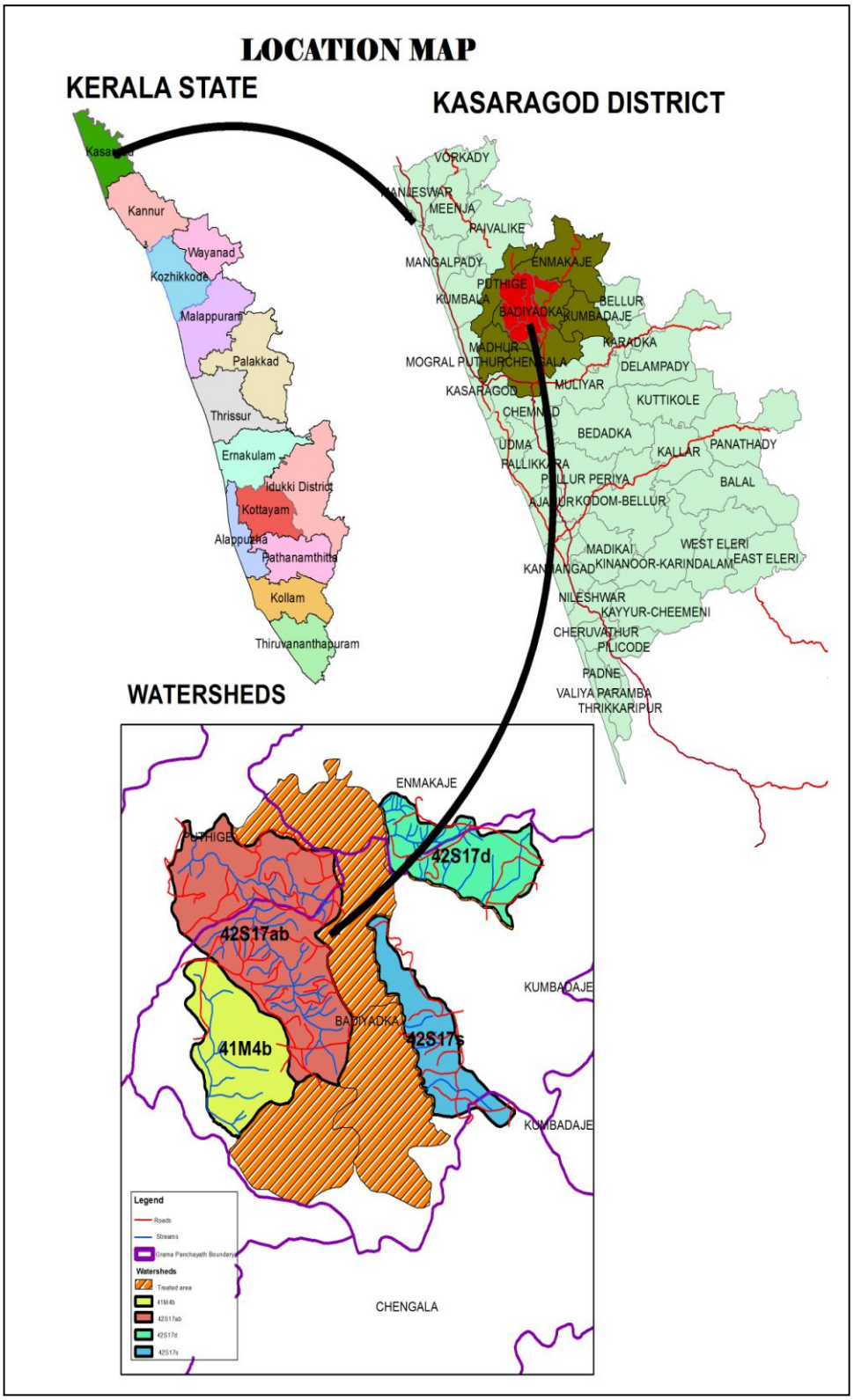
The project is planned to be carried out in the four v watersheds existing in the Panchayath of Puthige, Enmakaje, Badiadka, and Chengala in the Kasaragod Block Panchayath. The major watersheds in this Project coming under these Panchayaths are Perdala (42S17s), Chowkar (41M4b), Yelkana (42S17d) and Kilingar (42S17ab).

LOCATION AND EXTENT

The Project area is located in the Northern part of the Kasaragod district .The Cluster area is situated between 12°33'18.09"N 12°38'30.131"N Latitude and 75°0'54.675"E and 75°5'34.002"E Longitude . The total extent of the cluster is 2057 hectares. The cluster area bounded on the North Puthige Grama Panchayath ,South Chengala Grama Panchayath, in West Madhur and Puthige Grama Panchayaths and East Enmakaje and Kumbadaje Grama Panchayath

LOCATION MAP – KASARAGODE-BATCH 4-CLUSTER AREA

MAP.1.LOCATION MAP IWMP-BATCH-4 KASARAGODE



3. CRITERIA AND WEIGHTAGE FOR SELECTION

Table.2.1.Criteria and weight age for selection

SL No.	Criteria for selection of watershed	Maximum score	Range and scores			
1	Poverty index (% of poor to population)	10	Above 80%(10)	80 to 50 % (7.5)	50 to 20 % (5)	Below 20 % (2.5)
2	%SCST population	10	More than 40%(10)	20 to 40 % (5)	Less than 20 % (3)	
3	Actual wages	5	Actual wages are significantly lower than minimum wages(5)	Actual wages are equal to or higher than minimum wages (0)		
4	%of small and marginal farmers	10	More than 80%(10)	50 to 80 % (5)	Less than 50 % (3)	
5	Groundwater status	5	Over exploited(5)	Critical (3)	Sub critical (2)	Safe (0)
6	Moisture index/DPAP/DDP block	15	-66.7 &below(15)DDP Block	-33.3 to -66.6 (10) DPAP Block	0 to -33.2 (0) Non DPAP/ DDP Block	
7	Area under rain fed agriculture	15	More than 90%(15)	80 to 90 % (10)	70 to 80% (5)	Above 70 % (Reject)
8	Drinking water	10	No source(10)	Problematic village (7.5)	Partially covered (5)	Fully covered (0)
9	Degraded land	15	High-above 20%(15)	Medium – 10 to 20 % (10)	Low- less than 10 % of TGA (5)	
10	Productivity potential of the land	15	Lands with low production &where productivity can be significally enhanced with reasonable efforts(15)	Lands with moderate production & where productivity can be enhanced with reasonable efforts (10)	Lands with high production & where productivity can be marginally enhanced with reasonable efforts (5)	

11	Contiguity to another watershed that has already been developed/treated	10	Contiguous to previously treated watershed &contiguity within the micro watersheds in the project(10)	Contiguity within the micro watersheds in the project but non contiguous to previously treated watershed (5)	Neither contiguous to previously treated watershed nor contiguity within the micro watersheds in the project (0)	
12	Cluster approach in the plains(more than one contiguous micro watersheds in the project)	0	Above 6 micro watersheds in cluster(15)	4 to 6 micro watersheds in cluster (10)	2 to 4 micro watersheds in cluster (5)	
13	Cluster approach in the hills(more than one contiguous micro watersheds in the project)	15	Above 5 micro watersheds in the cluster(15)	3 to 5 micro watersheds in cluster (10)	2 to 3 micro watersheds in cluster (5)	

(Source: IWMP PPR, Kerala)

4. PHYSIOGRAPHY

There are streams running between the mountain slopes enriching the water resource of the watershed.. Though the watershed receives moderate annual rain fall, some regions face scarcity of water .More than half of the watershed area is comprised of hills and mountains where as major share of the remaining land is household premises. Pepper, Pepper, banana, tapioca, coconut, Areacanut and vegetables are the other major crops cultivated.

4.1. RELIEF DATA IN THE PROJECT AREA

Table.2.2.Relief of the Project area

Relief	Area in Ha	%
< 20 Meters	86.44	4.2
20 - 60 Meters	596.05	29.0
60 - 100 Meters	803.39	39.0
100 - 200 Meters	571.49	27.8
Total	2057	100

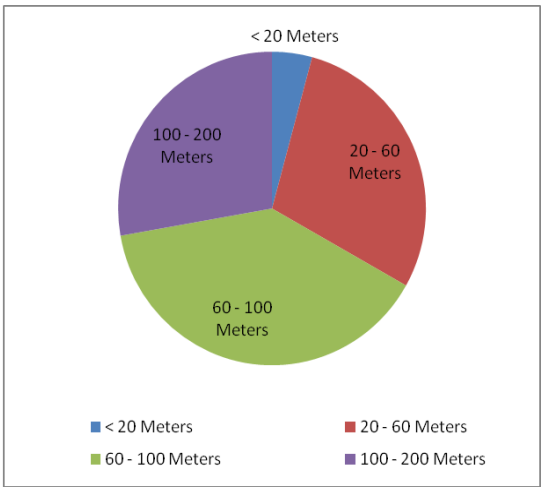
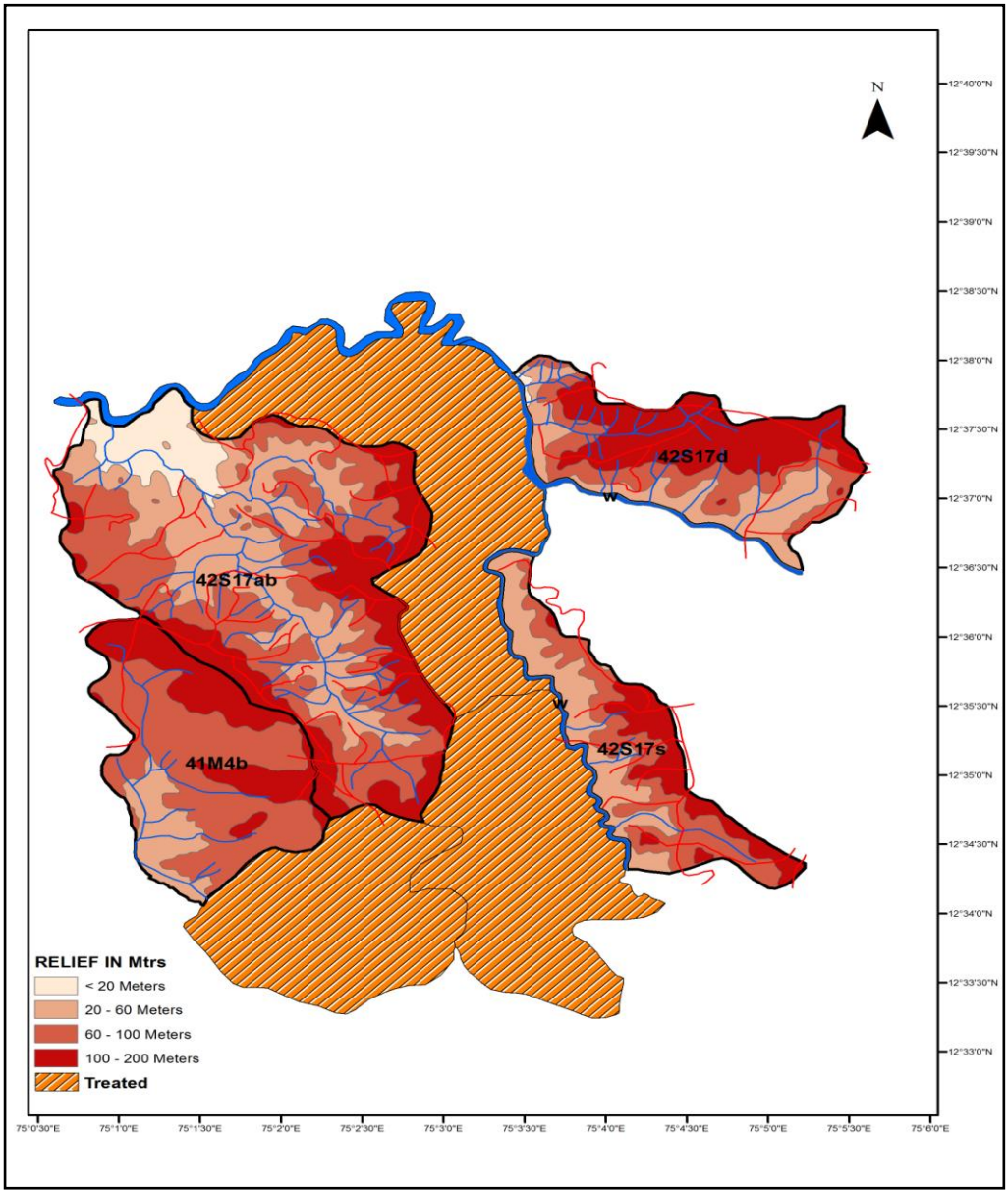


Figure.2.1: Relief of the Project area.

RELIEF MAP OF THE PROJECT AREA –IWMP-VI, BATCH-4 KASARAGODE

MAP 2, RELIEF OF THE PROJECT AREA



4.2. DRAINAGE (Major drains in the project area)

Table.2.3.Major drains in the project area.

Perdala river	Athippalla-Beejanthadukka thodu
	Kollampara-Chaliyathadka thodu
	Koovathodi thodu
	Karambila thodu-Peradala thodu
	Kattathangadi thodu
	Kedila gudda thodu
	Erniyarpu thodu
	Korathikundu thodu
	Kunjarpara thodu
	Chowkar thodu
	Pallathadka thodu
	Poovalathadka thodu(Belagadi)
	Urumi thodu
	Aramana- Makkikkana thodu

Source: base line survey TSO)

4.2.1. Drainage and Density

Table.2.4: Drainage and Density

Watershed code	Streams Length	Area km2	Density	Main stream length in km	Perimeter
41M4b	9.96	596	0.01	2.38	7.29
42S17ab	33.38	420	0.079	7.10	18.39
42S17d	14.9	567	0.02	2.29	11.65
42S17s	3.70	474	0.007	1.81	13.42

4.3 SLOPE

Majority of the area is Strong slope (14.79hectares) which is 0.7 % of the total area followed by moderately steep to steep sloping area covered 487 hectares which is 23.7%, moderate Slope area covered 611hectares which is 29.7% , gentle slope covered 943.78 hectares which is 45.9% of area of the total.

Table2.5: Slope of the Project area.

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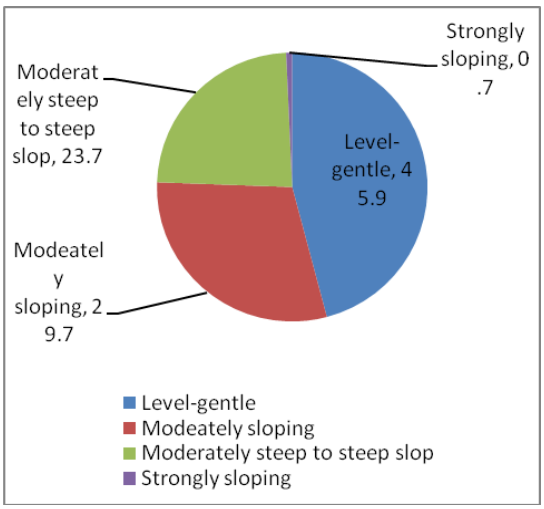
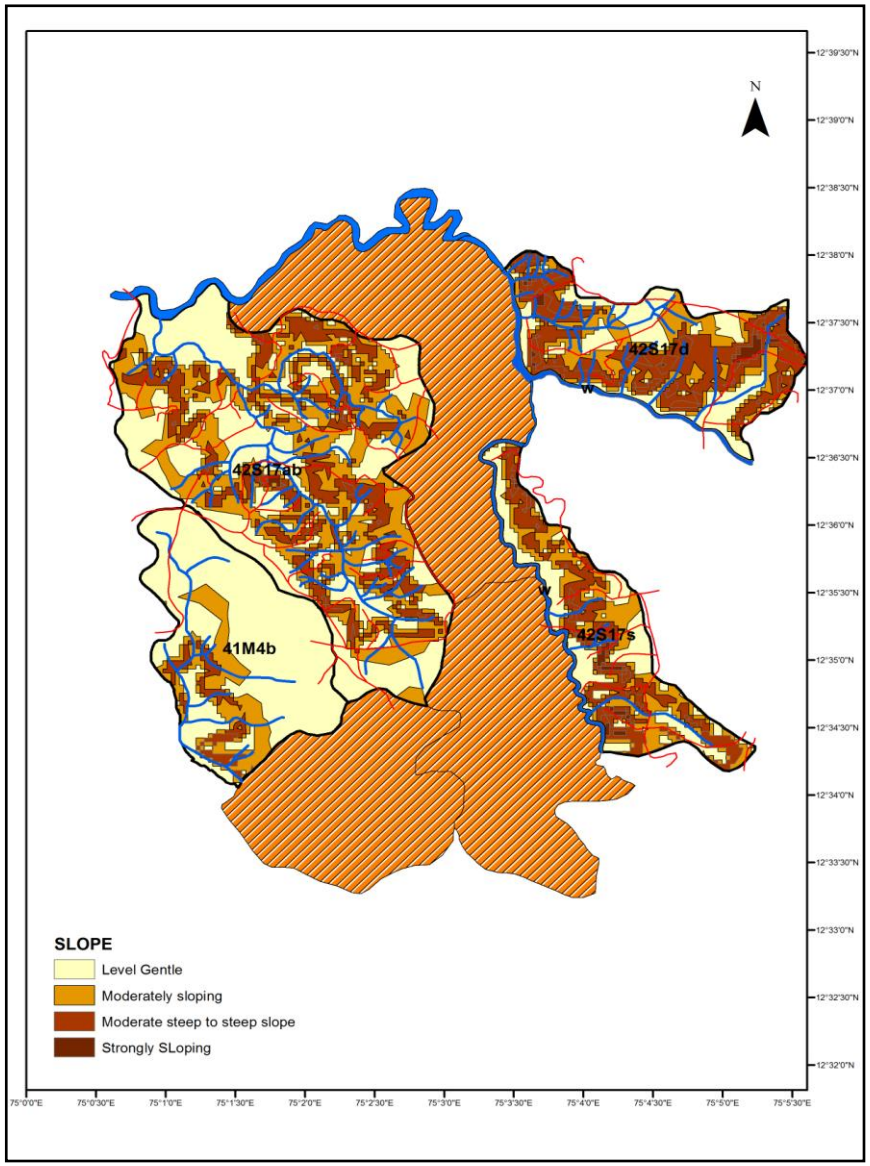
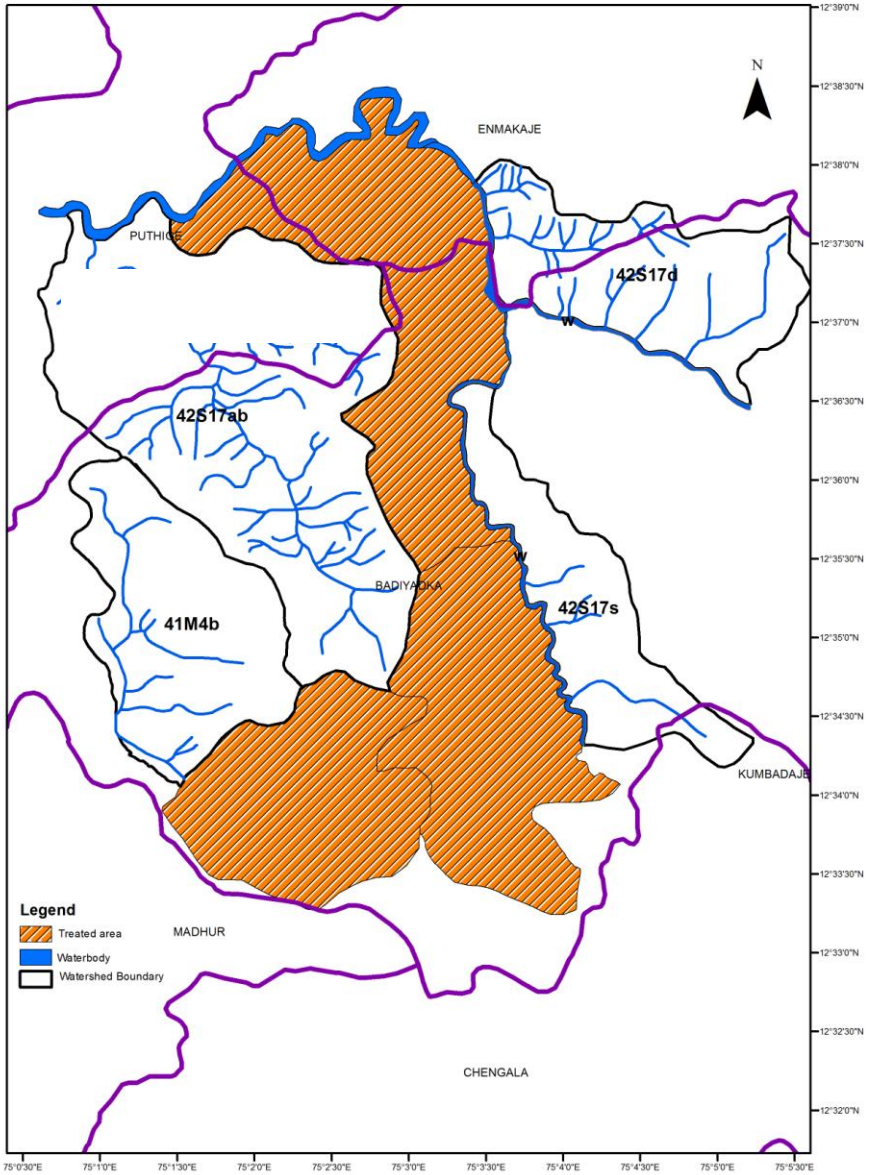
Slope	Area In Ha	in %
Level-gentle	943.78	45.9
Modeately sloping	611.03	29.7
Moderately steep to steep slop	487.78	23.7
Strongly sloping	14.79	0.7
Total	2057	100

Figure2.2: Slope of the project area





Map.3: Slope of the project area



Map .4: Drainage details of the project area.

5. CLIMATE

The watershed experiences an average annual rainfall of 2809mm , of which 1785mm is received during the South-West Monsoon (June to August) and 704mm during the North –East Monsoon (September to November)

5.1. TEMPERATURE

The maximum,, minimum and mean temperature of the watershed area 31.00 C, 240 C and 27.50 C respectively. The maximum temperature is experienced during the month of March and minimum during the month of December. The mean humidity of the watershed is 83% at 8-30hrs and 75 % at 17-30hrs.

5.2 RAINFALL

Rainfall data obtained from the rain gauge station located in Kasaragode for the period from 2003 to 2012 indicates that this area receives annual average rainfall of 4259 mm. During this period2005 was the wettest year with annual rainfall of 6882mm and the year 2012 received the lowest annual precipitation of 2749 mm. The monthly average rainfall varies from 229 mm in the month of January to 573 mm in the month of July. It is evident from the Table that the area receives rainfall both during south west and north east monsoons, however all the high rainfall years are supported by high rainfall in the month of July.

5.3 MONTHLY RAINFALL DISTRIBUTION (2003-2012)

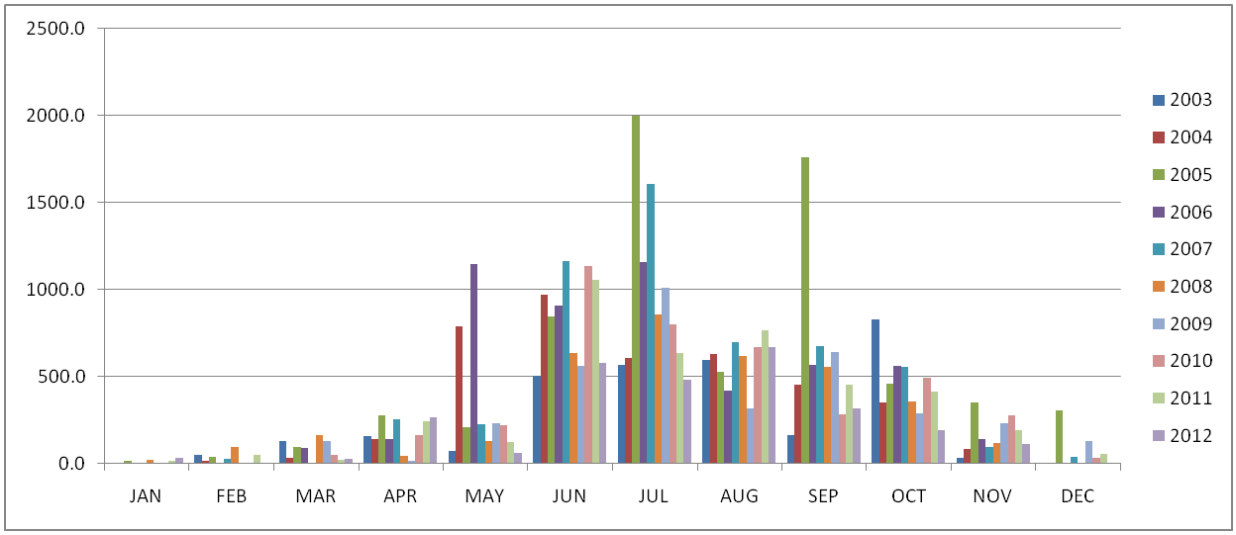


Figure.2.3. Monthly rainfall distribution (Source: Weather Station Kasaragode.)

Table.2.6.Monthly rainfall in mm

STATION : KASARAGODE												
MONTHLY TOTAL RAINFALL IN (MM)												
YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2003	0.0	52.4	128.0	161.0	76.0	506.0	568.0	593.0	167.0	828.0	35.5	0.0
2004	0.0	14.0	33.0	138.0	787.7	966.0	604.0	623.7	452.0	348.7	82.0	2.0
2005	19.3	42.0	97.0	280.0	208.3	844.8	1995.2	525.8	1759.4	457.0	349.0	305.0
2006	1.0	0.0	91.0	140.0	1144.0	906.0	1156.0	422.0	569.3	564.0	144.0	0.0
2007	0.0	28.3	1.0	254.0	227.0	1162.0	1606.0	700.0	677.0	555.0	95.2	40.0
2008	20.0	96.0	166.0	44.0	131.0	634.0	858.5	617.0	556.5	358.0	120.0	0.0
2009	7.0	0.0	129.0	15.0	234.0	562.0	1011.0	318.0	638.0	290.0	234.0	130.0
2010	5.0	0.0	53.0	161.8	218.5	1131.0	800.0	667.0	282.0	492.2	280.0	31.0
2011	15.0	51.0	25.0	241.0	127.2	1055.0	632.5	763.0	453.0	411.0	190.0	58.0
2012	32.0	0.0	30.0	268.0	65.0	579.0	482.0	671.0	316.0	191.0	115.6	0.0

Source: Kasaragode weather station

6. GEOMORPHOLGY

The below table giving the geomorphologic divisions of the project area.81 % of the area is covered by lower plateau and 2.88 % of the area is flood plain

Table2.7.Geomorpholgy of the project area

Geomorphology	Area	%
Flood Plain	59.16	2.88
Lower Plateau [Lateritic]	1677.88	81.55
River Channel	20.68	1.01
Valley	299.66	14.57
Total	2057	100

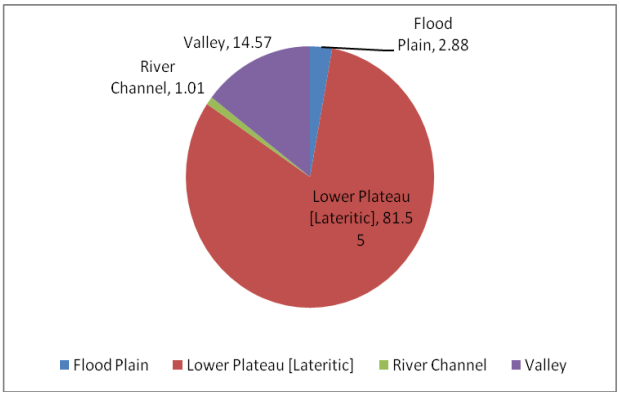
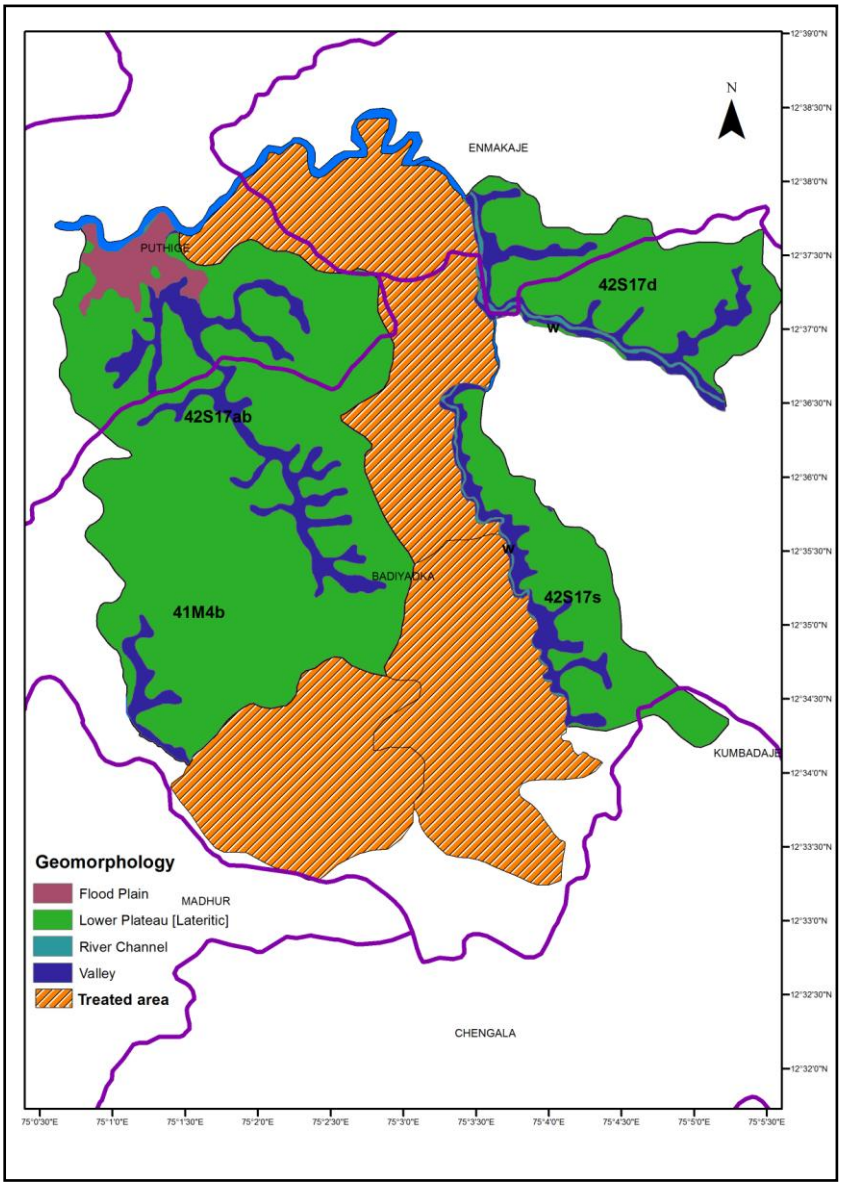


Figure.2.4.Geomorphology of the project area



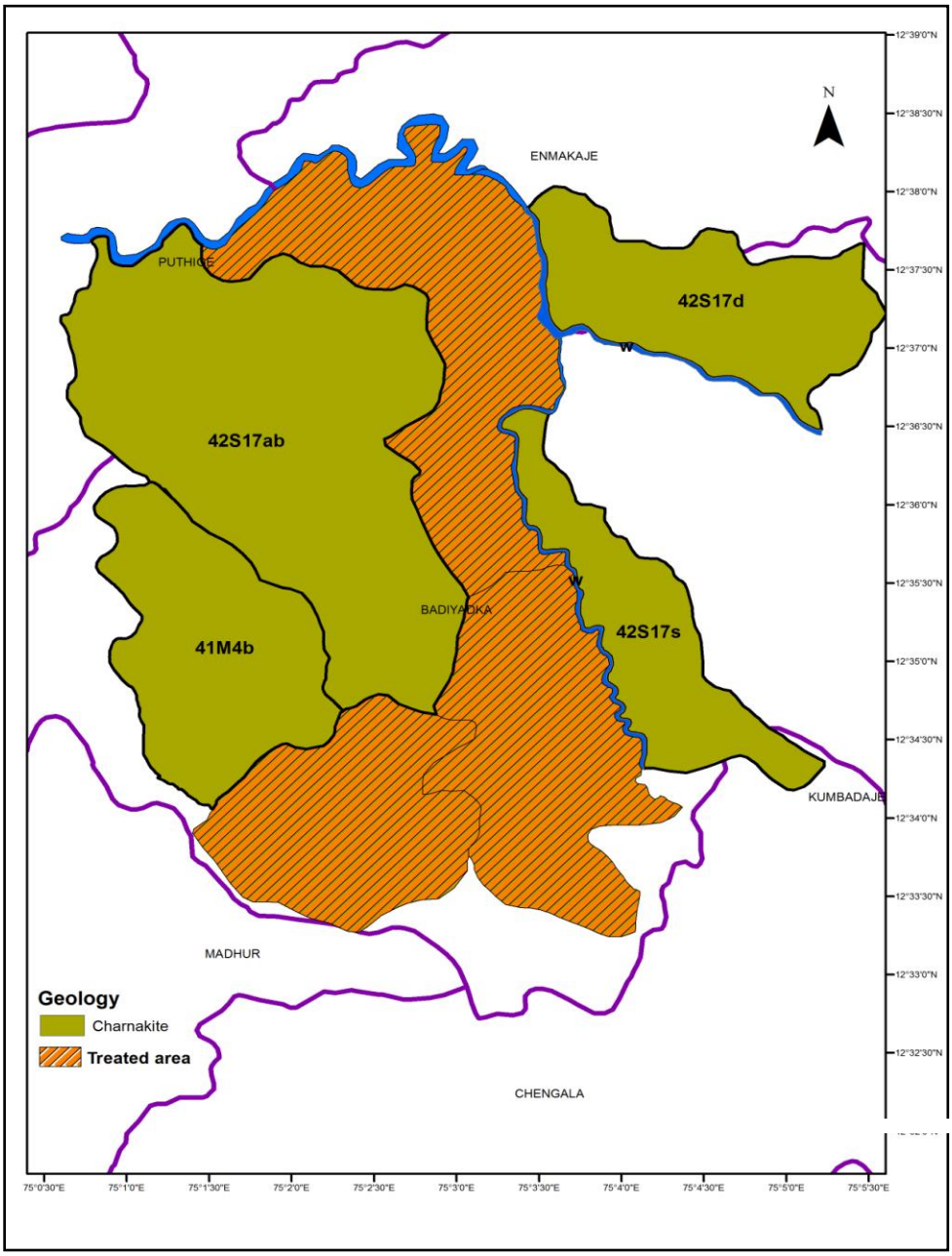
Map.5: Geomorphology of the project area.

7. GEOLOGY

Archaean Age and all area of the project is covered by charnakite rock Major part of the cluster area underlain by Charnakite rocks of. Table showing the distribution of geology in the seven watersheds are given below:

Table .2.8: Geology

GEO0LOGY	AREA HA	%
Charnakite	2057	100



Map.6: Geology

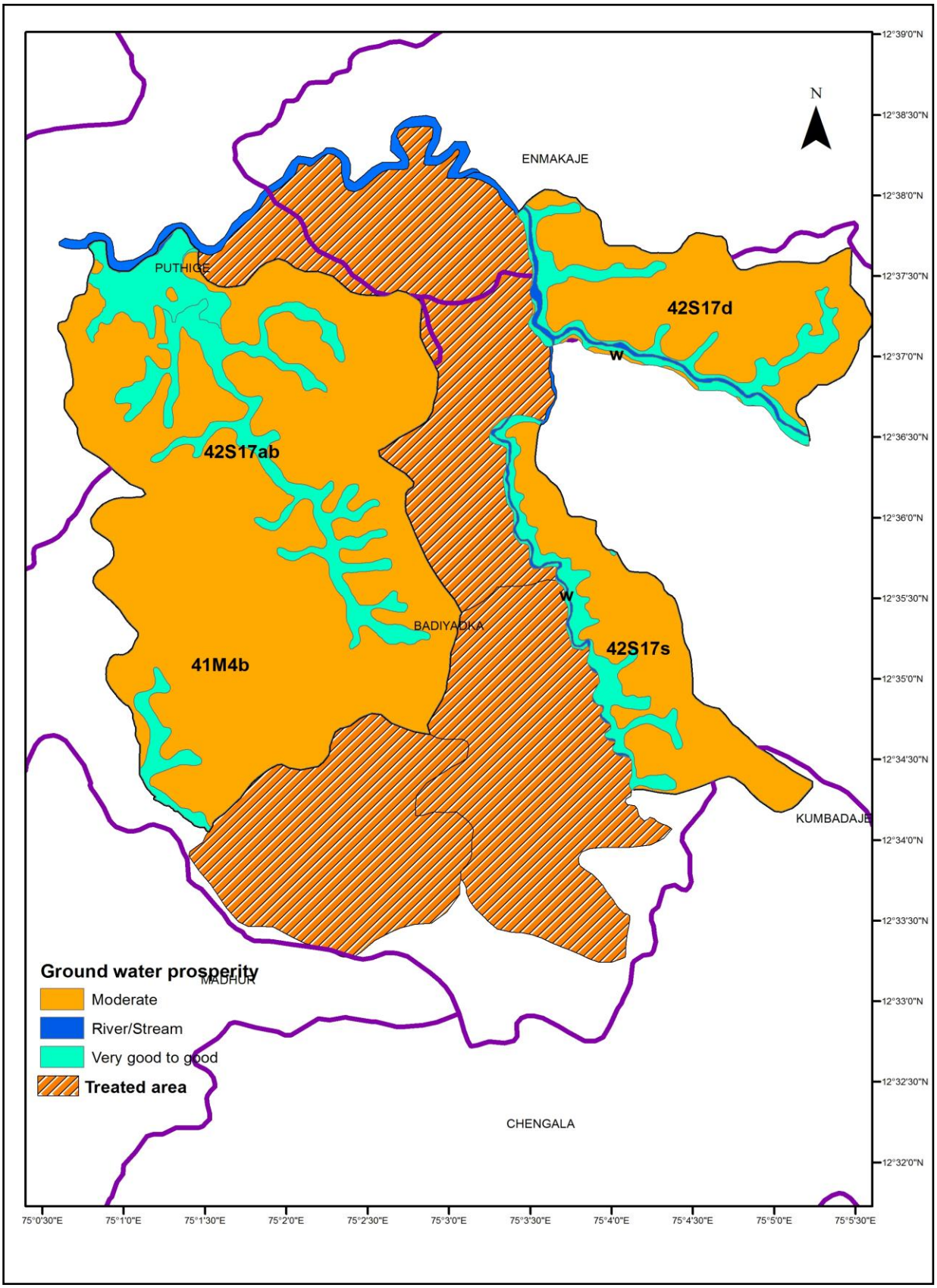
8. GROUND WATER

Ground Water occurs under unconfined; semi confined and confined perched aquifer conditions along the foliation planes and joints and mainly along the horizontal to low dipping fracture zones and vertical to sub vertical deep seated fractures in the crystalline rocks. The 86.09% portion of the project area is poor ground water prospered region. Remaining 12.22 % is the very good ground water prospered region. The pore space present in the weathered rocks, lithomarge, Laterite and alluvium from potential phreatic aquifers in the area. The meters below ground level of Upland in summer season is 11.2 and in Monsoon 8.23, Mid land 6.36 in Summer and 5.20 in Monsoon and the low land area in summer 4.36 mbgl and in Monsoon 2.85 mbgl (Meters Below Ground Level).

Table 2.9.GROUND WATER CONDITIONS OF THE PROJECT AREA

Ground water prosperity	Area in Ha	%
Moderate	1677.88	81.6
River/Stream	20.68	1.0
Very good to good	358.82	17.4
Total	2057	100.0

(Source: Ground water Dept.)



Map.7: Ground water prosperity

9. WATER RESOURCES

Table 2. 10. Water Resources

Sl no.	WATERSHED	Drinking Water Sources (in numbers)				
		Private well	Public well	Bore well	Public tap	Water connection
1	Perdala	135	4	125	12	Nil
2.	Yelkana	64	2	49	7	Nil
3.	Chowkar	550	4	96	3	Nil
4.	Kilingar	334	4	905	11	Nil
	GRAND TOTAL	1083	14	1175	33	0

(Source: base line survey TSO)

10. IRRIGATION DETAILS

Table 2. 11. Water source for irrigation details.

WATERSHED	SOURCE									
	OPEN WELL		TUBE WELL		PONDS		STREAMLETS		TOTAL	
	Nos	Area irrigated(ha)	Nos	Area irrigated(ha)	Nos	Area irrigated(ha)	Nos	Area irrigated(ha)	Nos	Area irrigated(ha)
CHOWKAR	13	14	96	75	8	9.2	16	22	133	120.2
KILINGAR	18	25	125	130	11	16	7	14	161	185
YELKANA	9	11.5	23	16	12	18	5	12	49	57.5
PERDALA	14	16	8	26	4	42	5	10	31	94
TOTAL	54	66.5	252	247	35	85.2	33	58	374	456.7

(Source: base line survey TSO)

11. SOCIO-ECONOMIC CONDITION

Majority of the people here are farmers and coolies, and those who work on small scale industries are also seen. Minority of the population are NRI`s, found in small numbers. Along with them, there are a few Govt. employees and self-employed. Most of the women are working under the MGNREGS. In general, the community is economically backward. The new generation is trying to acquire good Education and is trying to get jobs in the government sector as well as abroad.

11.1 DEMOGRAPHIC PROFILE OF THE PROJECT AREA

Table 2.12.Demographic profile of the project area

WATERSHED	FAMILY	General	OBC	SC	ST	POPULATION TOTAL		APL	BPL
						M	FM		
PERDALA	192	105	43	23	14	402	397	116	76
CHOWKAR	688	222	349	13	17	1387	1294	406	282
YELKANA	186	60	72	23	40	479	428	107	79
KILINGAR	1597	329	656	233	131	4980	4256	989	608

11.2 INFRASTRUCTURE FACILITIES IN THE PROJECT AREA

Table 2.13.Infrastructure facilities in the project area

SL NO.	INFRASTRUCTURE	TOTAL	ELECTRICITY	DRINKING WATER FACILITY	TOILET
1	ANGAN WADIES	12	YES	YES	YES
2	LP SCHOOL	7	YES	YES	YES
3	UP SCHOOL	2	YES	YES	YES
4	HIGH SCHOOL	1	YES	YES	YES
5	PHC	3	YES	YES	YES
6	POST OFFICE	1	YES	NO	YES
7	RATION SHOP	3	YES	NO	NO
8	CHURCH	13	YES	YES	NO
9	TEMPLE	8	YES	YES	YES
10	MOSQUE	1	YES	YES	YES

11	PLAY GROUND	1	NO	NO	NO
12	CLUBS	1	YES	NO	NO
13	COMMUNITY HALL	2	YES	YES	YES
14	BANKS	2	YES	YES	YES
15	BRIDGE	3	YES	YES	YES

(Source: base line survey TSO)

11.3 LAND HOLDING SIZE

TABLE 2.14 LAND HOLDING SIZE

WATERSHED	0-5 Cents	5-50 Cents	50-250 Cents	250-500 Cents	Above 500 cents	TOTAL
Perdala	28	106	52	5	1	192
Chowkar	119	362	174	31	3	688
Yelkana	31	80	57	16	2	186
Kilingar	363	543	557	65	69	1597

(Source: base line survey TSO)

11.4 TRANSPORT AND COMMUNICATION

Roads are the major means of transport. Nearly 90% of the roads are motorable. Major roads are road etc. KSRTC and the private buses are the main means of transportation. But people depend up Badiyadka-Yelkana road Pallathadka-Ethadka road, Maanya -Neerchal road, Manjivalappu-Kanyapady road, Neerchal-Manassinappara road, etc.

12. AGRICULTURE AND PRESENT LAND USE

The agriculture sector of this cluster area has been concededly weakened due to lack of labourers, decrease in price of agricultural products and increase in wages. Another problem is the lack of a market to sell these products. However Paddy, coconut, Areacanut, pepper, banana, tapioca and vegetables are cultivated here.

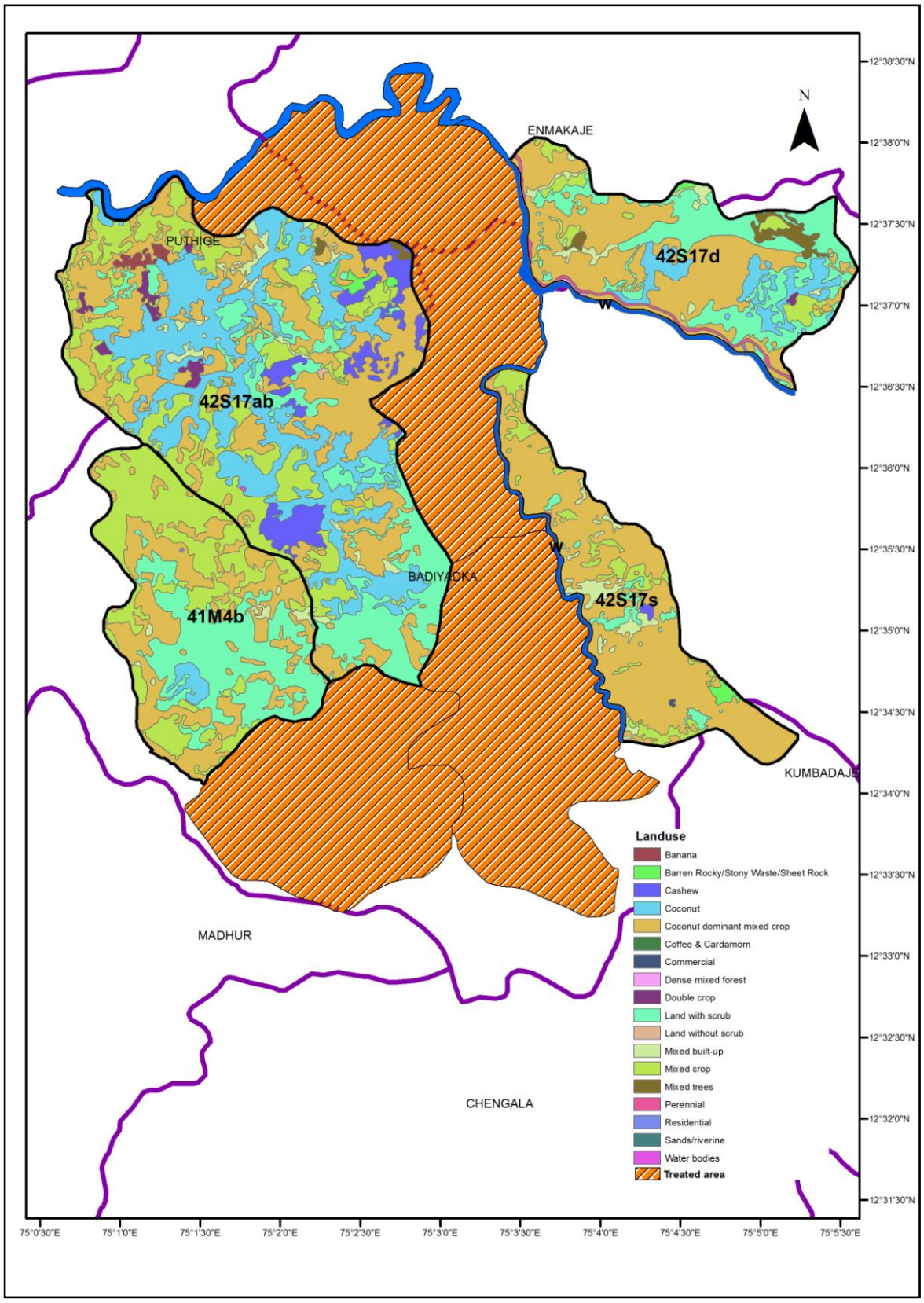
12.1 LAND USE

Table 2. 15. Land Use Details of the Project Area

Land use	Area in Ha	in %
Sands/riverine	0.37	0.017834
Double crop	10.52	0.511509
Coconut dominant mixed crop	828.19	40.25481
Mixed crop	374.16	18.1862
Barren Rocky/Stony Waste/Sheet Rock	9.36	0.455085
Banana	5.41	0.263055
Dense mixed forest	2.63	0.127653
Land without scrub	0.65	0.031555
Land with scrub	379.59	18.45007
Coconut	297.01	14.43643
Residential	0.69	0.033751
Mixed built-up	51.55	2.505641
Cashew	64.16	3.118635
Mixed trees	14.97	0.72759
Coffee & Cardamom	0.33	0.015868
Water bodies	0.16	0.00763
Commercial	0.31	0.014887
Perennial	17.32	0.841801
Total	2057	100

(Source: Kerala state Land Use Board)

Map 8 .Land use of the project area



12.2. MAJOR CROPS OF PROJECT AREA

Table 2.16.Major Crops

Name of Watersheds	CROPS (in Ha)					
	Paddy	Areacanut	Mixed crop	Rubber	Cashew	Total
Chowkar		13.36	126.96	166.95	247.96	555.23
Kilingar	97.97		527.43	206.48	305.3	1039.2
Yelkana	46.31		306.35	50.28		356.63
Perdala			210.26	100.39		310.65
Total	144.28	13.36	1171	524.1	553.26	2261.71

(Source: Agri. Dept.

13. COMMUNITY ORGANIZATIONS

Table 2.17. DETAILS OF SELF HELP GROUPS AND NEIGHBOUR HOOD GROUPS

WATERSHED NAME	No of SHGs/UGs	People registered under MGNREGS	No of federations of SHGs	No of JLGs
PERDALA	27	54	Nil	37
YELKANA	13	55	Nil	9
CHOWKAR	19	27	Nil	10
KILINGAR	38	290	Nil	8
TOTAL	97	426		64

(Source: base line survey TSO)

14. ANIMAL HUSBANDRY

Table 2.18 Animal Husbandry and Dairying

WATERSHED	COW	GOAT	POULTRY	OTHERS
PERDALA	155	25	133	18
CHOWKAR	136	11	194	22
YELKANA	142	20	170	11
KILINGAR	823	38	1228	43

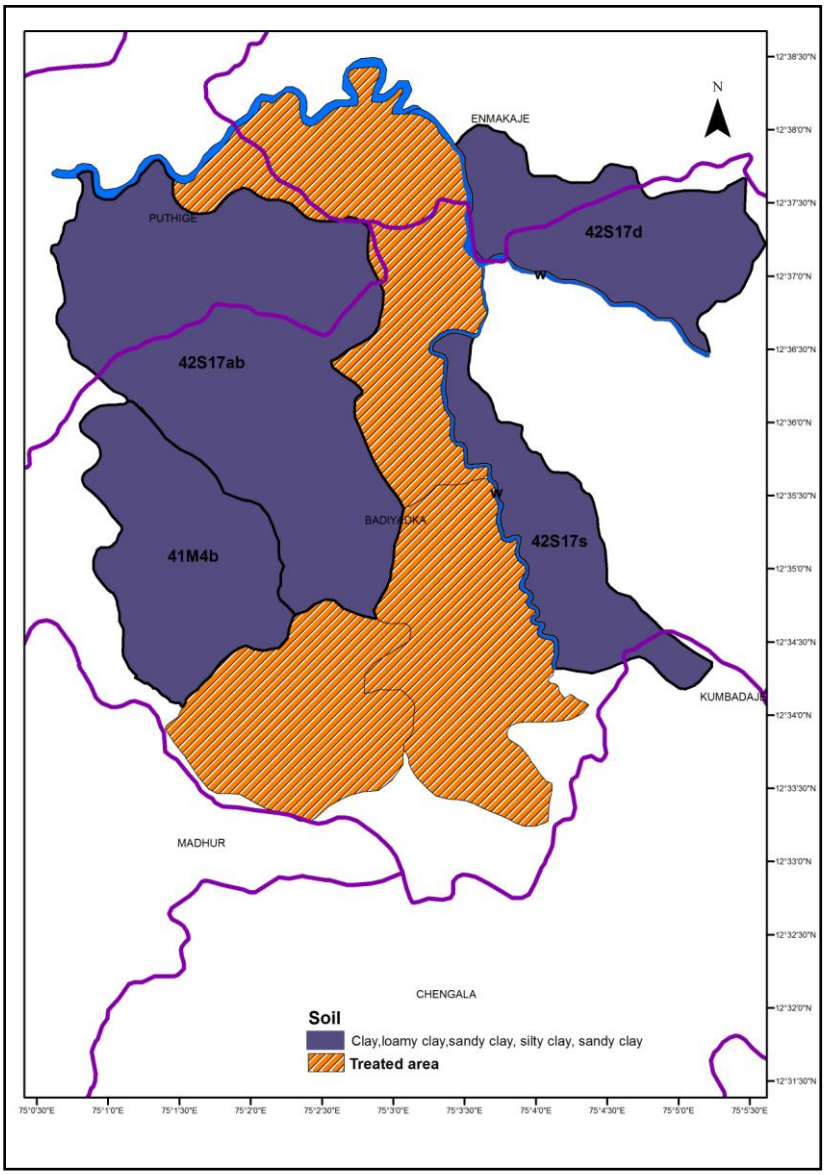
(Source: base line survey TSO)

15. SOILS

Soil is the basic natural resource that supports all life on earth's surface. Most of the Cluster area is covered by laterite soil. The table below giving the soil texture, depth, Erosion status and drainage.

Table2.19: Characteristics of soil

Characteristic	Upper Region	Middle Region	Lowe Region
Texture	Loam gravelly loam, clay, gravelly clay.	Loam gravelly loam, clay, gravelly clay with moderate surface gravelliness.	Sandy, clayey
Depth	Deep(100-150cm) to very deep (>150cm)	Deep(100-150 cm) to very deep(>150cm)	very deep(>150cm)
Drainage	Well drained	Moderately well drained to well drained	Very poorly drained to moderately well drained
Erosion status	Moderate to severe	Slight to moderate	Slight



Map.9 Soil Association

16. DETAILS OF WATERSHEDS COMING UNDER THE PROJECT AREA

Table.2.20.Basic information of the project area

State	District	Taluk	Block	Project	Micro Watersheds			Grama Panchayath	Wards Included	Total Area	Treatable Area	Project Amount.
					Name	Code No	Area		Partial			
Kerala	Kasaragode	Kasaragode	Kasaragode	IWMP –VI / Kasaragode –Batch-4,	Perdala	42S17s	428	Badiadka & Chengala	4, 6, 10, 11, 12, 13	3051 Ha	3051 Ha	Rs.3,66,12,000/-
					Chowkar	41M4b	629	Badiadka	7, 10, 11, 16& a little portions of ward no.13&14			
					Yelkana	42S17d	543	Badiadka & Enmakaje	Badiadka 4, 5, 6, 7, &Enmakaje, 12,13.			
					Kilingar	42S17ab	1451	Badiadka	3,6,7,12.			

17. INSTITUTION BUILDING AND PROJECT MANAGEMENT

The watershed development project has vast potential and scope to empower socially weekend sections of the community. Considering the requirements and priorities of these sections, particular activities were considered to reduce their drudgery. This involved in a skills up gradation programme. People's organizations hold the key in ensuring the exact integration between sustainable development and social equity. Such organizations have representations from socially backward communities and women with separate special interest groups. Within group interactions across group interactions and representation in village level institutions provide a platform for the disadvantaged groups to become a part of mainstream development. It is also essential to note that it was properly ensured that these groups obtain equal opportunities to access the resources developed at the community level.

In order to implement effectively, under the umbrella of State Level Nodal Agency

(SLNA) various institutional mechanisms are formed. They are:

Watershed Cell cum Data Centre (WCDC)

Project Implementing Agency (PIA)

Watershed Development Team (WDT)

Watershed Committee (WC)

Neighborhood Groups (NHG)

Self Help Groups (SHGs)

User Groups (UGs)

1. STATE LEVEL NODAL AGENCY

A committed State Level Nodal Agency (SLNA) is constituted by the State Government with Agricultural Production Commissioner as the Chairman and Rural Development Commissioner as the CEO. SLNA is having an independent bank account. The SLNA allow watershed projects for the State on the basis of approved state perspective and strategic plan as per procedure in vogue and manage all watershed projects in the state within the parameters set out in these Guidelines.

2. WATERSHED CELL CUM DATA CENTER (WCDC)

In district, a separate dedicated unit, called the Watershed Cell cum Data Centre (WCDC) is established, which oversees the implementation of watershed programme in the district. WCDC has a separate independent account for this purpose. WCDC function in close co-ordination with the District Planning Committee. WCDC is a separate unit with full time Project Manager and 3 to 4 subject matter specialists on Agriculture/ Water Management / Social Mobilization/ Management & Accounts appointed on the basis of their qualification and expertise on contract/deputation/transfer etc.

3. INSTITUTION BUILDING AT DISTRICT LEVEL

Table.2.21: Institution building at District level

	Designation
Chairman	District Panchayath President
Member Secretary	District Collector
Convener	Project manager IWMP
Joint-Programme Co-ordinator	Members
District Planning office	Members
District Soil survey Officer	Members
District Soil conservation officer	Members
Deputy Director, Fisheries	Members
Executive engineer, Minor Irrigation/LSGD.KWA	Members
Divisional forest officers	Members
District Officer ,GWD	Members
Rep. KRWSA	Members
District mission co-ordinator ,Kudumbasree	Members
District Co-ordinator, IKM	Members
District Co-ordinator ,Horticulture Mission	Members
Other IWMP Officers	Members

4. PROJECT IMPLEMENTING AGENCIES

The Block Panchayath having the major area under the programme is selected as the Project Implementing Agency (PIA) by the State Level Nodal Agency (SLNA) for Integrated Watershed Management Programme (IWMP) in Kerala. The PIAs are responsible for implementation of watershed project..

The Project Implementing Agency (PIA) provides necessary technical guidance to the Grama Panchayath for preparation of developmental plans for the watershed through Participatory Rural Appraisal (PRA) exercise, under take 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 DRDA and other arrangements. The PIA shall submit the periodical progress report to DRDA. 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 MGNREGS, BRGF, SGRY, National Horticulture Mission, Tribal Welfare Schemes, Artificial Ground Water Recharging, Greening India, etc.

4.1 DETAILS OF PROJECT IMPLEMENTATION AGENCY (PIA)

Table.2.22.Details of project implementation agency

Name of The project	**IWMP VI–KASARAGODE-BATCH -4**
PIA	Kasaragode Block Panchayath
Implementation Officer	Block Development Officer
Address PIA	Secretary, Kasaragode Block Panchayath,
Telephone	Phone:
Email	bdoksd@gmail.com

5. WATERSHED DEVELOPMENT TEAM

Watershed Development Team is an integral part of the PIA and is set up by the PIA as per the directions of SLNA. WDT has 4 members, broadly with knowledge and experience in agriculture, soil science, water management, social mobilization and institutional building. WDT functions in close collaboration with the team of experts at the district and state level. The expenses towards the salaries of the WDT members are charged from the administrative support to the PIA. WDT guides the Watershed Committee (WC) in the formulation of the watershed action plan. WDT assists Gram Panchayath /watershed Grama Sabha in constitution of the Watershed Committee and their functioning. WDT also assist in organizing and nurturing User Groups and Self-Help Groups. WDT undertakes engineering surveys, prepare engineering drawings and cost estimates for any structures to be built. Monitoring, checking, assessing, and undertaking physical verification and measurements of the work done are also done by WDT

6. INSTITUTIONAL ARRANGEMENTS AT VILLAGE LEVEL

6.1 WATERSHED COMMITTEE

It is a committee that is constituted by Watershed Grama Sabha to implement the watershed project with technical support of WDT in the micro watershed area. The watershed committee has to be registered under the Society Registration Act/1860. The Watershed Grama Sabha of the Panchayath selects the chairman of the watershed committee with the secretary who will be an employee nominated by the Grama Panchayath, preferably the Village Extension Officer. The Watershed Committee (WC) will comprise of at least 10 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 Grama Panchayath 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 Grama Panchayath, separate committees will be constituted for each Grama Panchayath.

The Watershed Committee was formed in all the 4 micro watersheds of IWMP-batch-4 project area. The IWMP-batch-4 is a cluster of 4 Grama Panchayaths coming under 2 Block Panchayath. Watershed Committee members are briefed about the project objectives and a workshop is also conducted in this regard at every Panchayath. The watershed committee has a pivotal role to play during and after the project implementation period. The Watershed Committee has a separate bank account to receive funds for watershed projects and will utilize the same for undertaking its activities.

6.2 NEIGHBOUR HOOD GROUPS

Neighbour Hood Groups are formed in every micro watershed containing 50 households living as clusters. The overall planning, coordination, management and maintenance of the activities pertaining to the area are implemented through this Group. These families are further subdivided into clusters of 7-8 houses and a person is selected to represent this cluster in the Neighbour Hood Committee ensuring the proper representation on different sections.

6.3 SELF HELP GROUPS

Self Help Groups are self-motivated, small homogenous groups organized together through highly successful of credit and thrift activities. Self Help Group initiative especially for women helps to uplift their livelihood. The Watershed Committee shall constitute SHGs in the watershed area with the help of WDT from amongst poor, small and marginal farmer households, landless/asset less poor, agricultural labourers, women, shepherds 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 SHG initiative in this project was being organized by having a focused group discussion between various homogenous communities of women based on their livelihood separately. Each group discussed their basic problems with their facilitators.

The major problems identified are:

a) Lack of proper credit facilities due to low intervention of formal financial credit institution.

b) Excessive exploitation of weaker section by money lenders

c) Lack of attitude for saving among poor people due to complex and rigid conventional financial institution structures.

d) Lack of small micro-loans without collaterals and high interest rates.

e) Lack of knowledge on credit, thrift activity and banking. With a view point of these problems it was planned to organize these women into a group consisting of 5 to 20 in each groups. It was planned to have some capacity building training regarding SHG activities. It was also proposed to have some livelihood activities which will promote women empowerment. This included Bakery units, Garments making, Mushroom Production, and Vermi compost activities with forward and backward linkage. This will ultimately lead into better human development in the village.

6.4 USER GROUPS

The watershed committee (WC) shall also constitute user groups in the watershed area with the help of WDT. These shall be homogeneous 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 Groups will be responsible for the operation and maintenance of all the assets created under the project in close collaboration with the Gram Panchayath and the Gramasabha. The user group collects user charges from their members, oversee the works and manage the benefits.

Some of the points which were considered while forming a user group in the villages of the IWMP-Kasaragode –batch-4 Project are:

a) In case of, Land Leveling, Farm Bund, Roof Well Recharge, Kitchen Garden, Demonstration Plot, Contour Trench, Ring Bund, Soil Bund, Staggered Trenches, etc all the beneficiaries of the individual and community activities who are involved are made user group members.

b) In case of a check dam or Gully Plug, all the beneficiaries of the individual check dam were involved as user group members. Focused group discussion will be conducted between the user groups to discuss the above conditions and to select potential members. It was decided that each group would formulate certain internal rules and have a feeling of ownership with community spirit. Membership was on voluntary and democratic.

18. PROJECT MANAGEMENT

18.1. IMPLEMENTATION PHASES OF IWMP PROJECT

Table.2.7.Implementation phases of IWMP Project

PHASE	NAME	DURATION(Years)
I	Preparatory Phase	1-2
II	Watershed Works Phase	2-3
III	Consolidation &Withdrawal Phase	1-2

18.2 PREPARATORY PHASE

Institution building, training and empowerment of institutions like watershed committee.

Preparation of Detailed Project Report with detailed action plans through participatory exercise (PRA,FGD)

Entry Point Activity shall be taken up during this phase to establish creditability of the Watershed Development Team (WDT) and create rapport with the village community.

18.3 WATERSHED WORKS PHASE

This phase is the very important of the Programme in which the DPR will be implemented.

Execution of action plans(NRM works, Agriculture and Allied sectors works, Livestock improvement measures)

18.4 CONSOLIDATION AND WITHDRAWAL PHASE

In this phase the resource augmented and economic plans developed in Phase II are made the foundation to be create new nature-based, sustained livelihoods and raise productivity levels.

Bridging the gaps for post project sustainability.

Building the capacity of the community based organizations to carry out the new agenda items during post project period.

Preparation of project completion report with details about status of each intervention.

Documentation of successful experiences as well as lessons learnt for future use.

18.5. WATERSHED DEVELOPMENT FUND (WDF)

One of the mandatory conditions for the selection of villages for watershed project is people's contributions towards the watershed development fund. The contribution of WDF shall be a minimum 10 % of cost of NRM works executed on private land only. However, in case of SC/ST, small and marginal farmers, the minimum contribution shall be 5 % of cost of NRM works executed on their land. This contribution would be acceptable either in cash at the time of execution of works or voluntary labour. A sum equivalent to the monetary value of the voluntary labour would be transferred from the watershed project account to the WDF bank account that will distinct from the watershed committee (WC) bank account. User charges, sales proceeds and other

contributions, disposal amounts of intermediate usufruct rights shall also be deposited in the WDF bank account. Income earned from assets created under the project on common property resources shall also be credited to WDF

19. CAPACITY BUILDING

The capacity building needs of the marginalized communities, including SC/ST, landless/asset less people, women, etc is also be included in the livelihood action plan prepared after the livelihood analysis. The capacity building aims at skill enhancement and not just knowledge and information. The expenditure for the training for livelihood component will be met from 5% of the budget component of the project cost earmarked for institution and capacity building.

19.1 ACTION PLAN FOR ACTIVITIES UNDER CAPACITY BUILDING

INTEGRATED WATERSHED MANAGEMENT PROGRAMME (IWMP)
PIA KASARAGOD BLOCK
PANCHAYATH

CAPACITY BUILDING ANNUAL ACTION PLAN 2014-15

Sl. No	Training / Programme	Category of Participants	Location/Venue	Date	Duration	No. of Batch	Total no. of Participants	Financial	
1	Camp for students	School Students	Pallathadka U.P.School	21/5/2014	One day	1	50	7000	
2	Awareness class about enviornment pollution	Lead farmers from MW's	MSCHS Neerchal	5/6/2014	Half day	1	50	7000	
3	Importance of natural resource Management	Lead farmers from MW's	Banupathadka	10/6/2014	Half day	1	50	7000	
4	Importance of forest	Upper Primary school	MSCHS Neerchal	25/06/2014	Half day	1	50	7000	

	trees and afforestation	Children							
5	Importance of forest trees and afforestation	Upper Primary school children	St.B.A.S.B.S.Bela	30/06/2014	Half day	1	50	7000	
6	Importance Livelihood	Members from various SHGs/NHGs in watershed area	GLPS Kadambala	4/7/2014	Half day	1	50	7000	
7	Ground water rechargin g techniques	Members from various UGs in watershed area	MSCHS Neerchal	14/07/2014	Half day	1	50	7000	
8	Importance of forest trees and afforestation	Members from various SHGs/NHGs in watershed area	Sairam mandir Kilingar	22/07/2014	Half day	1	50	7000	
9	Ridge to valley approch importance	Lead farmers from MW's	MSCHS Neerchal	30/07/2014	Half day	1	50	7000	
10	Importance of natural resource Management	Lead farmers from MW's	MSCHS Neerchal	13/08/2014	Half day	1	50	7000	
11	Importance of natural resource Management	Lead farmers from MW's	GHS Badiadka	17/08/2014	Half day	1	50	7000	

12	Ridge to valley approach importance	Lead farmers from MW's	GHS Badiadka	23/08/2014	Half day	1	50	7000	
13	Importance of natural resource Management	Higher Secondary School children	MSCHS Neerchal	30/08/2014	Half day	1	50	7000	
14	Global warming	Lead farmers from MW's	GLPS Kadambala	3/9/2014	Half day	1	50	7000	
15	Ground water recharging techniques	Members from various UGs in watershed area	GLPS Kadambala	18/9/2014	Half day	1	50	7000	
16	Ground water recharging techniques	Members from various UGs in watershed area	Pallathadka U.P.School	22/09/2014	Half day	1	50	7000	
17	Ground water recharging techniques	Members from various UGs in watershed area	MSCHS Neerchal	27/09/2014	half day	1	50	7000	
18	Ground water recharging techniques	Members from various UGs in watershed area	CEC Badiadka	30/09/2014	Half day	1	50	7000	
19	Ground water recharging techniques	Members from various UGs in watershed area	Sairam mandir Kilingar	7/10/2014	Half day	1	50	7000	
20	Importance Liveliho	Members from various	St.B.A.S.B.S.Bela	14/10/2014	Half day	1	50	7000	

	od	SHGs/NHGs in watershed area							
21	Importance Livelihood	Members from various SHGs/NHGs in watershed area	Puthige Grama Panchayath Hall	18/10/2014	Half day	1	50	7000	
22	Importance Livelihood	Members from various SHGs/NHGs in watershed area	CEC Badiadka	24/10/2014	Half day	1	50	7000	
23	Importance Livelihood	Members from various SHGs/NHGs in watershed area	GLPS Kadambala	31/10/2014	Half day	1	50	7000	
24	Importance Livelihood	Members from various SHGs/NHGs in watershed area	Pallathadka U.P.School	7/11/2014	Half day	1	50	7000	
25	Importance Livelihood	Members from various SHGs/NHGs in watershed area	Sairam mandir Kilingar	12/11/2014	Half day	1	50	7000	
26	Ridge to valley approach importance	Members from various UGs in watershed area	GLPS Kadambala	18/11/2014	Half day	1	50	7000	
27	Ridge to valley approach	Members from various	CEC Badiadka	25/11/2014	Half day	1	50	7000	

	importance	UGs in watershed area							
28	Ridge to valley approach importance	Members from various UGs in watershed area	Banputhadka	5/12/2014	Half day	1	50	7000	
29	Ground water rechargin g techniques	Lead farmers from MW's	CEC Badiadka	11/12/2014	Half day	1	50	7000	
30	Ground water rechargin g techniques	Lead farmers from MW's	Banputhadka	16/12/2014	Half day	1	50	7000	
31	Ground water rechargin g techniques	Lead farmers from MW's	GLPS Kadambala	23/12/2014	Half day	1	50	7000	
32	Ground water rechargin g techniques	Lead farmers from MW's	MSCHS Neerchal	30/12/2014	Half day	1	50	7000	
33	Importance of forest trees and afforestation	Members of Selected Club	Sairam mandir Kilingar	12/1/2015	Half day	1	50	7000	
34	Importance of forest trees and afforestation	Upper Primary school children	Pallathadka U.P.School	17/01/2015	Half day	1	50	7000	
35	Importance of forest	L.P school student	GLPS Kadambala	21/01/2015	Half day	1	50	7000	

	trees and afforestation								
36	Importance of forest trees and afforestation	High school student	MSCHS Neerchal	27/01/2015	Half day	1	50	7000	
37	Importance of forest trees and afforestation	High school student	N H S Badiadka	6/2/2015	Half day	1	50	7000	
38	Importance of forest trees and afforestation	Upper Primary school children	St.B.A.S.B.S.Bela	11/2/2015	Half day	1	50	7000	
39	Importance of natural resource Management	ADS AND CDS	Banputhadka	16/02/2015	Half day	1	50	7000	
40	Importance of natural resource Management	ADS AND CDS	CEC Badiadka	21/02/2015	Half day	1	50	7000	
41	Importance of natural resource Management	ADS AND CDS	Sairam mandir Kilingar	25/02/2015	Half day	1	50	7000	
42	Importance of natural resource Management	ADS AND CDS	GLPS Kadambala	4/3/2015	Half day	1	50	7000	
43	Importance of natural resource Management	Members from various SHGs/NHGs in watershed	MSCHS Neerchal	13/03/2015	Half day	1	50	7000	

		area and WC members							
44	Awareness programme on Micro enterprises	Members from various SHGs/NHGs in watershed area and WC members	CEC Badiadka	19/03/2015	Half day	1	50	7000	
45	Awareness programme on Micro enterprises	Members from various SHGs/NHGs in watershed area and WC members	Banputhadka	24/03/2015	Half day	1	50	7000	
46	Awareness programme on Micro enterprises	Members from various SHGs/NHGs in watershed area and WC members	Sairam mandir Kilingar	31/03/2015	Half day	1	50	7000	
							Total	322000	

Sd/
Secretary
Kasaragod Block Panchayath

Integrated Watershed Management Programme (IWMP)

PIA: Kasaragod Block Panchayath

Information,Education& Communication(IEC) activities in the project area (2014-15)

SL No	Activity	Executing agency	Estimated Expenditure(Rs)	Expected out come (may quantify, wherever possible)
1	Cloth Bags(30x50cm) Umbrella	PIA	150000 325,500	Community Awareness & ensure people participation
2	Name slip	PIA	5000	Awareness to school children.
3	Wall writing	PIA	15,000	Community Awareness & ensure people participation
4	Boards	PIA	21,000	Community Awareness & ensure people participation
5	Calendars	PIA	50,000	Community Awareness & ensure people participation
6	Stickers	PIA	5,000	Community Awareness & ensure people participation

7	Posters	PIA	10,000	Community Awareness & ensure people participation
8	Brochures	PIA	10,000	Community Awareness & ensure people participation
9	Greeting Card	PIA	5,000	Awareness to school children
10	Roof water recharge	PIA	60,000	Community Awareness & ensure people participation
11	TIME TABLE	PIA	5000	Awareness to school children
12	NURSERY	PIA	30000	Community Awareness & ensure people participation

3,66,000 5,41,500

Secretary

Kasaragod Block Panchayath

20. SCOPE FOR CONVERGENCE

IMPORTANCE OF CONVERGENCE IN IWMP

Avoids duplication of efforts

Improves quality of service provided.

Promote effective linkage with various developmental initiatives.

Help to identify new opportunities and options.

Ensures transparency and accountability in governance.

Results in the effective monitoring of out -comes.

21. MAJOR ONGOING AND COMPLETED SCHEMES IN THE PROJECT AREA

Table.3.7. Major ongoing and completed schemes in the project area

SCHEMES / PROJECTS	BRIEF DESCRIPTION
Centrally sponsored schemes	
Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS)	Aims to enhance livelihood security in rural areas by providing at least 100 days of guaranteed wage employment in a financial year to every household whose adult members volunteer to do unskilled manual work.
Sarva Shiksha Abhiyan (SSA)	Flagship programme run by the Government of India to provide universal access to elementary education for children 6-14 years old.
Integrated Child Development Services (ICDS)	This scheme represents one of the world's largest and most unique programmes for early childhood development. ICDS is the foremost symbol of India's commitment to her children – India's response to the challenge of providing pre-school education on one hand and breaking the vicious cycle of malnutrition, morbidity, reduced learning capacity and mortality, on the other.
Support to State Extension Programmes for Extension Reforms	This is the main scheme to revamp agricultural extension across the country and aims at providing a decentralized and demand driven extension system by way of new institutional arrangements for technology dissemination in the form of an Agricultural Technology Management Agency (ATMA) at district level. Important farmer oriented activities under ATMA includes: (a) training of farmers (b) demonstrations on agriculture and allied sector (c) exposure visit of farmers (d) farmer-scientist interactions (d) farm schools.
Rashtriya Krishi Vikas Yojana	Aims at achieving annual growth in agriculture sector by a holistic development of Agriculture and allied sectors.

(RKVY)	
State sponsored schemes	
Sustainable Development of Rice-Based Farming System	Aims to sustain rice cultivation and to increase its productivity. It includes group farming, distribution of fertilizer, organic manure and weedicides at subsidized rate.
State Horticulture Mission (SHM)	Area expansion and subsidy for rising banana, pineapple, cocoa, nutmeg, pepper & cut flowers.
Small Farm Mechanization	The objective of the scheme is to provide credit for the purchase of new tractor/new tractor for 2nd time/tractor renovation/ repair/ replacement of spares/small tractors (GOI) scheme/power tiller/ thresher/power sprayer.

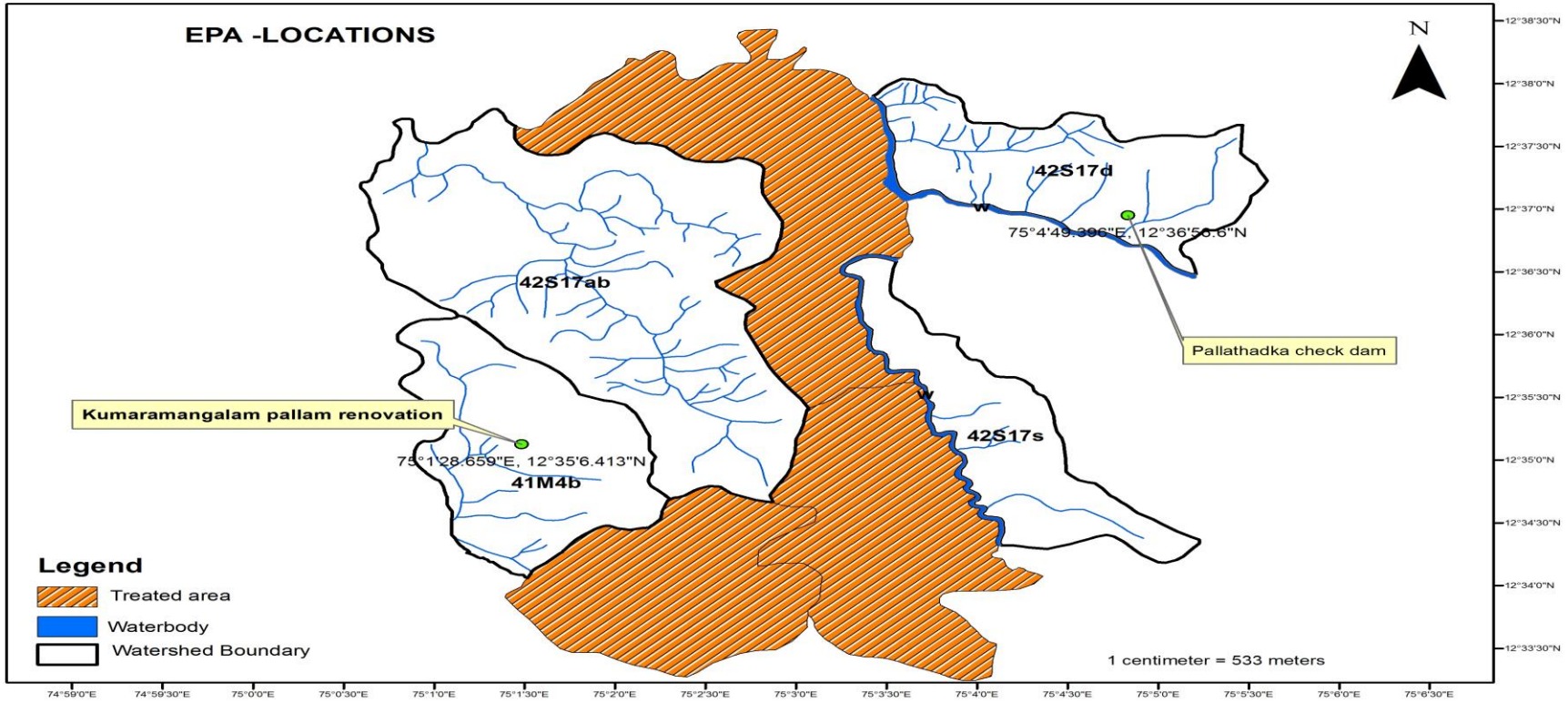
22. ACTIVITIES PROPOSED

22.1. ENTRY POINT ACTIVITIES

Entry point activity aims to mobilize the community in support of the subsequent interventions under the project. EPA helps to create rapport with the village community. Entry point activities are identified with a view to showcase them as model intervention which, in turn, would generate the interest of the community in watershed development activities. As noted earlier, community participation is essential to maximize the impact of the project and ensure the sustainability of the project outcomes.

Table.3.5.Entry point activities in the project area

Name Of Watershed	Panchayath	Name Of Work	Amount (Rs.)	Latitude	Longitude	Area benefited (Ha)/beneficiaries	
						Area	Beneficiaries
YELKANA	BADIADKA	Pallathadka check dam	892000	lat:N 12 36' 56.6"	long:75 4' 49.396"	5	23
CHOWKAR	BADIADKA	Kumaramangalam pallam renovation	454210	lat:N 12 35' 6.413"	long:75 1" 28.659"		35


EPA -LOCATIONS
N
42S17d
75°4'49.396"E, 12°36'56.6"N
Pallathadka check dam
42S17ab
Kumaramangalam pallam renovation
75°1'28.659"E, 12°35'6.413"N
41M4b
42S17s
Legend
Treated area
Waterbody
Watershed Boundary
1 centimeter = 533 meters
12°38'30"N
12°38'0"N
12°37'30"N
12°37'0"N
12°36'30"N
12°36'0"N
12°35'30"N
12°35'0"N
12°34'30"N
12°34'0"N
12°33'30"N
74°59'0"E
74°59'30"E
75°0'0"E
75°0'30"E
75°1'0"E
75°1'30"E
75°2'0"E
75°2'30"E
75°3'0"E
75°3'30"E
75°4'0"E
75°4'30"E
75°5'0"E
75°5'30"E
75°6'0"E
75°6'30"E

22.2. NATURAL RESOURCES MANAGEMENT

The physical treatments are to be carried on during the watershed development work phase. While implementing the project, it is necessary that the treatments are carried out starting form ridge and progressing towards the valley. This approach is followed with the following objectives:

a) Protect the upper reaches to control erosion and reduce runoff

b) Avoid siltation of structures in the middle and lower catchments.

c) Ensure the cost effectiveness of structures in the valley and

d) Improve overall efficacy of the measures.

This phase is the heart of the programme in which the DPR will be implemented. The following are some of the major interventions proposed in this report with a view to conserve and develop the natural resources in the area for bringing out the benefits conceived in the objectives of the project.

22.2.1Biological measures:

22.2.1A.Live Fencing

Natural fencing is a multi- purposed method to control soil erosion, improve biomass, infiltration rate and for protecting crops by enabling shelter for natural predators of the pest population. The plants suitable for planting on the fences are Cassia, Hibiscus, Lettuce, Tapioca or Glyricidia, Henna etc. Annual or quarterly chopping of the leaves can be used as biomass to the agriculture land. Glyricidia can fix nitrogen to the soil. This is not a new method but one that has been practiced by farmers elsewhere for long time.

22.2.1B. Horticulture

Horticulture promotion is very important in the project area because majority of population buys vegetable and fruits from shops which are grown in other states. Press reports regarding usage of pesticide on vegetables and fruits should be an eye opener. People should be made aware of the health impact of using these vegetables and fruits. This understanding will motivate them to cultivate local fruit plants. This range of food, medicinal, environmental, and social products and services are all fundamental to developing and maintaining human health and well-being. Supply of fruit plants such as Jack fruit, Mango, Pineapple and Papaya for beneficiaries.

22.2.2 Engineering structures:

22.2.2A.Percolation pits

Pits of appropriate dimensions are made at suitable locations in the watersheds for augmenting recharge of ground water through enhanced percolation of rain water. These pits may also be termed as rain pits. This is an intervention suitable for areas with moderate slopes. Plant Basins can also act as efficient recharge pits. Number and spacing of the pits shall be conducive to the land use in each holding. Rain pits are not recommended in rockery areas of higher altitude and water logged areas.

22.2.2B. Stone Pitched Bund

This measure involves construction of horizontal lines of stone pitched contour bunds across the sloping land surface. Contour bunding is practiced to intercept the runoff flowing down the slope by an embankment with either open or closed ends to conserve moisture as well as to reduce erosion. The land treatment in between the bunds is desirable for uniform conservation of moisture.

Detailed estimate

Estimate for a 100 m length:

Cleaning grass and other over growth of vegetation etc. Complete.

1*100.00*1.00=100m^2

Say 10m^2 @ Rs.177/100m^2----------Rs.172.00

Earth work excavation in ordinary soil for foundation and initial lead up to 50m and left up to 1.50m including breaking clods, watering , Ramming and sectioning of soil tank etc complete.

1*100.00*0.30*0.20=6m^3

Say 6m^3 @ Rs.1115.92/10m3----------Rs.669.55

Pitching work with locally available dry rubble and back filling of the bund including all cost of materials and labour charges, conveyance etc. complete.

L.S Rs.13510.4

14352.00

========

(Rupees fourteen thousand three hundred and fifty two only)

Rs. 14352/100^{m2} or

Rs. 14352/100m length of 1m height

Or Rs. 143.52 /m^2.

22.2.2C .Well Recharging

The broad aim of the programme is to improve the water quantity and quality levels of homestead open dug wells and small homestead ponds. This will contribute to enhanced health and welfare of the community through improved access to drinking water. The reduction of public spending on Tanker Water Distribution to the water stressed regions which is common during summer is also envisaged as a broader goal of the programme.

The specific objectives of the programme are

Ground water recharge

Improve drinking water availability across the year

Improved agricultural production and productivity

Significantly reduce the impact of drought and consequent public spending on supply of drinking water in tankers to the water stressed regions

The programme would also envisage strengthening of the decentralization programme and the PRIs, in discharging their basic mandate in water sector through community efforts that are cost effective and sustainable.

22.2.2D.Vermi compost

Vermi-compost is the product or process of composting using various worms, usually red wigglers, white worms, and other earthworms to create a heterogeneous mixture of decomposing vegetable or food waste, bedding materials, and vermicast. Vermicast, also called worm castings, worm humus or worm manure, is the end-product of the breakdown of organic matter by an earthworm. These castings have been shown to contain reduced levels of contaminants and a higher saturation of nutrients than do organic materials before Vermi composting.

22.2.2E. Biogas Plant

In the village area people who are living surroundings of watershed are poor farmers. Now a days and scarcity of log wood which required for cooking purpose the people are suffering too much. Hence by using Biogas, this problem can be minimized. By constructing Biogas plant they can make Biogas and use for cooking etc.

22.3 PRODUCTION SYSTEM MANAGEMENT

The major interventions suggested under the Production System and Microenterprises based livelihood activities are the following.

22.3.1A. Bee Keeping

In Kerala Bee-keeping is done by farmers as a source of additional income. Rubber planters place beehives in rubber plantations and gain a good return from it without any risk. Ayurveda Industry is the major consumer of pure honey. This component aims supplying 5-10 cages to selected beneficiaries as one unit.

22.3.1B. Vegetable Cultivation (Kitchen Garden)

Keralites are fully depending on other states for vegetables. These vegetables that arrive from the neighboring states are highly contaminated with toxic compounds through the pesticide applications. As a result, the Keralites are increasingly getting affected with diseases. Though Kerala is blessed with suitable environment (rich soil, availability of water, prolonged monsoon, etc) for the production of many vegetables, there is an apparent lacking of interest among people to cultivate vegetables. Vegetable cultivation is an easy job for those who are interested. As home garden agriculture is mainly a need-oriented, self-provisioning system, the use of chemicals is minimal, and the emphasis is more on homemade formulations of biological origin, such as tobacco decoction, neem extracts, and so on. This helps to minimize pesticide pollution of the agricultural environment. The system is, by and large, environmentally clean and sustainable. This component aims that supplying 5 type vegetable seeds and biofertilizer as one unit (Rs. 750/-) for beneficiaries who have an area of 2 cent.

22.3.1C. Banana Cultivation

Banana cultivation is a promising activity for farmers in the light of new agricultural scenario. Banana has duel potential as a raw fruit and processed items such as Banana powder, chips and other associated products. The organic wastes available from the household if composted can be used as manure for the crop. The existing waste land can be made productive through banana cultivation. For Kudumbasree units as well as self -help groups, this is an appropriate income generation programme. One important point to be emphasized in the cultivation process is to minimize the use of chemical fertilizers and pesticides in the field. The focus should be on organic methods.

22.3.1D. Spices cultivation

Spice cultivation is the controlled growth of plants whose harvested parts are high in flavour and are used to season other foods. These include herbs, and may take the form of seeds, leaves, roots, bark, or other plant part

22.3.1E. Tapioca as Inter crops

These crops especially Tapioca, still continue to be major crops contributing significantly to human and animal food apart from findings use in various industrial applications, environments. Tuber crops fit well in to a variety of cropping systems and can be profitably intercropped in coconut based cropping system.

22.3.1F. Mushroom Cultivation

Mushrooms have been valued throughout the world as both food and medicine for thousands of years. They are a rich source of nutrition with less fat and that also consists predominantly of unsaturated fatty acids such as linoleic acid. Hence mushroom is considered as the perfect food for maintaining a healthy heart and cardiovascular system.

22.4 LIVELIHOOD SUPPORT SYSTEM

The activities proposed under the livelihood action plan below are meant for improving livelihood of the poor and marginalized people in the project area. It is proposed to earmark 9 percent of the total allotted amount for the activities under this plan. Major portion of this component is suggested to give to the SHGs working in the project area as revolving funds for improving their livelihood improvement/income generation activities. For each SHGs in the project area, will give revolving funds of Rs.25, 000/- per SHG during the project period. The beneficiary SHGs will be selected mainly on the basis of criteria currently used to rate the SHGs. If any change in the criteria is required with regard to the selection of beneficiary SHGs, same will be decided at the time of selection considering the suitable factors and according to State level policies.

22.4.1 Goat Rearing:

It is an important employment source that can be embraced very profitably by low income group people. As the gestation period is short and the number of the lambs is usually two or more in a single litter, goat rearing can bring in a profit that is two or three times bigger than the invested amount. Women's self-help groups can select the eligible people for goat rearing. This component aims at supplying 5 goats as one unit each of 8 months old to selected beneficiaries.

(5 goats * 6000 Rs = 30000/-)

22.4.2 Dairy

This has much popularity among rural farmers of Kerala as a main sub occupation. Rearing cattle fetches an increase in income from milk production it give cow dung and urine rather. Moreover it leads to biogas production needed for domestic purpose. Cattle rearing have commercial scope as well. This component aims at supplying 2 cows as one unit each of 9 months old to selected beneficiaries. (2 cows @ Rs 20000/-)

22.4.3. Food Processing Unit

It means that to make small units like pickles making/ bakes making units by using selected SHG groups in the watershed area (Rs . 23000/ unit).

Paper bag and cloth bag making units- Rs .23000/

Floriculture, Fruit marketing units,

22.4.4 Poultry

This component aims supplying 6 layer birds each of 50-60 days old (as one unit) to selected beneficiaries. They can thrive well on kitchen waste so that no additional expenditure on feed cost is necessary. Landless people, SC/ST, OBC, and BPL etc. should get the benefits of this. The self-help groups can select the beneficiaries. (6 poultry * 115 Rs = 690/-)

22.4.5 Pisciculture

Fish farming is the principal form of aquaculture, while other methods may fall under Pisciculture. Fish farming involves raising fish commercially in tanks or enclosures, usually for food. There is an increasing demand for fish and fish protein, which has resulted in widespread overfishing in wild fisheries. Fish farming offers fish marketers another source. The self-help groups can select the people who are going for the rabbit keeping.

PART - II

INDIVIDUAL WATERSHEDS

KILINGAR

(42S 17ab)

CHAPTER I

1. INTRODUCTION

Kilingar watershed bearing the code number (14P53a) lies in the village of Badiadka in the Grama Panchayath of Badiadka and Puthige of the Kasaragode block in Kasaragode District, extends to a total area of 1451ha. The coordinates of the watershed is75°0'25.565"E 12°34'37.084"N to 75°2'58.664"E, 12°37'54.37"N

Table 3.1 Boundaries of Kilingar Watershed

Kilingar Watershed	North	, Mugu Service Bank area
	South	Manjivalappu culvert area
	West	Majirpallakkatta, Bhajanamandiram,Kilingar School
	East	Chennegoli colony,Kanyapadi
	Geographical Coordinates	Latitude: 12°34'37.084"N -12°37'54.37"N Longitude: 75°0'25.565"E -75°2'58.664"E

2. PHYISIOGRAPHY

Kilingar watershed includes hilly, valley, slightly slope areas. The highest elevated area of the watershed is south eastern part which is near to 142 meter.

3. PROBLEMS AND SUGGESSIONS

3.1 AGRICULTURAL SECTOR:

1. For agriculture purposes there is wide usage of pesticides and chemicals which lead to destruction of natural enemies of pests. It also creates environmental pollution and directly affects mankind and nature.

2. Ignorance of scientific Agriculture methods.

3. Hike in cost of productivity and lack of getting market value for crops.

4. Acute water scarcity.

3.2 ANIMAL HUSBUNDRY AND DAIRYING SECTOR:

1. Scarcity of hybrid cows and goats.

2. Hike in price of cattle feed.

3. Lack of proper possibility for milk selling.

4. Lack of scientific, modernized cow shed.

5. Productivity of milk is very poor from dairy farming sector due to the scarcity of fodder grass and grazing land.

3.3 WATER AND SOIL CONSERVATION SECTOR:

1. Canals and other water reservoirs are being filled with soil.

2. Lack of water and soil conservation activities

3. Acute shortage of drinking water is the main problem in the project area.

4. Ground water depletion is also experienced in some parts due to the large number of bore well.

3.4 SUGGESSIONS

1. Undertake scientific agricultural method after compulsory soil testing.

2. Increase convenient irrigation facilities by preservation of canals and ponds.

3. Use organic insecticides instead of chemical insecticides.

4. Construct new ponds and water reservoirs to encourage, summer vegetable cultivation.

5. Encourage reclamation of barren field for cultivation.

6. Form labour force to reduce scarcity of labourers and provide them with adequate training to understand the latest technology in agriculture.

7. Provide monitory help them to buy machinery.

8. Promote mushroom cultivation, apiculture, cattle breeding.

9. Promote the cultivation of medicinal plants and fruit bearing trees at schools and other institution.

10. Construct rain water harvesting pits, and reservoirs and biogas plants.

11. Make high yielding cattle available and encourage fodder grass cultivation.

12. Promote floriculture and sericulture.

13. Vegetation in slope areas and thereby form bio belt.

14. Protect the side walls of ponds and streams.

ESTIMATE

1. FUNDING PATTERN OF KILINGAR WATERSHED

TABLE 3.2 FUNDING PATTERN OF KILINGAR WATERSHED

FUND DISTRIBUTION MASTER PLAN FOR 4 YEAR											
KILINGAR WATERSHED											
TOTAL TREATABLE AREA - 1451 Ha					TOTAL AMOUNT - 1451x 12000/ Ha = Rs.17412000/-						
YEAR	ADMINISTRATION	MONITORING	EVALUATION	ENTRY POINT ACTIVITY	INSTITUTION & CAPACITY BUILDING	DPR PREPERATION	NATURAL RESOURCE MANAGEMENT ACTIVITIES	LIVELIHOOD ACTIVITIES	PRODUCTION SYSTEM 7 MICRO ENTERPRISES	CONSOLIDATION PHASE	TOTAL IWMP PROJECT
FIRST	217650	34824	17412	696480	43530	174120	1950144	313416	348240		3795816
%	1.25	0.2	0.1	4	0.25	1	11.2	1.8	2		21.8
SECOND	609420	43530	43530		348240		2925216	470124	522360		4962420
%	3.5	0.25	0.25		2		16.8	2.7	3		28.5
THIRD	609420	43530	43530		348240		2925216	470124	522360		4962420
%	3.5	0.25	0.25		2		16.8	2.7	3		28.5
FOURTH	304710	52236	69648		130590		1950144	313416	348240	522360	3691344
%	1.75	0.3	0.4		0.75		11.2	1.8	2	3	21.2
TOTAL	1741200	174120	174120	696480	870600	174120	9750720	1567080	1741200	522360	17412000
%	10	1	1	4	5	1	56	9	10	3	100

NATURAL RESOURCE MANAGEMENT (NRM)

Natural resource management activities are such as afforestation, Horticulture, Soil & moisture conservation, vegetative and engineering structure and water harvesting structures. Item wise annual action plans are mentioned below as well as the year wise financial tables. The contribution to WDF shall be a minimum 10 % of the cost of NRM works executed on private land. In case of SC/ST, small and marginal farmers, the minimum contribution shall be 5 % of cost of NRM works executed on their land.

TABLE 3.3. MASTER PLAN OF NATURAL RESOURCE MANAGEMENT

Kilingar Watershed-NRM Consolidated Action Plan

Sl. No.	Activities	Unit	Unit Rate	Physical Units	Financial		
					IWMP	Convergence	Total
1	Afforestation at Kattadmoola, and Kariyad areas.	NOS.	40	8000	320000		320000
2	FRUIT PLANTS	NOS.	60	8500	510000		510000
3	RAIN PITS	NOS.	700	285	199500		199500
4	Soak Pit	NOS.	4500	200	900000		900000
5	Stone Pitched Bund	RM	143.52	4590	658756.8		658756.8
6	EARTHERN BUND	RM	61.83	5022	310510.26		310510.26
7	Vermicompost	NOS.	30000	32	960000		960000
8	COMPOST PIT	NOS.	700	320	224000		224000
9	BIOMULCHING	Ha	18850	11	207350		207350
10	LIVE FENCING	RM.	20	4557	91140		91140
11	WELL RECHARGE (GROUND WATER RECHARGE)	NOS.	11119	173	1923587		1923587
12	FARM PONDS (NEW)	NOS.	25000	18	450000		450000
13	FARM POND / WELL RENOVATION	NOS.	14500	20	290000		290000
14	New pond at Kilingar Padasekharam	NOS.	100852	1	100852		100852
15	New open well at Puthige-Kakyappadi	NOS.	50583	1	50583		50583
16	Choyimoole SC Colony open well- ground water recharge	NOS	7435	1	7435		7435

17	Mugu-Nattikkunnu (Cheva) open well repair	NOS.	15222	1	15222		15222
18	New well at Mundakkana ST Colony	NOS.	50583	1	50583		50583
19	Check dam at Uppine thodu	NOS.	67825	1	67825		67825
20	Thodu side protection at Barikatta-Bavadmoolai	NOS.	99841	1	99841		99841
21	Check dam at Kandige	NOS.	165167	1	165167		165167
22	Kadaganji Pond renovation	NOS.	85532	1	85532		85532
23	Side protection wall at Ponnengala thodu	NOS.	63590	1	63590		63590
24	Pond Recharging near Bhajana mandir, Mundithadka	NOS.	6196	1	6196		6196
25	Chakanige pond renovation at ward 6 of Puthige GP	NOS.	360623	1	360623		360623
26	Public Pond repair at Bavadamoolai	NOS.	388349	1	388349		388349
27	Checkdam at Molayar	NOS.	165167	1	165167		165167
28	Checkdam at Kakunje	NOS.	168546	1	168546		168546
29	Checkdam at Sedikattai	NOS.	168546	1	168546		168546
30	Checkdam at Mallatheru lower	NOS.	165167	1	165167		165167
31	Checkdam at Hosamana	NOS.	165167	1	165167		165167
32	Checkdam at Nidungala Tharavadu	NOS.	64424	1	64424		64424
33	Checkdam at Nidungala Agrasala	NOS.	25287	1	25287		25287
34	Checkdam at Nidugala Krishna Bhutt	NOS.	54479	1	54479		54479
35	Checkdam at Nidugala Gopalakrishna Sharma	NOS.	65113	1	65113		65113
36	Nidugala Pond renovation at Soumya Mahesh's property	NOS.	202166	1	202166		202166
	ROUNDED FIGURE						15.94
	TOTAL						9750704.06
	GRAND TOTAL						9750720

TABLE 3.4 YEAR WISE ACTION PLAN -NRM

Kilingar Watershed NRM Annual Action Plan

Ist Year

Sl. No.	Activities	Unit	Unit Rate	Physical Units	Financial		
					IWMP	Convergence	Total
1	Afforestation at Kattadmoola, and Kariyad areas.	NOS.	40	2000	80000		80000
2	FRUIT PLANTS	NOS.	60	2500	150000		150000
3	RAIN PITS	NOS.	700	135	94500		94500
4	Soak Pit	NOS.	4500	50	225000		225000
5	Stone Pitched Bund	RM	143.52	470	67454.4		67454.4
6	EARTHERN BUND	RM	61.83	1073	66343.59		66343.59
7	Vermicompost	NOS.	30000	10	300000		300000
8	COMPOST PIT	NOS.	700	75	52500		52500
9	BIOMULCHING	Ha	18850	2.5	47125		47125
10	LIVE FENCING	RM.	20	552	11040		11040
11	WELL RECHARGE (GROUND WATER RECHARGE)	NOS.	11119	35	389165		389165
12	FARM PONDS (NEW)	NOS.	25000	5	125000		125000
13	FARM POND / WELL RENOVATION	NOS.	14500	4	58000		58000
14							
15	New open well at Puthige-Kakyappadi	NOS.	50583	1	50583		50583
16	Choyimoole SC Colony open well- ground water recharge	NOS.	7435	1	7435		7435
17	Mugu-Nattikkunnu (Cheva) open well repair	NOS.	15222	1	15222		15222
18	New well at Mundakkana ST Colony	NOS.	50583	1	50583		50583
19	Side protection wall at Ponnengala thodu	NOS.	63590	1	63590		63590
20	Pond Recharging near Bhajana mandir, Mundithadka	NOS.	6196	1	6196		6196
21	Checkdam at Nidungala Agrasala	NOS.	25287	1	25287		25287
22	Checkdam at Nidugala Gopalakrishna Sharma	NOS.	65113	1	65113		65113
	ROUNDED FIGURE						7.01
	TOTAL						1950136.99
	GRAND TOTAL						1950144

Kilingar Watershed NRM Annual Action Plan

IInd year

Sl. No.	Activities	Unit	Unit Rate	Physical Units	Financial		
					IWMP	Convergence	Total
1	Afforestation at Kattadmoola, and Kariyad areas.	NOS.	40	2500	100000		100000
2	FRUIT PLANTS	NOS.	60	3000	180000		180000
3	RAIN PITS	NOS.	700	150	105000		105000
4	Soak Pit	NOS.	4500	50	225000		225000
5	Stone Pitched Bund	RM	143.52	1481	212553.12		212553.12
6	EARTHERN BUND	RM	61.83	1058	65416.14		65416.14
7	Vermicompost	NOS.	30000	10	300000		300000
8	COMPOST PIT	NOS.	700	75	52500		52500
9	BIOMULCHING	Ha	18850	2.5	47125		47125
10	LIVE FENCING	RM.	20	551	11020		11020
11	WELL RECHARGE (GROUND WATER RECHARGE)	NOS.	11119	45	500355		500355
12	FARM PONDS (NEW)	NOS.	25000	5	125000		125000
13	FARM POND / WELL RENOVATION	NOS.	14500	6	87000		87000
14	New pond at Kilingar Padasekharam	NOS.	100852	1	100852		100852
15	Chakanige pond renovation at ward 6 of Puthige GP	NOS.	360623	1	360623		360623
16	Public Pond repair at Bavadamoolai	NOS.	388349	1	388349		388349
17	Checkdam at Nidungala Tharavadu	NOS.	64424	1	64424		64424
ROUNDED FIGURE							-1.26
TOTAL							2925217.26
GRAND TOTAL							2925216

Kilingar Watershed NRM Annual Action Plan

III rd year

Sl. No.	Activities	Unit	Unit Rate	Physical Units	Financial		
					IWMP	Convergence	Total
1	Afforestation at Kattadmoola, and Kariyad areas.	NOS.	40	3500	140000		140000
2	FRUIT PLANTS	NOS.	60	3000	180000		180000
3	Soak Pit	NOS.	4500	75	337500		337500
4	Stone Pitched Bund	RM	143.52	2500	358800		358800
5	EARTHERN BUND	RM	61.83	2000	123660		123660
6	Vermicompost	NOS.	30000	10	300000		300000
7	COMPOST PIT	NOS.	700	100	70000		70000
8	BIOMULCHING	Ha	18850	6	113100		113100
9	LIVE FENCING	RM.	20	1562	31240		31240
10	WELL RECHARGE (GROUND WATER RECHARGE)	NOS.	11119	55	611545		611545
11	FARM PONDS (NEW)	NOS.	25000	5	125000		125000
12	FARM POND / WELL RENOVATION	NOS.	14500	8	116000		116000
13	Checkdam at Uppine thodu	NOS.	67825	1	67825		67825
14	Thodu side protection at Barikatta-Bavadmoolai	NOS.	99841	1	99841		99841
15	Checkdam at Kandige	NOS.	165167	1	165167		165167
16	Kadaganji Pond renovation	NOS.	85532	1	85532		85532
ROUNDED FIGURE							6
TOTAL							2925210
GRAND TOTAL							2925216

Kilingar Watershed NRM Annual Action Plan

IVth year

Sl. No.	Activities	Unit	Unit Rate	Physical Units	Financial		
					IWMP	Convergence	Total
1	Soak Pit	NOS.	4500	25	112500		112500
2	Stone Pitched Bund	RM	143.52	139	19949.28		19949.28
3	EARTHERN BUND	RM	61.83	891	55090.53		55090.53
4	Vermicompost	NOS.	30000	2	60000		60000
5	COMPOST PIT	NOS.	700	70	49000		49000
6	LIVE FENCING	RM.	20	1892	37840		37840
7	WELL RECHARGE (GROUND WATER RECHARGE)	NOS.	11119	38	422522		422522
8	FARM PONDS (NEW)	NOS.	25000	3	75000		75000
9	FARM POND / WELL RENOVATION	NOS.	14500	2	29000		29000
10	Checkdam at Molayar	NOS.	165167	1	165167		165167
11	Checkdam at Kakunje	NOS.	168546	1	168546		168546
12	Checkdam at Sedikattai	NOS.	168546	1	168546		168546
13	Checkdam at Mallatheru lower	NOS.	165167	1	165167		165167
14	Checkdam at Hosamana	NOS.	165167	1	165167		165167
15	Checkdam at Nidugala Krishna Bhutt	NOS.	54479	1	54479		54479
16	Nidugala Pond renovation at Soumya Mahesh's property	NOS.	202166	1	202166		202166
	ROUNDED FIGURE						4.19
	TOTAL						1950139.81
GRAND TOTAL							1950144

4.PRODUCTION SYSTEM MANAGEMENT

All the activities in the Production System management activities are included as per the proposals collected from FGDs and SHG/ JLG meetings conducted in the Project area, and a list of beneficiaries were also prepared and kept with the PIA. Item wise annual actions plans are mentioned below.

TABLE 3.5 .MASTER PLAN OF PRODUCTION SYSTEM MANAGEMENT

KILINGAR WATERSHED- PSM TOTAL FUND RS.1741200/-

Sl No	Crop	1st Year	2nd Year	3rd Year	4th Year	5th Year	Total
1	Vegetable	99850	78560	82560	50360	36910	348240
2	Banana	91460	68900	48965	35780	33487	278592
4	Coconut	85900	52800	26400	48700	47380	261180
5	Pepper	87350	33400	42250	39400	23956	226356
6	Cocoa	42250	39400	87350	23956	33400	226356
7	Areca nut	48300	28500	32400	52450	47294	208944
8	Rubber	30350	38480	28600	32320	24958	154708

(Prepared by the PIA)

5. LIVELIHOOD SUPPORT SYSTEM

Livelihood support system activities are such as Goat rearing, Floriculture, , Dairy and Food processing units,etc, are included as per the proposals collected from FGDs and SHG/ JLG meetings conducted in the Project area, and a list of beneficiaries were also prepared and kept with the PIA . Item wise annual action plans are mentioned below.

Table.3.6.LIVELIHOOD ACTION PLAN FOR THE PERIOD 2013-2017.

BLOCK PANCHAYATH OFFICE ,KASARAGOD

(PIA KASARAGOD)

INTEGRATED WATERSHED MANAGEMENT PROGRAMME (IWMP)

LIVELIHOOD ACTIONPLAN FOR THE PERIOD FROM 2013-2017
BATCH 4 PROJECT 6

Item	Allocation for 2013-14 under IWMP Scheme	Total fund available under IWMP Scheme	Amount to be used for livelihood (9%)	Amount to be used for seed money (70% from 9%)	Amount to be used for grant in aid (30% from 9%)	Total number of JLG 'S to be assissted seed money	Total number of SHG'S to be assissted grant in aid
IWMP fund	3,66,12,000	1000000	32,95,080	23,06,556	9,88,524	92	4

WATERSHED WISE FUND DETAILS

Name of Watershed	Code No.	Hectare	Total Fund allotted for IWMP Scheme	Amt.to be used for Livelihood (9%)	Amt.to be used for seed money (70%)	Amt.to be used for grant in aid(30%)
Kilingar	42S17ab	1451 Ha	1,74,12,000	15,67,080	10,96,956	4,70,124

Watershed wise details of JLG 'S proposed to be assisted seed money

Sl.No	Name of watershed	Number of JLG'S to be assisted	SC	ST	Min	Men	Women	Mixed	Total	Total amt of seed money
1	Kilingar	44	2	2	4	7	20	9	44	1100000
	Total	44	2	2	4	7	20	9	44	1100000

LIVELIHOOD ACTION PLAN 2013-14

Sl.No	Name of watershed	No.of. JLG's tobe assisted	No. of beneficiaries to be benefited	Amount of seed money
1	Kilingar	22	132	550000
	Total	22	132	550000

Livelihood Action Plan activity wise for 2014-15

Name of watershed	No.of JLG'S to be assisted	No. of beneficiaries to be assisted	Amt. of seed money
Kilingar watershed	22 /44	132	550000
Total	22 /44	132	550000

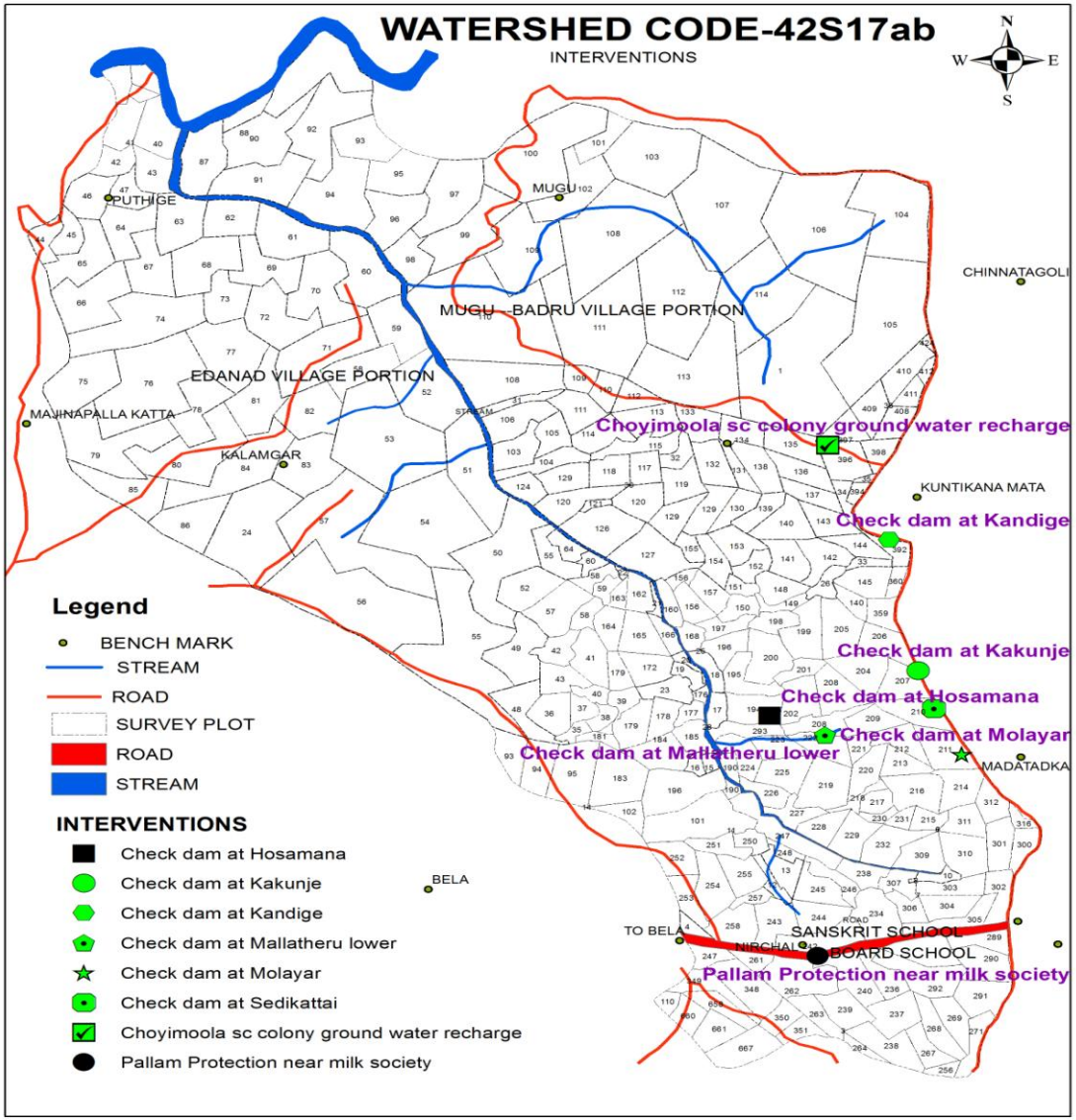
Name of watershed	No.of JLG'S to be assisted	Name of activity		No. of she's to be assisted activity wise
Kilingar watershed	22	1	Cow rearing	5
		2	Poultry farming	4
		3	Tailoring	1
		4	Furniture unit	1
		5	grass cultivation	4
		6	Soap making and agarbathi making	1
		7	Bee keeping	2
		8	Jasmine cultivation	2
		9	Catering	1
		10	Stationary	1
			TOTAL	22

Livelihood Action Plan activity wise for 2015-16

Name of watershed	No.of JLG'S to be assisted	No. of beneficiaries to be assisted	Amt. of seed money
Kilingar watershed	22	132	550000
TOTAL	22	132	550000

Name of watershed	No.of JLG'S to be assisted	Name of activity		No. of she's to be assisted activity wise
Kilingar watershed	22	1	Cow rearing	5
		2	Poultry farming	4
		3	Tailoring	1
		4	Furniture unit	1
		5	grass cultivation	5
		6	Bee keeping	3
		7	Jasmine cultivation	2
		8	Organic farming	1
			TOTAL	22

(Prepared by PIA)



MAP.10 .INTERVENTIONS OF KILINGAR WATERSHED.

CHOWKAR WATERSHED

(41M4b)

1. INTRODUCTION

The Chowkar watershed bearing the code number 41M 4ab is located in the village of Badiadka of the Badiadka Grama Panchayath in the block of Kasaragode in Kasaragode extending to a total area of 629 ha. The watershed coordinate is 75°0'35.346"E 12°34'6.341"N to 75°1'49.359"E 12°36'16.294"N The watershed shares its boundaries with North Majeerpallakkatta &Kilingar watershed, South : Patla road, Korathikundu thodu, West Arikkal, Kattathangadi,and East Erniyarpu,Bela village Office Jn.

1.1. BOUNDARIES OF MICRO WATERSHED

Table 3.7. Boundaries of Chowkar watershed

Chowkar Watershed	North	Majeerpallakkatta &Kilingar watershed
	South	South : Patla road, Korathikundu thodu
	West	West Arikkal, Kattathangadi
	East	East Erniyarpu, Bela village Office Jn.
	Geographical Coordinates	75°0'35.346"E 12°34'6.341"N to 75°1'49.359"E 12°36'16.294"N

2. PHYSIOGRAPHY

The highest elevated area is located in north western part of the watershed which is 108 meters from mean sea level. The lowest point of the watershed is located southern part of the watershed, which 24 meters msl.

3. PROBLEMS AND SUGGESSIONS

3.1 AGRICULTURAL SECTOR:

1. For agriculture purposes there is wide usage of pesticides and hazardous chemicals which lead to destruction of natural enemies of pests. It also creates environmental pollution and directly affects mankind and nature.

2. Ignorance about scientific agriculture methods.

3. Hike in cost of products and lack of getting market value for crops.

3.2 ANIMAL HUSBANDRY AND DAIRYING SECTOR:

1. Non availability of hybrid cows and goats.

2. Hike in price of cattle feed.

3. Lack of proper facilities for milk selling.

4. Lack of scientific, modernized cattle shed.

5. Production of milk is very less from dairy farming sector due to the scarcity of fodder grass and grazing land.

3.3 WATER AND SOIL CONSERVATION SECTOR:

1. Lack of water and soil conservation measures.

2. Acute shortage of drinking water is the main problem in the project area.

3. Ground water depletion is also experienced in some parts due to the large number of bore well.

3.4 SUGGESSIONS

1. Construction of rain water harvesting pits, and reservoirs and biogas plants

2. Promote scientific agricultural method after compulsory soil testing.

3. Increase convenient irrigation facilities by preservation of canals and ponds.

4. Production of bio fertilizers and Vermi compost.

5. Use bio-insecticides instead of chemical insecticides.

6. Promotion of school vegetable garden in the project area.

7. Promotion of micro irrigation in the project area for effective use of water.

8. Encourage reclamation of barren field for cultivation.

9. Form labour force to reduce scarcity of labourers and provide them with adequate training to understand the latest technology in agriculture.

10. Plant medicinal plants and fruit bearing trees schools and other institution.

11. Make high yielding cattle available and encourage fodder grass cultivation.

12. Vegetation in slope areas and thereby form bio belt.

13. Formation of scientific cowshed and milking machines.

14. Establishment of factories for the production of cattle feed at government level.

ESTIMATE

1. FUNDING PATTERN OF CHOWKAR WATERSHED

TABLE 3.8 FUNDING PATTERN OFCHOWKAR WATERSHED

MASTER PLAN FOR 4 YEAR											
CHOWKAR WATERSHED											
TOTAL TREATABLE AREA - 629 Ha					TOTAL AMOUNT - 629 x 12000/ Ha = Rs.7548000/-						
YEAR	ADMINISTRATION	MONITORING	EVALUATION	ENTRY POINT ACTIVITY	INSTITUTION & CAPACITY BUILDING	DPR PREPERATION	NATURAL RESOURCE MANAGEMENT ACTIVITIES	LIVELIHOOD ACTIVITIES	PRODUCTION SYSTEM 7 MICRO ENTERPRISES	CONSOLIDATION PHASE	TOTAL IWMP PROJECT
FIRST	94350	15096	7548	301920	18870	75480	845376	135864	150960		1645464
%	1.25	0.2	0.1	4	0.25	1	11.2	1.8	2		21.8
SECOND	264180	18870	18870		150960		1268064	203796	226440		2151180
%	3.5	0.25	0.25		2		16.8	2.7	3		28.5
THIRD	264180	18870	18870		150960		1268064	203796	226440		2151180
%	3.5	0.25	0.25		2		16.8	2.7	3	0	28.5
FOURTH	132090	22644	30192		56610		845376	135864	150960	226440	1600176
%	1.75	0.3	0.4		0.75		11.2	1.8	2	3	21.2
TOTAL	754800	75480	75480	301920	377400	75480	4226880	679320	754800	226440	7548000
%	10	1	1	4	5	1	56	9	10	3	100

2. NATURAL RESOURCE MANAGEMENT (NRM)

Natural resource management activities are such as afforestation, Horticulture, Soil & moisture conservation, vegetative and engineering measures and water harvesting structures (Ridge to valley approach). Item wise annual actions plans are mentioned below as well as the year wise financial tables The contribution to WDF shall be a minimum 10 % of the cost of NRM works executed on private land. In case of SC/ST, small and marginal farmers, the minimum contribution shall be 5 % of cost of NRM works executed on their land.

TABLE 3.9 MASTER PLAN OF NATURAL RESOURCE MANAGEMENT

Chowkar Watershed- NRM Consolidated Action Plan

Sl. No.	Activities	Unit	Unit Rate	Physical Units	Financial		
					IWMP	Convergence	Total
1	Afforestation at Kattadmoola, and Kariyad areas.	NOS.	40	5000	200000		200000
2	FRUIT PLANTS	NOS.	60	2500	150000		150000
3	RAIN PITS	NOS.	700	35	24500		24500
4	Soak Pit	NOS.	4500	15	67500		67500
5	Stone Pitched Bund	RM	143.52	840	120556.8		120556.8
6	EARTHERN BUND	RM	61.83	892	55152.36		55152.36
7	Vermicompost	NOS.	30000	5	150000		150000
8	COMPOST PIT	NOS.	700	25	17500		17500
9	BIOMULCHING	Ha	18850	4	75400		75400
10	LIVE FENCING	RM.	20	982	19640		19640
11	WELL RECHARGE (GROUND WATER RECHARGE)	NOS.	11119	30	333570		333570
12	FARM PONDS (NEW)	NOS.	25000	3	75000		75000
13	FARM POND / WELL RENOVATION	NOS.	14500	5	72500		72500
14	Check dam at Kaliyakkana thodu	NOS.	126239	1	126239		126239
15	Check dam at Kodinkar thodu	NOS.	95329	1	95329		95329
16	Retaining wall at Guthu- Kunjarpara thodu	NOS.	1095317	1	1095317		1095317

17	Kedila-Gudda thodu side protection	NOS.	633645	1	633645		633645
18	Check dam at Bela thodu near Post office	NOS.	11197	1	11197		11197
19	Check dam at Earniyarp thodu and percolation tank	NOS.	126239	1	126239		126239
20	Check dam at Chimminadka thodu	NOS.	106339	1	106339		106339
21	Check dam at Bela- Kattathangadi thodu	NOS.	29264	1	29264		29264
22	Pond renovation(Odankal Rama Kodinkar)	NOS.	145600	1	145600		145600
23	Pond renovation (Assyamma Moideen kunju)	NOS.	116159	1	116159		116159
24	Pond renovation (K.Krishna)	NOS.	290873	1	290873		290873
25	Pond renovation (James Desoga Kodinkar)	NOS.	89361	1	89361		89361
ROUNDED FIGURE							-1.16
TOTAL							4226881.2
GRAND TOTAL							4226880

TABLE 3.10 YEAR WISE ACTION PLAN -NRM

Chowkar Watershed NRM Annual Action Plan

Ist Year

Sl. No.	Activities	Unit	Unit Rate	Physical Units	Financial		
					IWMP	Convergence	Total
1	Afforestation at Kattadmoola, and Kariyad areas.	NOS.	40	2000	80000		80000
2	FRUIT PLANTS	NOS.	60	750	45000		45000
3	RAIN PITS	NOS.	700	20	14000		14000
4	Soak Pit	NOS.	4500	13	58500		58500
5	Stone Pitched Bund	RM	143.52	528	75778.56		75778.56
6	EARTHERN BUND	RM	61.83	267	16508.61		16508.61
7	Vermicompost	NOS.	30000	2	60000		60000
8	COMPOST PIT	NOS.	700	10	7000		7000
9	BIOMULCHING	Ha	18850	1.5	28275		28275
10	LIVE FENCING	RM.	20	311	6220		6220
11	WELL RECHARGE (GROUND WATER RECHARGE)	NOS.	11119	5	55595		55595
12	FARM PONDS (NEW)	NOS.	25000	1	25000		25000
13	FARM POND / WELL RENOVATION	NOS.	14500	1	14500		14500
14	Check dam at Kaliyakkana thodu	NOS.	126239	1	126239		126239
15	Check dam at Kodinkar thodu	NOS.	95329	1	95329		95329
16	Check dam at Bela thodu near Post office	NOS.	11197	1	11197		11197
17	Check dam at Earniyarp thodu and percolation tank	NOS.	126239	1	126239		126239
ROUNDED FIGURE							-5.17
TOTAL							845381.17
GRAND TOTAL							845376

Chowkar Watershed NRM Annual Action Plan

IInd year

Sl. No.	Activities	Unit	Unit Rate	Physical Units	Financial		
					IWMP	Convergence	Total
1	Afforestation at Kattadmoola, and Kariyad areas.	NOS.	40	2010	80400		80400
2	FRUIT PLANTS	NOS.	60	761	45660		45660
3	RAIN PITS	NOS.	700	15	10500		10500
4	Soak Pit	NOS.	4500	2	9000		9000
5	Stone Pitched Bund	RM	143.52	312	44778.24		44778.24
6	EARTHERN BUND	RM	61.83	605	37407.15		37407.15
7	Vermicompost	NOS.	30000	3	90000		90000
8	COMPOST PIT	NOS.	700	15	10500		10500
9	BIOMULCHING	Ha	18850	2.5	47125		47125
10	LIVE FENCING	RM.	20	671	13420		13420
11	WELL RECHARGE (GROUND WATER RECHARGE)	NOS.	11119	9	100071		100071
12	FARM PONDS (NEW)	NOS.	25000	2	50000		50000
13	FARM POND / WELL RENOVATION	NOS.	14500	4	58000		58000
14	Check dam at Bela- Kattathangadi thodu	NOS.	29264	1	29264		29264
15	Pond renovation(Odankal Rama Kodinkar)	NOS.	145600	1	145600		145600
16	Pond renovation (Assyamma Moideen kunju)	NOS.	116159	1	116159		116159
17	Pond renovation (K.Krishna)	NOS.	290873	1	290873		290873
18	Pond renovation (James Desoga Kodinkar)	NOS.	89361	1	89361		89361
	ROUNDED FIGURE						-54.39
	TOTAL						1268118.4
	GRAND TOTAL						1268064

Chowkar Watershed NRM Annual Action Plan

III rd year

Sl. No.	Activities	Unit	Unit Rate	Physical Units	Financial		
					IWMP	Convergence	Total
1	Afforestation at Kattadmoola, and Kariyad areas.	NOS.	40	990	39600		39600
2	FRUIT PLANTS	NOS.	60	901	54060		54060
3	EARTHERN BUND	RM	61.83	20	1236.6		1236.6
4	WELL RECHARGE (GROUND WATER RECHARGE)	NOS.	11119	7	77833		77833
5	Retaining wall at Guthu- Kunjarpara thodu	NOS.	1095317	1	1095317		1095317
	ROUNDED FIGURE						17.4
	TOTAL						1268046.6
	GRAND TOTAL						1268064

Chowkar Watershed NRM Annual Action Plan

IVth year

Sl. No.	Activities	Unit	Unit Rate	Physical Units	Financial		
					IWMP	Convergence	Total
2	FRUIT PLANTS	NOS.	60	88	5280		5280
11	WELL RECHARGE (GROUND WATER RECHARGE)	NOS.	11119	9	100071		100071
17	Kedila-Gudda thodu side protection	NOS.	633645	1	633645		633645
20	Check dam at Chimminadka thodu	NOS.	106339	1	106339		106339
	ROUNDED FIGURE						41
	TOTAL						845335
	GRAND TOTAL						845376

3. PRODUCTION SYSTEM MANAGEMENT

All the activities in the Production System management activities are included as per the proposals collected from FGDs and SHG/ JLG meetings conducted in the Project area, and a list of beneficiaries were also prepared and kept with the PIA. Item wise annual action plan Prepared by the PIA is mentioned below.

TABLE 3.11 .MASTER PLAN OF PRODUCTION SYSTEM MANAGEMENT-CHOWKAR WS

CHOWKAR WATERSHED- PSM TOTAL FUND RS. 7, 54,800/-

Sl No	Crop	1st Year	2nd Year	3rd Year	4th Year	5th Year	Total
1	Paddy	53620	32560	26580	22920	15280	150960
2	Banana	42500	18670	26850	9260	8392	105672
4	Vegetable	18800	22650	12200	19680	24794	98124
5	Coconut	33850	8500	19850	20600	7776	90576
6	Pepper	23440	18100	21850	11100	8538	83028
7	Areca nut	18800	23450	11380	11280	10570	75480
8	Rubber	14500	18670	9800	12340	12622	67932
9	Tapioca	13550	8600	20300	10380	12200	52836

4. LIVELIHOOD SUPPORT SYSTEM

Livelihood support system activities are such as Goat rearing, Floriculture, , Dairy and Food processing units,etc, are included as per the proposals collected from FGDs and SHG/ JLG meetings conducted in the Project area, and a list of beneficiaries were also prepared and kept with the PIA . Item wise annual action plan prepared by the PIA is mentioned below.

TABLE 3.12. ACTION PLAN OF LIVELIHOOD SUPPORT SYSTEM

WATERSHED WISE FUND DETAILS

Name of Watershed	Code No.	Hectare	Total Fund allotted for IWMP Scheme	Amt.to be used for Livelihood (9%)	Amt.to be used for seed money (70%)	Amt.to be used for grant in aid(30%)
Chowkar	41M4b	629 Ha	75,48,000	6,79,320	4,75,524	2,03,796

Watershed wise details of JLG 'S proposed to be assisted seed money

Sl.No	Name of watershed	Number of JLG'S to be assisted	SC	ST	Min	Men	Women	Mixed	Total	Total amt of seed money
1	Chowkar	19	1	1	2	2	10	3	19	475000
	TOTAL	19	1	1	2	2	10	3	19	475000

LIVELIHOOD ACTION PLAN 2013-14

Sl.No	Name of watershed	No.of JLG's to be assisted	No. of beneficiaries to be benefited	Amount of seed money
1	Chowkar	10	60	250000
	TOTAL	10	60	250000

Livelihood Action Plan activity wise for 2014-15

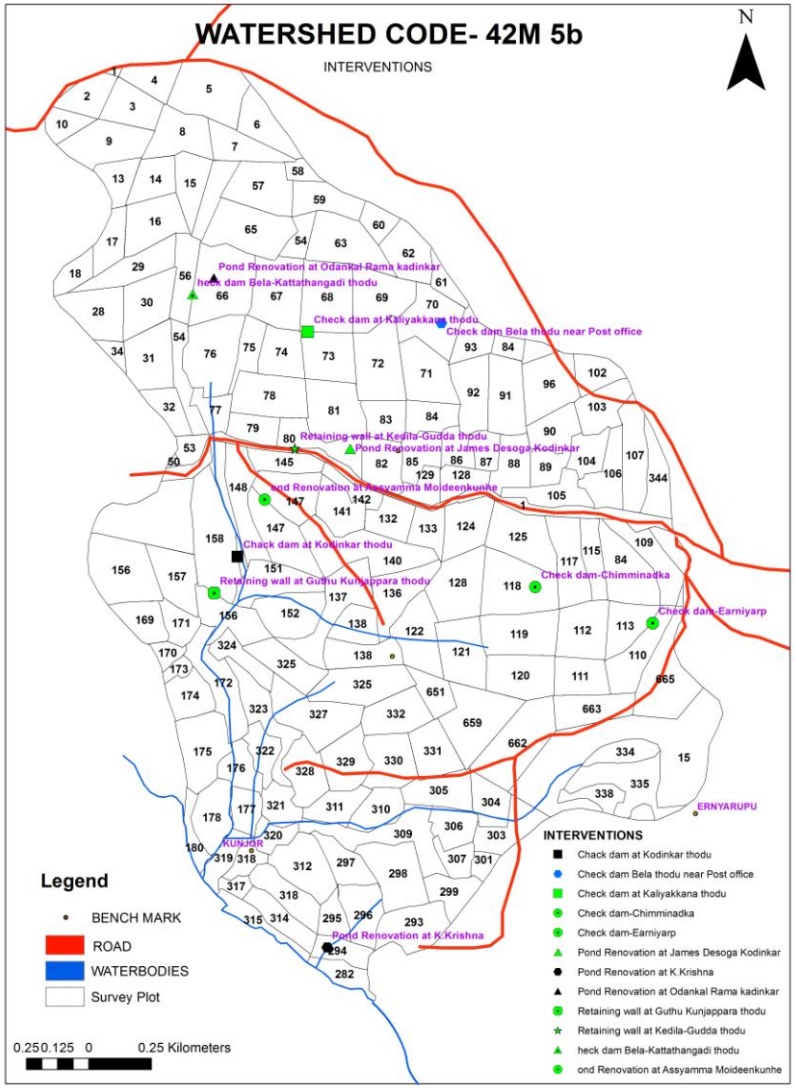
Name of watershed	No.of JLG'S to be assisted	No. of beneficiaries to be assisted	Amt. of seed money
Chowkar watershed	10 /19	60	250,000
			250000

Name of watershed	No.of JLG'S to be assisted	Name of activity		No. of She's to be assisted activity wise
Chowkar watershed	10	1	Cow rearing	2
		2	Poultry farming	2
		3	Tailoring	1
		4	Catering	0
		5	Soap making and agarbathi making	1
		6	Bee keeping	2
		7	Jasmine cultivation	2
		8	Vegetable cultivation	

Livelihood Action Plan activity wise for 2015-16

Name of watershed	No.of JLG'S to be assisted	No. of beneficiaries to be assisted	Amt. of seed money
Chowkar watershed	9	54	225,000
Total	9	54	225,000

Name of watershed	No.of JLG'S to be assisted	Name of activity		No. of she's to be assisted activity wise
Chowkar watershed	9	1	Cow rearing	1
		2	Poultry farming	2
		3	Tailoring	1
		4	Catering	1
		5	Soap making and agarbathi making	0
		6	Bee keeping	2
		7	Jasmine cultivation	2
		8	Nursery	
			Total	9



MAP 11.INTERVENTIONS OF CHOWKAR WATERSHED.

YELKANA WATERSHED

(42S17d)

1. INTRODUCTION

The Yelkana watershed bearing the code number (42S17d) located in the village of Badiadka in the Grama Panchayath , Badiadka in the Kasaragode block in Kasaragode district extends to a total area of 543ha.

. The watershed located between 75°3'34.931"E 12°34'15.408"N to 75°5'7.739"E 12°36'47.26"N.

TABLE 3.13. BOUNDARIES OF YELKANA WATERSHED

Yelkana Watershed	North	Yelkana Bus stop, Kariyad ST Colony,
	South	Pallathadka thodu,
	West	Pallathadka thodu, ,
	East	Kattathavally, Ukkinadka Jn.
	Geographical Coordinates'	75°3'34.931"E 12°34'15.408"N to 75°5'7.739"E 12°36'47.26"N.

PHYSIOGRAPHY

The slope of the watershed is east to west direction. The highest elevated point of the watershed is located in southern part of the watershed, which is 97 meters msl. The lowest area is located in western part of the watershed.

3. WATER SHED CHARACTERISTICS

The shape of the watershed is Triangular which is located in the south east portion of the cluster area.

4. PROBLEMS AND SUGGESSIONS

4.1 AGRICULTURAL SECTOR:

1. The "Padasekhara samithy" is not working properly.

2. Not encouraging the farmers engaging in paddy cultivation.

3. No irrigation facilities.

4. Soil erosion

5. Sliding the stream banks.

4.2 ANIMAL HUSBANDRY AND DAIRYING SECTOR:

1. Scarcity of hybrid cows and goats.

2. Hike in price of cattle feed.

3. Lack of proper possibility for milk selling.

4. Lack of scientific, modernized cattle shed.

4.3WATER AND SOIL CONSERVATION SECTOR:

1. Lack of water and soil conservation activities.

2. Commonness of land sliding and razing of earth.

3. Acute shortage of drinking water is the main problem in the project area.

4.4 SUGGESSIONS

1. Stream bank protection by stone pitched bunds.

2. Increase convenient irrigation facilities by conservation of canals and ponds.

3. Production of bio fertilizers and Vermi compost.

4. Construction of check dams at necessary areas

5. Promotion of Agriculture and Horticulture in barren land.

6. Encourage mushroom cultivation, apiculture, cattle breeding.

7. Plant medical plants and fruit bearing trees schools and other institution.

8. Construction of rain water harvesting systems.

9. Make high yielding cattle available and encourage fodder grass cultivation.

10. Vegetation in slope areas and thereby form bio belt.

11. Renovation of existing ponds and construction of new ponds.

ESTIMATE

1. FUNDING PATTERN OF YELKANA WATERSHED

TABLE 3.14 MASTER PLAN FOR 4 YEARS

MASTER PLAN FOR 4 YEAR											
YELKANA WATERSHED											
TOTAL TREATABLE AREA - 428 Ha					TOTAL AMOUNT - 543 x 12000/ Ha = Rs.6516000						
YEAR	ADMINISTRATION	MONITORING	EVALUATION	ENTRY POINT ACTIVITY	INSTITUTION & CAPACITY BUILDING	DPR PREPERATION	NATURAL RESOURCE MANAGEMENT ACTIVITIES	LIVELIHOOD ACTIVITIES	PRODUCTION SYSTEM 7 MICRO ENTERPRISES	CONSOLIDATION PHASE	TOTAL IWMP PROJECT
FIRST	81450	13032	6516	260640	16290	65160	729792	117288	130320		1420488
%	1.25	0.2	0.1	4	0.25	1	11.2	1.8	2		21.8
SECOND	228060	16290	16290		130320		1094688	175932	195480		1857060
%	3.5	0.25	0.25		2		16.8	2.7	3		28.5
THIRD	228060	16290	16290		130320		1094688	175932	195480		1857060
%	3.5	0.25	0.25		2		16.8	2.7	3	0	28.5
FOURTH	114030	19548	26064		48870		729792	117288	130320	195480	1381392
%	1.75	0.3	0.4		0.75		11.2	1.8	2	3	21.2
TOTAL	651600	65160	65160	260640	325800	65160	3648960	586440	651600	195480	6516000
%	10	1	1	4	5	1	56	9	10	3	100

2. NATURAL RESOURCE MANAGEMENT (NRM)

Natural resource management activities included in this Project are afforestation, Horticulture, Soil & moisture conservation, vegetative and engineering measures and water harvesting structures. Item wise annual actions plans are mentioned below as well as the year wise financial tables.The contribution to WDF shall be a minimum 10 % of the cost of NRM works executed on private land. In case of SC/ST, small and marginal farmers, the minimum contribution shall be 5 % of cost of NRM works executed on their land.

TABLE 3.1 5 MASTER PLAN OF NATURAL RESOURCE MANAGEMENT

Yelkana Watershed NRM Consolidated Action Plan

Sl. No.	Activities	Unit	Unit Rate	Physical Units	Financial		
					IWMP	Convergence	Total
1	Afforestation at Kattadmoola, and Kariyad areas.	NOS.	40	4000	160000		160000
2	FRUIT PLANTS	NOS.	60	2500	150000		150000
3	RAIN PITS	NOS.	700	25	17500		17500
4	Soak Pit	NOS.	4500	35	157500		157500
5	Stone Pitched Bund	RM	143.52	1500	215280		215280
6	EARTHERN BUND	RM	61.83	2500	154575		154575
7	Vermicompost	NOS.	30000	6	180000		180000
8	COMPOST PIT	NOS.	700	60	42000		42000
9	BIOMULCHING	Ha	18850	4	75400		75400
10	LIVE FENCING	RM.	20	3233	64660		64660
11	WELL RECHARGE (GROUND WATER RECHARGE)	NOS.	11119	50	555950		555950
12	FARM PONDS (NEW)	NOS.	25000	4	100000		100000

13	FARM POND / WELL RENOVATION	NOS.	14500	5	72500		72500
14	Pond renovation at Kattadmoola	NOS.	91536	1	91536		91536
15	Well recharging for Kariyad Koraga colony	NOS.	15129	1	15129		15129
16	Pallam renovation near Banpathadka masjid	NOS.	30100	1	30100		30100
17	Gully plugging at lower portion of Kariyad Colony	NOS.	72870	1	72870		72870
18	Retaining wall at Kattadmoola- Golimoola Thodu (200 mtr)	NOS.	794647	1	794647		794647
19	Side protection for Nagavanam thodu	NOS.	519329	1	519329		519329
20	Well recharging for Badiadka Panchayath open well	NOS.	9426	1	9426		9426
21	Pond renovation at Niramoola	NOS.	85320	1	85320		85320
22	Banpathadka Panchayath Pond renovation	NOS.	50659	1	50659		50659
23	Pond renovation at Golimoola	NOS.	34572	1	34572		34572
	ROUNDED FIGURE						7
TOTAL							3648953
GRAND TOTAL							3648960

TABLE 3.16 YEAR WISE ACTION PLAN-NRM YELKANA WS.

Yelkana Watershed NRM Annual Action Plan

Ist Year

Sl. No.	Activities	Unit	Unit Rate	Physical Units	Financial		
					IWMP	Convergence	Total
1	Afforestation at Kattadmoola, and Kariyad areas.	NOS.	40	2000	80000		80000
2	FRUIT PLANTS	NOS.	60	500	30000		30000
3	RAIN PITS	NOS.	700	5	3500		3500
4	Soak Pit	NOS.	4500	10	45000		45000
5	Stone Pitched Bund	RM	143.52	500	71760		71760
6	EARTHERN BUND	RM	61.83	640	39571.2		39571.2
7	Vermicompost	NOS.	30000	2	60000		60000
8	COMPOST PIT	NOS.	700	15	10500		10500
9	BIOMULCHING	Ha	18850	1	18850		18850
10	LIVE FENCING	RM.	20	1234	24680		24680
11	WELL RECHARGE (GROUND WATER RECHARGE)	NOS.	11119	6	66714		66714
12	FARM PONDS (NEW)	NOS.	25000	1	25000		25000
13	FARM POND / WELL RENOVATION	NOS.	14500	2	29000		29000
14	Well recharging for Kariyad Koraga colony	NOS.	15129	1	15129		15129
15	Pallam renovation near Banpathadka masjid	NOS.	30100	1	30100		30100
16	Well recharging for Badiadka Panchayath open well	NOS.	9426	1	9426		9426
17	Pond renovation at Niramoola	NOS.	85320	1	85320		85320
18	Banpathadka Panchayath Pond renovation	NOS.	50659	1	50659		50659
19	Pond renovation at Golimoola	NOS.	34572	1	34572		34572
	ROUNDED FIGURE						10.8
TOTAL							729781.2
GRAND TOTAL							729792

Yelkana Watershed NRM Annual Action Plan

IInd year

Sl. No.	Activities	Unit	Unit Rate	Physical Units	Financial		
					IWMP	Convergence	Total
1	Afforestation at Kattadmoola, and Kariyad areas.	NOS.	40	1000	40000		40000
2	FRUIT PLANTS	NOS.	60	1000	60000		60000
3	RAIN PITS	NOS.	700	10	7000		7000
4	Soak Pit	NOS.	4500	10	45000		45000
5	Stone Pitched Bund	RM	143.52	500	71760		71760
6	EARTHERN BUND	RM	61.83	924	57130.92		57130.92
7	Vermicompost	NOS.	30000	2	60000		60000
8	COMPOST PIT	NOS.	700	30	21000		21000
9	BIOMULCHING	Ha	18850	1.5	28275		28275
10	LIVE FENCING	RM.	20	1000	20000		20000
11	WELL RECHARGE (GROUND WATER RECHARGE)	NOS.	11119	10	111190		111190
12	FARM PONDS (NEW)	NOS.	25000	1	25000		25000
13	FARM POND / WELL RENOVATION	NOS.	14500	2	29000		29000
14	Side protection for Nagavanam thodu	NOS.	519329	1	519329		519329
	ROUNDED FIGURE						3.08
TOTAL							1094684.92
GRAND TOTAL							1094688

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Yelkana Watershed NRM Annual Action Plan

III rd year

Sl. No.	Activities	Unit	Unit Rate	Physical Units	Financial		
					IWMP	Convergence	Total
1	Afforestation at Kattadmoola, and Kariyad areas.	NOS.	40	1000	40000		40000
2	FRUIT PLANTS	NOS.	60	500	30000		30000
3	RAIN PITS	NOS.	700	10	7000		7000
4	Soak Pit	NOS.	4500	10	45000		45000
5	Stone Pitched Bund	RM	143.52	265	38032.8		38032.8
6	EARTHERN BUND	RM	61.83	351	21702.33		21702.33
7	Vermicompost	NOS.	30000	1	30000		30000
8	COMPOST PIT	NOS.	700	15	10500		10500
9	BIOMULCHING	Ha	18850	1.5	28275		28275
10	LIVE FENCING	RM.	20	501	10020		10020
11	FARM PONDS (NEW)	NOS.	25000	1	25000		25000
12	FARM POND / WELL RENOVATION	NOS.	14500	1	14500		14500
13	Retaining wall at Kattadmoola- Golimoola Thodu (200 mtr)	NOS.	794647	1	794647		794647
	ROUNDED FIGURE						10.87
	TOTAL						1094677.13
	GRAND TOTAL						1094688

Yelkana Watershed NRM Annual Action Plan

IVth year

Sl. No.	Activities	Unit	Unit Rate	Physical Units	Financial		
					IWMP	Convergence	Total
1	FRUIT PLANTS	NOS.	60	500	30000		30000
2	Soak Pit	NOS.	4500	5	22500		22500
3	Stone Pitched Bund	RM	143.52	235	33727.2		33727.2
4	EARTHERN BUND	RM	61.83	585	36170.55		36170.55
5	Vermicompost	NOS.	30000	1	30000		30000
6	LIVE FENCING	RM.	20	498	9960		9960
7	WELL RECHARGE (GROUND WATER RECHARGE)	NOS.	11119	34	378046		378046
8	FARM PONDS (NEW)	NOS.	25000	1	25000		25000
9	Pond renovation at Kattadmoola	NOS.	91536	1	91536		91536
10	Gully plugging at lower portion of Kariyad Colony	NOS.	72870	1	72870		72870
	ROUNDED FIGURE						-17.75
	TOTAL						729809.75
	GRAND TOTAL						729792

3. PRODUCTION SYSTEM MANAGEMENT

All the activities in the Production System management activities are included as per the proposals collected from FGDs and SHG/ JLG meetings conducted in the Project area, and a list of beneficiaries were also prepared and kept with the PIA. Item wise annual action plan prepared by the PIA is mentioned below.

TABLE 3.17 MASTER PLAN OF PRODUCTION SYSTEM MANAGEMENT-YELKANA WS .(**Total amount- 6,51,600/-)**

Sl No	Crop	1st Year	2nd Year	3rd Year	4th Year	5th Year	Total
1	Coconut	39450	21400	18800	24150	20004	123804
2	Areca nut	29950	15400	19950	17400	15040	97740
4	Banana	31300	14500	12200	18350	14874	91224
5	Pepper	22400	10100	17750	15500	12379	78129
6	Vegetable	20200	17450	10400	14510	9776	71676
7	Paddy	14150	10400	20200	9776	17450	71676
8	Sweet potato	17750	12500	9450	10700	8244	58644
9	Betel vine	14400	9600	8400	5300	7912	45612

4. LIVELIHOOD SUPPORT SYSTEM

During the first year of IWMP mainly concentrating with DPR preparation and Entry point activities. Livelihood support system activities are starting from second year such as Goat rearing, Coconut climber, Dairy and Food processing units. Item wise annual action plan prepared by the PIA is mentioned below.

TABLE 3.18. ACTION PLAN OF LIVELIHOOD SUPPORT SYSTEM

WATERSHED WISE FUND DETAILS

Name of Watershed	Code No.	Hectare	Total Fund allotted for IWMP Scheme	Amt.to be used for Livelihood (9%)	Amt.to be used for seed money (70%)	Amt.to be used for grant in aid(30%)
Yelkana	42S17d	543 Ha	65,16,000	5,86,440	4,10,508	1,75,932

Watershed wise details of JLG 'S proposed to be assisted seed money

Sl.No	Name of watershed	Number of JLG'S to be assisted	SC	ST	Min	Men	Women	Mixed	Total	Total amt of seed money
3	Yelkana	16	1	2	2	1	8	2	16	400000
	TOTAL		1	2	2	1	8	2	16	400000

LIVELIHOOD ACTION PLAN 2013-14

Sl.No	Name of watershed	No.of JLG's to be assisted	No. of beneficiaries to be benefited	Amount of seed money
1	Yelkana	8	48	200000
	TOTAL	8	48	200000

Livelihood Action Plan activity wise for 2014-15

Name of watershed	No.of JLG'S to be assisted	No. of beneficiaries to be assisted	Amt. of seed money
Yelkana watershed	8 /16	48	200000

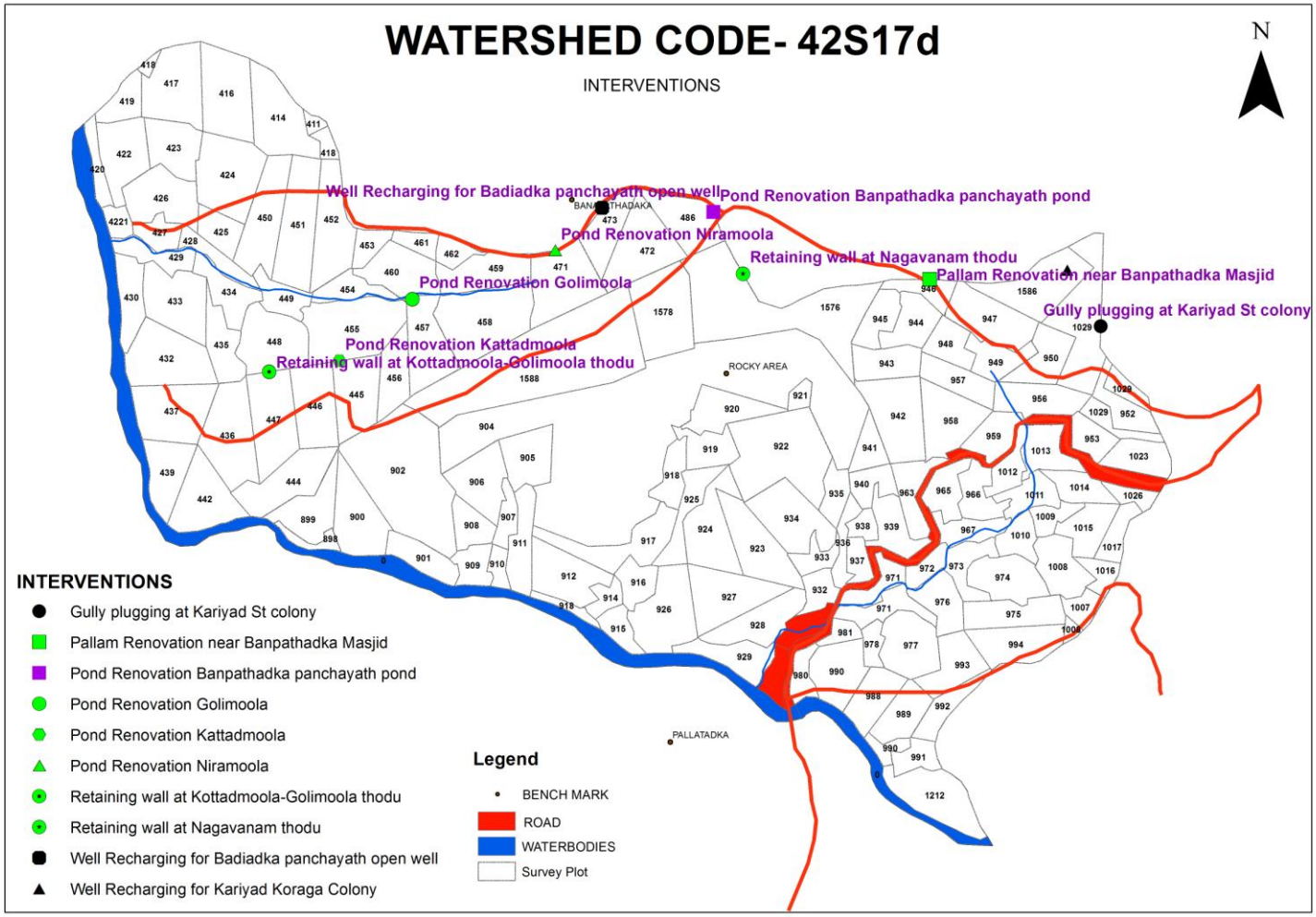
Name of watershed	No.of JLG'S to be assisted		Name of activity	No. of she's to be assisted activity wise
Yelkana watershed	8	1	Dairy farming	1
		2	Goat rearing	1
		3	Piggery	1
		4	Poultry farming	1
		5	Tailoring	1
		6	Catering	1
		7	Fancy, beautiparlour	1
		8	Bee keeping	1
		9	Vegetable cultivation	1
			Total	9

Livelihood Action Plan activity wise for 2015-16

Name of watershed	No.of JLG'S to be assisted	No. of beneficiaries to be assisted	Amt. of seed money
Yelkana watershed	8	48	200000
	8	48	200000

Name of watershed	No.of JLG'S to be assisted		Name of activity	No. of she's to be assisted activity wise
Yelkana watershed	8	1	Dairy farming	1
		2	Goat rearing	1
		3	Piggery	1
		4	Poultry farming	1
		5	Tailoring	1
		6	Catering	1
		7	Fancy, beautiparlour	1
		8	Bee keeping	1
			Total	8

MAP.12. INTERVENTIONS OF YELKANA WS



PERDALA WATERSHED

(42S17s)

1. INTRODUCTION

The Perdala watershed bearing the code number (42S 17d) situated in the villages of Badiadka,Nirchal&Pady in the Grama Panchayath of Badiadka and Chengala in Kasaragode block in Kasaragode district extends to a total area of 428 ha. The watershed lie down between 75°3'34.931"E 12°34'15.408"N to 75°5'7.739"E 12°36'47.26"N

1.1. BOUNDARIES OF PERDALA WATERSHED

Table.3.19. Boundaries of Perdala Watershed

Perdala Watershed	North	Kollampara,Chaliyathadukka
	South	Athippalla-Beejanthadukka thodu,
	West	Karambila thodu-Peradala thodu,
	East	Nellikkatta - Perla road.
	Geographical Coordinates’	75°3'34.931"E 12°34'15.408"N to 75°5'7.739"E 12°36'47.26"N

2. PHYSIOGRAPHY

The slope of the watershed is east to west direction. The highest elevated point of the watershed is located in southern part of the watershed, which is 97 meters msl. The lowest area is located in western part of the watershed

3. PROBLEMS AND SUGGESSIONS

3.1 AGRICULTURAL SECTOR:

1. Lack of Irrigation Facilities.
2. Lack of skilled Labours in Agriculture.
3. Hike in cost of productivity and lack of getting fair value for crops due to following the traditional agricultural methods.
4. Excessive production cost and low productivity.
5. Disturbance by wild animals (Pig, Monkey, etc.

3.2 ANIMAL HUSBANDRY AND DAIRYING SECTOR:

1. Increased price of hybrid cows and goats.
2. Hike in price of cattle feed.
3. Lack of proper facility for milk marketing.
4. Lack of scientific, modernized Cattle shed.
5. Productivity of milk is very poor from dairy farming sector due to the scarcity of fodder grass

3.3 WATER AND SOIL CONSERVATION SECTOR:

1. Silting of canals and ponds due to high erosion.
2. Lack of water and soil conservation activities.
3. Acute shortage of drinking water is the main problem in the project area.
4. Ground water depletion is also experienced in some parts due to the large number of bore well.

3.4 SUGGESSIONS

1. Undertake scientific agricultural method after compulsory soil testing.
2. Increase convenient irrigation facilities by conservation of canals and ponds.
3. Promotion of bio fertilizers and Vermi compost.
4. Construction of new ponds and water reservoirs to encourage, summer vegetable cultivation.
5. Encourage reclamation of barren field for cultivation.
6. Encourage mushroom cultivation, apiculture, cattle breeding.
7. Plant medicinal plants and fruit bearing trees in schools and other institution.
8. Construction of rain water harvesting pits, and reservoirs and biogas plants.
9. Make high yielding cattle available and promote fodder grass cultivation.
10. Vegetation in slope areas and thereby form bio belt.
11. Formation of scientific cattle shed and uses milking machines.

ESTIMATE

1. FUNDING PATTERN

TABLE 3.20 PERDALA WATERSHED- MASTER PLANS FOR 4 YEARS

MASTER PLAN FOR 4 YEAR											
PERDALA WATERSHED											
TOTAL TREATABLE AREA - 428 Ha					TOTAL AMOUNT - 428 x 12000/ Ha = Rs.5136000						
YEAR	ADMINISTRATION	MONITORING	EVALUATION	ENTRY POINT ACTIVITY	INSTITUTION & CAPACITY BUILDING	DPR PREPERATION	NATURAL RESOURCE MANAGEMENT ACTIVITIES	LIVELIHOOD ACTIVITIES	PRODUCTION SYSTEM 7 MICRO ENTERPRISES	CONSOLIDATION PHASE	TOTAL IWMP PROJECT
FIRST	64200	10272	5136	205440	12840	51360	575232	92448	102720		1119648
%	1.25	0.2	0.1	4	0.25	1	11.2	1.8	2		21.8
SECOND	179760	12840	12840		102720		862848	138672	154080		1463760
%	3.5	0.25	0.25		2		16.8	2.7	3		28.5
THIRD	179760	12840	12840		102720		862848	138672	154080		1463760
%	3.5	0.25	0.25		2		16.8	2.7	3	0	28.5
FOURTH	89880	15408	20544		38520		575232	92448	102720	154080	1088832
%	1.75	0.3	0.4		0.75		11.2	1.8	2	3	21.2
TOTAL	513600	51360	51360	205440	256800	51360	2876160	462240	513600	154080	5136000
%	10	1	1	4	5	1	56	9	10	3	100

2. NATURAL RESOURCE MANAGEMENT (NRM)

Natural resource management activities are such as afforestation, Horticulture, Soil & moisture conservation, vegetative and engineering measures and water harvesting structures (Ridge to valley approach). Item wise annual actions plans are mentioned below as well as the year wise financial tables. The contribution to WDF shall be a minimum 10 % of the cost of NRM works executed on private land. In case of SC/ST, small and marginal farmers, the minimum contribution shall be 5 % of cost of NRM works executed on their land.

TABLE 3.21MASTER PLAN OF NATURAL RESOURCE MANAGEMENT

Perdala Watershed- NRM Consolidated Action Plan

Sl. No.	Activities	Unit	Unit Rate	Physical Units	Financial		
					IWMP	Convergence	Total
1	AGROFORESTRY	NOS.	40	2750	110000		110000
2	FRUIT PLANTS	NOS.	60	1000	60000		60000
3	RAIN PITS	NOS.	700	75	52500		52500
4	Soak Pit	NOS.	4500	75	337500		337500
5	Stone Pitched Bund	RM	143.52	3251	466583.52		466583.52
6	EARTHERN BUND	RM	61.83	2751	170094.33		170094.33
7	Vermicompost	NOS.	30000	10	300000		300000
8	COMPOST PIT	NOS.	700	75	52500		52500
9	BIOMULCHING	Ha	18850	5	94250		94250
10	LIVE FENCING	RM.	20	2084	41680		41680
11	WELL RECHARGE (GROUND WATER RECHARGE)	NOS.	11119	40	444760		444760
12	FARM PONDS (NEW)	NOS.	25000	5	125000		125000
13	FARM POND / WELL RENOVATION	NOS.	14500	12	174000		174000
14	Checkdam at Perdala-Guthu thodu near Jagannatha Rai	NOS.	62256	1	62256		62256
15	Checkdam at Perdala-Guthu thodu near Shravankumar	NOS.	54397	1	54397		54397

16	Sidewall protection for Aramana-Makkikkana thodu (50 mtr)	NOS.	186193	1	186193		186193
17	Check dam at Muriyan kudlu , near Koraga ST Colony.	NOS.	6176	1	6176		6176
18	Kunjimoola public pond renovation	NOS.	100852	1	100852		100852
19	Pond renovation- Perdala, Guthu public pond near Thimmanna Alva.	NOS.	37407	1	37407		37407
	ROUNDED FIGURE						11.15
	TOTAL						2876148.85
	GRAND TOTAL						2876160

TABLE 3.22 YEAR WISE ACTION PLAN FOR NRM – PERDALA WS

Perdala Watershed NRM Annual Action Plan

Ist Year

SL NO.	Activities	Unit	Unit Rate	Physical Units	Financial		
					IWMP	Convergence	Total
1	AGROFORESTRY	NOS.	40	750	30000		30000
2	FRUIT PLANTS	NOS.	60	500	30000		30000
3	RAIN PITS	NOS.	700	25	17500		17500
4	Soak Pit	NOS.	4500	20	90000		90000
5	Stone Pitched Bund	RM	143.52	501	71903.52		71903.52
6	EARTHERN BUND	RM	61.83	751	46434.33		46434.33
7	Vermicompost	NOS.	30000	2	60000		60000
8	COMPOST PIT	NOS.	700	28	19600		19600
9	BIOMULCHING	Ha	18850	2	37700		37700
10	LIVE FENCING	RM.	20	594	11880		11880

11	WELL RECHARGE (GROUND WATER RECHARGE)	NOS.	11119	6	66714		66714
12	FARM PONDS (NEW)	NOS.	25000	2	50000		50000
13	FARM POND / WELL RENOVATION	NOS.	14500	3	43500		43500
	ROUNDED FIGURE						0.15
	TOTAL						575231.85
	GRAND TOTAL						575232

Perdala Watershed NRM Annual Action Plan

IInd year

SL NO	Activities	Unit	Unit Rate	Physical Units	Financial		
					IWMP	Convergence	Total
1	AGROFORESTRY	NOS.	40	750	30000		30000
2	FRUIT PLANTS	NOS.	60	500	30000		30000
3	RAIN PITS	NOS.	700	25	17500		17500
4	Soak Pit	NOS.	4500	20	90000		90000
5	Stone Pitched Bund	RM	143.52	1250	179400		179400
6	EARTHERN BUND	RM	61.83	1000	61830		61830
7	Vermicompost	NOS.	30000	3	90000		90000
8	COMPOST PIT	NOS.	700	27	18900		18900
9	BIOMULCHING	Ha	18850	1.5	28275		28275
10	LIVE FENCING	RM.	20	465	9300		9300
11	WELL RECHARGE (GROUND WATER RECHARGE)	NOS.	11119	14	155666		155666
12	FARM PONDS (NEW)	NOS.	25000	1	25000		25000
13	FARM POND / WELL RENOVATION	NOS.	14500	2	29000		29000
14	Checkdam at Perdala-Guthu thodu near Shravankumar	NOS.	54397	1	54397		54397
15	Check dam at Muriyan kudlu, near Koraga ST Colony.	NOS.	6176	1	6176		6176
16	Pond renovation- Perdala, Guthu public pond near Thimmanna Alva.	NOS.	37407	1	37407		37407
	ROUNDED FIGURE						-3
	TOTAL						862851
	GRAND TOTAL						862848

Perdala Watershed NRM Annual Action Plan

III rd year

Sl. No.	Activities	Unit	Unit Rate	Physical Units	Financial		
					IWMP	Convergence	Total
1	AGROFORESTRY	NOS.	40	1250	50000		50000
2	RAIN PITS	NOS.	700	15	10500		10500
3	Soak Pit	NOS.	4500	20	90000		90000
4	Stone Pitched Bund	RM	143.52	763	109505.76		109505.76
5	EARTHERN BUND	RM	61.83	502	31038.66		31038.66
6	Vermicompost	NOS.	30000	3	90000		90000
7	COMPOST PIT	NOS.	700	20	14000		14000
8	BIOMULCHING	Ha	18850	1.5	28275		28275
9	LIVE FENCING	RM.	20	1025	20500		20500
10	WELL RECHARGE (GROUND WATER RECHARGE)	NOS.	11119	12	133428		133428
11	FARM PONDS (NEW)	NOS.	25000	2	50000		50000
12	FARM POND / WELL RENOVATION	NOS.	14500	5	72500		72500
13	Checkdam at Perdala-Guthu thodu near Jagannatha Rai	NOS.	62256	1	62256		62256
14	Kunjimoola public pond renovation	NOS.	100852	1	100852		100852
	ROUNDED FIGURE						-7.42
	TOTAL						862855.42
	GRAND TOTAL						862848

Perdala Watershed NRM Annual Action Plan

IVth year

Sl. No.	Activities	Unit	Unit Rate	Physical Units	Financial		
					IWMP	Convergence	Total
1	RAIN PITS	NOS.	700	10	7000		7000
2	Soak Pit	NOS.	4500	15	67500		67500
3	Stone Pitched Bund	RM	143.52	737	105774.24		105774.24
4	EARTHERN BUND	RM	61.83	498	30791.34		30791.34
5	Vermicompost	NOS.	30000	2	60000		60000
6	WELL RECHARGE (GROUND WATER RECHARGE)	NOS.	11119	8	88952		88952
7	FARM POND / WELL RENOVATION	NOS.	14500	2	29000		29000
8	Sidewall protection for Aramana-Makkikkana thodu (50 mtr)	NOS.	186193	1	186193		186193
	ROUNDED FIGURE						21.42
	TOTAL						575210.58
	GRAND TOTAL						575232

3. PRODUCTION SYSTEM MANAGEMENT

All the activities in the Production System management activities are included as per the proposals collected from FGDs and SHG/ JLG meetings conducted in the Project area, and a list of beneficiaries were also prepared and kept with the PIA. Item wise annual action plan prepared by the PIA is mentioned below.

TABLE 3.23 MASTER PLAN OF PRODUCTION SYSTEM MANAGEMENT-PERDALA WS

Sl No	Crop	1st Year	2nd Year	3rd Year	4th Year	5th Year	Total
1	Vegetable	28600	19800	12100	17540	14408	92600
2	Paddy	18850	21600	13800	11400	6254	71904
4	Coconut	16800	9860	16900	12980	10228	66768
5	Flower	18700	7500	12300	8500	9416	56496
6	Areca nut	16800	11450	8650	8700	5760	51360
7	Pepper	13500	9450	7400	10450	5424	46224
8	Aroroot	14350	10400	5300	6750	4288	41088
9	Rubber	9550	4850	7450	9700	4402	35952

5. LIVELIHOOD SUPPORT SYSTEM

During the first year of IWMP mainly concentrating with DPR preparation and Entry point activities. Livelihood support system activities are starting from second year such as Goat rearing, Coconut climber, Dairy and Food processing unit. Item wise annual action plan prepared by the PIA is mentioned below.

3.24 ACTION PLAN OF LIVELIHOOD SUPPORT SYSTEM-PERDALA WS

WATERSHED WISE FUND DETAILS

Name of Watershed	Code No.	Hectare	Total Fund allotted for IWMP Scheme	Amt.to be used for Livelihood (9%)	Amt.to be used for seed money (70%)	Amt.to be used for grant in aid(30%)
Perdala	42S17s	428 Ha	4,62,240	4,62,240	3,23,568	1,38,672
TOTAL		428 Ha	4,62,240	4,62,240	3,23,568	1,38,672

Watershed wise details of JLG 'S proposed to be assisted seed money

Sl.No	Name of watershed	Number of JLG'S to be assisted	SC	ST	Min	Men	Women	Mixed	Total	Total amt of seed money
1	Perdala	13	1	2	2	2	4	2	13	325000
	TOTAL		1	2	2	2	4	2	13	325000

LIVELIHOOD ACTION PLAN 2013-14

Sl.No	Name of watershed	No of .JLG's tobe assisted	No. of beneficiaries to be benefited	Amount of seed money
1	Perdala	6	36	150000

Livelihood Action Plan activity wise for 2014-15

Name of watershed	No.of JLG'S to be assisted	No. of beneficiaries to be assisted	Amt. of seed money
Perdala watershed	6 /12	36	150000
Total			150000

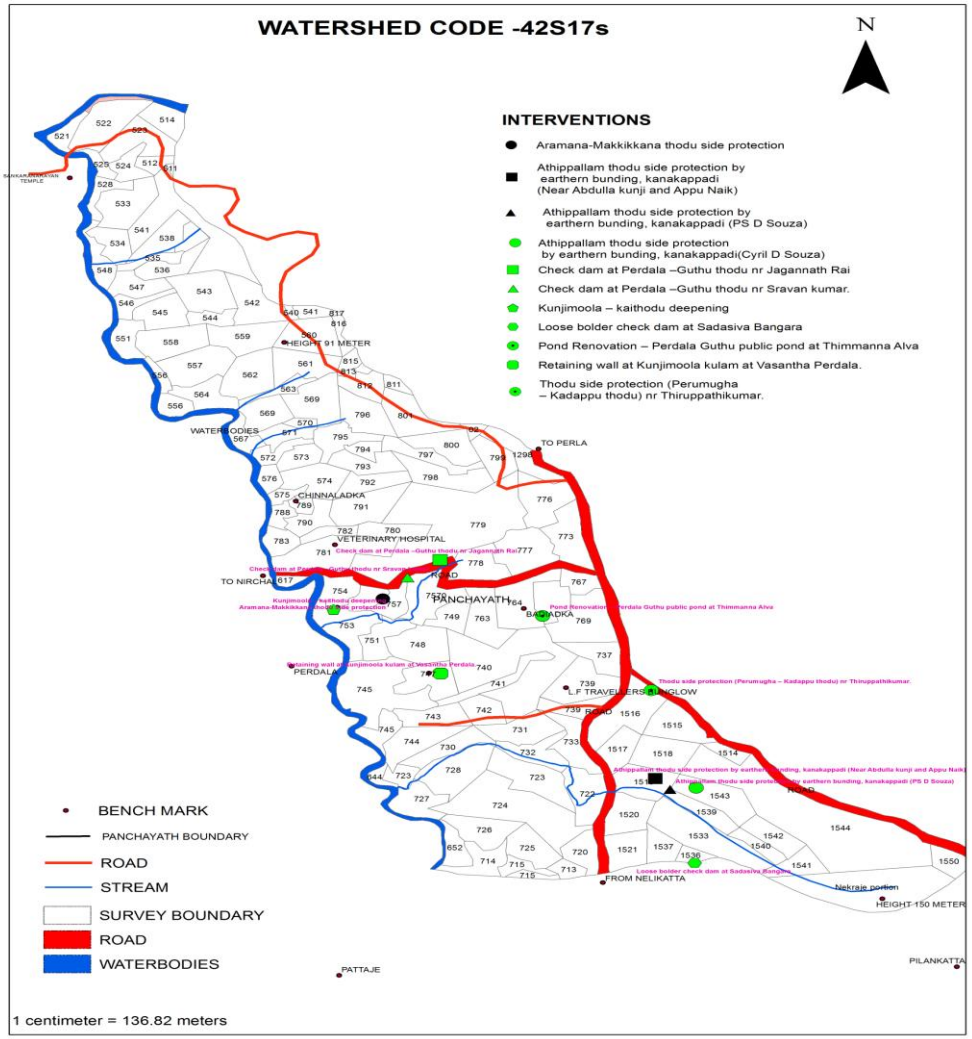
Name of watershed	No.of JLG'S to be assisted	Name of activity		No. of she's to be assisted activity wise
Perdala watershed	6	1	Poultry farming	2
		2	Goat rearing	2
		3	Basket making for ST.JLG'S	2
		4	Vegetable cultivation	
				6

Livelihood Action Plan activity wise for 2015-16

Name of watershed	No.of JLG'S to be assisted	No. of beneficiaries to be assisted	Amt. of seed money
Perdala watershed	6	36	150000
TOTAL	6	36	150000

Name of watershed	No.of JLG'S to be assisted	Name of activity		No. of she's to be assisted activity wise
Perdala watershed	6	1	Poultry farming	2
		2	Goat rearing	2
		3	Basket making and mat weaving for ST.JLG'S	1
		4	Paper cup and plate	1
				6

MAP 13. INTERVENTION MAP OF PERDALA WATERSHED



PART – III

1. EXPECTED OUTCOMES

Projects under IWMP are a multi -disciplinary which include Natural Resource Management, Production System, Micro enterprises and Livelihood activities. The project conceives to bring in holistic and sustainable development in the concerned areas. This programme mainly focus on activities which create employment opportunities, enhance income, decrease migration, increase productivity, which would ensure sustainable livelihood opportunities for the community. The expected outcomes are given in the table below.

INTERVENTIONS	ACTIVITIES	OUTCOMES
1. WATERSHED DEVELOPMENT WORKS A. LAND DEVELOPMENT	Adoption of suitable land development works like, **AFFORESTATION** **HORTICULTURE** **AGRICULTURE** Vegetable Garden - 39 Ha Banana Cultivation - 35 Ha Spices Cultivation - 26 Ha Tuber Crops - 21.25 Ha Fodder Grass Cultivation - 14.5Ha Mixed Crop - 21.75 Ha	Organic crop production from an extent of about 97.2 ha of the watershed area can be enhanced substantially. Soil erosion is significantly reduced as tree plantations prevent run off after heavy rains. In addition, trees bring soils together which prevents soil erosion in the project area. Water infiltration is increased, and runoff and erosion are consequently decreased. Compaction is reduced so roots can freely explore the soil for nutrients and water, increasing yields in the area. creates 1120 man labour days every year.
B. SOIL AND MOISTURE	Adoption of suitable soil and moisture	Rain water will be conserved to recharge Ground Water Level.

CONSERVATION	conservation measures like , Stone Pitched Bund - 7959m Contour Terracing - 1Ha Centripetal Terracing - 13 Ha Live Fencing – 19359 M	Valuable Top Soil source in about 1104 ha of land will be protected from soil erosion. Strengthen outer bunds by planting fodder grass along the slope facing era`s and reduce the soil erosion. Employment for around 860 landless or asset less poor every year.
C. VEGETATIVE AND ENGINEERIG STRUCTURE	Streams Side Protection –1519 M Pond side protection – 4 Nos	Water conservation in about 1012 ha of the project area, control soil erosion and Problem of drinking water in the watershed area gets substantially solved.
D. WATER HARVESTING STRUCTURE	Well Recharge – 291 Nos Public pond Renovation – 3 Nos Pond Construction – 3 Nos Water Absorption Pit – 2500 Nos	Water conservation in about 1012 ha of the project area. Problem of drinking water in the watershed area gets substantially solved.112 M3 of rain water will be additionally collected in the project area. Depth to WT to be reduced by 1m in Mid lands and 1-1.5 m in High lands.

2. PRODUCTION SYSTEM AND MICRO ENTERPRISES	Beekeeping - 61 Unit Pisciculture - 27 Unit Vermicomposting – 141 Unit Biogas Plant – 45 Unit Floriculture - 15 unit Mushroom Cultivation – 59Unit Weed cutter-3nos. Dairy – 50 unit	By supplying 14286 nos poultry for 2381 families in the project area. Egg production in backyard system is a cheap and easy alternative to commercial egger farms which can augment the production and reduce the dependency on other states for our food. Promotion of non -conventional energy for daily cooking needs. Employment for around 230 land less or asset less poor every year
3.LIVELIHOOD ACTIVITIES	Goat Rearing - 231 unit Poultry - 19394nos.	To empower land less, asset less poor people. 25% Increase in milk production. 95 SHGs will get aid for strengthening their livelihood activities in every year. Generate employment opportunities for minimum 100 people every year.

2. WATERSHED DEVELOPMENT FUND (WDF)

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

3. EXIT PROTOCOL

While preparing the detailed project report, the Gramasabha /Grama Panchayath, under the technical guidance of WDT, shall evolve proper Exit Protocol for the watershed development project. The Exit Protocol shall specify a mechanism for maintenance of assets created, augmentation including levy and collection of user charges, utilization of the Watershed Development Fund etc. Mechanism for equitable distribution and sustainability of benefits accrued under the watershed development project should also be clearly spelt out in the Exit Protocol. While approving the Action Plan for the watershed, the ZP/ DRDA shall ensure that the detailed mechanism for such Exit Protocol forms part of the Action Plan/Treatment Plan.

4. PROJECT SUMMARY AND CONCLUSION

The Watershed cluster is located in Kasaragode Block of the Kasaragode District. Badiadka, Enmakaje and Puthige areas included in the watershed. The cluster is comprised of 4 micro watersheds namely Kilingar,Chowkar,Yelkana, and Perdala of Kasaragode Block . Total area of the watershed is 3051 hectares. There are 2663 households in the project area and the total population is 13623. The total project cost is 366.12lakhs. State Department of Rural Development is the nodal department for the implementation of IWMP in Kerala. State Level Nodal Agency (SLNA) is coordinating and providing guidelines for the effective planning and implementation of the individual IWMP projects. District Planning Committee (DPC) is responsible for approving the DPR at the district level. A District Level Coordination Committee-DLCC- has been constituted to facilitate integration of technology as required under IWMP. A Watershed Cell Cum Data Centre (WCDC) is working under the Project Manager (PD , PAU) at the district level to assist the DLCC in the matter. The Kasaragode Block Panchayath is the Programme Implementing Agency (PIA) of the project. A Block Level Coordination Committee (BLCC) has been formed for ensuring the coordination of line technologies and for the timely implementation of the project and to provide help to the PIA in technical and administrative matters related to the project. A separate Watershed Development Team (WDT) has been formed under the PIA. SEID is the Technical Support Organization (TSO).

Preparation of the DPR involved village level meetings and participatory discussions with people, elected representatives, officials and other stakeholders. A situational analysis was undertaken using secondary data and information collected from different sources. A Logical Framework Analysis was done at the project level for identifying the important problems (through problem tree analysis) as well as for the purpose of assessing the present situation. PRA techniques like transect walk, social mapping, resource mapping, seasonal calendar, etc., were employed in each micro watershed area. GIS and remote sensing devices

have been made use of in the preparation of DPR. GIS Software was used for the preparation of maps. In depth interviews with officials, farmers, labourers, entrepreneurs of micro-enterprises etc. were also undertaken. Field level verification of the identified interventions was undertaken by the DPR preparation team. Most of the micro watersheds in the project area share common problems because of the similarities existing among the micro watersheds. The interventions proposed for the area covered under this project of IWMP are expected to help in restoring the ecological balance of the project area, in conserving the natural resources and in improving the livelihood opportunities of the people.

NB: DETAILED ESTIMATES OF NRM WORKS IN THE PROJECT AREA IS SUBMITTED TO THE PIA IN SEPARATE