INTEGRATED WATERSHED MANAGEMENT PROGRAMME

(BATCH – III)

AREACODE BLOCK PANCHAYAT
MALAPPURAM DISTRICT
KERALA STATE

DETAILED PROJECT REPORT

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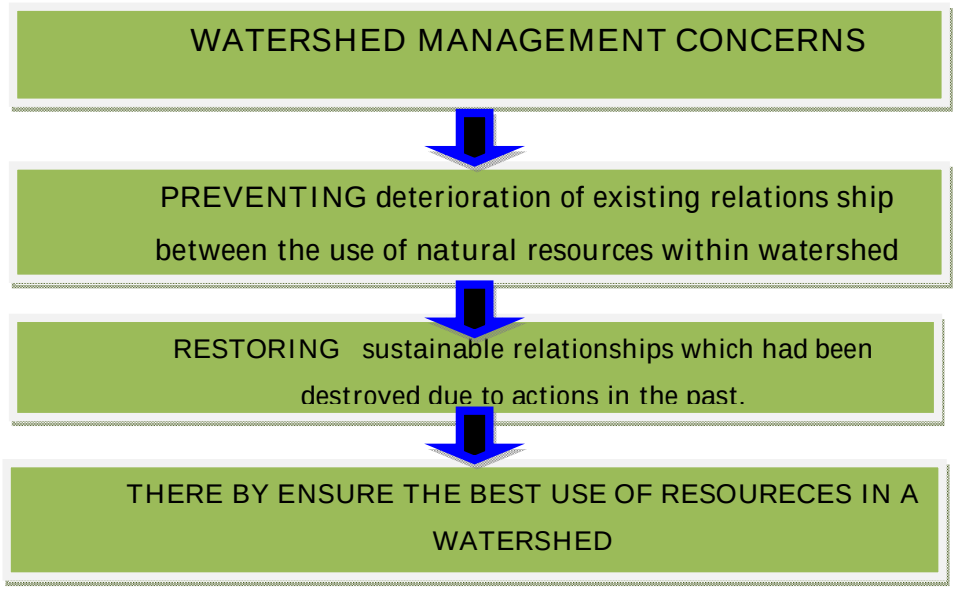
PART I

CHAPTER -1

INTRODUCTION

1.1 PROJECT BACKGROUND

A watershed is an area from which run off, resulting from precipitation flows past a single point into a large stream, river, lake or an ocean. 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 wellbeing 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.



1.2 NEED AND SCOPE FOR WATERSHED DEVELOPMENT

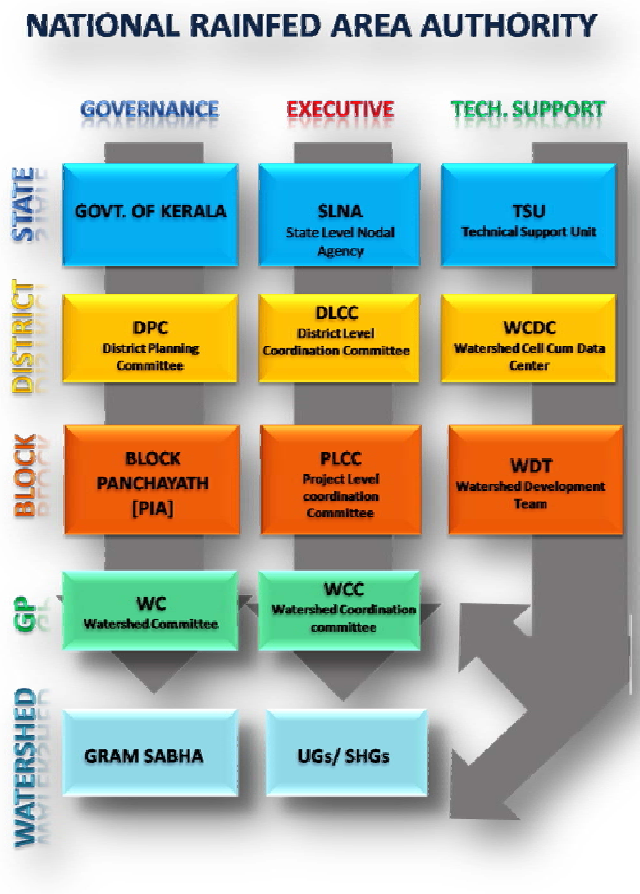
Loss of vegetative cover following by soil degradation through various forms of erosion has resulted into lands which are thirsty in terms of water as well as hungry in terms of soil nutrients. All these regions have predominantly livestockcentered farming systems; less biomass for animals not only reduces 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.

1.3 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 or suitable measures according to the land capability and without any environmental degradation.

1.4 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

Figure :Institutional Set Up

1.5 FUND FLOW

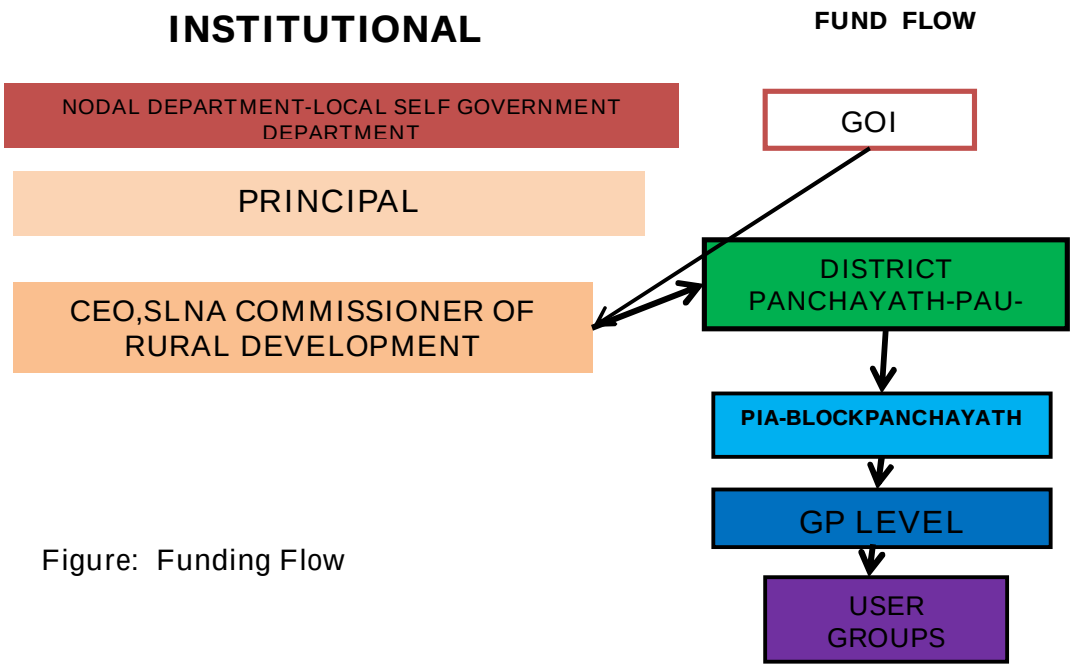


Figure: Funding Flow

1.6 FUNDING PATTERN

Table No.1: Funding Pattern

Sl. No.	Particulars	Percentage of Fund	Amount
01.	Administration Cost	10.00	4674000
02.	Monitoring	1.00	467400
03.	Evaluation	1.00	467400
04.	Entry Point Activities	4.00	1869600
05.	Institution & Capacity Building	5.00	2337000
06.	DPR	1.00	467400
07.	Watershed Development Works	56.00	26174400
08.	Livelihood Activities	9.00	4206600
09.	Production System & Micro Enterprises	10.00	4674000
10.	Consolidation Phase	3.00	1402200
Total		**100%**	**46740000**

CHAPTER -2

WATERSHED ACTIVITIES

2.1. 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 Implementation Agency (PIA)
- . Watershed Development Team (WDT)
- . Watershed Committee (WC)
- . Neighborhood Groups(NHG)
- . Self Help Groups (SHGs)
- . User Groups (UGs)

➢ .STATE LEVEL NODAL AGENCIES

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.

➢ 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.

- **Institution Building at District Level**

Name	Designation
Chairman	District Panchayat 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
DistrictCo-ordinator,Horticulture Mission	Members
Other IWMP Officers	Members

- **. 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. In Malappuram district, for the IWMP – B2, the Areacode Block Panchayat is being selected as the Project Implementing Agency.

The Project Implementing Agency (PIA) provides necessary technical guidance to the Grama Panchayat 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.

- Details of Project Implementation Agency (PIA)

Name of The project	IWMP B2
PIA	Areacode Block Panchayat
Implementation Officer	Block Development Officer
Address PIA	Secretary, Areacode Block Panchayat, Areacode, 673 639
Telephone	Phone: 0483-2850221.
Email	bpoarkd@gmail.com

- **WATERSHED DEVELOMENT TEAM**

Name	Age	Sex	Designation	Qualification
Muhammed sadique k	24	Male	WDT Engineer	Civil engineering
Ranjith - k	28	Male	Social Mobilizer	MSW

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 Gram 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.

- . Details of Watershed Development team in IWMP B2

➢ **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 7 micro watersheds of IWMP-B2 project area. The IWMP-B2 is a cluster of 2 Grama Panchayats coming under 1 Block Panchayat. 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 utilise the same for undertaking its activities.

➢ **NEIGHBOUR HOOD GROUPS**

Neighbour Hood Groups are formed in every micro watershed containing 50 households living as clusters. The baseline survey carried by the help of this group

➢ **. 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.

- **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 Gram Sabha. 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-B2 project are:

a) In case of, Roof Well Recharge, Kitchen Garden, Contour Trench, Soil Bund, etc all the beneficiaries of the individual and community activities who are involved are made user group members.

- **. 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 all so 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.

2.2 IWMP- PROJECT MANAGEMENT

: . Implementation Phases of IWMP

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

- ***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.

- . ***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)

- ***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

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

The project comprises of seven 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-B2 of Malappuram District is outlined below:

Following steps were followed for the preparation of the plan:

- Delineation of watershed map from the Top sheet
- Collection of cadastral map from revenue department
- Boundary identification
- 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

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

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.

- **PARTICIPATORY RURAL APPRAISALS**

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 soc+ial 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 vegetations

(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.

- **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. Most of the streams become waste carriers. 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.

- **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

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

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

➢ **. USE OF GIS AND REMOTE SENSING FOR PLANNING**

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

➢ **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.

➢ **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.

➢ **. 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.

➢ **PLANNING**

A 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. Contour Map of vertical interval of 1 meter at a scale of 1:8000 was used for identifying various locations for soil and water conservation structures.

- **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.

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
Contour mapping	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
Crop simulation models#	
Integrated coupled analyzer/ near infrared visible ispectroscopy/ medium spectroscopy for high speed soil nutrient analysis	
Normalized difference vegetation index (NDVI)#	
Weather Stations	yes
(B)Inputs	
1. Bio-pesticides	
2. Organic manures	Yes
3. Vermi compost	
4. Bio-fertilizer	

5. Water saving devices	Yes
6. Mechanized tools/ implements	
7. Bio-fencing	Yes
8. Nutrient budgeting	
9. Automatic water level recorders & sediment samplers	From GWD Mlpm
Any other (please specify)	

- **GUIDING PRINCIPLES**

Livelihood improvement initiative emphasizes on natural resource based activities and conforms to principles of equity, gender sensitivity and transparency. It strives to:-

a. Enhance livelihood opportunities for the poor through investment into asset creation and improvement in productivity and income.

b. Improve access of the marginalized communities, including SC/ST, landless/asset less people, women, etc., to the benefits.

c. Select the beneficiaries in a transparent manner. Livelihood guidelines for landless/ asset less households aims at improved household income, participation and division of labour, access to information, knowledge, appropriate technologies and resources.

- **PLANNING AND IMPLEMENTATION**

The most important aspect is the inclusion of 'micro level livelihood planning' an empowerment tool for the marginalized communities. This planning helps in understanding existing livelihood assets/capitals in a highly participatory manner to augment the existing livelihood platform.

Planning

i. An awareness drive was undertaken at Grama Panchayath level for communication & sensitization of the target beneficiaries

ii. A "Livelihood Action Plan" (LAP) was prepared for availing the funds under the livelihood component.

iii. The livelihood action plan was prepared by analyzing the socio-economic conditions and existing livelihood capitals of the watershed, during the situation analysis by means of PRA and focus group discussion, in order to facilitate collection of information to feed into the livelihood action planning process. Livelihood action plan contains schedule of activities, interventions, no. of SHGs to be assisted and expected outcome.

iv. To promote convergence, the PIA has worked in close association with other Employment generating programmes such as MGNREGS, NRLM, Kudumbashree, VFPCK, NHM, etc.

- **MODE OF OPERATION**

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

ii. Livelihood activities will be carried out either through the existing SHGs having good performance or new SHGs formed with a group of 10-20 persons.

iii. SHGs selected for implementing livelihood action plan will be homogeneous in terms of their existing livelihood capitals, common interest and need.

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

v. The financial support to enterprising individuals who prepare and submit a viable livelihood proposal, will be considered by Watershed Cell cum Data Centre (WCDC) on the recommendation of the Watershed Committee (WC). The plan has to be approved by the WCDC before extending financial support. However, support to individuals should not exceed a maximum of 10 % of funds under the livelihood component.

- **CAPACITY BUILDING FOR BENEFICIARIES**

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.

- **ELIGIBILITY FOR AVAILING THE PRODUCTION SYSTEM FUNDS:**

  - Individual land holders/owners can avail the benefits of production system on their private land. The small and marginal farming households, women headed farming households, SC & ST farmers will be given preference based on the wealth ranking exercise conducted during PRA. Those households whose land is in close proximity to the developed natural resources may be preferred to make full use of natural resource potential.
  - Selection of beneficiaries will be done by PIA, in consultation with WC.
  - Beneficiaries having common interest will be organized into User Groups to pool and manage their resources as well as manage aggregating their produce for effective disposal and marketing, besides maintaining their natural resource

base. This may also provide a means for deciding resource use arrangements based on equity and sustainability.

- The funds were earmarked for cost intensive farming system based livelihood activities/interventions such as aquaculture, agriculture, horticulture, agro forestry, animal husbandry, agro-processing, value addition, etc.
- . The beneficiary contribution of farmers will be 20 percent for general category and 10 percent for SC/ST.

2.4. ACTIVITIES TO BE PROPOSED

➢ ***ENTRY POINT ACTIVITIES***

EPA is done as a part of IWMP. In Areacode b2 cluster area most of the EPA activities are related water harvesting like check dams, construction of ponds, Well construction, streams side protection. EPA activities will implement in the first year. The major EPA activities area showing below

: Entry Point Activities of Cluster

No	Name Of Watershed & Code	Name Of Panchayath	Entry Point Activities suggested	Total cost	Latitude	Longitude
1	Chundathupoyil (24 C 12f)	Urngatiri	Kunthanikkad Check Dam Construction	2,81,280	$11^0 17' 48.25"$N	$76^0 05' 55.91"$
2	Thottumukkam (24C12g)	Urngatiri	Amapetty chola pond construction	1,73,760	11^0 17' 01.44"	$76^0$04'34.456"
3	Kottampara Poolakkamthod (24C12h)	Urngatiri	Vilakkuparamb Chola pond construction	4,48,320	N$11^0$16'17.0"	E $76^0 04' 23.7"$
4	Kavunginchola Cherangad (24C12l)	Urngatiri	Repair Of Oyilupara Drinking Water Supply Scheme	2,44,320	$11^0$15'4''N	$76^0$05'21.50"E
5	Therattammal (24C12n)	Urngatiri	Rain Water Harvesting Tank-.Kallarattikkal	1,66,560	11 ^{0}14'52.76	76^0 03' 36. 21"
6	Urngatiri Kolarthod (24C14a)	Urngatiri	Choolattipara Varikkal Thodu Side Protection) Myladi STcolony Solar panel – (18 nos)	4,13,760	$11^0 14' 09.34"$ $11^0$14'31.76	76^0 05' 28. 25" $76^0$05'34.09"
7	Moozhipadam Vakalure (24C62-63a)	Kavanur	Repair Of Anaprachal Panchayath Pond Repair Of Puliyarakunn Panchayath Pond	1,41,600	$11^0$12'41.439'' $11^0$12'30.957''	$76^0$4'32.715'' $76^0$42 '7.811''

➢ *NATURAL RESOURCE MANAGEMENT*

Natural resource management refers to the management of natural resources such as land, water, soil, plants and animals, with a particular focus on how management affects the quality of life for both present and future generations.

Natural resource management deals with managing the way in which people and natural landscapes interact. It brings together land use planning, water management, biodiversity conservation, and the future sustainability of industries like agriculture, mining, tourism, fisheries and forestry. It recognises that people and their livelihoods rely on the health and productivity of our landscapes, and their actions as stewards of the land play a critical role in maintaining this health and productivity.

Natural resource management is also congruent with the concept of sustainable development, a scientific principle that forms a basis for sustainable global land management and environmental to conserve and preserve natural resources. Natural resource management specifically focuses on a scientific and technical understanding of resources and ecology and the life-supporting capacity of those resources. In this project area NRM activities will start on second year. Interventions are mentioned in below.

- **Afforestation**

Afforestation is the establishment of a forest or stand of trees in an area where there was no forest. Reforestation is the reestablishment of forest cover, either naturally (by natural seeding, coppice, or root suckers) or artificially (by direct seeding or planting). The programs objectives are afforestation to create forests, increase carbon capture and sequestration, and help to anthropogenic ally improve biodiversity.

- **Horticulture**

Horticulture is the science, technology, and business involved in intensive plant cultivation for human use. It is practiced from the individual level in a garden up to the activities of a multinational corporation. It is very diverse in its activities, incorporating plants for food (fruits, vegetables, mushrooms, culinary herbs) and non-food crops (flowers, trees and shrubs, turf-grass, hops, medicinal herbs). It also includes related services in plant conservation, landscape restoration, landscape and garden design/construction/maintenance, arboriculture, horticultural therapy, and much more. This range of food, medicinal, environmental, and social products and services are all fundamental to developing and maintaining human health and well-being.

- **Vegetable Gardening**

A vegetable garden (also known as a vegetable patch or vegetable plot) is a garden that exists to grow vegetables and other plants useful for human consumption, in contrast to a flower garden that exists for aesthetic purposes. It is a small-scale form of vegetable growing. A vegetable garden typically includes a compost heap, and several plots or divided areas of land, intended to grow one or two types of plant in each plot. Plots may also be divided into rows with an assortment of vegetables grown in the different rows. It is usually located to the rear of a property in the back garden or back yard.

- **Banana Cultivation**

Banana (Musa sp.) is the second most important fruit crop in India next to mango. Its year round availability, affordability, varietals range, taste, nutritive and medicinal value makes it the favourite fruit among all classes of people. It has also good export potential. Hi-tech cultivation of the crop is an economically viable enterprise leading to increase in productivity, improvement in produce quality and early crop maturity with the produce commanding premium price.

- **Spices Cultivation**

Kerala is famous for spices. Merchants from ancient Phoenicia travelled to Kerala to take its spices to the Mediterranean lands. There are a wide variety of spices grown here which includes pepper, cardamom, cinnamon, ginger, cloves etc. The spices from Kerala were used for adding flavors to food and wine and also to preserve meat during the cold climates in Europe.

Spices are an aromatic substance which can be used for flavoring the food or can be used as a preservative. Spices can also be used for various medicinal purposes. For example, spices such as turmeric and curry leaf have high medicinal value. Turmeric is an anti-oxidant. Curry leaf can be consumed to prevent or control diabetes.

- **Fodder Grass Cultivation**

Fodder Grass production is an important and major activity of the dairy farms. The major expenditure is spent on feeding cattle with fodder occupies a large share. If nutritious fodder is fed to cattle considerable amount can be reduced on feeding with concentrates. If the expenditure is minimized on concentrates the cost of milk production will become cheaper making the farm profitable. Generally speaking one acre of land is sufficient to grow fodder for four dairy animals. According to the availability of land the number of animals to be maintained in the farm should be planned. There are several fodder crops, leguminous fodders, perennials, annual crops and fodder trees available for

cultivation. The planning should be done carefully so that there is no shortage of fodder throughout the year. When there is surplus fodder in flush seasons fodder can be conserved as dry fodder, Hay and silage for feeding when there is scarcity.

- **Poly house**

A polytonal (also known as a polyhouse, hoop greenhouse or hoop house, or high tunnel) is a tunnel made of polyethylene, usually semi-circular, square or elongated in shape. The interior heats up because incoming solar radiation from the sun warms plants, soil, and other things inside the building faster than heat can escape the structure. Air warmed by the heat from hot interior surfaces is retained in the building by the roof and wall. Temperature, humidity and ventilation can be controlled by equipment fixed in the polytonal.

- **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. The practice of contour bunding is found to increase crop yield by about 15-20 per cent.

Objectives

1. To increase the time of concentration of rainwater where it falls and thereby allowing rainwater to percolate into the soil
2. Converting a long slope into several ones so as to minimize velocity and thereby reducing the erosion by runoff water
3. To divert runoff for water harvesting purposes

The term contour bunding used in India is same as “level terraces” and “ridge type terraces”. The bund acts as barrier to the flow of water and at the same time impound water to build up soil moisture storage. The spacing of bunds is so arranged that the flowing water is intercepted before it attains the erosive velocity V.I. = 0.3 (S/3 + 2) Where, S = Degree of slope in percent V.I. = Vertical interval between two bunds, The spacing is increased by 25% in highly permeable soils and decreased by 15percent in poorly permeable soils. It is always desirable to remove local ridges and depressions before building contour bunds.

Detailed estimate

Estimate amount:14352/100m

Estimate for a 100 m length:

1. Cleaning grass and other over growth of vegetation etc. complete.

   1*100.00*1.00=100m^2
   Sa y 10m^2 @ Rs.177/100m^2----------Rs.172.00
2. 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
3. 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. 14352/100m^2 or

   Rs. 14352/100m length of 1m height

   or Rs. 143.52/m

- **Terracing**

Method of growing crops on sides of hills or mountains by planting on graduated terraces built into the slope. Though labour-intensive, the method has been employed effectively to maximize arable land area in variable terrains and to reduce soil erosion and water loss.In most systems the terrace is a low, flat ridge of earth built across the slope, with a channel for runoff water just above the ridge. Usually terraces are built on a slight grade so that the water caught in the channel moves slowly toward the terrace outlet. In areas where soils are able to take in water readily and rainfall is relatively low, level terraces may be used.

- **Side Protection works of Stream**

For the disturbance to the bed or banks of a protected stream. Protected streams are determined by their assigned water classification. The purpose of the Streamside Protection is to protect and improve the integrity, ecological health and biodiversity of our natural features and systems.

- **Farm pond**

Means a deep water habitat created from a non-wetland site in connection with agricultural activities where the pond is smaller than 5 acres.

- **Check dams**

  A check dam is a small dam, which can be either temporary or permanent, built across a minor channel, swale, bios wale, or drainage ditch. Similar to drop structures in purpose, they reduce erosion and gullying in the channel and allow sediments and pollutants to settle. They also lower the speed of water flow during storm events. Check dams can be built with logs, stone, or sandbags. Of these, the former two are usually permanent or semi-permanent; and the sandbag check dam is usually for temporary purposes. Also, there are check dams that are constructed with rock fill or wooden boards. These dams are usually used only in small, open channels that drain 10 acres (0.040 km^2) or less; and usually do not exceed 2 feet.

- **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

(i) recharge ground water

(ii) improved drinking water availability across the year

(iii) significantly reduce the impact of drought and consequent public spending on supply of drinking water in tankers to the water stressed regions

(iv) Improved agricultural production and productivity.

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.

- **Rain water Harvesting Tank**

Rain water harvesting is the accumulating and storing of rainwater for reuse before it reaches the aquifer. It has been used to provide drinking water, water for livestock, water for irrigation, as well as other typical uses. The method of rain water harvesting has been into practice since ancient times. It is as far the best possible way to conserve water and awaken the society towards the importance of water. The method is simple and cost effective too. It is especially beneficial in the areas, which faces the scarcity of water.

- **Other interventions**

- Farm Pond Renovation
- Well Construction
- Water absorption Pit
- Paddy Field Bund
- Tuber Crops

➢ ***PRODUCTION SYSTEM AND MICROENTERPRISES***

- **Bee Keeping**

True honeybees belong to the family Apidae subfamily Apinae and genus Apis. They are social insects living in colonies. A colony consists of a queen, several thousand workers and a few hundred drones. There is division of labour and specialization in the performance of various functions. They build nests (combs) with wax, which is secreted from the wax glands of worker bees. The bees use their cells to rear thin brood and store food. Indian bee (Apis cerana indica) This is the domesticated hive bee in Kerala. A colony consists of a queen, 20,000 to 30,000 workers and a few drones. This species is with gentle temperament and responds to smoking. Lack of flora leads to absconding and also has a strong tendency for swarming. It yields 8-10 kg of honey per colony per year.

Bee-box: ISI Type-A box is recommended for the state of Kerala. A division board may be added to the bee box for adjusting the internal space depending on the strength of the colony. It can also be procured from beekeepers. Wild feral colonies can be hired. Beekeepers in different regions use local hives made of low cost wood. The wood should not have a strong smell. Kail (Pinus excelsa), teak (Tectona grandis), toon (Toona ciliata) anjili (Artocarpus hirsutus), punna (Calophyllum inophyllum) are some of the suitable woods. The hives should be preferably painted white on outside to protect the timber from weathering.

Extraction of honey: Honey is extracted only from super combs using honey extractor. The sealing of cells on combs is removed with sharp knife before placing in the extractor. Extractor should be worked slowly at the beginning and at about 150 rpm at the end for about 1 to 2 minutes. Then the sides of the frames are reversed and the extractor is again worked. Extracted honey is filtered through muslin cloth. Providing a bee escape between the brood and super on the day prior to honey extraction keeps the bees away from the super. Remove the escape soon after honey extraction.

- **Psciculture**

Generally, a fishery is an entity engaged in raising or harvesting fish which is determined by some authority to be a fishery. A fishery is typically defined in terms of the "people involved, species or type of fish, area of water or seabed, method of fishing, class of boats, and purpose of the activities or a combination of the foregoing features". The definition often includes a combination of fish and fishers in a region, the latter fishing for similar species with similar gear types.

A fishery may involve the capture of wild fish or raising fish through fish farming or aquaculture. Directly or indirectly, the livelihood of over 500 million people in developing countries depends on fisheries and aquaculture. Overfishing, including the taking of fish beyond sustainable levels, is reducing fish stocks and employment in many world regions.

- **Mushroom Cultivation**

Mushrooms, also called 'white vegetables' or 'boneless vegetarian meat' contain ample amounts of proteins, vitamins and fibre apart from having certain medicinal properties. Mushroom contains 20-35% protein (dry weight) which is higher than those of vegetables and fruits and is of superior quality. Mushrooms are now getting significant importance due to their nutritional and medicinal value and today their cultivation is being done in about 100 countries. At present world production is estimated to be around 5 million tonnes and is ever increasing. Though 20 mushroom varieties are domesticated about half a dozen varieties viz; button, shitake, oyster, wood ear and paddy straw mushrooms contribute major share of the total world production. Mushroom offers prospects for converting lignocelluloses residues from agricultural fields, forests, etc. into protein rich biomass. Such processing of agro waste not only reduces environmental pollution but the by product of mushroom cultivation isalso a good source of manure, animal feed and soil conditioner.

- **Dairying**

Dairy farming is a class of agricultural, or an animal husbandry, enterprise, for long-term production of milk, usually from dairy cows but also from goats, sheep and camels, which may be either processed on-site or transported to a dairy factory for processing and eventual retail sale.

Most dairy farms sell the male calves born by their cows, usually for veal production, or breeding depending on quality of the bull calf, rather than raising non-milk-producing

stock. Many dairy farms also grow their own feed, typically including corn, and hay. This is fed directly to the cows, or is stored as silage for use during the winter season.

- **Other interventions**

- Agri-Nursery
- Poultry
- vermicompost

➢ ***LIVELIHOOD SUPPORT SYSTEM***

- **Goat Rearing Unit**

Rearing goats is a profitable business. Goat has been rearing since the time immemorial. Generally goat farming means rearing goats for the purpose of harvesting milk, meat and fiber. At present, goat farming has become a profitable business with a very low investment because of its multi-functional utility. It keeps a great contribution to the economy and nutrition of a country. Goat is a multi-functional animal. From goat many kinds of products are produced such as goat milk is used to produce full cream goat powder, skimmed goat milk powder, goat butter, goat milk cream, fresh goat milk etc. Goat meat is a big source of consumable meat which is very tasty, nutritious and healthy. Besides, goat's wool is being used in many purposes and skin of goat plays a vital role in leather industry.

- **Rabbit Rearing Unit**

Rabbits are midway between ruminants and monogastric animals. They are called pseudo ruminant. They can convert cellulose into meat and can easily survive on kitchen scrap. They are coprophagous in nature they reinvest their faeces in the early hours of morning directly from their anus through lips. They breed eight times in a year. Female may produce five to eight young which attain sexual maturity in four to six months. Life span of rabbit is about seven to eight years. Slaughter weight of rabbit is about 2 kg. This can be achieved in 12 to 15 weeks. Rabbits have got fast reproductive process and are able to remake within 24 hours of **Other interventions**

- Bamboo Bye products Making Unit
- Weed Cutter
- Coconut Climber
- food processing unit (bakery making unit)

- **Project Period**

In this project area first year is going with detailed project report and Implementation of Entry Point activities. From second year starting NRM, PSM and LSS activities.

CHAPTER -3

GENERAL DESCRIPTION OF THE PROJECT AREA

➢ HISTORY

The project is planned to be carried out in the seven watersheds existing in the Grama Panchayaths of Urangattiri and Kavanur in the Block Panchayath of Areacode that lies on either sides of river Chaliyar in the district of Malappuram. A land of several martyrs of Indian independence, Areacode is a village proud of its rich cultural heritage and had been deeply influenced by the 'Quilafat Movement' during Indian independence. It is noteworthy that Areacode has to its credit being the most important block Panchayath contributing to the field of sports by bringing up several national level sportsmen.

The wide forest region in the district of Kozhikode near the Urangattiri Panchayath has a cave believed to be the hide out of Tippu Sulthan. The remnant of temple of the ancient Stone Age and 'shilalikhithangal' is yet another historical importance of the place. Till a few years back the Therattammal region, the meeting place of two watersheds, had been affected by 'Theratta edamuriyuka', a process in which flood affects the area during monsoon including the GramaPanchayath office and various trading centers.

The homes and residential area of the migrated tribes(aadivasi)from the forest of Nilambur who found shelter in the forests near the hills of Chekkunnu were known as 'ooru' from which this place , according to the older generation, formed its name 'Urangattiri'. As per the census, there are now 16 'Paniya' families and 245 'Muthuvan' families living in this region allotted by the Govt. through Land Tribunal in 1972. Though there are only less landless tribes living here, they have no documents regarding the land now and hence face difficulties in tax payment. Various colonies like Panniyanmala, Alappara, Chekunnu, Eenthumpali, Kureeri, Nelliyayi, Karimbu Vendekkumpoyil, Pottadi, Kodumpuzhaand kalakappara suffer scarcity of water.

The project is planned in such a way that the major water resources in the Panchayath of Urangattiri, Cherupuzha and Chaliyar are connected with the seven watersheds Chundathupoyil, Therattammal, Thottumukkam, Kottampara, Poolakkanthodu, Kavunginchola-cherangad, Urngattiri kolarthodu(24c12f, 24c12n, 24c12z, 24c12h, 24c12l, 24c14a) and One watershed coming in Kavanur Grama Panchayath, which is Moozhipadam –Vakkalloor (24 c 62/63a).The various streams Kodassery kavumthodu, Kolarthodu, Pannikodu, Mullungad thodu, Panthalangadi thodu and Thekkumkadu thodu connect the hills where these streams take its origin with Cherupuzha and Chaliyar. The major places included in these watersheds and

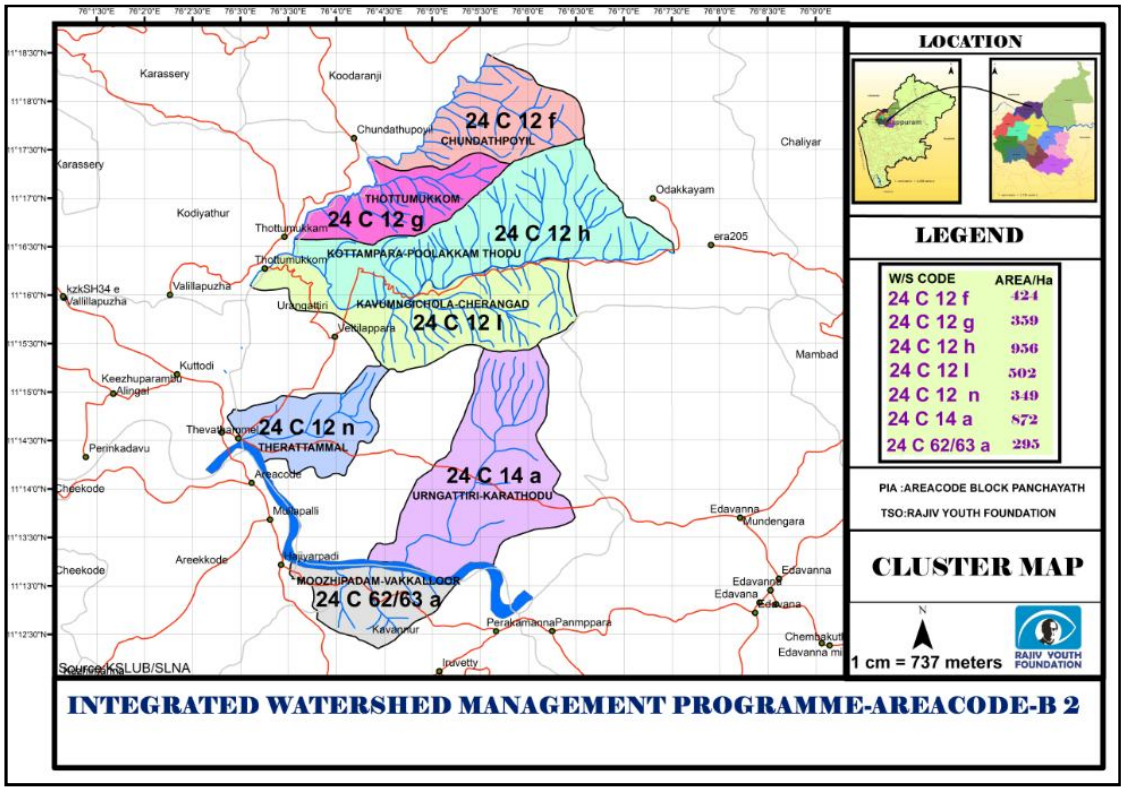
Grama Panchayath are Edakkad parambu, Vettilappara, Alappara, Kinaradappan, Kallaratti, Therattammal, Oyilupara, Vezhekodu and Chundathupoyil. The watersheds Chundathupoyil, Thottumukkam, Kottampara and Poolakkathodu coming under this project lies in the village of Vettilappara, Therattammal, Urangattiri and Karathodu in the village of Urangattiri and Kavunginchola Cherangad in both the villages of Vettilappara and Urangattiri.The Moozhipadam Vakkalloor watershed coming under Moozhipadam-Vakkallur Village.

- **LOCATION AND EXTENT**

Areacode B2 Project area is situated in the Northern part of the Areacode Block. The Cluster area is situated between 11^0 12'30" N and 11o 18' 30"North latitude and between76^o1'30" and 76^o9'0" in the east longitude. The total extent of the cluster is 3897hectares. The cluster area bounded on the North Kozhikodedistrict, east by Edavanna, Mampad and Keezhuparamba Grama Panchayath and south Chaliyar river.

State	District	Taluk	Block	Project	Micro Watersheds				Gramapanchayat	Wards covered	Total Area	Treatable area	Project Amount (Rs) (In lakhs)
					Name	Code No	Area (Ha)	Treatable Area					
Kerala	Malappuram	Ernad	Areacode,	IWMP/ AREACODE B2	CHUNDATHPOYIL	24 C 12 f	586	586	Urngatiri	1	3897	3895	467,40000
					THERATTAMMAL	24C12 n	347	347	Urngatiri	14,15,16 17,18,19			
					KAVUNGINCHOLA CHERANGAD	24C12I	509	509	Urngatiri	3,18,19			
					THOTTUMUKKAM	24C12 g	362	362	Urngatiri	20,21			
					KOTTAMPARA POOLAKKAMTHOD	24C12 h	936	934	Urngatiri	20,2			
					URNGATIRI KOLARTHOD	24C14 a	862	862	Urngatiri	5,6,7,8,9			
					MOOZHIPADAM VAKKALURE	24C63/62a	295	295	Kavanoor	6, 7 8			

- **Basic information of the project area**



IWMP B 2 – CLUSTER MAP

➢ PHYSIOGRAPHY

Descending from the heights of the Western Ghats in the east, the land slopes towards the west forming three distinct – the highlands, the plains and the sea coast. The portion of Western Ghats, which forms the eastern belt of district, constitutes its chief mountain system. Some of the lofty ridges and peaks extend towards the west by a succession of hills of diminishing altitude. Stretching westwards in gentle slopes the plains succeed forest-clad uplands. Konurkandi hills and Chekunnu hills are the highest elevated point in the watershed as well as number of small streams are originating. Chaliyar river it is passing through the centre portion of the cluster area. Most of the streams are joining to Chaliyar river.The below map summarising the relief of the project area.

Table No.: Physiography and Relief

Project Name	Physiography	Relief	Major Drainage
IWMP B2(Areacode)	1-631 Metre (MSL)	Flat, Uneven	Chaliyar and Cherupuzha

Source:baseline survey

MAJOUR DRAINS	1.Kollaram Thod 2. Kodasserikavu Thod 3. Thekkin Thod 4. Panambilav Thod 5. Kavuthod 6. Pannithod 7. Mundakkal Thod 8. Kolarthod 9. Kavungin Chola

- **SLOPE**

Majority of the area is moderately steep to steep (1410 hectares) which is 36.20 % of the total area. Strongly sloping area covered 52 hectares which is 1.34%,Moderaley Sloping covered 907 hectares which is 23.29% very steep sloping covered 507 hectares which is 13.02% and very very steep is covered 1019 hectares which is 26.16 % of the total area. The below table gives the slope of the entire project area.

- **Slope categories of cluster area**

Slope	Area In Ha	Area At %	% of slope
Moderately sloping	907.00	23.29	5-10%
Strongly sloping	52.00	1.34	10-15%
Moderately steep to steep	1410.00	36.20	15-33
Very steep sloping	507.00	13.02	33-50
Very Very steep	1019.00	26.16	>50
Total	3895	100	

Source: ASTER G

- **CLIMATE**

Climate is one of the important elements in understanding environmental condition of any area. It significantly effects on agricultural activity, sediment generation which cause erosion. We shall discuss here two basic elements of climate- temperature and rainfall. After analyzing climate data of duration 11 year (2002-2012) the following conclusions are made.

Temperature:-Mean maximum temperature is above 29ºC in all the months. March and April are normally hottest months with mean maximum temperature reaching above 35º C. In case of mean minimum temperature the lowest is recorded in the month of January and in someyears it is in the month of December. Temperature variations may impact crop productivity.

Rainfall: Rainfall data obtained from the rain gauge station located in Anakkayam for the period from 2002 to 2012 indicates that this area receives annual average rainfall of 2456 mm. During this period2007 was the wettest year with annual rainfall of 3464mm and the year 2012 received the lowest annual precipitation of 1598 mm(Table No.2.3).The monthly average rainfall varies from 2.25 mm in the month of January to 563 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.

Monthly Mean Precipitation (2002-2012) (Source: Cashew Research Station Anakkayam, Malappuram)

- Monthly wise Mean Minimum Temperature

Year	January	February	March	April	May	June	July	August	September	October	November	December
2002	28.50	26.70	27.90	28.80	28.80	22.50	26.50	25.40	28.30	28.60	27.50	*
2004	18.90	21.20	23.60	22.00	22.60	22.40	21.70	21.70	22.40	22.30	21.80	18.40
2005	20.20	21.90	23.70	24.00	24.50	21.90	22.60	22.40	22.60	22.30	22.50	21.00
2006	20.60	20.90	22.80	24.80	30.70	22.70	22.00	22.00	22.00	22.00	22.00	19.00
2007	18.70	26.90	23.30	23.80	23.60	22.50	21.50	21.60	21.60	21.80	19.60	19.50
2008	17.40	21.10	21.10	22.40	22.10	21.40	18.60	21.10	20.40	20.80	20.20	18.60
2009	17.79	19.35	20.85	22.29	21.50	20.80	20.24	20.50	21.20	20.43	20.50	19.03
2010	18.27	17.16	21.37	20.82	20.82	19.74	19.26	19.48	19.04	19.03	18.26	17.81
2011	16.58	16.53	19.37	19.11	20.58	18.65	18.51	18.85	18.45	19.17	17.78	15.27
2012	15.70	17.82	20.09	20.28	23.33	19.30	18.67	18.82	18.53	18.73	19.37	19.11
	15.70	20.96	22.41	22.83	23.85	21.19	20.96	21.19	21.45	21.52	20.95	18.64

Source: Cashew Research Station Anakkayam, Malappuram

- Monthly wise Mean maximum temperature

Year	January	February	March	April	May	June	July	August	September	October	November	December
2002	33.20	31.20	33.80	33.70	32.30	25.10	29.50	28.70	31.10	30.30	30.50	*
2003	32.70	34.50	34.90	33.50	35.00	29.30	27.60	28.70	21.09	29.70	31.10	27.10
2004	34.10	35.80	37.70	35.10	31.90	33.80	30.50	31.10	32.40	32.40	33.10	33.30
2005	34.40	36.40	32.30	36.10	36.60	31.10	29.20	33.00	21.00	31.10	31.50	32.90
2006	34.30	35.90	35.30	36.30	34.80	33.20	30.20	31.20	30.60	32.10	32.40	33.30
2007	34.30	35.70	37.50	37.60	35.80	31.00	29.10	30.80	30.60	32.10	33.70	34.10
2008	36.00	36.70	35.40	35.90	35.10	31.90	31.70	31.60	31.80	32.70	33.70	34.20
2009	34.60	36.17	35.17	35.80	35.60	31.40	30.30	31.50	31.30	32.90	32.30	33.50
2010	34.12	32.30	37.12	35.63	34.13	30.58	30.06	30.06	29.82	30.24	30.34	32.00
2011	33.97	35.00	36.19	35.16	33.91	28.80	27.43	26.88	27.15	28.25	27.18	30.93
2012	33.90	35.17	36.33	36.23	33.00	31.50	30.67	30.41	31.87	33.32	27.15	28.25
	34.14	34.99	35.61	35.55	34.38	30.70	29.66	30.36	28.98	31.37	31.18	31.96

Source: Cashew Research Station Anakkayam, Malappuram

- **Monthly wise Rainfall**

Month	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Monthly Mean
January	13.10	0.00	0.00	7.40	0.00	0.00	0.00	0.00	4.20	0.00	0.00	2.25
February	0.00	0.00	0.00	0.00	0.00	0.00	34.40	0.00	0.00	11.80	0.00	4.20
March	0.00	10.20	0.00	0.00	68.60	0.00	175.00	48.00	11.60	2.40	0.00	28.71
April	58.00	105.80	119.90	115.20	8.80	25.80	30.80	80.00	58.80	122.00	115.20	76.39
May	249.20	119.60	408.40	25.60	453.70	167.00	108.80	103.40	69.60	51.60	8.80	160.52
June	413.10	534.40	634.00	698.40	689.80	615.10	641.10	332.30	466.00	809.00	269.20	554.76
July	296.40	547.40	281.60	605.90	620.80	1319.00	279.70	965.60	483.40	457.40	331.17	562.58
August	423.00	614.60	374.40	213.20	390.80	455.20	177.80	219.60	237.40	410.60	343.20	350.89
September	57.80	63.40	140.00	299.80	700.60	498.40	293.80	240.30	182.10	371.60	144.10	271.99
October	439.20	281.20	264.40	334.80	251.80	305.60	421.70	290.40	425.20	157.80	107.60	298.15
November	141.20	65.00	71.00	155.40	142.00	78.00	13.20	227.40	232.20	137.80	232.20	135.95
December	*	0.00	0.00	7.80	0.00	0.00	0.00	2.80	46.80	0.00	46.80	10.42
Annual (mm)	**2091.00**	**2341.60**	**2293.60**	**2463.50**	**3326.90**	**3464.10**	**2176.30**	**2509.80**	**2217.30**	**2532.00**	**1598.27**	

Source: Cashew Research Station Anakkayam, Malappuram

➢ GEOLOGY

Major part of the cluster area underlain by Charnockite rocks of Archaean Age. Laterite derived from crystalline rocks and Tertiary sediments in consolidated form are also found in southern part. Physiographically the district can be divided broadly into three types viz: coastal plains (less than 7.5 m), Midland (7.5-75 m) and highlands (above 75 m). As per the state P W D classification. The Salient features of the unit are briefly described below. Most of the places are underlain by Charnockite and Horn blende gneiss rocks of Archaean Age. Laterite derived from crystalline rocks and Tertiary sediments is also found in the cluster area. Wandoor B1 area contains mid land region is characterized by flat topped hillocks with steep 'U' shaped valleys and ridges. The hill tops are generally barren and are covered by thick and compact Laterite.

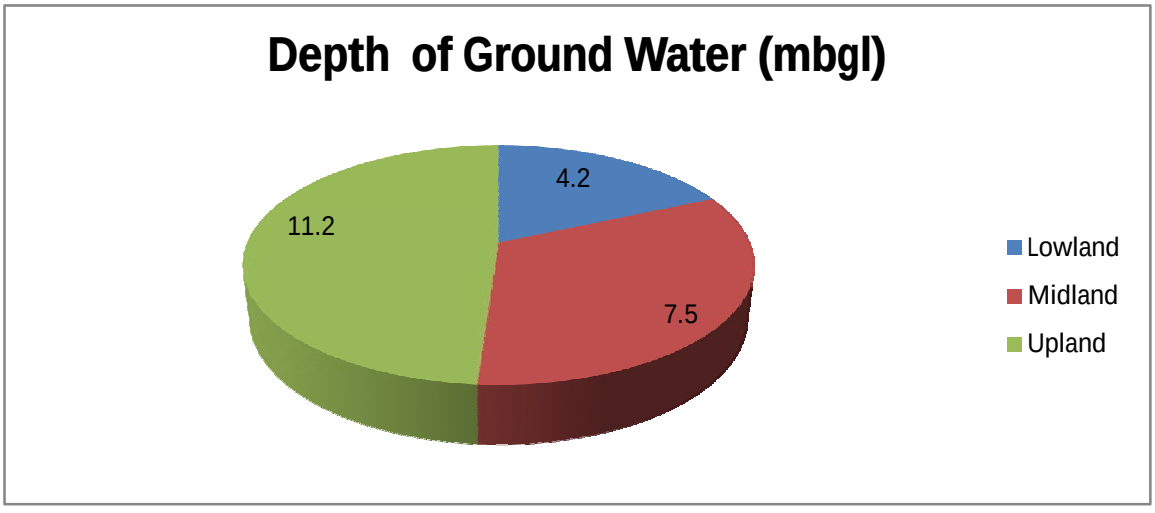
➢ GROUND WATER

Ground Water occurs under phreatic, semi confined and confined 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 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 8.6, Mid land 7.5 in Summer and 5.44 in Monsoon and the low land area in summer 4.2 mbgl and in Monsoon 2.85 mbgl.

Table. Ground water details

Location	Depth of Ground Water (mbgl)	
	Summer	Monsoon
Lowland	4.2	2.85
Midland	7.5	5.44
Upland	11.2	8.6

Source: GWD Malappuram



➢ . WATER SUPPLY AND IRRIGATION

- ***IRRIGATION IN THE PROJEC AREA***

Source	area	%
River , Streams	340	58.51
Ponds	20.7	8.01
Well	30	7.44
Canals ,Natural Springs and others	4	2.23
Total	394.9	10.13

Source: Base Line Survey

- ***WATER SUPPLY***

IWMP B2	Water supply Of Grama Panchayath And Block Panchayath	Kerala Water Authority
	1. Vettilapara Phc Well 2. Kottampara Well Alapara Well 3. Vallipalam Drinking Water Scheme (Sc Colony) 4 .Therattammalayaloor Drinking Water Project 5. Therattammalayaloor Drinking Water Project 6 .Kottampara Drinking Water Scheme 7. Chembrammal Drinking Watre Scheme 8 .Oyilupara Drinking Water Scheme	1. Bhagavathiparamb Sc colony Drinking Water Scheme 2. Thekkumkad Drinking Water Supply Scheme 3. Nermukk Drinking Water Scheme

Source: Base Line Survey

➢ SOCIO-ECONOMIC CONDITION

Watershed Name	House Holds	Total Population	Male	Female	SC	ST	BPL	Small Farmers	Marginal farmers	Land less
Chundathu poyil	283	1489	714	775	12	32	184	91	31	4
Thottumukkom	549	2847	1415	1432	53	35	178	149	83	6
Kottampara-Poolakkomthodu	338	1721	861	869	60	35	131	121	96	12
Kavungichola-Cherangad	812	4466	2219	2247	9	32	307	440	128	9
Therattammal	1846	9230	4593	4637	410	nil	975	1413	349	84
Urngattiri-Kolarthod	1012	5060	2541	2551	155	18	560	269	142	21
Moozhipadam -Vakkalloor	892	4452	2192	2260	107	NIL	296	368	115	6
Total	5732	29265	14535	14771	806	152	2631	2851	944	142

Source: Baseline survey

➢ AGE WISE CLASSIFICATION

Watershed wise age wise classification

Watersheds	Particulars	0-5	15	15-40	40-60	60 Above	Total
Chundathu poyil	Male	54	214	263	157	22	710
	Female	59	222	285	182	27	775
Thottumukkom	Male	94	187	781	309	32	1403
	Female	101	199	796	319	29	1444
Kottampara-Poolakkomthodu	Male	123	235	326	420	219	1323
	Female	212	245	398	436	311	1602
Kavungichola-Cherangad	Male	118	276	808	418	24	1644
	Female	125	285	816	440	25	1691
Therattammal	Male	139	702	2491	1069	81	4482
	Female	144	716	2611	1077	89	4637
Urngattiri-Karathode	Male	101	521	1460	371	65	2518
	Female	109	529	1465	378	61	2542
Moozhipadam -Vakkalloor	Male	92	489	726	760	141	2208
	Female	135	495	735	769	152	2286

Source : Baseline survey

➢ EMPLOYMENT ANALYSIS

Employment details

Sl No.	Employment	Total
1	Agriculture	3121
2	Business	2631
3	Coolie	8202
4	Government	2213
5	MGNREGS	4519
6	Pension	2152
7	Student	4512
8	others	1926
	Total	29276

Source: baseline survey

➢ . INCOME ANALYSIS

Income Analysis of Project area

Sl No.	Income	Total
1	0-5000	2176
2	5001-10000	2839
3	10001-25000	618
4	25001-50000	76
5	50001-100000	11
6	Above 100001	12
	Total	5732

Source: Baseline survey

➢ . TYPE OF DWELLING

:Type dwelling in the Project area

House Type	No. of Families
Concrete	2369
Tiled	2571
Huts	696
Temporary Shelter	96
Total	5732

Source: Baseline survey

➢ .LIVE STOCK AND POULTRY POPULATION

Watersheds	Cow	Milk /yr /litre	Buffalo	Milk /yr /litre	Goat	Milk /Yr/litre	Poultry	Duck	Rabbit	Piggery	Milk Marketing Societies
Chundathupoyil	44	31680	7	2520	47	5231	747	36	29	7	
Thottumukkom	76	48956	11	3854	56	7845	356	143	12	Nil	Nil
Kottampara-Poolakkomthodu	58	38510	17	4985	69	6541	186	62	13	Nil	Nil
Kavungichola-Cherangad	59	39403			27	2069	603	89	21	Nil	1(Not working)
Therattammal	79	45621	24	8451	24	2467	986	61	11	Nil	1
Urngattiri-Karathode	133	86321	54	15230	69	6302	873	32	19	Nil	1
Moozhipadam -Vakkalloor	74	52910	18	8730	55	8754	739	12	Nil	9	Nil

Source: Baseline survey

➢ .DETAILS OF SELF HELP GROUPS AND NEIGHBOUR HOOD GROUPS

: Watershed wise Self Help Groups and Neighbour Hood Groups

WATERSHED NAME	No of SHGs/UGs	People registered under MGNREGS	No of federations of SHGs
Chundathupoyil	29	286	Nil
Thottumukkom	25	171	Nil
Kottampara-Poolakkomthodu	12	231	Nil
Kavungichola-Cherangad	21	263	Nil
Therattammal	47	355	2
Urngattiri-Karathode	36	521	Nil
Moozhipadam -Vakkalloor	33	282	Nil

Source: Baseline survey

- **. INFRASTRUCTURE**

: Infrastructure details of Project area

Infrastructure	Number	Elecricity	Drinking Water Facility	Toilet
Angan Wadies	15	Yes	Yes	Yes
Lp School	3	Yes	Yes	Yes
Up School	2	Yes	Yes	Yes
High School	2	Yes	Yes	Yes
Phc	3	Yes	Yes	Yes
Clinic	1	Yes	Yes	Yes
Banks	2	Yes	Yes	Yes
Post Office	4	Yes	No	Yes
Ration Shop	3	Yes	No	No
Market	3	Yes	No	No
Temple	25	Yes	Yes	Yes
Church	10	Yes	Yes	Yes
Mosque	21	Yes	Yes	Yes
Colony	6	Yes	Yes	Yes
Library	6	Yes	No	No
Clubs	9	Yes	No	No
Madrassa	8	Yes	Yes	Yes
Village Office	2	Yes	Yes	Yes
Agriculture Office	2	Yes	Yes	Yes
Milma Socitey	3	Yes	No	No
Dispensary	2	Yes	Yes	Yes

Source: Base line survey

- **.LAND HOLDING SIZE**

Project Name	0-5 Cents	5-50	50-250	250-500	Above 500 cents
IWMP B2(Areacode)	1310	2358	1416	464	184

Source: baseline survey

- **. TRANSPORTATION**

The project area connected with PWD roads also most of the roads are connected all watershed area.(The detailed roads reports are mentioned in Appendix 1.)

- **. SOILS**

: Details of soils in the project area

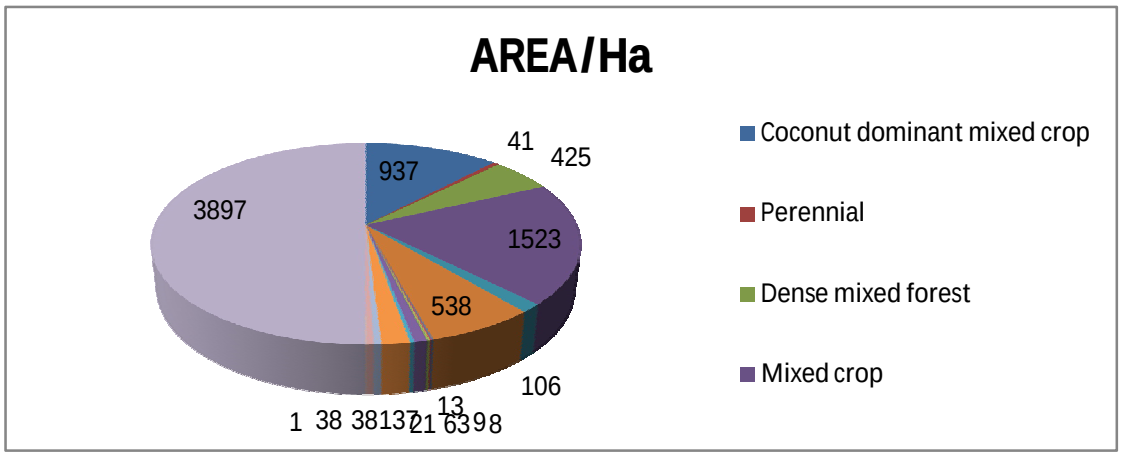
Soil	Area/Ha	Area at %
Laterite	1410	36.2
Forest soil	1442	37.0
Red loamy	985	25.3
Barren Rocks	60	1.5
Total	3897	100

Source: Department of Soil Conservation, Malappuram

➢ **Land use details of the project area**

LAND USE	AREA/Ha	Area at %
Coconut dominant mixed crop	937	24.04
Perennial	41.0	1.1
Dense mixed forest	425	10.9
Mixed crop	1523	39.1
Underutilized/degraded notified forest	106	2.7
Rubber	538	13.8
Barren Rocky/Stony Waste/Sheet Rock(Forest)	8	0.2
Barren Rocky/Stony Waste/Sheet Rock	9	0.2
Residential	13	0.3
Open mixed forest	63	1.6
Viruppu (1st crop)	21	0.5
Banana	137	3.5
Arecanut	38	1.0
Commercial	38	1.0
Sands/riverine	1	0.0
Total	3897	100

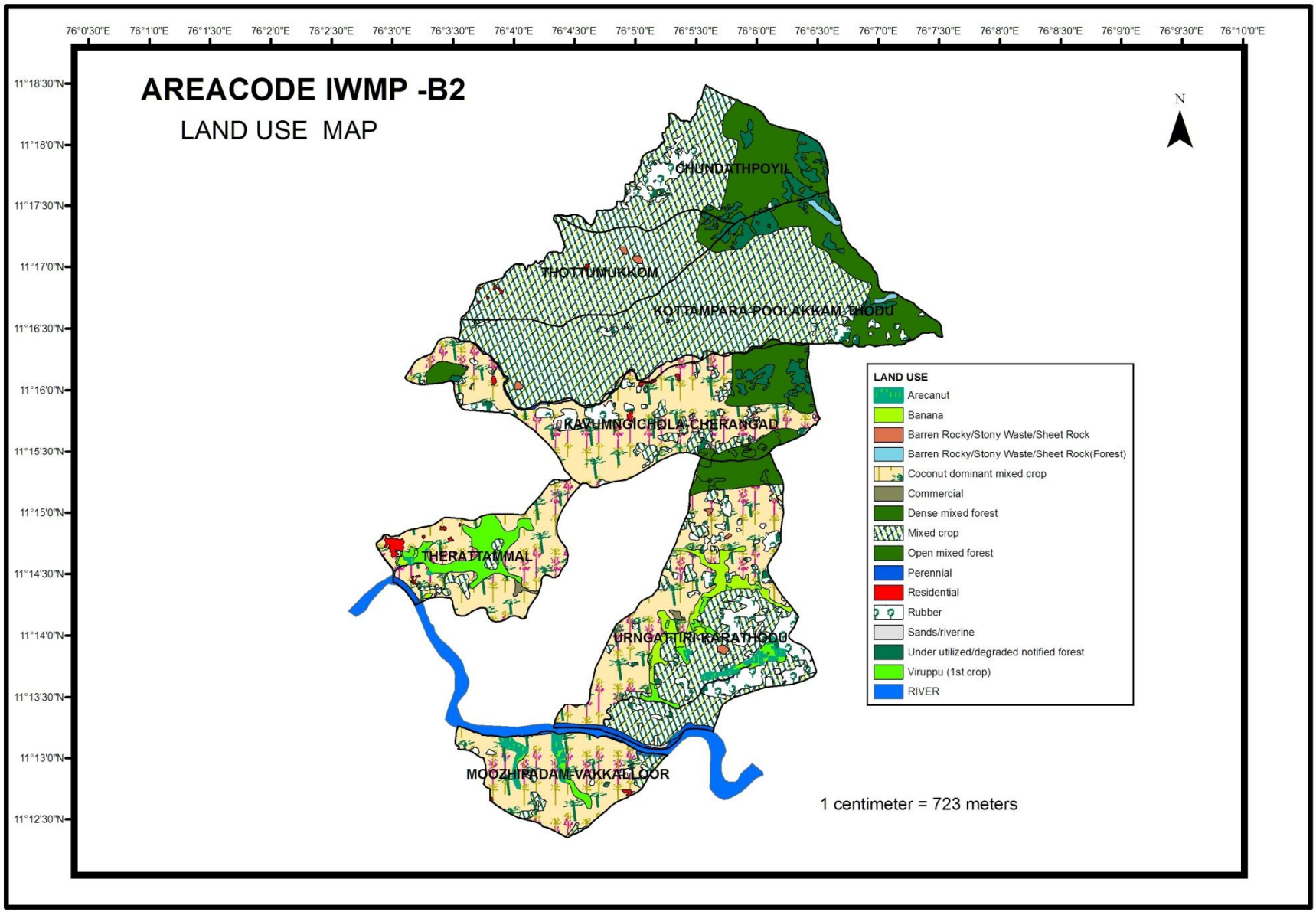
Source: Source: Kerala State Land use Board



➢ **CROPPING PATTERN**

CROPPING PATTERN	Area in Ha	Area at %	Production/Ha/Tonne
Coconut	402	37.3	34384
Rubber	538	7.5	333
Paddy	20	0.5	60
Banana	59	1.8	1593
Arecanut	38	1.2	46
Pepper	45	1.4	59
Cashew nut	36	1.1	40
Vegetables	1539	46.8	120042

Source: baseline survey


AREACODE IWMP -B2
LAND USE MAP
N
76°0'30"E
76°1'0"E
76°1'30"E
76°2'0"E
76°2'30"E
76°3'0"E
76°3'30"E
76°4'0"E
76°4'30"E
76°5'0"E
76°5'30"E
76°6'0"E
76°6'30"E
76°7'0"E
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76°9'30"E
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11°13'30"N
11°13'0"N
11°12'30"N
CHUNDATHPOYIL
THOTTUMUKKOM
KOTTAMPARA-POOLAKKAM-THODU
RAVUMNGICHOLA-CHERANGAD
THERATTAMMAL
URNGATTIRI-KARATHODU
MOOZHIPADAM-VAKKALLOOR
LAND USE
Arecanut
Banana
Barren Rocky/Stony Waste/Sheet Rock
Barren Rocky/Stony Waste/Sheet Rock(Forest)
Coconut dominant mixed crop
Commercial
Dense mixed forest
Mixed crop
Open mixed forest
Perennial
Residential
Rubber
Sands/riverine
Under utilized/degraded notified forest
Viruppu (1st crop)
RIVER
1 centimeter = 723 meters

24. INFERENCE

The total area of the Areacode B2 is 3897 Ha; the area is surrounded by Chaliyar and Cherupuzha River which are major water resources in the project area. The area contains rugged topography, valley and Dense mixed forest.Tribal people living in the hilly area they don't have any proper accessible roads to come for their daily needs. The scarcity of water is very high in the summer season. Shortage of skilled labours for agriculture allied activities in this project area. Proper conservation soil and water this project area will reduce soil erosion and drinking water problems in future.

CHAPTER-4

PROBLEMS

1. AGRICULTURAL SECTOR:

1. Lack of better Irrigation Facilities
   - Especially in place like cherngad , koorangallu , therattammal , vettilapara
2. Inflation of Chemical fertilizers
   - Affected in Therattammal and urngatiri kolarthod watershed
3. Hike in cost of productivity and lack of getting fair value for crops due to following the traditional agricultural methods.

2. ANIMAL PROTECTION SECTOR:

1. Hike in price of cattle feed.
2. Lack of proper possibility for milk selling.

3. WATER AND SOIL PRESERVATION SECTOR:

1. Soil erosion
2. Some Canals and other water reservoirs are being filled with soil.
3. Lack of water and soil preservation activities.
4. Commonness of land filling and razing of earth.
5. Some Water reservoirs being made impure by sewage disposal.
6. Over use of chemical fertilizers and insecticides.
7. Deforestation in the hilly areas

4. SUGGESSIONS

- Undertake scientific agricultural method after compulsory soil inspection.
- Increase convenient irrigation facilities by preservation of canals and ponds.
- Encouraged group farming system.
- Production of bio fertilizers
- Increase use of bio-insecticides
- Construction of new ponds and water reservoirs to encourage drinking and irrigation facility
- Encourage reclamation of barren field for cultivation.
- From labour force to reduce scarcity of labours and provide them with adequate training to understand the latest technology in agriculture. Provide monitory help them to buy machinery.
- Extend help for self employment for “Kudumba Sree Members”.
- Encourage mushroom cultivation, apiculture, cattle breeding.
- Plant medical plants and fruit bearing trees.
- Construction of rain water harvesting pits, and reservoirs
- Make high yielding cattle available.
- Encourage fodder grass - azoles cultivation.
- Plant ramacham, kaitha and barmy in the boundaries of lakes.
- Undertake floriculture and sericulture.
- Artificial vegetation in slope areas and thereby form bio belt.
- Protection of side walls of lakes.
- Formation of scientific cowshed and artificial milk machinery.
- Establishment of factories for the production of cattle feed at government level.

PART II

INDIVIDUAL WATERSHEDS

CHUNDATHUPOYIL WATERSHED

(24c12f)

1. INTRODUCTION

The Chundathupoyil watershed exists(24c12f) in the Vettilappara village of the Urangattiri Panchayath belonging to the Areacode Block Panchayath in the District of Malappuram .This watershed (in ward 1) extends to a total areaof 586Hectares to which streams like Karimbu Thenaruvi ,Kodasserikavu ,Kollaramthodu and Marathodu flow in beginning in the mountain of Vendekumpoyil .The prominent places included in this watershed whose boundaries lies plakkal mala in the North ,thomarapara mala in the South, Cherupuzha thod in the West and Cheenkannipali Karimbu colony in the East are odiyirinji mala

2. PHYISIOGRAPHY

Chundathupoyil is located in hilly area. The highest (637 Mtrs) elevated area of watershed located in eastern part, which is Konurkandi hills and dense mixed forest of the area. The lowest point located in near to Cherupuzha which is northern boundary of the watershed. The slope is from east to western side and also most of the steams are originating from the hilly area.

3. WATERSHED CHARECTOR

The shape of the watershed is Triangular which is located in the northern portion of Malappuram district and is near to Kozhikode district. The most of the streams are originating from the Konurkandi Mala and Dense mixed forest of this watershed. Cherupuzha, which is main stream in the watershed as well as all streams are joining to Cherupuzha, the total length of rive is 3.7 Kms and last it is joining to Chaliyar.The major water resources in the area are Cherupuzha, Thenaruvippuzha, Edapottipoyil pond, Marathodu, Kunthanikadu pond, Kodasserykavu thodu and Kollarampuzha pond.

4. IRRIGATION

Well	Pond	Streams	Canal ,springs, Others
4 Ha	2.5 Ha	51 Ha	1Ha

Source: Baseline data survey

5. WATERSUPPLY

PONDS	WATERSUPPLY OF G.P	Streams
Edapattipoyil pond, Marathod pond, Kunthanikadu pond, Kollarampuzha pond	Kunthanikad kulam ,	Kodasserikavu thod, Kollaram thod,Kunthanithanikad kollaram thod Kozhipram thod

Source: Base line data Survey

6. LAND USE

Type of land use table	Area in hectors	Percentage of Area
Rocky area	30	5.1
Play Ground	3	0.5
Water bodies	4	0.6
Forest Area	155	26.4
Commercial Land	2	0.3
Residential area	8	1.3
Residential area converted from paddy	4	0.6
Land with mixed crop	101	1.1
Rubber plantation	186	48.9
Coconut plantation	20	3.4
Coconut dominant mixed crop	6	1.02
Miscellaneous	39	6.6
Arecanut	6	1.0
Banana	15	2.4
Total	586	100

Source: Source: Kerala State Land use Board &Google Earth Pro

7. CROPPING PATTERN

SL NO	Crop Pattern	Area In Hector	Percentage Of Watershed Area	Production/Y(Tonne)
1	Coconut	20	3.4	500
2	Arracanut	6	1.02	7.5
3	Banana	4	0.6	108
4	Rubber	187	48.09	114.8
5	Cashew	2	0.34	2
6	Vegetable	8	1.3	624

Source: Baseline data survey

8. LIVESTOCK

Cow	Milk/Yr	Buffalo	Milk/Yr	Goat	Milk/Yr	Poultry	Duck	Rabbit	Piggery
44	31680 litre	7	2520	47	5231 litre	747	36	29	7

Source: Baseline data survey

9 . INFERENCES

The watershed area mostly covered by hilly area so the implementation of interventions should be related natural conservation. After implementing the kunthanikad check dam it will help to reduce scarcity of water in this area also can be use for agriculture allied practices.

ESTIMATE

1. WATERSHED DEVELOPMENT FUNDING PATTERN

ENTRY POINT	*4%*	*281280*
NATURAL RESOURSE MANAGEMENT	*56%*	*3937920*
PRODUCTIVE SYSTEM AND MICRO ENTERPRISES	*10%*	*703200*
LIVELYHOOD SUPPORT	*9%*	*632880*
MANAGEMENT COMPONENT	*21%*	*1476720*
TOTAL(In Rupees)		*7032000*

2. ENTRY POINT ACTIVITIES

Activity:KUNTHANIKKAD CHECK DAM CONSTRUCTION

This activity is intended to be carried out in the kunthanikad in chundathumpoyil watershed .The geographical location of the place is 11^0 17'48.25N,$76^0$05'55.91. This activity is located in eastern part of the watershed which is 614 meters height. The remote area doesn't have proper accessible facilities.

agricultural practices are expected a group of people who have been suffering immensely due to scarcity of water and lack of agriculture labours. After implementing this project can be use differential purposes like agricultural and drinking water purposes. The watershed almost all area covered in hilly area and this EPA activity is located in 614 meters height from Mean sea level.

SL NO	NAME OF WORK :	ESTIMATE COST
1	KUNTHANIKKAD CHECK DAM CONSTRUCTION	**281280**
	TOTAL(In Rupees)	**281280**

3. NATURAL RESOURCE MANAGEMENT (NRM)

.During the first year of IWMP – b2 concentrating with DPR preparation, Entry point activities and institutional building. Natural resource management activities are starting from second year such as afforestation, Horticulture, Agriculture, Medicinal plant cultivation, Soil & moisture conservation, vegetative and engineering structure and water harvesting structures.Item wise annual actions plans are mentioned below.

Master plan and year wise plan of Natural resource management programme

CHUNDATHPOYIL WATERSHED - MASTER PLAN	UNIT	VOLUME/UNITS	RATE	TOTAL IWMP SHARE	EXPECTINGWDF
AFFORESTATION					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
RAMACHAM	Ha	1.1	12500	13750	
NEEM	Ha	1	6250	6250	
UNG	Ha	1	6000	6000	
HORTICULTURE					
MANGO	Ha	2	5400	10800	
PINEAPPLE	Ha	1.1	200000	220000	
AGRICULTURE				0	
VEGETABLE GARDEN (seed and fertilizer)	Ha	3.5	37500	131250	
BANANA CULTIVATION (Tissue culture)	Ha	5.2	50000	260000	
SPICES CULTIVATION (Ginger, Turmeric)	Ha	8	30000	240000	
TUBER CROPS	Ha	4	30000	120000	
FODDER GRASS CULTIVATION	Ha	1	6000	6000	
MIXED CROP	Ha				
MEDICINAL PLANT CULTIVATION					
1.KATTARVAAZHA	Ha	0.5	50000	25000	
2.CHITTAADALODAKAM	Ha	0.5	50000	25000	
SOIL & MOISTURE CONSERVATION					
STONE PITCHED BUND	Ha	9	12000	108000	
EARTHERN BUND	Ha	5	12000	60000	
TERRACING	Ha	1	79724.3	79724.3	
CONTOUR TERRACING	Ha	0.5	79724.3	39862.15	
VEGETATIVE AND ENGINEERING STRUCTURES					
SIDE PROTECTION OF STREAMS					
1. KUNTHANIKAD THOD	m3	200	2227	445400	

2. KODASSERIKAV PALAM THOD	m3	100	2553.81	255381	
3. KOZHIPRAM THOD	m3	200	2110.64	422128	
4. KODASSERI PALAM THOD	m3	100	3258.44	325844	
WATER HARVESTING STRUCTURE(NEW CREATED)					
CHECK DAMS	Nos				
1. KUNTHANIKAD THOD	Nos	1	110000	110000	
2. KOZHIPRAM THOD	Nos	1	35000	35000	
3. THAYYILAPARA THOD	Nos	1	26000	26000	
4. NJATTUTHODI MUKK	Nos	1	104762	104762	
5. THAYYILPADI THOD	Nos	1	106000	106000	
6. OLAKKAMATTATHIL THOD	Nos	1	25000	25000	
7. EMBRATHOD	Nos	1	25000	25000	
8. ELAVANGUL THOD	Nos	1	25000	25000	
CHIRA IN STREAMS USING DEPT RUBBLES - KODASSERIKAV THOD	Nos	9	641	5769	
WELL RECHARGE	Nos	45	15000	675000	
Rounded figure				-0.45	
TOTAL AMOUNT				**3937920**	

Second year	**UNIT**	**VOLUME/UNITS**	**RATE**	**TOTAL IWMP SHARE**	**TOTAL WDF SHARE**
AFFORESTATION					
NEEM	Ha	1	6250	6250	
UNG	Ha	0.6	6000	3600	
HORTICULTURE					
MANGO	/hectare	1	5400	5400	
AGRICULTURE					
VEGETABLE GARDEN	/hectare	1	37500	37500	
BANANA CULTIVATION	/hectare	1.5	50000	75000	
SPICES CULTIVATION	/hectare	1	30000	30000	

TUBER CROPS	/hectare	1	30000	30000	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
FODDER GRASS CULTIVATION	/hectare	0.3	6000	1800	
SOIL & MOISTURE CONSERVATION					
STONE PITCHED BUND	/hectare	7	12000	84000	
TERRACING	/hectare	1	79724.3	79724.3	
CONTOUR TERRACING	/hectare	0.5	79724.3	39862.15	
VEGETATIVE AND ENGINEERING STRUCTURES					
SIDE PROTECTION OF STREAMS					
1.KUNTHANIKAD THOD	m3	200	2227	445400	
2.KOZHIPRAM THOD	m3	200	2110.64	422128	
WATER HARVESTING STRUCTURE(NEW CREATED)					
CHECK DAMS					
1. KUNTHANIKAD THOD	nos	1	110000	110000	
2. KOZHIPRAM THOD	nos	1	35000	35000	
3. NJATTUTHODIMUKK THOD	nos	1	104762	104762	
CHIRA IN STREAMS USING DEPT RUBBLES					
KUNTHANIKAD THOD	No	3	641	1923	
WELL RECHARGE	Nos	7	15000	105000	
rounded figure				11	
TOTAL				**1617360**	
THIRD YEAR	**UNIT**	**VOLUME/UNITS**	**RATE**	**TOTAL IWMP SHARE**	**TOTAL WDF SHARE**
AFFORESTATION					
RAMACHAM	Ha	1.1	12500	13750	
UNG	Ha	0.4	6000	2400	
HORTICULTURE					
MANGO	/hectare	1	5400	5400	

PINEAPPLE	/hectare	1.1	200000	220000	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
AGRICULTURE					
VEGETABLE GARDEN	/hectare	2.5	37500	93750	
BANANA CULTIVATION	/hectare	3.7	50000	185000	
SPICES CULTIVATION	/hectare	7	30000	210000	
TUBER CROPS	/hectare	3	30000	90000	
FODDER GRASS CULTIVATION	/hectare	0.7	6000	4200	
MEDICINAL PLANT CULTIVATION					
1.KATTARVAAZHA		0.5	50000	25000	
2.CHITTAADALODAKAM		0.5	50000	25000	
SOIL & MOISTURE CONSERVATION					
STONE PITCHED BUND	/hectare	2	12000	24000	
EARTHERN BUND	/hectare	5	12000	60000	
VEGETATIVE AND ENGINEERING STRUCTURES					
SIDE PROTECTION OF STREAMS					
1. KUNTHANIKAD PALAM THOD	m3	100	2553.81	255381	
2.KODESSERI PALAM THOD	m3	100	3258.44	325844	
WATER HARVESTING STRUCTURE(NEW CREATED)					
CHECK DAMS					
1. THAYYILPARA THOD	nos	1	26000	26000	
2. THAYYILPADI THOD	nos	1	106000	106000	
3. OLAKKAMATTATHIL THOD	nos	1	25000	25000	
4. EMBRA THOD	nos	1	25000	25000	
5. ELAVANGAL THOD	nos	1	25000	25000	
CHIRA IN STREAMS USING DEPT RUBBLES					
KUNTHANIKAD THOD	Nos	6	641	3846	
WELL RECHARGE	Nos	38	15000	570000	
				-11	
TOTAL				**2320560**	

4. YEAR WISE PLAN OF PRODUCTION SYSTEM MANAGEMENT

During the first year of IWMP mainly concentrating with DPR preparation and Entry point activities. Production system management activities are starting from second year such as Bee keeping, Poultry, Fisheries, Agriculture nursery, Vermicompost, Milk society and Mushroom cultivation. Item wise annual actions plans are mentioned below .

PSM ACTIVITIES – *MASTER PLAN*	UNIT	RATE	IWMP SHARE	EXPECTING WDF
BEEKEEPING	2	6000	12000	The contribution of WDF shall be a minimum 20 % of cost of PSM works executed on general. However, in case of SC/ST, small and marginal farmers, the minimum contribution shall be 10 % of cost of PSM works
POULTRY	385	575	221375	
DIARY	10	30000	300000	
VERMICOMPOST	5	10000	50000	
MUSHROOM CUTIVATION	4	30000	120000	
TOTAL			***703200***	
SECOND YEAR				
POULTRY	176	575	101200	
DIARY	3	30000	90000	
VERMICOMPOST	3	10000	30000	
MUSHROOM CUTIVATION	2	30000	60000	
rounded figure			80	
TOTAL			***281280***	
THIRD YEAR				
POULTRY	209	575	120175	
DIARY	3	30000	90000	
VERMICOMPOST	1	10000	10000	
MUSHROOM CUTIVATION	2	30000	60000	
rounded figure			1105	
TOTAL			***281280***	
FOURTH YEAR				
BEEKEEPING	2	6000	12000	
DIARY	4	30000	120000	
VERMICOMPOST	1	10000	10000	
rounded figure			-1360	
TOTAL			***140640***	

5. YEAR WISE 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, Rabbit rearing, Weed cutter, Coconut climber, Bamboo by production unit, Chapatti and Food processing unit. Item wise annual actions plans are mentioned below.

Chundathupoyil Watershed – Master Plan Of LSS				SECOND YEAR	THIRD YEAR	FOURTH YEAR
ACTIVITIES	**UNIT**	**Unit cost**	**IWMP AMOUNTE**	**UNIT**	**UNIT**	**UNIT**
GOAT REARING	25	6000	150000	20	1	4
RABBIT REARING	15	5000	75000	6	6	3
WEED CUTTER	7	20,000	140000	2	0	5
COCONUT CLIMBER	6	3000	18000	2	3	1
AGRICULTURE NURSURY	1	200000	200000	-	1	-
BAKERY MAKING UNIT -	**1**	50000	50000	1	-	-
ROUNDED FIGURE			-120	120	1120	-1360
TOTAL			**632880**	**246120**	**246120**	**140640**

6 . CAPACITY BUILDING PLAN

FIRST YEAR

Sl.No	Programmes	Implementing Authority	Total Amount
1	Institutional Building And Awareness Programmes	PIA	17580

SECOND YEAR

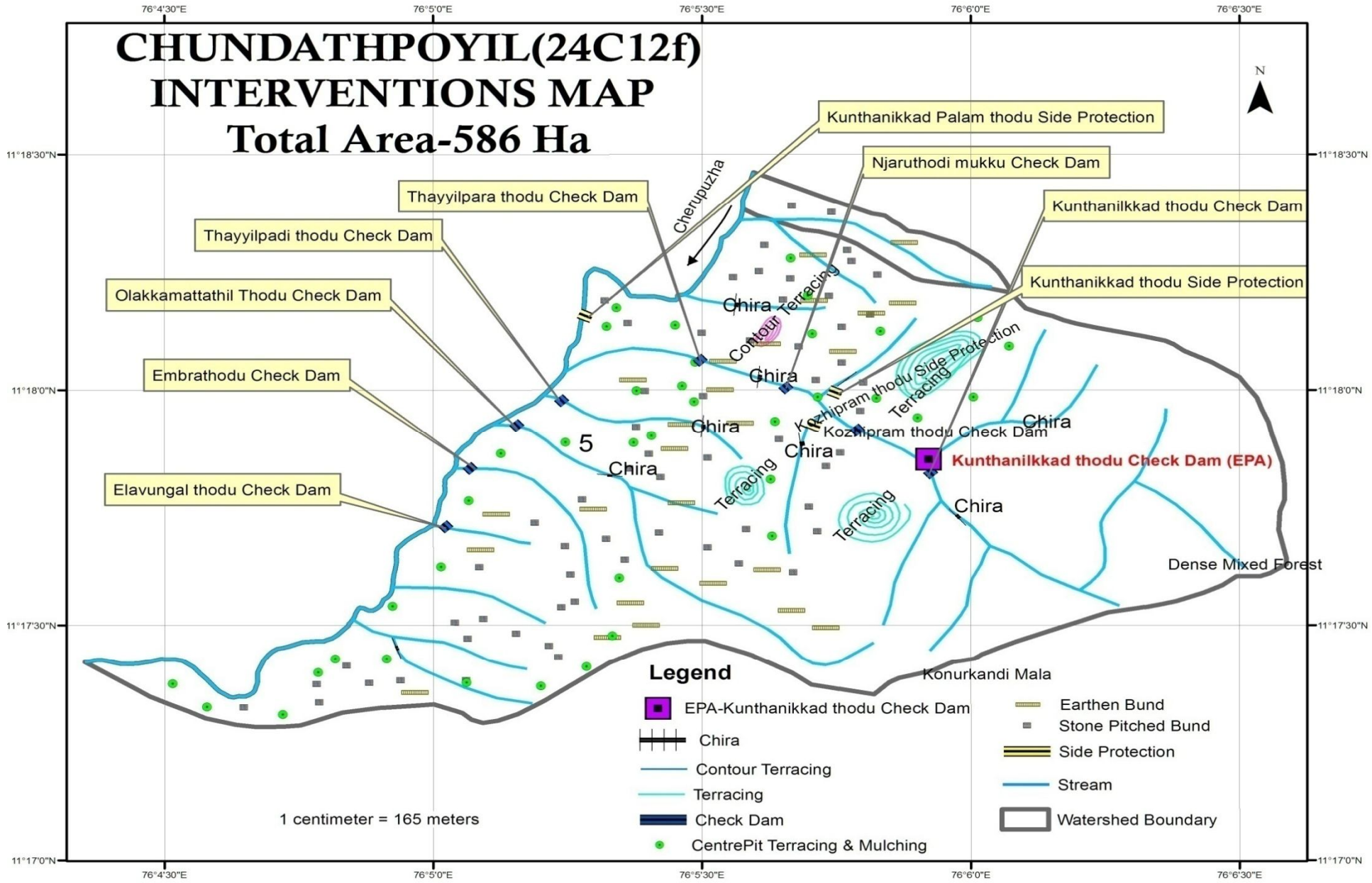
SL.NO	Programmes	TARGET GROUPS	AMOUNT/BATCH	TOTAL AMOUNT
1	Awareness Programmes And Training For Mgnregs Workers	Members Of Block Panchayaths And Panchayath , Wdt, Watershed Peoples	7200	21600
2	Awareness For Watershed Project On Tribes		6100	6100
3	Awareness Programmes For Students On Environment Day		4000	4000
4	Training For User Group And Beneficiaries (Nrm Activities)		8300	33200
5	Trining For Psm Activities		8300	16600
6	Training For Lss Actvities		8300	8300
7	Exposure Visit		50840	50840
	Total			140640

THIRD YEAR

Sl.No	Programmes	Target Groups	Amount/Batch	Total Amount
1	Awareness For Nrm , Psm , Lss Activities	Members Of Block Panchayaths , Panchayath , Wdt And Watershed Peoples	8300	33200
2	Training On Nrm		8300	33200
3	Training On Psm		8300	16600
4	Training On Lss		8300	8300
5	Awareness Programmes For Students On Environment Day		4000	4000
6	Exposure Visit		45340	45340
	Total			140640

Fourth Year

SL.NO	Programmes	TARGET GROUPS	AMOUNT/BATCH	TOTAL AMOUNT
1	Field Visit By Beneficiaries And Wdt In The Watershed Area	MEMBERS OF BLOCK PANCHAYATHS , PANCHAYATH , WDT WATERSHED PEOPLES	9035	36140
2	Awareness On With Drawal Phase Concept Of Watershed Management, Roles And Responsibilities		8300	8300
3	Awareness On Proper Maintenance Of Nrm Works - 1 Batch		8300	8300
	Total			52740


CHUNDATHPOYIL(24C12f)
INTERVENTIONS MAP
Total Area-586 Ha
N
76°4'30"E
76°5'0"E
76°5'30"E
76°6'0"E
76°6'30"E
11°18'30"N
11°18'0"N
11°17'30"N
11°17'0"N
Kunthanikkad Palam thodu Side Protection
Njaruthodi mukku Check Dam
Kunthanilkkad thodu Check Dam
Kunthanikkad thodu Side Protection
Thayyilpara thodu Check Dam
Thayyilpadi thodu Check Dam
Olakkamattathil Thodu Check Dam
Embrathodu Check Dam
Elavungal thodu Check Dam
Cherupuzha
Chira
Contour Terracing
Terracing
Kozhipram thodu Side Protection
Kozhipram thodu Check Dam
Kunthanilkkad thodu Check Dam (EPA)
5
Dense Mixed Forest
Konurkandi Mala
Legend
EPA-Kunthanikkad thodu Check Dam
Chira
Contour Terracing
Terracing
Check Dam
CentrePit Terracing & Mulching
Earthen Bund
Stone Pitched Bund
Side Protection
Stream
Watershed Boundary
1 centimeter = 165 meters

KAVUNGINCHOLA-CHERANGAD WATERSHED

(24 C12 I)

1. . INTRODUCTION

The Kavunginchola–Cherangad watershed that extends to a total of 509 hectares lies in the villages of Vettilappara and Urangattiri in the Grama Panchayath of Urangattiri of the Areacode Block in Malappuram district .This watershed bearing the Code 24C12l reaches Cherupuzha through various streams Pallithodu ,Pannikkjodu , Oyiluparathodu ,Kavungichola thodu ,Koorankallu,Attarmadithodu having its origin in the hills of Cherukunnu .the watershed shares its boundaries with Kalappara in the North ,Cherukunnu hill in the South ,Mullungad Road in the West and Koorankallu in the East.The major places in this watershed Koorankallu, Vettilappara, Cherngad, Chenkunnu, Oyilupara, Kavunginchola, and Palathotam lie in the wards 3, 18, and 19.

2. PHYSIOGRAPHY

Kavungichoal-Cheranagad is located in hilly area. The highest (601 Mtrs) elevated area of watershed located in southern part, which is Chekunnu hills and dense mixed forest of the area. The slope is from South to Northern side and also most of the steams are originating from the hilly area.

3. WATERSHED CHARECTOR

The shape of the watershed is Rectangular which is located in the northern portion of Malappuram district and is near to Kozhikode district. The most of the streams are originating from the Chekkunnu Mala .The total lenegth of the main stream of the watershed is 6.7km which joining to Cherupuzha.

4. WATERSUPPLY (Source: Baseline data Survey)

Streams	Water supply Of G.P	Block Panchayath
1. Vettilapara Pannithod 2. Ramankulam Thod 3. Vettilapara Kundoli Thod 4. Pannithod 5. Kavungin Chola	Vettilapara Public well	Oyilupara drinking water scheme

5. IRRIGATION

Well	Pond	Stream	Others
3.6 Ha	1 Ha	61 Ha	1 Ha

Source: Baseline data Survey

6. LAND USE

Type of Land use	Area(Ha)	%
Built Up	3	0.59
Agricultural Land	454	89.19
Forest	49	9.63
Wastelands	3	0.59
Total	509	100

Source: Kerala State Land use Board &Google Earth Pro

7. CROPPING PATTERN

Cropping Pattern	Area	Production/Yr(Tonne)
Coconut	74	600
Areacanut	18	21.78
Rubber	93	868.5
Banana	76	702
vegetable	36	2808
Cashew nut	1	1.2

Source: Baseline data Survey

8. LIVE STOCK

Cow	Milk	Buffalo	Milk	Goat	Milk	Poultry	Duck	Rabbit	Piggery	Milk Marketing Societies
59	39403 Litre	Nil	Nil	27	2069 Liter	603	89	21	Nil	1 (Not working)

Source: Baseline data Survey

ESTIMATE

1. WATERSHED DEVELOPMENT FUNDING PATTERN

ENTRY POINT	4%	244320
NATURAL RESOURSE MANAGEMENT	56%	3420480
PRODUCTIVE SYSTEM AND MICRO ENTERPRISES	10%	610800
LIVELYHOOD SUPPORT	9%	549720
MANAGEMENT COMPONENT	21%	1282680
TOTAL(In Rupees)	100	6108000

2. ENTRY POINT ACTIVITIES

The project is planned to be implemented place Oyilupara in Vettilappara village in the Kavunginchola- Cherangad watershed. The geographical distinction lies down $11^0 15' 49.06'' N$, $76^0 05' 21.50'' E$.

Oyilupara drinking water scheme had been implemented by Grama Panchayath of Urangattiri in Areacode Block Panchayath in 1998.This project has been largely depended upon by 31 families living here .Most of the wells and pipe lines used for this scheme has been damaged and hence repair of this water supply scheme incorporating with the integrated watershed conservation scheme gains much importance as an entry point activity is the need of the hour for the families solely depending on this project.

SL NO	NAME OF WORK :	ESTIMATE COST
1	Repair Of Oyilupara Drinking Water Supply	244320
	TOTAL(In Rupees)	244320

3. NATURAL RESOURCE MANAGEMENT

During the first year of IWMP mainly concentrating with DPR preparation, Entry point activitiesand institutional building. Natural resource management activities are starting from second year such as afforestation, Horticulture, Agriculture, Medicinal plant cultivation, Soil & moisture conservation, vegetative and engineering structure and water harvesting structures. Item wise annual actions plans are mentioned below

4. MASTER PLAN AND YEAR WISE PLAN OF NATURAL RESOURCE MANAGEMENT PROGRAMME

ACTIVITIES	UNIT	VOLUME/ UNITS	RATE	TOTAL IWMP SHARE	EXPECTING WDF
AFFORESTATION					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
NEEM	Ha	3.2	6250	20000	
UNG	Ha	2.2	6000	13200	
HORTICULTURE					
MANGO	/hectare	1.3	5400	7020	
PINEAPPLE	/hectare	1	200000	200000	
AGRICULTURE					
VEGETABLE GARDEN (seed and fertilizer)	/hectare	2.1	37500	78750	
BANANA CULTIVATION (Tissue culture)	/hectare	2	50000	100000	
SPICES CULTIVATION (Ginger, pepper)	/hectare	2.6	30000	78000	
TUBER CROPS	/hectare	1	30000	30000	
FODDER GRASS CULTIVATION	/hectare	1	6000	6000	
SOIL & MOISTURE CONSERVATION					
STONE PITCHED BUND	/hectare	4	12000	48000	
EARTHERN BUND	/hectare	2.5	12000	30000	
TERRACING	/hectare	2.4	79724.3	191338.32	
CONTOUR TERRACING	/hectare	2.2	79724.3	175393.46	
VEGETATIVE AND ENGINEERING STRUCTURES					
SIDE PROTECTION OF STREAMS					
1. KUNIYANMOOCHI	m3	150	1791	268796	
2.VETTILAPPARA-PHC-PANNITHODU	m3	100	3630	363000	
WATER HARVESTING STRUCTURE(NEW CREATED)					
CHECK DAMS					
VETTILAPARA PANNITHOD	Nos	1	16000	16000	

VETTILAPARA KUNDOLI THOD	Nos	1	16000	16000	
CHIRA IN STREAMS USING DEPT RUBBLES – PANNITHODU	Nos	14	641	8974	
WELL RECHARGE	Nos	49	15000	735000	
WELL CONSTRUCTION					
PALLIKUNN	Nos	1	350000	350000	
PARAKADAV	Nos	1	350000	350000	
KOORANKALLU	Nos	1	335000	335000	
TOTALRounded figure (8.22)				**3420480**	
SECOND YEAR	**UNIT**	**VOLUME/UNITS**	**RATE**	**TOTAL IWMP SHARE**	**expecting wdf**
AFFORESTATION					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
NEEM	Ha	0.5	6250	3125	
AGRICULTURE					
BANANA CULTIVATION	/hectare	0.5	50000	25000	
SPICES CULTIVATION	/hectare	1	30000	30000	
FODDER GRASS CULTIVATION	/hectare	0.3	6000	1800	
SOIL & MOISTURE CONSERVATION					
STONE PITCHED BUND	/hectare	3.2	12000	38400	
TERRACING	/hectare	2.4	79724.3	191338.32	
CONTOUR TERRACING	/hectare	2.2	79724.3	175393.46	
VEGETATIVE AND ENGINEERING STRUCTURES					
SIDE PROTECTION OF STREAMS					
1. KUNIYANMOOCHI	m3	150	1791	268650	
WATER HARVESTING STRUCTURE(NEW CREATED)					
WELL CONSTRUCTION					
1. PALLIKUNN	Nos	1	350000	350000	
2. PARAKADAV	Nos	1	350000	350000	

CHECK DAMS					
1. VETTILAPARA PANNITHOD	Nos	1	16000	16000	
CHIRA IN STREAMS USING DEPT RUBBLES - KUNIYANMOOCHI	Nos	4	641	2564	
WELL RECHARGE	Nos	5	15000	75000	
				-270.78	
TOTAL				**1527000**	
Third year	**UNIT**	**VOLUME/UNITS**	**RATE**	**TOTAL IWMP SHARE**	**expecting wdf**
AFFORESTATION					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
NEEM	Ha	0.7	6250	4375	
UNG	Ha	0.5	6000	3000	
HORTICULTURE					
MANGO	/hectare	1	5400	5400	
PINEAPPLE	/hectare	0.8	200000	160000	
AGRICULTURE					
VEGETABLE GARDEN	/hectare	0.4	37500	15000	
BANANA CULTIVATION	/hectare	0.4	50000	20000	
SPICES CULTIVATION	/hectare	0.8	30000	24000	
TUBER CROPS	/hectare	1	30000	30000	
FODDER GRASS CULTIVATION	/hectare	0.3	6000	1800	
SOIL & MOISTURE CONSERVATION					
STONE PITCHED BUND	/hectare	0.8	12000	9600	
EARTHERN BUND	/hectare	1	12000	12000	
VEGETATIVE AND ENGINEERING STRUCTURES					
SIDE PROTECTION OF STREAMS					
1.VETTILAPARA PHC PANNITHOD	m3	100	3630	363000	
WATER HARVESTING STRUCTURE(NEW CREATED)					

CHECK DAMS					
1. VETTILAPARA KUNDOLITHOD	Nos	1	16000	16000	
CHIRA IN STREAMS USING DEPT RUBBLES - KUNIYANMOOCHI	Nos	5	641	3205	
WELL RECHARGE	Nos	35	15000	525000	
WELL CONSTRUCTION					
1. KOORANKALLU	Nos	1	335000	335000	
rounded figure				-380	
Total				**1527000**	
Fourth year	**UNIT**	**VOLUME/UNITS**	**RATE**	**TOTAL IWMP SHARE**	**expecting wdf**
AFFORESTATION					
NEEM	Ha	2	6250	12500	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
UNG	Ha	1.7	6000	10200	
HORTICULTURE					
MANGO	/hectare	0.3	5400	1620	
PINEAPPLE	/hectare	0.2	200000	40000	
AGRICULTURE					
VEGETABLE GARDEN	/hectare	1.7	37500	63750	
BANANA CULTIVATION	/hectare	1.1	50000	55000	
SPICES CULTIVATION	/hectare	0.8	30000	24000	
FODDER GRASS CULTIVATION	/hectare	0.4	6000	2400	
SOIL & MOISTURE CONSERVATION					
EARTHERN BUND	/hectare	1.5	12000	18000	
CHIRA IN STREAMS USING DEPT RUBBLES – KUNIYANMOOCHI THOD	Nos	5	641	3205	
WELL RECHARGE	Nos	9	15000	135000	
rounded figure				805	
Total				**366480**	

5. YEAR WISE PRODUCTION SYSTEM MANAGEMENT

During the first year of IWMP mainly concentrating with DPR preparation and Entry point activities. Production system management activities are starting from second year such as Bee keeping, Poultry, Fisheries, Agriculture nursery, Vermicompost, Milk society and Mushroom cultivation. Item wise annual actions plans are mentioned below

ACTIVITIES- MASTER PLAN	UNIT	RATE	IWMP AMOUNT	EXPECTING WDF
BEEKEEPING	4	6000	24000	The contribution of WDF shall be a minimum 20 % of cost of PSM works executed on general. However, in case of SC/ST, small and marginal farmers, the minimum contribution shall be 10 % of cost of PSM works
POULTRY	203	575	116725	
DIARY	11	30000	330000	
VERMICOMPOST	5	10000	50000	
MUSHROOM CUTIVATION	3	30000	90000	
Rounded Figure			75	
TOTAL			***610800***	
FIRST YEAR				
BEEKEEPING	2	6000	12000	
POULTRY	108	575	62100	
DIARY	3	30000	90000	
VERMICOMPOST	2	10000	20000	
MUSHROOM CUTIVATION	2	30000	60000	
Rounded Figure			220	
TOTAL			***244320***	
SECOND YEAR				
POULTRY	95	575	54625	
DIARY	5	30000	150000	
VERMICOMPOST	1	10000	10000	
MUSHROOM CUTIVATION	1	30000	30000	
Rounded Figure			-305	
TOTAL			***244320***	
FOURTH YEAR				
BEEKEEPING	2	6000	12000	
DIARY	3	30000	90000	
VERMICOMPOST	2	10000	20000	
Rounded Figure			160	
TOTAL			***122160***	

6. YEAR WISE 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, Rabbit rearing, Weed cutter, Coconut climber, , Chapatti and Food processing unit . Item wise annual actions plans are mentioned below.

KAVUNGIN CHOLA WATERSHED - MASTER PLAN OF LSS				SECOND YEAR	THIRD YEAR	FOURTH YEAR
ACTIVITIES	**UNITS**	**Unit cost**	**IWMP AMOUNT**	**UNITS**	**UNITS**	**UNITS**
GOAT REARING	20	6000	120000	8	0	12
RABBIT REARING	15	5000	75000	10	3	2
AGRI NURSERY	1	200,000	200000	0	1	0
WEED CUTTER	4	20,000	80000	2	0	2
COCONUT CLIMBER	5	3000	15000	5	0	0
FOOD PROCESSING UNIT	**1**	60000	60000	1	0	0
ROUNDED FIGURE			-280	780	-1220	160
TOTAL			**549720**	**213780**	**213780**	**122160**

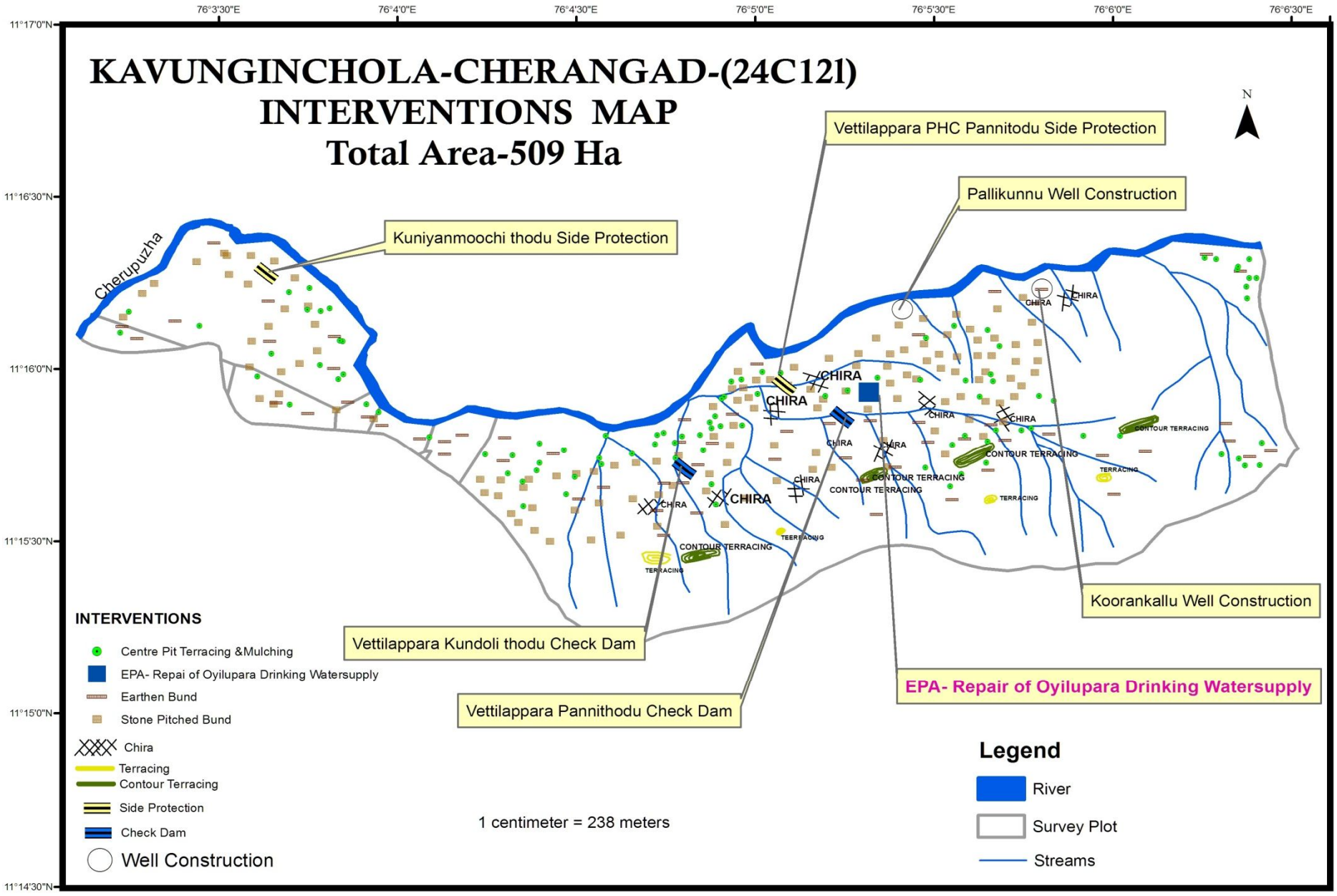
7. CAPACITY BUILDING PLAN

	FIRST YEAR	
Sl.No	Programmes	Total Amount
1	Institutional Building And Awareness Programmes	15270

	SECOND YEAR				
Sl.No	Programmes	Target Groups	Amount/Batch		Total Amount
1	Awareness Programmes And Training For Mgnregs Workers	Watershed People	7200		17650
2	Awareness For Watershed Project On Tribes		4400		6650
3	Awareness Programmes For Students On Environment Day		3175		4950
4	Training For User Group And Beneficiaries (Nrm Activities)		8300		20400
5	Trining For Psm Activities		8300		11160
6	Training For Lss Actvities		8300		10500
7	Exposure Visit		50840		50840

	THIRD YEAR							
Sl.No	Programmes	Duration		No. Of Expected Participants	Implementing Authority	Amount/Batch	No.Of Batches	Total Amount
1	Awareness Programmes For Nrm , Psm ,Lss Activities	3	Days	140	PIA	7200	3	18200
2	Training For Nrm	1	Days	100		4400	1	13800
3	Training On Psm	4	Days	100		8300	4	13800
4	Trining For Lss	2	Days	100		8300	2	13800
5	Awareness Programmes For Students On Environment Day	2	Days	81		8300	1	11710
6	Exposure Visit	2	Days	45+5		50840	1	50840

	FOURTH YEAR							
Sl.No	Programmes	Duration		No. Of Expected Participants	Target Groups	Amount/Batch	No.Of Batches	Total Amount
1	Field Visit By Beneficiaries And Wdt In The Watershed Area	5	Days	140	WATERSHED PEOPLES	7200	5	18200
2	Awareness On With Drawal Phase Concept Of Watershed Management, Roles And Responsibilities	1	Days	100		4400	1	13800
3	Awareness On Proper Maintenance Of Nrm Works - 1 Batch	4	Days	100		8300	4	13800


KAVUNGINCHOLA-CHERANGAD-(24C12I)
INTERVENTIONS MAP
Total Area-509 Ha
76°3'30"E
76°4'0"E
76°4'30"E
76°5'0"E
76°5'30"E
76°6'0"E
76°6'30"E
11°17'0"N
11°16'30"N
11°16'0"N
11°15'30"N
11°15'0"N
11°14'30"N
N
Cherupuzha
Kuniyanmoochi thodu Side Protection
Vettilappara PHC Pannitodu Side Protection
Pallikunnu Well Construction
Koorankallu Well Construction
Vettilappara Kundoli thodu Check Dam
Vettilappara Pannithodu Check Dam
EPA- Repair of Oyilupara Drinking Watersupply
CHIRA
CONTOUR TERRACING
TERRACING
INTERVENTIONS
Centre Pit Terracing &Mulching
EPA- Repai of Oyilupara Drinking Watersupply
Earthen Bund
Stone Pitched Bund
Chira
Terracing
Contour Terracing
Side Protection
Check Dam
Well Construction
1 centimeter = 238 meters
Legend
River
Survey Plot
Streams

KOTTAMPARA-POOLAKANTHODU WATERSHED (24C12h)

1. INTRODUCTION

. The watershed Kottampara-Poolakkanthod bearing the code 24C12h existing the Vettilappara village is in the Gramapanchayath of Urangattiri of the Areacode Block in Malappuram district. Finding its origin in the Alappara Pannyanmala the streams Kaithakunnuthodu ,Alapparathodu and Pandalangadi thodu flow in to Cherupuzha .The watershed extends to a total area of 934 hectares sharing boundaries with Perinkadavu in the North ,Cherupuzha in the south ,Kaithakkalthodu in the west and Koorankallu _Poolakkanthodu Road in the East .Major places included in this watershed Vettilappara Angadi ,Koorankallu –Poolakkanthodu ,Peinkallu and Alappara belong to the wards 2,20.

2. . PHYSIOGRAPHY

Kottampara-Poolakkomthodu watershed is located in hilly area. The highest (637 Mtrs) elevated area of watershed located in northern part, Which are Kaidakkal and Konurkandi hills .The lowest point located in near to Cherupuzha which is western boundary of the watershed. The slope is from North to south ward direction and also most of the steams are originating from Northern part of the watershed.

3. . WATERSHED CHARECTOR

The shape of the watershed is rectangular which is located in the northern portion of Malappuram district and is near to Kozhikode district. The most of the streams are originating from the Kaidakkal and Konukandi hills of this watershed. Cherupuzha, which is western boundary of this watershed as well as all streams are flowing to Poolakkom thodu. The total length of Poolakkom thodu is 9 Kms and last it is joining to Cherupuzha. About 18 streams are originating from the Kaidakkal and Konurkandi Hills.

4. . IRRIGATION

Well	Pond	Streams, springs and others
7.3 ha	3.9 Ha	49 Ha

Source: Baseline data Survey

5. . WATERSUPPLY

WELL	STEAMS	WATERSUPPLY OF G.P
Vilakkumparamb Kaithakkal Kaithakunn Panthalangadi Kottampara Alappara well Koorankallu	Alapara Thod Thekkinthod Kottampara Thod PoolakkamThod Koorankallu thod Kaithakkal thod Vilakkumparamb	Alapara well

Source: Baseline data Survey

6. . LAND USE

Types of Land Use	Area in Ha.	% of area
Baren rocky	64	60.1
Rubber plantation	260	27.1
cashew	7	0.74
Play ground	7	0.74
Water bodies	9	0.96
Arecanut	37	3.9
Coconut dominant mixed crop	36	3.8
Banana	61	6.4
commercial	17	1.8
Land with mixed crop	23	2.45
Residential	59	6.3
Residential converted from paddy	4	0.4
Forest	148	15.8
Miscellaneous	204	21.7
Total	936	100

Source: Kerala State Land use Board &Google Earth Pro

7. CROPPING PATTERN

Sl .no	Crop Pattern	Area In Hacters	Percentage Of Watershed Area
1	Coconut	36	3.8
2	Arecanut	37	3.9
3	Banana	14	1.4
4	Rubber	260	27.7
5	Cashew	7	0.7
6	Vegetable	21	2.2

Source: Baseline Survey

8. LIVE STOCK

Cow	Milk	Buffalo	Milk	Goat	Milk	Poultry	Duck	Rabbit
76	48956 litre	11	3854 litre	56	7845 litre	356	143	12

Source: Baseline Survey

9. INFERENCES

The slope of the watershed is north direction to south also most of the streams is originating from Konurkand hills. The area mostly affected acute water shortage in Konurkandi and Kadikkal Hill. The conservation methods must be implementing as early as above mentioned area

ESTIMATE

1. . WATERSHED DEVELOPMENT FUNDING PATTERN

ENTRY POINT	4%	448320
NATURAL RESOURSE MANAGEMENT	56%	6276480
PRODUCTIVE SYSTEM AND MICRO ENTERPRISES	10%	1120800
LIVELYHOOD SUPPORT	9%	1008720
MANAGEMENT COMPONENT	21%	2353680
TOTAL(In Rupees)	100	11208000

2. . ENTRY POINT ACTIVITIES

SL NO	NAME OF WORK :	ESTIMATE COST
1	1.VILAKKUPARAMB CHOLA POND CONSTRUCTION	448320
	TOTAL(In Rupees)	448320

Nearly 90 families including 75 SC families residing here depend on this stream and present EPA activity can be decrease the water availability. The geographical location of this place is N11^{0}16'17.0" E76^{0}04'23.7".

3. NATURAL RESOURCE MANAGEMENT (NRM)

During the first year of IWMP mainly concentrating with DPR preparation and Entry point activities. Natural resource management activities are starting from second year such as afforestation, Horticulture, Agriculture, Medicinal plant cultivation, Soil & moisture conservation, vegetative and engineering structure and water harvesting structures. Item wise annual actions plans are mentioned below.

4. MASTER PLAN AND YEAR WISE PLAN OF NATURAL RESOURCE MANAGEMENT PROGRAMME

KOTTAMPAARA-POOLAKKAMTHOD WATERSHED MASTER PLAN	UNIT	VOLUME/ UNITS	RATE	TOTAL IWMP SHARE	EXPECTING WDF SHARE
AFFORESTATION					**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**
RAMACHAM	Ha	3.3	12500	41250	
NEEM	Ha	1.7	6250	10625	
UNG	Ha	2.1	6000	12600	
HORTICULTURE					
MANGO	/hectare	2.5	5400	13500	
PINEAPPLE	/hectare	1.5	200000	300000	
AGRICULTURE					
VEGETABLE GARDEN (seed and fertilizer)	/hectare	3.9	37500	146250	
BANANA CULTIVATION (Tissue culture)	/hectare	8	50000	400000	
SPICES CULTIVATION (Ginger, pepper)	/hectare	14.5	30000	435000	
TUBER CROPS	/hectare	10	30000	300000	
FODDER GRASS CULTIVATION	/hectare	2	6000	12000	
MEDICINAL PLANT CULTIVATION					
1.KATTARVAAZHA		0.8	50000	40000	
2.CHITTAADALODAKAM		0.75	50000	37500	
SOIL & MOISTURE CONSERVATION					
STONE PITCHED BUND	/hectare	10	12000	120000	
EARTHERN BUND	/hectare	15.4	12000	184800	
TERRACING	/hectare	1.9	79724.3	151476.17	
CONTOUR TERRACING	/hectare	1.2	79724.3	95669.16	
VEGETATIVE AND ENGINEERING STRUCTURES					
SIDE PROTECTION OF STREAMS					
1.VILAKUPARAMB CHOLA	M^3	150	7501	1125150	
2. KAITHAKKAL THOD	M^3	200	2553.81	510762	
WATER HARVESTING STRUCTURE(NEW CREATED)					
WELL CONSTRUCTION					
KOTTAMPARA	Nos	1		500000	
PALLITHAZHA	Nos	1		600000	
CHECK DAMS					
ALAPARA THOD	NOS	3	50000	150000	
KOORANKALLU THOD	Nos	3	50000	150000	

KAITHAKAL THOD	Nos	3	50000	150000	
VILAKKUPARAMB CHOLA	Nos	1	50000	50000	
CHIRA IN STREAMS USING DEPT RUBBLES – ALAPARA THOD	Nos	19	641	12179	
WELL RECHARGE	Nos	47	15000	705000	
WATER ABSORBTION PIT	Nos	212	107.14	22713.68	
Rounded Figure				4.99	
TOTAL				6276480	
SECOND YEAR	UNIT	VOLUME/UNITS	RATE	TOTAL IWMP SHARE	EXPECTING WDF SHARE
AFFORESTATION					
NEEM	Ha	1	6250	6250	
UNG	Ha	1.3	6000	7800	
HORTICULTURE					
MANGO	/hectare	1.5	5400	8100	
PINEAPPLE	/hectare	0.4	200000	80000	
AGRICULTURE					
VEGETABLE GARDEN	/hectare	1	37500	37500	
BANANA CULTIVATION	/hectare	1	50000	50000	
SPICES CULTIVATION	/hectare	3	30000	90000	
TUBER CROPS	/hectare	2	30000	60000	
FODDER GRASS CULTIVATION	/hectare	0.4	6000	2400	
SOIL & MOISTURE CONSERVATION					
STONE PITCHED BUND	/hectare	8.5	12000	102000	
TERRACING	/hectare	1.9	79724.3	151476.17	
CONTOUR TERRACING	/hectare	1.2	79724.3	95669.16	
VEGETATIVE AND ENGINEERING STRUCTURES					
SIDE PROTECTION OF STREAMS					
1.VILAKKUMPARAB CHOLA	m3	150	7501	1125150	
WATER HARVESTING STRUCTURE(NEW CREATED)					
CHECK DAMS					
ALAPARA THOD	Nos	1	50000	50000	
KOORANKALLU THOD	Nos	1	50000	50000	
KAITHAKKAL THOD	Nos	1	50000	50000	5000
CHIRA IN STREAMS USING DEPT RUBBLES –	Nos	5	641	3205	320.5

ALAPARA THOD					
WELL CONSTRUCTION					
PALLITHAZHA	Nos	1	600000	600000	60000
WELL RECHARGE	Nos	15	15000	225000	22500
WATER ABSORBTION PIT	Nos	70	107.14	7499.8	749.98
Total (ROUNDED FIGURE -50)				2802000	280200
THIRD YEAR	UNIT	VOLUME/UNITS	RATE	TOTAL IWMP SHARE	EXPECTING WDF SHARE
AFFORESTATION					
NEEM	Ha	0.7	6250	4375	
UNG	Ha	0.8	6000	4800	
HORTICULTURE					
MANGO	/hectare	1	5400	5400	
PINEAPPLE	/hectare	1.1	200000	220000	
AGRICULTURE					
VEGETABLE GARDEN	/hectare	2.1	37500	78750	
BANANA CULTIVATION	/hectare	4.4	50000	220000	
SPICES CULTIVATION	/hectare	7	30000	210000	
TUBER CROPS	/hectare	5	30000	150000	
FODDER GRASS CULTIVATION	/hectare	1	6000	6000	
MEDICINAL PLANT CULTIVATION					
1.KATTARVAAZHA		0.8	50000	40000	
2.CHITTAADALODAKAM		0.75	50000	37500	
SOIL & MOISTURE CONSERVATION					
STONE PITCHED BUND	/hectare	1.5	12000	18000	
EARTHERN BUND	/hectare	8	12000	96000	
VEGETATIVE AND ENGINEERING STRUCTURES					
SIDE PROTECTION OF STREAMS					
1.KAITHAKKAL THOD	m3	200	2553.81	510762	
WATER HARVESTING STRUCTURE(NEW CREATED)					
WELL CONSTRUCTION					
KOTTAMPARA	Nos	1	500000	500000	
CHECK DAMS					
1. ALAPARA THOD	Nos	1	50000	50000	
2. KOORANKALLU THOD	Nos	1	50000	50000	

3. KAITHAKKAL THOD	Nos	1	50000	50000	
4. VILAKKUMPARAMB CHOLA	Nos	1	50000	50000	
CHIRA IN STREAMS USING DEPT RUBBLES – . KOORANKALLU THOD	Nos	8	641	5128	
WELL RECHARGE	Nos	32	15000	480000	
WATER ABSORBTION PIT	Nos	142	107.14	15213.88	
TOTAL (rounded figure - 71)				2802000	
FOURTH YEAR	UNIT	VOLUME/UNITS	RATE	TOTAL IWMP SHARE	EXPECTING WDF SHARE
AFFORESTATION					
RAMACHAM	Ha	3.3	12500	41250	
AGRICULTURE					
VEGETABLE GARDEN	/hectare	0.8	37500	30000	
BANANA CULTIVATION	/hectare	2.6	50000	130000	
SPICES CULTIVATION	/hectare	4.5	30000	135000	
TUBER CROPS	/hectare	3	30000	90000	
FODDER GRASS CULTIVATION	/hectare	0.6	6000	3600	
SOIL & MOISTURE CONSERVATION					
EARTHERN BUND	/hectare	7.4	12000	88800	
WATER HARVESTING STRUCTURE(NEW CREATED)					
CHECK DAMS					
1. ALAPARA THOD	Nos	1	50000	50000	
2. KOORANKALLU THOD	Nos	1	50000	50000	
3. KAITHAKKAL THOD	Nos	1	50000	50000	
CHIRA IN STREAMS USING DEPT RUBBLES - KAITHAKKAL THOD	Nos	6	641	3846	
TOTAL (Rounded Figure = -16)				672480	

5. YEAR WISE PRODUCTION SYSTEM MANAGEMENT

During the first year of IWMP mainly concentrating with DPR preparation and Entry point activities. Production system management activities are starting from second year such as Bee keeping, Poultry, Fisheries, Agriculture nursery, Vermicompost, Milk society and Mushroom cultivation. Item wise annual actions plans are mentioned below

ACTIVITIES	UNIT	RATE	IWMP AMOUNT	EXPECTING WDF
BEEKEEPING	4	6000	24000	The contribution of WDF shall be a minimum 20 % of cost of PSM works executed on general. However, in case of SC/ST, small and marginal farmers, the minimum contribution shall be 10 % of cost of PSM works
POULTRY	603	575	346725	
DIARY	17	30000	510000	
VERMICOMPOST	9	10000	90000	
MUSHROOM CUTIVATION	5	30000	150000	
rounded figure			75	
TOTAL			*1120800*	
SECOND YEAR				
BEEKEEPING	2	6000	12000	
POULTRY	272	575	156400	
DIARY	6	30000	180000	
VERMICOMPOST	4	10000	40000	
MUSHROOM CUTIVATION	2	30000	60000	
rounded figure			-80	
TOTAL			*448320*	
THIRD YEAR				
BEEKEEPING	1	6000	6000	
POULTRY	195	575	112125	
DIARY	8	30000	240000	
VERMICOMPOST	3	10000	30000	
MUSHROOM CUTIVATION	2	30000	60000	
rounded figure			195	
TOTAL			*448320*	
FOURTH YEAR				
BEEKEEPING	1	6000	6000	
POULTRY	136	575	78200	
DIARY	3	30000	90000	
VERMICOMPOST	2	10000	20000	
MUSHROOM CUTIVATION	1	30000	30000	
rounded figure			-40	
TOTAL			*224160*	

6. YEAR WISE LIVELIHOOD SUPPORT SYSTEM

KOOTTAMPARA POOLAKKAMTHOD WATERSHED	UNIT	RATE	IWMP AMOUNT	SECOND YEAR	THIRD YEAR	FOURTH YEAR
GOAT REARING	29	6000	174000	10	8	11
RABBIT REARING	20	5000	100000	10	5	5
AGRI - NURSERY	2	276450	552900	1	1	0
WEED CUTTER	6	20,000	120000	0	2	4
COCONUT CLIMBER	4	3000	12000	2	1	1
BAKERY MAKING UNIT	1	50000	50000	0	0	1
Rounded figure			-180	-170	-170	160
TOTAL			1008720	392280	392280	224160

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, Rabbit rearing, Weed cutter, Coconut climber, Bamboo by production unit, processing unit. Item wise annual actions plans are mentioned below.

7. CAPACITY BUILDING PLAN

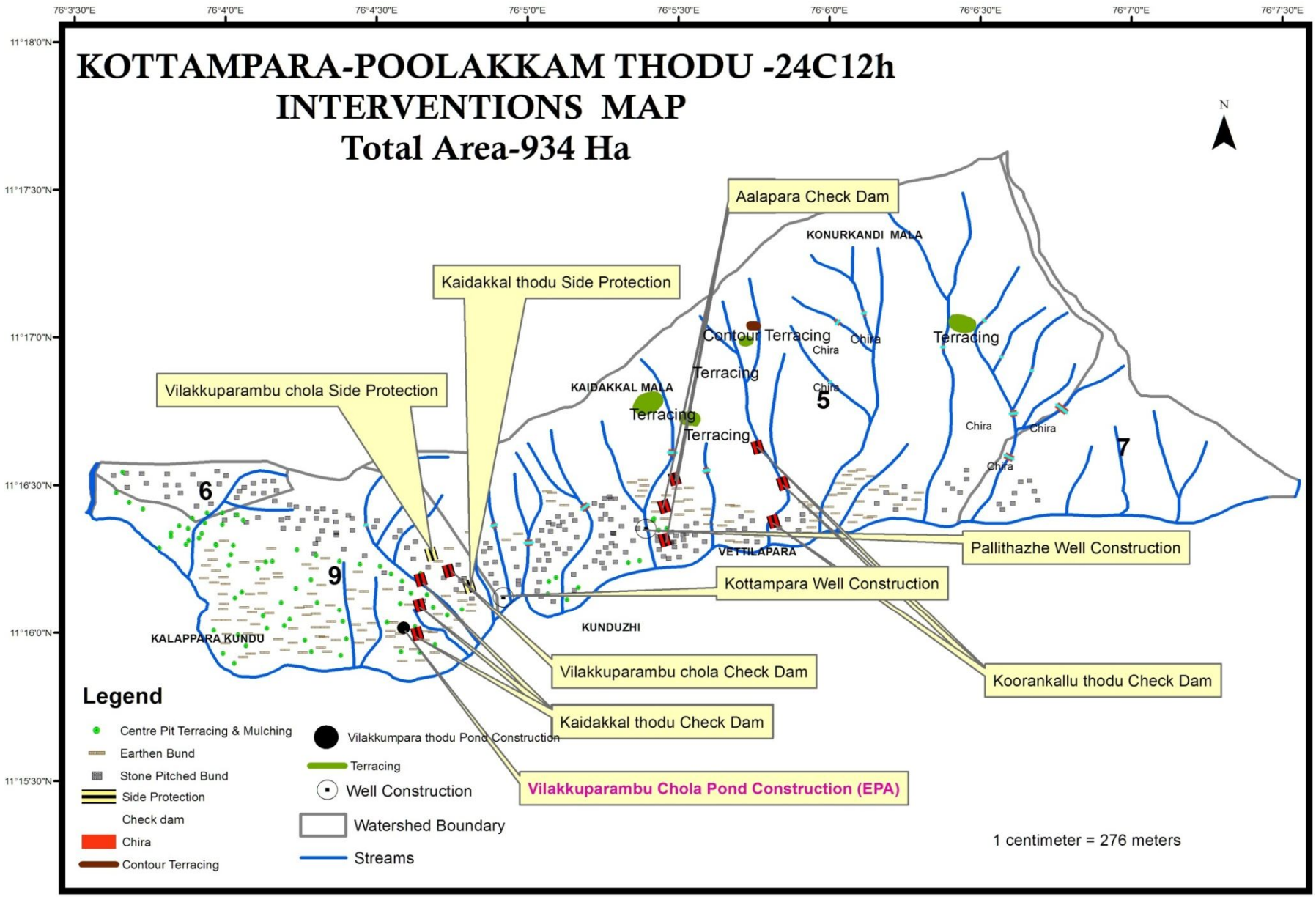
	First Year		
Si.No	Programmes	Implementing Authority	Total Amount
1	Institutional Building And Awareness Programmes	PIA	28020

	Second Year	Target Groups		
SL.NO	Programmes		Amount/Batch	Total Amount
1	Awareness Programmes And Training For Mgnregs Workers	WATERSHED PEOPLES	7200	30300
2	Awareness For Watershed Project On Tribes		4400	9400
3	Awareness Programmes For Students On Environment Day		3175	7275
4	Training For User Group And Beneficiaries (Nrm Activities)		8300	30300

5	**Trining For Psm Activities**			**8300**	**30300**
6	**Training For Lss Actvities**			**8300**	**14900**
7	**Exposure Visit**			**50840**	**101680**
			ROUNDED FIGURE		**5**
	TOTAL				***224160***

	Third Year						
SL. NO	Programmes	No. Of Expected Participants	Implementing Authority	Target Groups	Amount/ Batch	No.Of Batches	TOTAL AMOUNT
1	Awareness Programmes For Nrm , Psm ,Lss Activities	400	Tso With Support Of Pia	Watershed Peoples	7200	3	46800
2	Training For Nrm	200			4400	1	24800
3	Training On Psm	324			8300	4	38440
4	Trining For Lss	325			8300	2	38550
5	Awareness Programmes For Students On Environment Day	200			8300	1	24800
6	Exposure Visit	45+5			50840	1	50840
	Total						*224160*

	Fourth Year			
SL.NO	**Programmes**	**Target Groups**	**Amount/Batch**	**Total Amount**
1	Field Visit By Beneficiaries And Wdt In The Watershed Area	Watershed Peoples	7200	30300
2	Awareness On With Drawal Phase Concept Of Watershed Management, Roles And Responsibilities		4400	31180
3	Awareness On Proper Maintenance Of Nrm Works - 1 Batch		8300	22600
	Total			***84060***


KOTTAMPARA-POOLAKKAM THODU -24C12h
INTERVENTIONS MAP
Total Area-934 Ha
N
76°3'30"E
76°4'0"E
76°4'30"E
76°5'0"E
76°5'30"E
76°6'0"E
76°6'30"E
76°7'0"E
76°7'30"E
11°18'0"N
11°17'30"N
11°17'0"N
11°16'30"N
11°16'0"N
11°15'30"N
Aalapara Check Dam
Kaidakkal thodu Side Protection
Vilakkuparambu chola Side Protection
KONURKANDI MALA
KAIDAKKAL MALA
VETTILAPARA
KUNDUZHI
KALAPPARA KUNDU
Contour Terracing
Terracing
Chira
5
6
7
9
Pallithazhe Well Construction
Kottampara Well Construction
Koorankallu thodu Check Dam
Vilakkuparambu chola Check Dam
Kaidakkal thodu Check Dam
Vilakkuparambu Chola Pond Construction (EPA)
Legend
Centre Pit Terracing & Mulching
Earthen Bund
Stone Pitched Bund
Side Protection
Check dam
Chira
Contour Terracing
Vilakkumpara thodu Pond Construction
Terracing
Well Construction
Watershed Boundary
Streams
1 centimeter = 276 meters

MOOZHIPADAM-VAKKALLOOR WATERSHED
(24C62/63 a)

1. . INTRODUCTION

Moozhipadam -Vakkalloor watershed (24C62/63 a) lie down between 11^0 12' 15" to 11^0 13' 15" North latitude and 76^0 3'45" to 76^0 5'15" East longitude. The some parts of 24C63a watershed merged with Moozhipadam-Vakkaloor because a little portion already treated in previous project which iwmp Areacode A1. The agrarian Village in its term and set up, the Kavanur Grama Panchayath of the Areacode Block in the Taluk of Ernad in Malappuram District extends up to a vast area of 31.30 sq. km. The very name "Kavanur" is believed to have come from its expansion 'Kavukalude ooru'. It is also said that the place Kavanur had for the name 'Kamarisunupuram' in olden times.The village Kavanur has been formed with the village re-organization in 1961 by combining the kavaur 'Amsam' consisting of the revenue district of Kavanur and vakkallur and the iruveti desam comparing iruveti, elayur and chenzara areas.The history of Kavanur begins in the first phase of the 19th C. existing as a complete agrarian society; Kavanur was firmly built upon feudalism. A major share of the land remained with the feudal lords. The important landlords of the time were Muntamb Moosad Kozhikode new Kovilakam, Nilambur Kovilakam and Mampram Devaswam. Under these landlords had remained majority of the population undertaking agricultural activities.

Majority of the population being farmers, these existed a life style purely based paddy cultivation and wages had been paid in the firm of products. The landlords maid the labours, brought from other parts of the state, settle here and organized special settlement camps known as 'Chalas (colonies), Perumkollan's (blacksmith) 'Asaris' (carpenters) Vaidyans (traditional medical practitioners) are all believed to have settled here this.

2. . PHYSIOGRAPHY

Moozhipadam -Vakkalloor is located in hilly area. The highest (122 Mtrs) elevated area of watershed located in southern part, which is Vakkaloor area. The lowest point located in near to Chaliyar river which is northern boundary of the watershed. The slope is from South to Northern side and also most of the steams are originating from the Vakkkaloor area.

3. WATERSHED CHARECTOR

The shape of the watershed is Triangular which is located near to Chaliyar river. The most of the streams are originating from the Vakkaloor area and these are joining to Chaliyar river. There are two major streams passing through this watershed which are Pothampulli thodu (1kms) and Thachangod –Moozhikund Thodu (1.25kms length) both are originating from the Vakkaloor and Anayerimala.

4. WATERSUPPLY

PONDS
1. Palanad pond 2. Anaprachalpanchayath pond 3. Puliyarakkunnu-Chalikavupanchayath pond

Source: baseline data survey

5. IRRIGATION

Well	Pond	Streams
7.5 Ha	6.3 Ha	42.3 Ha

Source: baseline data survey

6. LAND USE

Land Use	Area/Ha
Coconut dominant mixed crop	60
Perennial	10
Mixed crop	121
Rubber	24
Residential	5
Paddy	1
Arecanut	45

Source: Kerala State Land use Board &Google Earth Pro

7. CROPPING PATTERN

Cropping Pattern	Area in Ha	Production/Yr(Tonne)
Coconut	60	1500
Arecanut	45	45
Banana	40	1080
Tapioca	40	80
pulses	12	36
Vegetable	35	2730
Paddy	1	10
Rubber	24	10800

Source: Baseline data survey

8. LIVE STOCK

Cow	Milk	Buffalo	Milk	Goat	Milk	Poultry	Duck	Milk Marketing Societies
74	52910 litre	18	8730 litre	55	8754litre	739	12	Nil

Source: baseline data survey

9. INFERENCE

This watershed is located near to Chaliyar River, which is one main source water so it can be use for Agriculture allied activities and drinking water related projects. Some places going with razing of hill as extraction of laterite very much in this area.

ESTIMATE

1. WATERSHED DEVELOPMENT FUNDING PATTERN

ENTRY POINT	*4%*	*141600*
NATURAL RESOURSE MANAGEMENT	*56%*	*1982400*
PRODUCTIVE SYSTEM AND MICRO ENTERPRISES	*10%*	*354000*
LIVELYHOOD SUPPORT	*9%*	*318600*
MANAGEMENT COMPONENT	*21%*	*743400*
TOTAL(In Rupees)	*100*	*3540000*

2. ENTRY POINT ACTIVITIES

Sl No	Name Of Work :	Estimate Cost
1	1. Repair Of Anaprachal Panchayath Pond 2. Repair Of Puliyarakunnu Panchayath Pond	***141600***
	Total(In Rupees)	***141600***

Nearly 30 families including SC families residing here depend on this stream and present EPA activity can be decrease the water availability. The geographical location of Repair Of Anaprachal Panchayath Pond is $11^0$12'41.439" $76^0$4'32.715" and Repair Of Puliyarakunn Panchayath Pond is$11^0$12'30.957" $76^0$42 '7.811"

3. NATURAL RESOURCE MANAGEMENT (NRM)

During the first year of IWMP mainly concentrating with DPR preparation, institutional buildingand Entry point activities. Natural resource management activities are starting from second year such as afforestation, Horticulture, Agriculture, Medicinal plant cultivation, Soil & moisture conservation, vegetative and engineering structure and water harvesting structures. Item wise annual actions plans are mentioned below .

4. . Master plan and year wise plan of natural resource management programme

MOOZHIPPADAM - VAKKALOOR	UNIT	VOLUME/UNITS	RATE	IWMPAMOUNT	EXPECTING WDF SHARE
AFFORESTATION					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
RAMACHAM	Ha	0.4	12500	5000	
NEEM	Ha	1	6250	6250	
UNG	Ha	0.8	6000	4800	
HORTICULTURE					
MANGO	/hectare	2	5400	10800	
PINEAPPLE	/hectare	0.4	200000	80000	
AGRICULTURE					
BANANA CULTIVATION (Tissue culture)	/hectare	3.4	50000	170000	
SPICES CULTIVATION (Ginger, Turmeric)	/hectare	1.2	30000	36000	
TUBER CROPS	/hectare	2.3	30000	69000	
FODDER GRASS CULTIVATION	/hectare	0.5	6000	3000	
MEDICINAL PLANT CULTIVATION					
1.KATTARVAAZHA		0.5	50000	25000	
2.CHITTAADALODAKAM		0.4	50000	20000	
SOIL & MOISTURE CONSERVATION					
STONE PITCHED BUND	/hectare	6	12000	72000	
EARTHERN BUND	/hectare	12	12000	144000	
TERRACING	/hectare	0.6	79724.3	47834.58	
CONTOUR TERRACING	/hectare	0.3	79724.3	23917.29	
VEGETATIVE AND ENGINEERING STRUCTURES					
SIDE PROTECTION OF STREAMS					
1.THACHANGODE - MOOZHIKKUND THODU	m3	257	1558	400406	
2.POTHUMPULLI THODU I	m3	130	1558	202540	
WATER HARVESTING STRUCTURE(NEW CREATED)					

CHECK DAMS	Nos	3	10000	30000	
CHIRA IN STREAMS USING DEPT RUBBLES –THACHANGODE - MOOZHIKKUND THODU	Nos	3	641	1923	
WELL RECHARGE	Nos	42	15000	630000	
TOTAL (Rounded Figure-70.87)				**1982400**	

SECOND YEAR	UNIT	VOLUME /UNITS	RATE	IWMP AMOUNT	WDF SHARE
AFFORESTATION					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
NEEM	Ha	1	6250	6250	
UNG	Ha	0.5	6000	3000	
HORTICULTURE					
MANGO	/hectare	1	5400	5400	
AGRICULTURE					
BANANA CULTIVATION	/hectare	1	50000	50000	
SPICES CULTIVATION	/hectare	0.5	30000	15000	
TUBER CROPS	/hectare	1	30000	30000	
SOIL & MOISTURE CONSERVATION					
STONE PITCHED BUND	/hectare	6	12000	72000	
EARTHERN BUND	/hectare	0.8	12000	9600	
TERRACING	/hectare	0.6	79724.3	47834.58	
CONTOUR TERRACING	/hectare	0.3	79724.3	23917.29	
VEGETATIVE AND ENGINEERING STRUCTURES					
SIDE PROTECTION OF STREAMS					
THACHANGODE - MOOZHIKKUND THODU	m3	257	1558	400406	
WATER HARVESTING STRUCTURE(NEW CREATED)					
CHECK DAMS	Nos	3	10000	30000	

***CHIRA IN STREAMS USING DEPT RUBBLES -* THACHANGODE - MOOZHIKKUND THODU**	Nos	3	641	1923	
WELL RECHARGE	Nos	15	15000	225000	
rounded figure				69.13	
TOTAL				**920400**	

THIRD YEAR	**UNIT**	**VOLUME/UNIT**	**RATE**	**TOTAL IWMP**	**WDF SHARE**
AFFORESTATION					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
RAMACHAM	Ha	0.4	12500	5000	
UNG	Ha	0.3	6000	1800	
HORTICULTURE					
PINEAPPLE	Ha	0.4	200000	80000	
MANGO	Ha	1	5400	5400	
AGRICULTURE					
BANANA CULTIVATION	/hectare	2.4	50000	120000	
SPICES CULTIVATION	/hectare	0.7	30000	21000	
TUBER CROPS	/hectare	1.3	30000	39000	
FODDER GRASS CULTIVATION	/hectare	0.5	6000	3000	
SOIL & MOISTURE CONSERVATION					
EARTHERN BUND	/hectare	11.2	12000	134400	
MEDICINAL PLANT CULTIVATION					
1.KATTARVAAZHA	/hectare	0.5	50000	25000	
2.CHITTAADALODAKAM	/hectare	0.4	50000	20000	
VEGETATIVE AND ENGINEERING STRUCTURES					
SIDE PROTECTION OF STREAMS					
1..POTHUMPULLI THODU I	m3	130	1558	202540	
WELL RECHARGE	Nos	27	15000	405000	
TOTAL (ROUNDED FIGURE (-140)				**1062000**	

5. YEAR WISE PRODUCTION SYSTEM MANAGEMENT

During the first year of IWMP mainly concentrating with DPR preparation and Entry point activities. Production system management activities are starting from second year such as Bee keeping, Poultry, Fisheries, Vermicompost, Item wise annual actions plans are mentioned below.

Moozhipadam Vakkalure Watershed - Master Plan Of Psm Activities				
PSM ACTIVITIES	**UNITS**	**UNIT COST**	**TOTAL AMOUNT**	**EXPECTING WDF**
BEEKEEPING	3	6000	18000	The contribution of WDF shall be a minimum 20 % of cost of PSM works executed on general. However, in case of SC/ST, small and marginal farmers, the minimum contribution shall be 10 % of cost of PSM works
POULTRY	323	575	185725	
DIARY	5	30000	150000	
Rounded Figure			275	
TOTAL			**354000**	
SECOND YEAR				
ACTIVITIES	**UNITS**	**Unit cost**	**TOTAL AMOUNT**	
BEEKEEPING	3	6000	18000	
POULTRY	110	575	63250	
DIARY	2	30000	60000	
Rounded Figure			350	
TOTAL			**141600**	
THIRD YEAR				
ACTIVITIES	**UNITS**	**Unit cost**	**TOTAL AMOUNT**	
POULTRY	142	575	81650	
DIARY	2	30000	60000	
TOTAL			**141600**	
FOURTH YEAR				
ACTIVITIES	**UNITS**	**Unit cost**	**TOTAL AMOUNT**	
POULTRY	71	575	40825	
DIARY	1	30000	30000	
Rounded figure			-25	
TOTAL			***70800***	

6. YEAR WISE 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, Rabbit rearing, Weed cutter, Coconut climber. Item wise annual actions plans are mentioned below.

MOOZHIPADAM VAKKALURE WATERSHED LSS ACTIVITIES	Unit	rate	Iwmp amount	Second year	Third year	Fourth year
GOAT REARING	44	6000	264000	15	19	10
RABBIT REARING	3	5000	15000	3	0	0
COCONUT CLIMBER	13	3000	39000	3	3	4
Rounded Figure			600	900	900	-1200
TOTAL			**318600**	**123900**	**123900**	**70800**

7. CAPACITYBUILDING PLAN

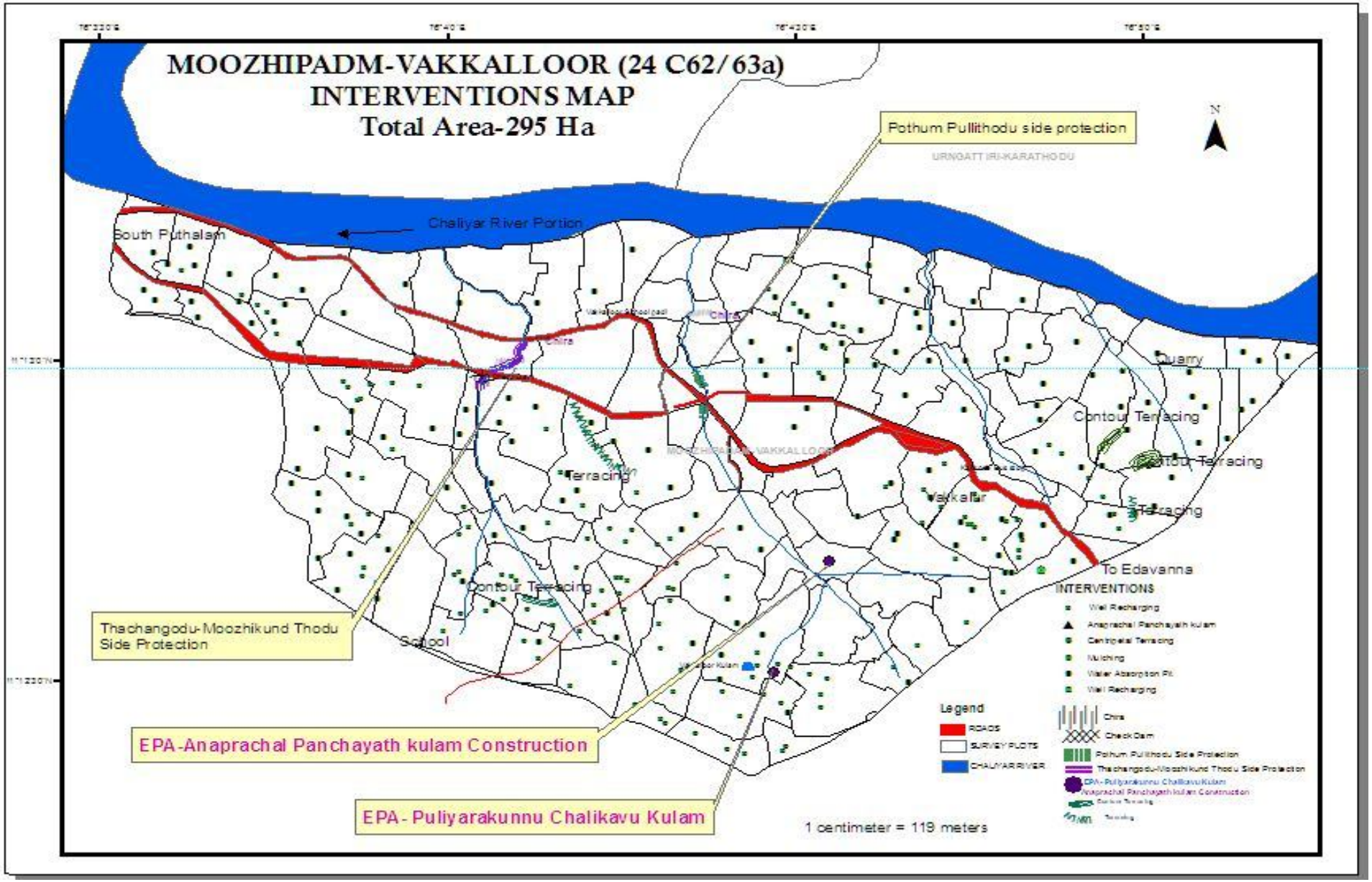
		FIRST YEAR	
	Sl.No	Programmes	Total Amount
	1	Institutional Building And Awareness Programmes	8850

SECOND YEAR

Sl.No	Programmes	Duration		No. Of Expected Participants		Target Groups	Amount/Batch	No.Of Batches	Total Amount
1	Awareness Programmes And Training For Mgnregs Workers	2	Days	157			5200	3	15600
2	Awareness Programmes For Students On Environment Day	0.5	Days	50			2800	1	2800
3	Training For User Group And Beneficiaries (Nrm Activities)	2	Days	100			5200	2	10400
4	Trining For Psm And Lss Activities	1	Days	30			4000	1	4000
5	**Exposure Visit**	**2**	Days	40			38000	1	38000

	CAPACITY BUILDING PROGRAMMES							
	Third Year							
SL.NO	Programmes	DURATION		NO. OF EXPECTED PARTICIPANTS		AMOUNT/BATCH	NO.OF BATCHES	TOTAL AMOUNT
1	Awareness For Nrm , Psm , Lss Activities	2	Days	100	Target Groups Watershed Peoples	6900	2	13800
2	Training On Nrm	1	Days	50		5200	1	5200
3	Training On Psm	1	Days	50		5200	1	5200
4	Training On Lss	1	Days	50		5200	1	5200
5	Awareness Programmes For Students On Environment Day	1	Days	50		2800	1	2800
6	Exposure Visit	**2**	Days	40		38600	1	38600

	CAPACITY BUILDING PROGRAMMES							
	Fourth Year							
SL.NO	Programmes	DURATION		NO. OF EXPECTED PARTICIPANTS		AMOUNT/BATCH	NO.OF BATCHES	TOTAL AMOUNT
1	Awareness For Nrm , Psm , Lss Activities	2	Days	100	Target Groups Watershed Peoples	6900	2	13800
2	Training On Nrm	1	Days	50		5200	1	5200
3	Training On Psm	1	Days	50		5200	1	5200
4	Training On Lss	1	Days	50		5200	1	5200
5	Awareness Programmes For Students On Environment Day	1	Days	50		2800	1	2800
6	Exposure Visit	**2**	Days	40		38600	1	38600


MOOZHIPADM-VAKKALLOOR (24 C62/63a)
INTERVENTIONS MAP
Total Area-295 Ha
Pothum Pullithodu side protection
Chaliyar River Portion
South Puthalam
Quarry
Contour Terracing
Terracing
Vakkallur
To Edavanna
Thachangodu-Moozhikund Thodu Side Protection
School
EPA-Anaprachal Panchayath kulam Construction
EPA- Puliyarakunnu Chalikavu Kulam
INTERVENTIONS
Legend
ROADS
SURVEY PLOTS
CHALIYAR RIVER
1 centimeter = 119 meters

THERATTAMMAL WATERSHED

(24C12n)

1. . INTRODUCTION

. Therattammal watershed situated in Urangattiri Panchayath of the Areacode block in Malappuram district extends to a total area of 347 Ha. Rainfalls in the Malangad mountain flows through various streams like Malangad thodu, Peroolithod, Pulikkalathod, Iriyattuparamb thodu, East thodu and Vazhikadav thodu into the Cherupuzha .The boundaries of this watershed are Kalappara in the north, Therattammal in the south, Cherupuzha in the west and Perooli quarry in the east. Major places included in the watershed are Kinaradappan jn, Kallaratti, Iriyattuparamb, East angadi and Therattammal. moreover these places coming under wards 14,15,16,17,,18,19 and the Urangattiri Panchayath office also are situated in this watershed that bears the code 24c12n .

2. PHYSIOGRAPHY

Therattammal watershed is located near to joining of Cherupuzha in to Chaliyar. The highest elevated are is located in the eastern part, which is southern side of Kaidakkal hill (338 Meters MSL).Most of the streams are originating from Kaidakkal hill. The slope is from east to western direction. The lowest point located in near to Chaliyar River, which are joining part of both rivers.

3. WATERSHED CHARECTOR

The shape of the watershed is Rectangular which is located in the northern portion of Malappuram district and is near to Kozhikode district. The most of the streams are originating from the Koaidakkal Mala. There are four minor streams are passing through his watershed.

4. IRRIGATION

Well	Pond	stream	Canal, Springs and others
1.3 Ha	2.1 Ha	46 Ha	2 Ha

Source: baseline data Survey

5. WATERSUPPLY

Ponds	Streams	Watersupply Of G.P	KWA
1. Iriyattuparamb pond 2. East vadakkumuri pond 3. Enancheri pond	1. Kavuthod 2. Cherupuzhathod 3. Pulingunn thoyal thod 4. Iriyattuparamb padam thod 5. Neermukk thod 6. Njanipoyil thod	1. Vallipalam Drinking Water Scheme (Sc Colony) 2.TherattammalAyaloor Drinking	Nermukk Drinking Water Scheme

Source: baseline data survey

6. LAND USE

Landuse	AREA/Ha
Coconut dominant mixed crop	200
Perennial	61
Mixed crop	39
Rubber	15
Residential	2
Paddy	20
Banana	4
Arecanut	10
Commercial	1
Rocky area	3
Total	337

Source: Kerala State Land use Board &Google Earth Pro

7. CROPPING PATTERN

CROPS	Area/Ha	Production/yr(Tonne)
Coconut	200	5000
Arecanut	30	36.3
Banana	2	54
Tapioca	10	120
pulses	5	61.5
Pepper	2.9	4.901
Betal vine	1	2.3
Ginger	2	16
Turmeric	3	27
Vegetable	49	3822
Paddy	20	69

Source: baseline data survey

8. LIVE STOCK

Cow	Milk	Buffalo	Milk	Goat	Milk	Poultry	Duck	Rabbit	Milk Marketing Societies
79	45621 litre	24	8451 Litre	24	2467 Litre	986	61	11	1

Source: baseline data survey

ESTIMATE

1. WATERSHED DEVELOPMENT FUNDING PATTERN

ENTRY POINT	*4%*	*166560*
NATURAL RESOURSE MANAGEMENT	*56%*	*2331840*
PRODUCTIVE SYSTEM AND MICRO ENTERPRISES	*10%*	*416400*
LIVELYHOOD SUPPORT SYSTEM	*9%*	*374760*
MANAGEMENT COMPONENT	*21%*	*874440*
TOTAL(In Rupees)	*100*	*4164000*

2. ENTRY POINT ACTIVITIES

Activity: Rain Water Harvesting Tank .Kallarattikkal

Location: the work is planned to be done in a place named Kallarattikkal in the Therattammal watershed. The physiological distinction of the place is $11^0$14'52.76"N 76^0 03'36.21".

SL NO	NAME OF WORK :	ESTIMATE COST
1	RAIN WATER HARVESTING TANK- KALLARATTIKKAL	**166560**
	TOTAL(In Rupees)	**166560**

3. NATURAL RESOURCE MANAGEMENT (NRM)

During the first year of IWMP mainly concentrating with DPR preparation, Institutional building and Entry point activities. Natural resource management activities are starting from second year such as afforestation, Horticulture, Agriculture, Medicinal plant cultivation, Soil & moisture conservation, vegetative and engineering structure and water harvesting structures. Item wise annual actions plans are mentioned below .

(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)

4. MASTER PLAN AND YEAR WISE PLAN FOR NATURAL RESOURCE MANAGEMENT PROGRAMME

THERATTAMMAL WATERSHED	UNIT	VOLUME/ UNITS	RATE	TOTAL IWMP SHARE
AFFORESTATION				
NEEM	Ha	0.63	6250	3937.5
UNG	Ha	0.6	6000	3600
HORTICULTURE				
MANGO	/hectare	1.5	5400	8100
AGRICULTURE				
VEGETABLE GARDEN (seed and fertilizer)	/hectare	0.4	37500	15000
BANANA CULTIVATION (Tissue culture)	/hectare	3	50000	150000
SPICES CULTIVATION (Ginger, Turmeric)	/hectare	2.9	30000	87000
TUBER CROPS	/hectare	2.5	30000	75000
FODDER GRASS CULTIVATION	/hectare	0.5	6000	3000
SOIL & MOISTURE CONSERVATION				
STONE PITCHED BUND	/hectare	1.5	12000	18000
EARTHERN BUND	/hectare	5.6	12000	67200
TERRACING	/hectare	1	79724.3	79724.3
VEGETATIVE AND ENGINEERING STRUCTURES				
SIDE PROTECTION OF STREAMS				
1. KAVUTHOD SIDE PROTECTION – 1	m	100	2504.07	250407
2. IRIYATTUPARAMB THOD	m	100	1786.67	178667
3. KAVUTHOD - 2	m	100	3596.24	359624
4. PULINGUNNATHOYAL THOD	m	100	2154	215400
WATER HARVESTING STRUCTURE(NEW CREATED)				
CHECK DAMS				
IRIYATTUPARAMB THOD	Nos	1	11901.94	11901.94
CHIRA IN STREAMS USING DEPT RUBBLES	Nos	16	641	10256
WELL RECHARGE	Nos	53	15000	795000
ROUNDED FIGURE				22
TOTAL				**2331840**

SECOND YEAR	UNIT	VOLUME /UNITS	RATE	TOTAL IWMP SHARE
AFFORESTATION				
NEEM	Ha	0.63	6250	3937.5
HORTICULTURE				
MANGO	/hectare	0.2	5400	1080
AGRICULTURE				
BANANA CULTIVATION	/hectare	1	50000	50000
SPICES CULTIVATION	/hectare	1.5	30000	45000
FODDER GRASS CULTIVATION	/hectare	0.5	6000	3000
SOIL & MOISTURE CONSERVATION				
STONE PITCHED BUND	/hectare	1.5	12000	18000
EARTHERN BUND	/hectare	3	12000	36000
TERRACING	/hectare	1	79724.3	79724.3
VEGETATIVE AND ENGINEERING STRUCTURES				
SIDE PROTECTION OF STREAMS				
1. KAVUTHOD SIDE PROTECTION -1	m3	100	2504.07	250407
2. IRIYATUPARAMB PADAM THOD	M3	100	1786.67	178667
WATER HARVESTING STRUCTURE(NEW CREATED)				
CHECK DAMS				
1. IRIYATUPARAMB THOD	nos	1	11901.94	11901.94
CHIRA IN STREAMS USING DEPT RUBBLES				
KAVUTHOD	nos	5	641	3205
IRIYATTUPARAMB THOD	nos	3	641	1923
WELL RECHARGE	Nos	10	15000	150000
				-45.74
TOTAL				**832800**
THIRD YEAR	**UNIT**	**VOLUME/UNITS**	**RATE**	**TOTAL IWMP SHARE**
AFFORESTATION				
UNG	Ha	0.6	6000	3600
HORTICULTURE				

MANGO	/hectare	1.3	5400	7020
AGRICULTURE				
VEGETABLE GARDEN	/hectare	0.4	37500	15000
BANANA CULTIVATION	/hectare	2	50000	100000
SPICES CULTIVATION	/hectare	1.4	30000	42000
TUBER CROPS	/hectare	2.5	30000	75000
SOIL & MOISTURE CONSERVATION				
EARTHERN BUND	/hectare	2.6	12000	31200
VEGETATIVE AND ENGINEERING STRUCTURES				
SIDE PROTECTION OF STREAMS				
1. KAVUTHOD SIDE PROTECTION - 2	m3	100	3596.24	359624
2. PULINGUNNAN THOYAL THOD	m3	100	2154	215400
WATER HARVESTING STRUCTURE(NEW CREATED)				
CHIRA IN STREAMS USING DEPT RUBBLES				
PULINGUNN THOYAL THOD	nos	8	641	5128
WELL RECHARGE	Nos	43	15000	645000
				68
TOTAL				**1499040**

5. YEAR WISE PRODUCTION SYSTEM MANAGEMENT

During the first year of IWMP mainly concentrating with DPR preparation and Entry point activities. Production system management activities are starting from second year such as Bee keeping, Poultry, Fisheries, Agriculture nursery, Vermicompost, Milk society and Mushroom cultivation. Item wise annual actions plans are mentioned below.

PSM ACTIVITIES – MASTER PLAN	UNIT	RATE	IWMP SHARE	EXPECTING WDF
BEEKEEPING	2	6000	12000	The contribution of WDF shall be a minimum 20 % of cost of PSM works executed on general. However, in case of SC/ST, small and marginal farmers, the minimum contribution shall be 10 % of cost of PSM works
POULTRY	112	575	64400	
DIARY	7	30000	210000	
VERMICOMPOST	4	10000	40000	
MUSHROOM CUTIVATION	3	30000	90000	
TOTAL			**416400**	
Second year				
POULTRY	64	575	36800	
DIARY	4	30000	120000	
VERMICOMPOST	1	10000	10000	
			-240	
TOTAL			**166560**	
Third year				
BEEKEEPING	2	6000	12000	
POULTRY	25	575	14375	
DIARY	3	30000	90000	
VERMICOMPOST	2	10000	20000	
MUSHROOM CUTIVATION	1	30000	30000	
			185	
TOTAL			**166560**	
Fourth year				
POULTRY	23	575	13225	
VERMICOMPOST	1	10000	10000	
MUSHROOM CUTIVATION	2	30000	60000	
			55	
TOTAL			**83280**	

6. YEAR WISE 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, Rabbit rearing, Weed cutter, Coconut climber, Chapatti and Food processing unit . Item wise annual actions plans are mentioned below.

THERATTAMMAL WATERSHED LSS ACTIVITIES	UNITS	Unit cost	TOTAL AMOUNT	SECOND YEAR	THIRD YEAR	FOURTH YEAR
GOAT REARING	19	6000	114000	5	0	4
RABBIT REARING	12	5000	60000	4	8	00
AGRI - NURSERY	1	100000	100000	0	1	0
WEED CUTTER	2	20,000	40000	2	0	0
COCONUT CLIMBER	3	3000	9000	1	2	0
BAKERY MAKING UNIT	1	52000	52000	1	0	0
Rounded figure			-240			
TOTAL			374760	145740	145740	83280

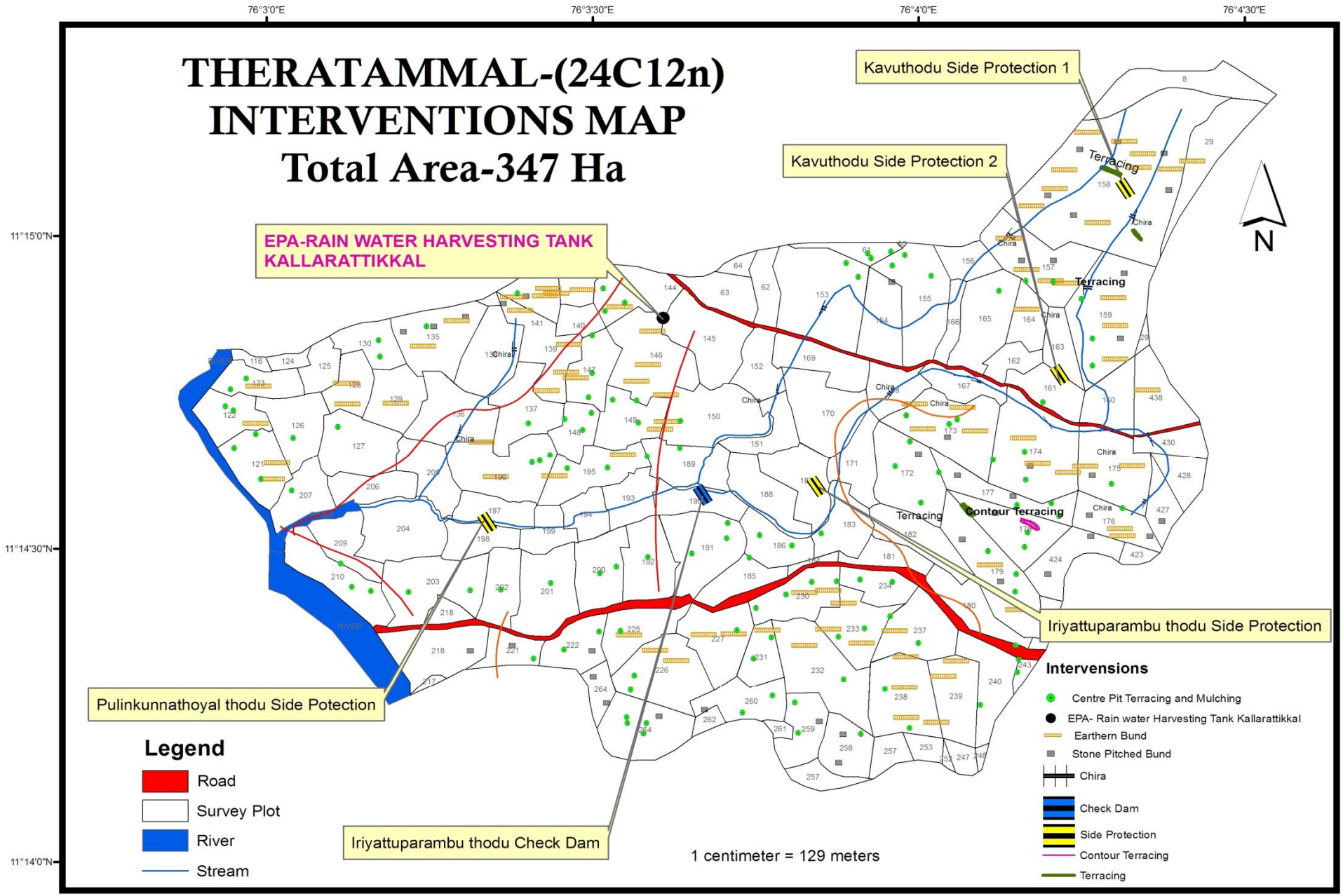
7. CAPACITY BUILDING PLAN

	FIRST YEAR	
Sl.No	Programmes	TOTAL AMOUNT
1	Institutional Building And Awareness Programmes	10410

	SECOND YEAR							
Sl.No	Programmes		No. Of Expected Participants	Target Groups	Amount/Batch	No.Of Batches	Total Amount
1	Awareness Programmes And Training For Mgnregs Workers		63	Watershed Peoples	7200	3	9730
2	Training For User Group And Beneficiaries (Nrm Activities)		80		8300	4	11600
4	Trining For Psm Activities		50		8300	2	8300
5	Training For Lss Actvities		50		8300	1	8300
6	Exposure Visit		40+5		45340	1	45340

	THIRD YEAR							
Sl.No	Programmes	DURATION		NO. OF EXPECTED PARTICIPANTS	TARGET GROUPS	AMOUNT/BATCH	NO.OF BATCHES	TOTAL AMOUNT
1	Awareness Programmes For Nrm , Psm ,Lss Activities	3	DAYS	179	WATERSHED PEOPLES	7200	3	22490
2	Training For Nrm	1	DAYS	100		4400	1	13800
3	Training On Psm	4	DAYS	100		8300	4	13800
4	Trining For Lss	2	DAYS	100		8300	2	13800
5	Awareness Programmes For Students On Environment Day	2	DAYS	151		8300	1	19410

	FOURTH YEAR							
SL.NO	PROGRAMMES	DURATION		NO. OF EXPECTED PARTICIPANTS	TARGET GROUPS	AMOUNT/BATCH	NO.OF BATCHES	TOTAL AMOUNT
1	FIELD VISIT BY BENEFICIARIES AND WDT IN THE WATERSHED AREA	5	DAYS	80	WATERSHED PEOPLES	7200	5	11600
2	AWARENESS ON WITH DRAWAL PHASE CONCEPT OF WATERSHED MANAGEMENT, ROLES AND RESPONSIBILITIES	1	DAYS	78		4400	1	11380
3	AWARENESS ON PROPER MAINTENANCE OF NRM WORKS - 1 BATCH	4	DAYS	50		8300	4	8300


THERATAMMAL-(24C12n)
INTERVENTIONS MAP
Total Area-347 Ha
76°3'0"E
76°3'30"E
76°4'0"E
76°4'30"E
11°15'0"N
11°14'30"N
11°14'0"N
N
Kavuthodu Side Protection 1
Kavuthodu Side Protection 2
EPA-RAIN WATER HARVESTING TANK
KALLARATTIKKAL
Iriyattuparambu thodu Side Protection
Pulinkunnathoyal thodu Side Potection
Iriyattuparambu thodu Check Dam
Terracing
Contour Terracing
Chira
RIVER
Legend
Road
Survey Plot
River
Stream
Intervensions
Centre Pit Terracing and Mulching
EPA- Rain water Harvesting Tank Kallarattikkal
Earthern Bund
Stone Pitched Bund
Chira
Check Dam
Side Protection
Contour Terracing
Terracing
1 centimeter = 129 meters

THOTTUMUKKAM WATERSHED (24C12g)

1. INTRODUCTION

Thottumukkam watershed bearing the code 24C12g is located in the Vettilapara village of the Panchayath Urangattiri in the Areacode block in Malappuram district. Rain falls in the hills Thekkukadu flows down through Malamud Thod and Thekkumkad Thod and reaches Cherupuzha. The watershed shares its boundaries with Cherupuzha in the North, Kaithakunn Mala in the south Cherupuzha in the west and Konnorkandi Mala in the east. Themajor places in this watershed that extends to a total of 362 Ha in the wards 20 and 21 Are Edakattuparambu, Panambilav, Thekkumkadu, Malakund and Erairannkuzhi.

2. PHYSIOGRAPHY

Thottumukkam also mixed with hill and valleys .The highest elevated point is located Konurkand which above 637 meters from mean sea level. The second elevated area located Kaidakkal mala which is 379 meters from mean sea level. The slope direction is from east to west. The most of the streams are starting from Konurkandi and Kaidakkal hills and these are joining to Cherupuzha.

3. WATERSHED CHARECTOR

The shape of the watershed is Triangular which is located in the northern portion of Malappuram district and is near to Kozhikode district. The most of the streams are originating from the Konurkandi Mala and Kaidakkal Mala. Cherupuzha, which is main stream in the watershed as well as all streams are joining to Cherupuzha, the total length of rive is 2.64 Kms and last it is joining to Chaliyar. About 13 small streams are starting from the Kadiakkal mala as well as 3 from Konurkandi mala.

4. WATERSUPPLY

The major water resources in the area is Cherupuzha , Kaithakkal drinking water project ,Panthalangadi drinking water project, Thenaruvi drinking water project, Alappara drinkingwater project, Kottampara drinking water project and Vilakkumparambu adikkunnu drinking water project.

Watersupply Of G.P	Kwa
Nill	Thekkumkad drinking water supply scheme

Source: Baseline survey

5. IRRIGATION

Well	Pond	Streams
8 Ha	5 Ha	51.3 Ha

Source: Baseline survey

6. LAND USE

Types Of Land Use	Area in hectors	Percentage of area
Rocky Area	24	6.6
Cashew	6	1.6
Play Ground	4	1.1
Forest	12	3.31
Water Bodies	6	1.6
Commercial Land	6	1.6
Residential Area	38	10.4
Residential Area Converted From Paddy	3	0.82
Land With Mixed Crop	7	1.93
Rubber Plantation	120	33.14
Coconut Plantation	16	4.41
Coconut Dominant Mixed Crop	3	0.82
Arecanut	19	5.24
Banana	22	5.98
Miscellaneous	76	20.99
Total	362	100

Source: Kerala State Land use &Google Earth Pro

7. CROPPING PATTERN

SL	Crop pattern	Area (Ha)	% of Watershed	Production/y(Tonn)
1	Coconut	16	4.4	400
2	Arecanut	19	5.2	22.29
3	Banana	9	2.4	243
4	Rubber	120	33.1	54
5	Cashew	6	1.6	6
6	Vegetables	13	3.5	1014

Source: baseline survey

8. LIVE STOCK

Cow	Milk	Buffalo	Milk	Goat	Milk	Poultry	Duck	Rabbit
76	**48956 liter**	**11**	**3854 liter**	**56**	**7845 liter**	**356**	**143**	**12**

Source: baseline survey

ESTIMATE

1. WATERSHED DEVELOPMENT FUNDING PATTERN

ENTRY POINT	4%	173760
NATURAL RESOURSE MANAGEMENT	56%	2432640
PRODUCTIVE SYSTEM AND MICRO ENTERPRISES	10%	434400
LIVELYHOOD SUPPORT	9%	390960
MANAGEMENT COMPONENT	21%	912240
TOTAL(In Rupees)		4344000

2. ENTRY POINT ACTIVITIES

Amapetty chola is located in ward number 21 at place Amapetty. The aim of the work is to protect the side of the stream and store the water. The geographical point is N $11^0$17'12.5 E $076^0$04'16.4 .

SL NO	NAME OF WORK :	ESTIMATE COST
1	Amapetty Chola Pond Construction	173760
	TOTAL(In Rupees)	173760

3. NATURAL RESOURCE MANAGEMENT (NRM)

During the first year of IWMP mainly concentrating with DPR preparation Institutional building and Entry point activities. Natural resource management activities are starting from second year such as afforestation, Horticulture, Agriculture, Medicinal plant cultivation, Soil & moisture conservation, vegetative and engineering structure and water harvesting structures. Item wise annual actions plans are mentioned below

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

4. MASTER PLAN AND YEAR WISE PLAN FOR NATURAL RESOURCE MANAGEMENT PROGRAMME

THOTTUMUKKAM WATERSHED – NRM MASTER PLAN	Unit	VOLUME/UNITS	RATE	TOTAL IWMP SHARE
AFFORESTATION				
RAMACHAM	Ha	0.2	12500	2500
NEEM	Ha	2.8	6250	17500
UNG	Ha	3	6000	18000
HORTICULTURE				
MANGO	/Hectare	2	5400	10800
PINEAPPLE	/Hectare	0.2	200000	40000
AGRICULTURE				
VEGETABLE GARDEN (seed and fertilizer)	/Hectare	5	37500	187500
BANANA CULTIVATION (Tissue culture)	/Hectare	2	50000	100000
SPICES CULTIVATION (pepper, Turmeric)	/Hectare	7.5	30000	225000
TUBER CROPS (tapioca , sweet potato)	/Hectare	2	30000	60000
FODDER GRASS CULTIVATION	/Hectare	2	6000	12000
SOIL & MOISTURE CONSERVATION				
STONE PITCHED BUND	/Hectare	3.5	12000	42000
EARTHERN BUND	/Hectare	1	12000	12000
TERRACING	/Hectare	1.5	79724.3	119586.45
CONTOUR TERRACING	/Hectare	0.5	79724.3	39862.15
VEGETATIVE AND ENGINEERING STRUCTURES				
SIDE PROTECTION OF STREAMS				
1. PAMBUMKAVU THOD	M3	100	1562	156200
2. THEKKINKAD THOD	M3	150	1562	234300
3. PANAMBILAV THEKKIN THOD	M3	150	1562	234300

WATER HARVESTING STRUCTURE(NEW CREATED)				
POND CONSTRUCTION				
NEDIYANTHALA MUKK	Nos	1	176040	176040
CHIRA IN STREAMS USING DEPT RUBBLES	Nos	11	641	7051
CHECK DAMS				
THEKKINKAD	Nos	3	18000	54000
PANAMBILAV THOD	Nos	3	18000	54000
WELL RECHARGE	Nos	42	15000	630000
ROUNDED FIGURE				0.4
TOTAL				**2432640**

SECOND YEAR	**Unit**	**VOLUME/UNITS**	**RATE**	**TOTAL IWMP SHARE**
AFFORESTATION				
UNG	Ha	1	6000	6000
AGRICULTURE				
VEGETABLE GARDEN	/Hectare	0.6	37500	22500
BANANA CULTIVATION	/Hectare	0.2	50000	10000
FODDER GRASS CULTIVATION	/Hectare	1	6000	6000
SOIL & MOISTURE CONSERVATION				
STONE PITCHED BUND	/Hectare	3.5	12000	42000
TERRACING	/Hectare	1.5	79724.3	119586.45
CONTOUR TERRACING	/Hectare	0.5	79724.3	39862.15
VEGETATIVE AND ENGINEERING STRUCTURES				
SIDE PROTECTION OF STREAMS				
1. THEKKINTHOD	M3	100	1562	156200
2. PANAMBILAV THEKKINT HOD	M3	150	1562	234300
WATER HARVESTING STRUCTURE(NEW CREATED)				

FARM POND (NEDIYANTHALA POND)	Nos	1	176040	176040
CHECK DAMS THEKKINKAD THOD, PANAMBILV THEKKIN THOD	Nos	3	18000	54000
CHIRA IN STREAMS USING DEPT RUBBLES				
PAMBUMKAVU THOD , THEKKINKAD THOD, PANAMBILV THEKKIN THOD	Nos	3	641	1923
				388.4
TOTAL				868800
THIRD YEAR	**Unit**	**VOLUME/UNITS**	**RATE**	**TOTAL IWMP SHARE**
AFFORESTATION				
NEEM	Ha	1	6250	6250
UNG	Ha	1.5	6000	9000
HORTICULTURE				
MANGO	/Hectare	1	5400	5400
PINEAPPLE	/Hectare	0.1	200000	20000
AGRICULTURE				
VEGETABLE GARDEN	/Hectare	3	37500	112500
BANANA CULTIVATION	/Hectare	1	50000	50000
SPICES CULTIVATION	/Hectare	4	30000	120000
VEGETATIVE AND ENGINEERING STRUCTURES				
SIDE PROTECTION OF STREAMS				
1. PAMBUMKAVU THOD	M3	150	1562	234300
WATER HARVESTING STRUCTURE(NEW CREATED)				
CHECK DAMS (THEKKINKAD THOD, PANAMBILV THEKKIN THOD)	Nos	3	18000	54000
CHIRA IN STREAMS USING DEPT RUBBLES				
PAMBUMKAVU THOD , THEKKINKAD THOD, PANAMBILV THEKKIN THOD	Nos	4	641	2564
WELL RECHARGE	Nos	17	15000	255000

				-214
TOTAL				***868800***
FOURTH YEAR	**Unit**	**VOLUME/UNITS**	**RATE**	**TOTAL IWMP SHARE**
AFFORESTATION				
RAMACHAM	Ha	0.2	12500	2500
NEEM	Ha	1.8	6250	11250
UNG	Ha	0.5	6000	3000
HORTICULTURE				
MANGO	/Hectare	1	5400	5400
PINEAPPLE	/Hectare	0.1	200000	20000
AGRICULTURE				
VEGETABLE GARDEN	/Hectare	1.4	37500	52500
BANANA CULTIVATION	/Hectare	0.8	50000	40000
SPICES CULTIVATION	/Hectare	3.5	30000	105000
TUBER CROPS	/Hectare	2	30000	60000
FODDER GRASS CULTIVATION	/Hectare	1	6000	6000
SOIL & MOISTURE CONSERVATION				
EARTHERN BUND	/Hectare	1	12000	12000
WATER HARVESTING STRUCTURE(NEW CREATED)				
CHIRA IN STREAMS USING DEPT RUBBLES				
PAMBUMKAVU THOD , THEKKINKAD THOD, PANAMBILV THEKKIN THOD	Nos	4	641	2564
WELL RECHARGE	Nos	25	15000	375000
				-174
TOTAL				***695040***

5. YEAR WISE PRODUCTION SYSTEM MANAGEMENT

During the first year of IWMP mainly concentrating with DPR preparation and Entry point activities. Production system management activities are starting from second year such as Bee keeping, Poultry, Agriculture nursery, Vermicompost, Milk society and Mushroom cultivation. Item wise annual actions plans are mentioned below.

PSM ACTIVITIES – MASTER PLAN	UNIT	RATE	IWMP SHARE	EXPECTING WDF
BEEKEEPING	3	6000	18000	
POULTRY	185	575	106375	
DIARY	7	30000	210000	
VERMICOMPOST	4	10000	40000	
MUSHROOM CUTIVATION	2	30000	60000	
Rounded Figure			25	
TOTAL			***434400***	
SECOND YEAR				
BEEKEEPING	1	6000	6000	
POULTRY	83	575	47725	
DIARY	2	30000	60000	
VERMICOMPOST	3	10000	30000	
MUSHROOM CUTIVATION	1	30000	30000	
Rounded Figure			35	
TOTAL			***173760***	
THIRD YEAR				
POULTRY	42	575	24150	
DIARY	4	30000	120000	
MUSHROOMCUTIVATION	1	30000	30000	
Rounded Figure			-390	
TOTAL			***173760***	
BEEKEEPING	2	6000	12000	
POULTRY	60	575	34500	
DIARY	1	30000	30000	
VERMICOMPOST	1	10000	10000	
Rounded Figure			380	
TOTAL			***86880***	

The contribution of WDF shall be a minimum 20 % of cost of PSM works executed on general. However, in case of SC/ST, small and marginal farmers, the minimum contribution shall be 10 % of cost of PSM works

6. YEAR WISE 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, Rabbit rearing, Weed cutter, Coconut climber, Bamboo by production unit, Food processing unit . Item wise annual actions plans are mentioned below.

THOTTUMUKKAM WATERSHED LSS ACTIVITIES						
MASTER PLAN	UNITS	BENIFICARY SHARE/UNIT	IWMP AMOUNT	SECOND YEAR	THIRD YEAR	FOURTH YEAR
GOAT REARING	20	600	120000	6	12	2
RABBIT REARING	15	500	75000	6	2	7
AGRI - NURSERY	1	5000	50000	0	1	0
WEED CUTTER	3	2000	60000	0	1	2
COCONUT CLIMBER	5	300	15000	5	0	0
BAKERY MAKING UNIT	1	7000	70000	1	0	0
ROUNDED FIGURE			960	1040	40	-120
TOTAL		15400	390960	152040	152040	86880

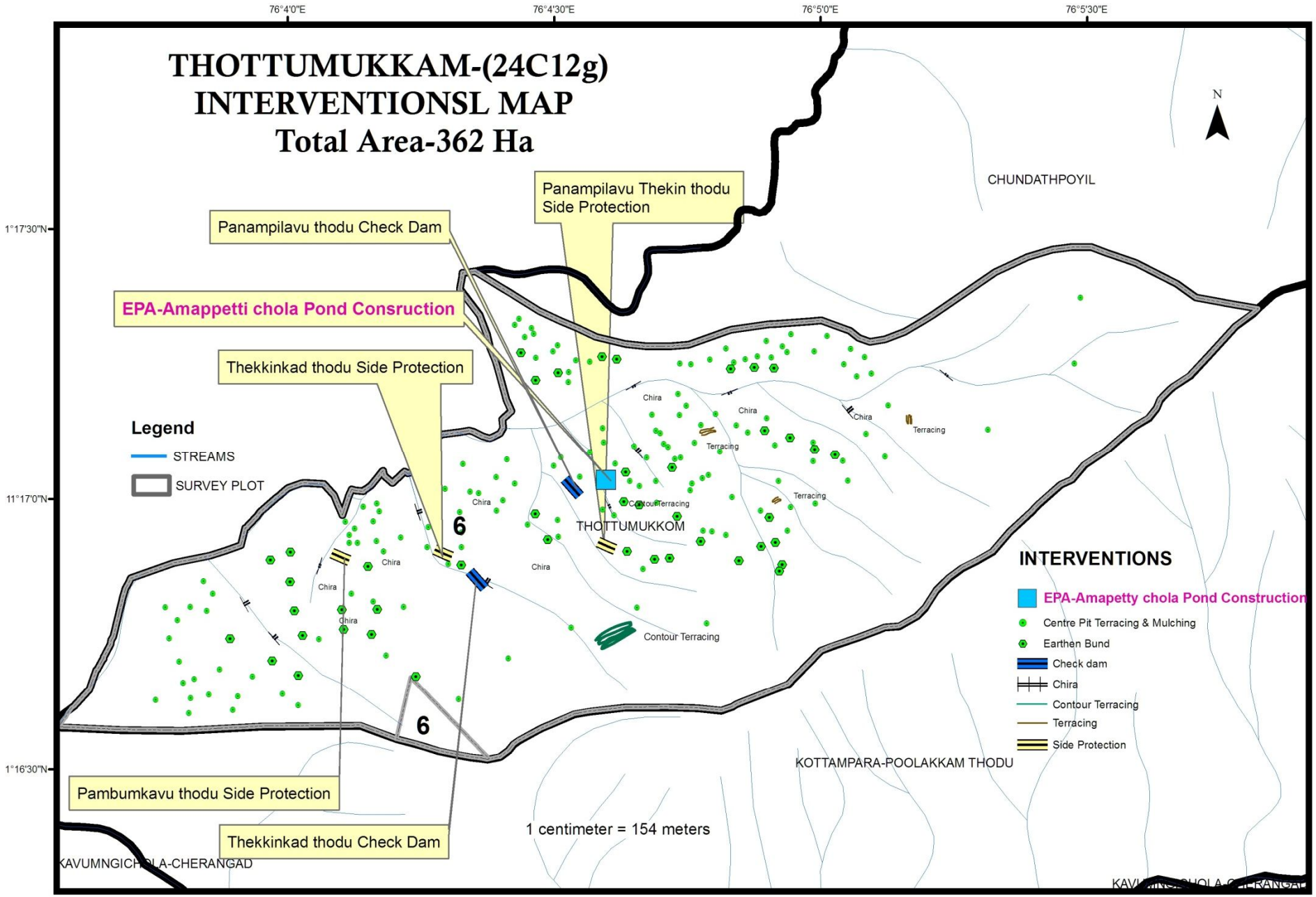
7. CAPACITY BUILDING PLAN

	FIRST YEAR		
Sl.No	Programmes	Implementing Authority	Total Amount
1	Institutional Building And Awareness Programmes	PIA	10860

	SECOND YEAR					
SL.NO	PROGRAMMES	NO. OF EXPECTED PARTICIPANTS	TARGET GROUPS	AMOUNT/BATCH	NO.OF BATCHES	TOTAL AMOUNT
1	Awareness Programmes And Training For MGNREGS Workers	75	WATER SHED PEOPLES	7200	3	11050
2	Awareness For Watershed Project On Tribes	20		4400	1	5000
3	Awareness Programmes For Students On Environment Day	60		3175	1	4300
4	Training For User Group And Beneficiaries (Nrm Activities)	100		8300	4	13800
5	Training For Psm Activities	30		8300	2	6100
6	Training For Lss Activities	30		8300	1	6100
7	Exposure Visit	40+5		40530	1	40530

	THIRD YEAR	
Sl.No	Programmes	Total Amount
1	Awareness For Nrm , Psm , Lss Activities	17100
2	Training On Nrm	8300
3	Training On Psm	4300
4	Training On Lss	8300
5	Awareness Programmes For Students On Environment Day	8300
6	Exposure Visit	40580

	FOURTH YEAR	
SL.NO	PROGRAMMES	TOTAL AMOUNT
1	field visit by beneficiaries and wdt in the watershed area	11050
2	awareness on with drawal phase concept of watershed management, roles and responsibilities	16220
3	AWARENESS ON PROPER MAINTENANCE OF NRM WORKS - 1 BATCH	5300


THOTTUMUKKAM-(24C12g)
INTERVENTIONSL MAP
Total Area-362 Ha
76°4'0"E
76°4'30"E
76°5'0"E
76°5'30"E
1°17'30"N
11°17'0"N
1°16'30"N
N
Panampilavu thodu Check Dam
Panampilavu Thekin thodu Side Protection
EPA-Amappetti chola Pond Consruction
Thekkinkad thodu Side Protection
Pambumkavu thodu Side Protection
Thekkinkad thodu Check Dam
CHUNDATHPOYIL
THOTTUMUKKOM
KOTTAMPARA-POOLAKKAM THODU
KAVUMNGICHOLA-CHERANGAD
Legend
STREAMS
SURVEY PLOT
INTERVENTIONS
EPA-Amapetty chola Pond Construction
Centre Pit Terracing & Mulching
Earthen Bund
Check dam
Chira
Contour Terracing
Terracing
Side Protection
Chira
Terracing
Contour Terracing
6
1 centimeter = 154 meters

URNGATIRI KOLARTHOD WATERSHED

(24C14a)

1. INTRODUCTION

This watershed existing in the Urangattiri village of the Areacode block Panchayath in the district of Malappuram, the Urangattiri Kolarthod watershed extends to a total area of 862 hectors. Originating in the mountain of Chekunnu, the various streams Kolarthod, Chattukal thodu, Chembrammal thodu, Korampalliali thod flow in to river Chaliyar. The major places in this watershed are Poovathikkal, Vezhakod Anakallu and Thachaparamb come under the wards 5, 6,7,8,9. The watershed shares its boundary Chekunnu mala in the north, Chaliyar in the south, Poovathikkal ALP School in the west and Koduvallimala in the east.

2. PHYSIOGRAPHY

Urangattiri - Kolarthodu is located Near to Chaliyar which is Northern side. The highest (601 Mtrs) elevated area of watershed located in northern part, which is Chekunnu hills also this area is mostly covered by rocky area. The lowest point located in near to Chaliyar which is Southern boundary of the watershed. The slope is from north to southern side and also most of the steams are originating from chekkunnu hill.

3. WATER SHED CHARECTOR

The shape of the watershed is rectangular which is located in the northern portion of Malappuram district and is near to Kozhikode district. The most of the streams are originating from the Chekkunnu. The major water resource in the area is Chaliyar River. So many first order streams are starting from Chekkunnnu hill. Jalanidhi and Bore wells of Panchayath, are Panchayath funded drinking water schemes also contribute amajor part in the water resources sector.

4. WATERSUPPLY

Water supply Of G.P	KWA	Well
1.Kottampara Drinking Water Scheme 2. Chembrammal Drinking Water Scheme	1. Bhagavathi parambu Sc Drinking Water Scheme	1. Poovathikkal Well 2. Choolattipara Well 3. Vezhakod well 4. Poovathikkal PHC Well

Source: baseline data Survey

5. IRRIGATION

Well	Pond	Streams
6.3 Ha	4.9 Ha	39.6 Ha

Source: Base line data Survey

6. LAND USE

Types of Land Use	Area in Ha.	Percentage of Area
Rocky area	94	10.9
Coconut plantation	46	5.3
Rubber plantation	101	11.7
Cashew	12	1.3
Play ground	16	1.8
Water bodies	37	4.2
Arecanut	31	3.5
Coconut dominant mixed crop	39	4.5
Banana	29	13.3
Commercial land	31	3.5
Paddy	20	2.3
Residential area	126	14.2
Residential converted from paddy	11	1.2
Forest	54	6.2
Miscellaneous	198	23.9
Total	862	100

Source: Kerala State Land use Board & Google Earth Pro.

7. CROPPING PATTERN

S.l no	Crop Pattern	Area In Hector	Production/Yr(Tonne)
1	Paddy	20	29
2	Coconut	46	1150
3	Arecanut	31	37.51
4	Banana	29	459
5	Rubber	101	142.32
6	Cashew	12	12
7	Vegetable	27	2106

Source : baseline survey

8. LIVE STOCK

Cow	Milk	Buffalo	Milk	Goat	Milk	Poultry	Duck	Rabbit	Milk Marketing Societies
133	86321 litre	54	15230 litre	69	6302 litre	873	32	19	1

Source: Baseline survey

9. . INFERENCE

The northern part of the watershed fully covered by rocky area also some tribal people are lives in this area. The people who are living in the Chekkunnu hill they does not have proper accessibility. Tribal people they are not willing to come for study in to Badal school because of poor accessibility.

ESTIMATE

1. WATERSHED DEVELOPMENT FUND

ENTRY POINT	4%	413760
NATURAL RESOURSE MANAGEMENT	56%	5792640
PRODUCTIVE SYSTEM AND MICRO ENTERPRISES	10%	1034400
LIVELYHOOD SUPPORT SYSTEM	9%	930960
MANAGEMENT COMPONENT	21%	2172240
TOTAL(In Rupees)	100	10344000

2. ENTRY POINT ACTIVITIES

Varikkal thodu side protection

This streams starting from the Vettilapara spring and it flowing to Chaliyar River. It located at Ward no 6 of Urngattiri-Karathode watershed . The main aim of the work is protecting the soil erosion and Over flow water in to paddy field. It will also reduce the scarcity of water in the work area. The geographical point is $11^0$14 '31'76" N 76^0 05' 28."25

Solar Power For Myladi ST Colony

Myladi ST colony is located at ward no 5, there are 18 families living this colony. The area doesn't have any electricity connection. This is one of the back ward ST colony in Malappuram district. Providing Solar, which will helps their daily needs. After providing solar animal attack on agriculture comparatively will be reduced.

SL NO	NAME OF WORK :	ESTIMATE COST
1	CHOOLATTIPARA VARIKKAL THODU SIDE PROTECTION)	233420
2	MAILADI KUNNU ST COLONY SOLAR PANAL - 18 NOS	180340
	TOTAL(In Rupees)	413760

3. NATURAL RESOURCE MANAGEMENT (NRM)

During the first year of IWMP mainly concentrating with DPR preparation institution building and Entry point activities. Natural resource management activities are starting from second year such as afforestation, Horticulture, Agriculture, Medicinal plant cultivation, Soil & moisture conservation, vegetative and engineering structure and water harvesting structures. Item wise annual actions plans are mentioned below

4. MASTER PLAN AND UEAR WISE PLAN OF NATURAL RESOURCE MANAGEMENT

URNGATTIRI – KOLARTHOD - MASTER PLAN	UNIT	VOLUME/UNITS	RATE	TOTAL IWMP SHARE
AFFORESTATION				
RAMACHAM	Ha	0.5	12500	6250
NEEM	Ha	1.5	6250	9375
UNG	Ha	1.6	6000	9600
HORTICULTURE				
MANGO	/hectare	1.5	5400	8100
PINEAPPLE	/hectare	0.2	200000	40000
AGRICULTURE				
VEGETABLE GARDEN (seed and fertilizer)	/hectare	2.8	37500	105000
BANANA CULTIVATION (Tissue culture)	/hectare	3.9	50000	195000
SPICES CULTIVATION (Ginger, pepper)	/hectare	7	30000	210000
TUBER CROPS	/hectare	6	30000	180000
FODDER GRASS CULTIVATION	/hectare	0.6	6000	3600
MEDICINAL PLANT CULTIVATION				
1.KATTARVAAZHA		0.5	50000	25000
2.CHITTAADALODAKAM		0.5	50000	25000
SOIL & MOISTURE CONSERVATION				
STONE PITCHED BUND	/hectare	8	12000	96000
EARTHERN BUND	/hectare	10	12000	120000
TERRACING	/hectare	2	79724.3	159448.6
CONTOUR TERRACING	/hectare	0.5	79724.3	39862.15
VEGETATIVE AND ENGINEERING STRUCTURES				

SIDE PROTECTION OF STREAMS				
1.KURIKKALAMPAADAM - MUNDAKKAL THODU	m3	100	2927.78	292778
3.MUNDAKKAL THODU-	m3	100	2625.27	262527
4.VARIOD THOD	m3	100	2011.89	201189
5. VARIOD UMMAYIL THOD	m3	100	1585.12	158512
6. KOLARTHOD	m3	75	4912.6	368445
7. CHATTUKAL ATHIKUND THOD	m3	100	3481.28	348128
8. CHEMBRAMMAL THOD	m3	100	4446.97	444697
9. KATTICHADIPOYIL	m3	100	2819.16	281916
10. CHEMBRAMMAL KAI THOD	m3	55	1613.5	88740
WATER HARVESTING STRUCTURE(NEW CREATED)				
FARM POND				
VARIOD POND	Nos	1	300000	300000
POOVATHIKKAL KOTTAMPARA	Nos	1	442132	442132
CHECK DAMS				
KOLARTHOD PARAKUND	Nos	1	18000	18000
CHATTUKAL THOD	Nos	1	35000	35000
CHIRA IN STREAMS USING DEPT RUBBLES	Nos	25	641	16025
WELL RECHARGE	Nos	73	15000	1095000
WATER ABSORBTION PIT	Nos	216	107.14	23142.24
WATER HARVESTING STRUCTURE(RENOVATION)				
WELL REPAIR				
CHEMBRAKON WELL	Nos	1	30000	30000
VEZHAKOD WELL	Nos	1	30000	30000
BHAGAVATHIPARAMBIL WELL	Nos	1	34172	34172
PALAKOTTUPARABIL WELL	Nos	1	30000	30000

KANNANTHODIKA SC COLONY WELL	Nos	1	60000	60000
TOTAL AMOUNT				**5792640**
SECOND YEAR	**UNIT**	**VOLUME/UNITS**	**RATE**	**TOTAL IWMP SHARE**
AFFORESTATION				
RAMACHAM	Ha	0.2	12500	2500
NEEM	Ha	1	6250	6250
HORTICULTURE				
MANGO	/hectare	0.2	5400	1080
PINEAPPLE	/hectare	0.2	200000	40000
AGRICULTURE				
VEGETABLE GARDEN	/hectare	0.9	37500	33750
BANANA CULTIVATION	/hectare	0.5	50000	25000
SPICES CULTIVATION	/hectare	2	30000	60000
TUBER CROPS	/hectare	1	30000	30000
FODDER GRASS CULTIVATION	/hectare	0.5	6000	3000
MIXED CROP	/hectare			
MEDICINAL PLANT CULTIVATION				
1.KATTARVAAZHA		0.5	50000	25000
2.CHITTAADALODAKAM		0.5	50000	25000
SOIL & MOISTURE CONSERVATION				
STONE PITCHED BUND	/hectare	8	12000	96000
EARTHERN BUND	/hectare	1	12000	12000
TERRACING	/hectare	2	79724.3	159448.6
CONTOUR TERRACING	/hectare	0.5	79724.3	39862.15
VEGETATIVE AND ENGINEERING STRUCTURES				

SIDE PROTECTION OF STREAMS				
1.KURIKKALAMPAADAM - MUNDAKKAL THODU	m3	100	2927.78	292778
2.MUNDAKKAL THODU-	m3	100	2625.27	262527
3. KATTICHADIPOYIL	m3	100	2819.16	281916
4. KOLARTHOD	m3	75	4912.6	368445
5. VARIOD UMMAYIL THOD	m3	100	1585.12	158512
WATER HARVESTING STRUCTURE(NEW CREATED)				
FARM POND				
VARIOD POND	Nos	1	300000	300000
CHECK DAMS				
KOLARTHOD PARAKUND	Nos	1	18000	18000
CHIRA IN STREAMS USING DEPT RUBBLES	Nos	10	641	6410
WELL RECHARGE	Nos	20	15000	300000
WATER ABSORBTION PIT	Nos	80	107.14	8571.2
WATER HARVESTING STRUCTURE(RENOVATION)				
WELL REPAIRING				
VEZHAKOD WELL		1	30000	30000
				-50
TOTAL				***2586000***
THIRD YEAR	**UNIT**	**VOLUME/UNITS**	**RATE**	**TOTAL IWMP SHARE**
AFFORESTATION				
UNG	Ha	1.6	6000	9600
HORTICULTURE				
MANGO	/hectare	1.3	5400	7020
AGRICULTURE				

VEGETABLE GARDEN	/hectare	1.9	37500	71250
BANANA CULTIVATION	/hectare	2	50000	100000
SPICES CULTIVATION	/hectare	2	30000	60000
FODDER GRASS CULTIVATION	/hectare	0.1	6000	600
SOIL & MOISTURE CONSERVATION				
EARTHERN BUND	/hectare	3	12000	36000
VEGETATIVE AND ENGINEERING STRUCTURES				
SIDE PROTECTION OF STREAMS				
1.VARIOD THOD	M3	100	2011.89	201189
2. CHATTUKAL ATHIKUND THOD	M3	100	3481.28	348128
WATER HARVESTING STRUCTURE(NEW CREATED)				
FARM POND				
1. POOVATHIKKAL KOTTAMPARA	Nos	1	442132	442132
CHIRA IN STREAMS USING DEPT RUBBLES	Nos	7	641	4487
WELL RECHARGE	Nos	20	15000	300000
WATER ABSORBTION PIT	Nos	136	107.14	14571.04
WATER HARVESTING STRUCTURE(RENOVATION)				
WELL				
1. KANNANTHODIKA SC COLONY WELL	Nos	1	60000	60000
				62.96
TOTAL				**1655040**
FOURTH YEAR	**UNIT**	**VOLUME/UNITS**	**RATE**	**TOTAL IWMP SHARE**
AFFORESTATION				
RAMACHAM	Ha	0.3	12500	3750
NEEM	Ha	0.5	6250	3125

AGRICULTURE				
BANANA CULTIVATION	/hectare	1.4	50000	70000
SPICES CULTIVATION	/hectare	3	30000	90000
TUBER CROPS	/hectare	5	30000	150000
SOIL & MOISTURE CONSERVATION				
EARTHERN BUND	/hectare	6	12000	72000
VEGETATIVE AND ENGINEERING STRUCTURES				
SIDE PROTECTION OF STREAMS				
1. CHEMBRAMMAL THOD	m3	100	4446.97	444697
2. CHEMBRAMMAL KAI THOD	m3	55	1613.5	88742.5
WATER HARVESTING STRUCTURE(NEW CREATED)				
CHECK DAMS				
CHATTUKAL THOD	Nos	1	35000	35000
CHIRA IN STREAMS USING DEPT RUBBLES	Nos	8	641	5128
WELL RECHARGE	Nos	33	15000	495000
WATER HARVESTING STRUCTURE(RENOVATION)				
WELL REPAIR				
CHEMBRAKON WELL	Nos	1	30000	30000
BHAGAVATHYPARAMBIL WELL	Nos	1	34172	34172
PALAKOTTUPARAMBIL	Nos	1	30000	30000
				-14.5
TOTAL				**1551600**

(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)

5. YEAR WISE PRODUCTION SYSTEM MANAGEMENT

During the first year of IWMP mainly concentrating with DPR preparation and Entry point activities. Production system management activities are starting from second year such as Bee keeping, Poultry, Agriculture nursery, Vermicompost, Milk society and Mushroom cultivation. Item wise annual actions plans are mentioned below

PSM ACTIVITIES MASTER PLAN	**UNIT**	**RATE**	**IWMP AMOUNT**	
BEEKEEPING	2	6000	12000	
POULTRY	474	575	272550	
DIARY	19	30000	570000	
VERMICOMPOST	6	10000	60000	
MUSHROOM CUTIVATION	4	30000	120000	
Rounded Figure			-150	
TOTAL			**1034400**	
SECOND YEAR				The contribution of WDF shall be a minimum 20 % of cost of PSM works executed on general. However, in case of SC/ST, small and marginal farmers, the minimum contribution shall be 10 % of cost of PSM works
BEEKEEPING	1	6000	6000	
POULTRY	188	575	108100	
DIARY	8	30000	240000	
VERMICOMPOST	3	10000	30000	
MUSHROOM CUTIVATION	1	30000	30000	
Rounded Figure			-340	
TOTAL			**413760**	
THIRD YEAR				
BEEKEEPING	1	6000	6000	
POULTRY	205	575	117875	
DIARY	7	30000	210000	
VERMICOMPOST	2	10000	20000	
MUSHROOM CUTIVATION	2	30000	60000	
Rounded Figure			-115	
TOTAL			**413760**	
FOURTH YEAR				
POULTRY	81	575	46575	
DIARY	4	30000	120000	
VERMICOMPOST	1	10000	10000	
Rounded Figure			305	
TOTAL			206880	

6. YEAR WISE 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, Rabbit rearing, , Weed cutter, Coconut climber, Bamboo by production unit, Chapatti and Food processing unit . Item wise annual actions plans are mentioned below

URNGATIRI KARATHOD WATERSHED						
MASTER PLAN	**UNITS**	**Unit cost**	**TOTAL AMOUNT**	**SECOND YEAR**	**THIRD YEAR**	**FOURTH YEAR**
GOAT REARING	30	6000	180000	9	8	13
RABBIT REARING	14	5000	70000	5	5	4
AGRI - NURSERY	2	200,000	400000	1	1	0
WEED CUTTER	4	20,000	80000	1	1	2
COCONUT CLIMBER	7	3000	21000	1	3	3
BAKERY MAKING UNIT	3	60000	180000	1	1	1
			-40	40	40	-120
TOTAL			930960	362040	362040	930960

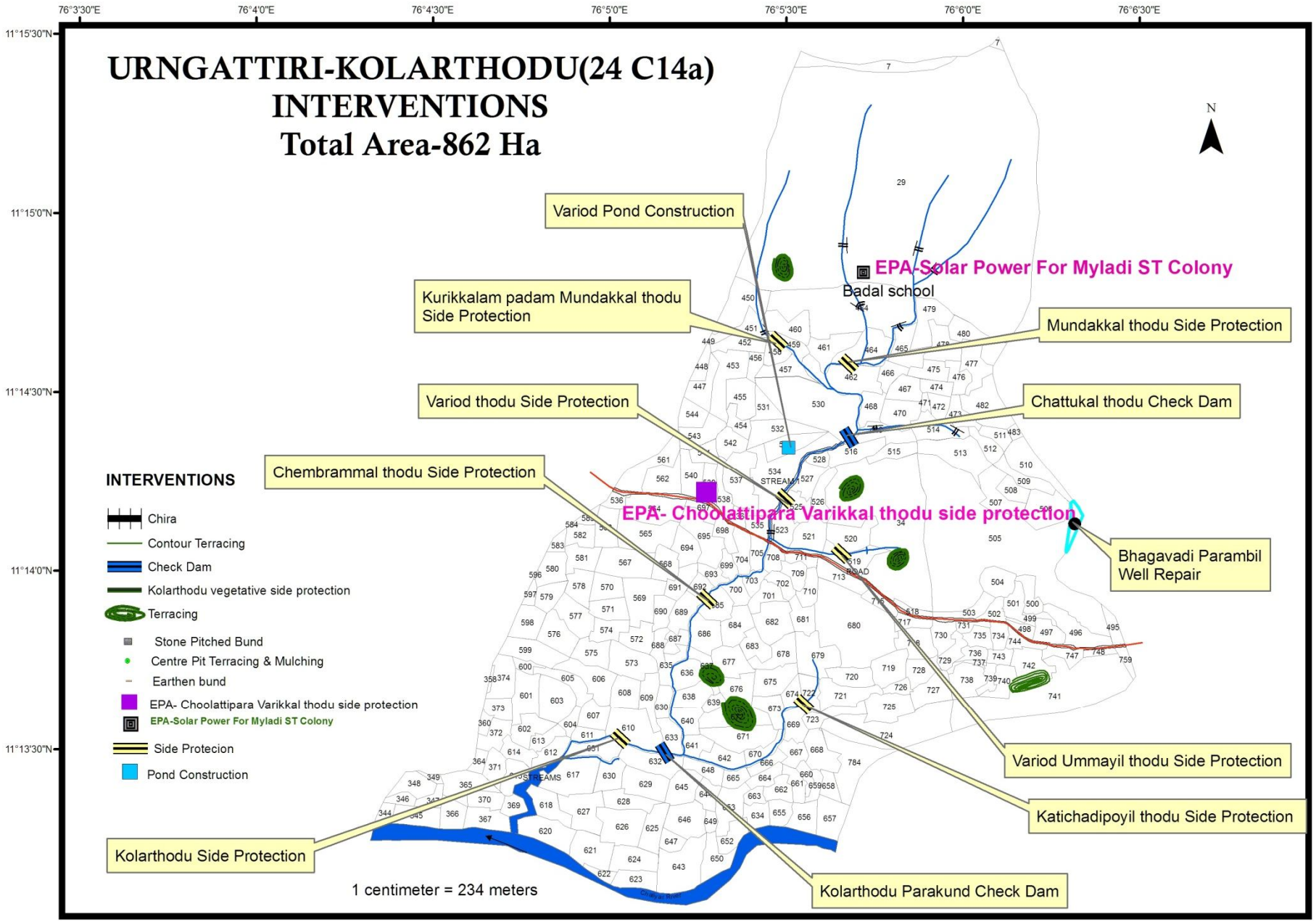
7. CAPACITY BUILDING PLAN

	FIRST YEAR	
SL.NO	PROGRAMMES	TOTAL AMOUNT
1	Institutional Building And Awareness Programmes	25860

	SECOND YEAR		
SL.NO	Programmes	Target Groups	Total Amount
1	Awareness Programmes And Training For Mgnregs Workers	WATERSHED PEOPLES	28100
2	Awareness For Watershed Project On Tribes		5000
3	Awareness Programmes For Students On Environment Day		7800
4	Training For User Group And Beneficiaries (Nrm Activities)		25680
5	Trining For Psm Activities		24800
6	Training For Lss Actvities		13800
7	Exposure Visit		101680

	THIRD YEAR		
Sl.No	Programmes	Target Groups	Total Amount
1	Awareness Programmes For Nrm , Psm ,Lss Activities	WATERSHED PEOPLES	41300
2	Training For Nrm		24800
3	Training On Psm		33600
4	Training For Lss		31510
5	Awareness Programmes For Students On Environment Day		24800
6	Exposure Visit		50840

	FOURTH YEAR			
SL.NO	Programmes	AMOUNT/BATCH	NO.OF BATCHES	TOTAL AMOUNT
1	Field Visit By Beneficiaries And Wdt In The Watershed Area	7200	5	27990
2	Awareness On With Drawal Phase Concept Of Watershed Management, Roles And Responsibilities	4400	1	24800
3	Awareness On Proper Maintenance Of Nrm Works - 1 Batch	8300	4	24800


URNGATTIRI-KOLARTHODU(24 C14a)
INTERVENTIONS
Total Area-862 Ha
76°3'30"E
76°4'0"E
76°4'30"E
76°5'0"E
76°5'30"E
76°6'0"E
76°6'30"E
11°15'30"N
11°15'0"N
11°14'30"N
11°14'0"N
11°13'30"N
N
Variod Pond Construction
EPA-Solar Power For Myladi ST Colony
Badal school
Kurikkalam padam Mundakkal thodu Side Protection
Mundakkal thodu Side Protection
Variod thodu Side Protection
Chattukal thodu Check Dam
Chembrammal thodu Side Protection
EPA- Choolattipara Varikkal thodu side protection
Bhagavadi Parambil Well Repair
Variod Ummayil thodu Side Protection
Katichadipoyil thodu Side Protection
Kolarthodu Side Protection
Kolarthodu Parakund Check Dam
1 centimeter = 234 meters
INTERVENTIONS
Chira
Contour Terracing
Check Dam
Kolarthodu vegetative side protection
Terracing
Stone Pitched Bund
Centre Pit Terracing & Mulching
Earthen bund
EPA- Choolattipara Varikkal thodu side protection
EPA-Solar Power For Myladi ST Colony
Side Protecion
Pond Construction
STREAM
ROAD

PART III

EXPECTED OUTCOME, EXIT PROTOCOL, CONVERGENCE, PROJECT SUMMARY AND CONCLUSION,

EXPECTED OUTCOMES

INTERVENTIONS	ACTIVITIES	OUTCOME
Natural Resource Management Programme	1. Afforestation Ramacham , Neem ,Ung 2. Horticulture - Mango , Pineapple 3. Agriculture - Vegetable Garden , Banana Cultivation , Spices Cultivation , Fodder Grass , Tuber Crop , Mixed Crop , Poly House 4. Medicinal Plant Cultivation - Kattarvazha , Chitadalodakam 5. Soil and Moisture Conservation - **238. 2 Ha** Stone Pitched Bund , Earthen Contour Bund , Terracing , Contour Terracing , Centripetal Terracing , Mulching 6. Vegetative And Engineering Structure Side Protection Of **27 Streams** In The Project Area 7. Water harvesting structure (new created) Check dams – 32 nos Chira - 97 nos	Soil erosion is significantly reduced as tree plantations prevent run off after heavy rains. In addition, 83.93 Ha tree planting and 17.2 Ha mango and pinapple cultivation brings soils together which prevents soil erosion in the project area. In agriculture section additional 129.4 Ha crop cultivation, 4.45 Ha medicinal plant cultivation also added to this project for preventing of soil erosion through increasing crop production. In Soil and Moisture Conservation section 238.2 Ha land treating in this project Important 27 streams protect under vegetative and engineering structure. Also 32 check dams ,97 “chira “ , 351 well recharge , construction of 6 farm ponds , 2 well construction and increased ground water levelsthe major expected postProject benefits. In this 238.2 Ha land treating under soil and moisture conservation. employment opportunities will increase from the pre project The training about these activities undertake capacity building training programmes

	Well recharge - 351 nos Pond - 6 nos Well - 2 nos 8. Water harvesting structure (renovation) Well repair – 5	
Production System And Micro Enterprises	1. Beekeeping 2. Poultry 3. Diary 4. Vermicompost 5. Mushroom cultivation 6. Psciculture 1.	Perfect execution of 20 beekeeping unit , 10000 poultry , 76 cow ,36 vermicompost , 22 mushroom cultivation and 24 psciculture help the people of project area to a sustainable production method by the help of capacity building programmes
Liveli hood activities	2. Goat rearing 3. Rabbit rearing 4. Weed cutter 5. Coconut climber 6. Agriculture nursery 7. Food processing unit (bakery making unit)	All these activities are empower landless and asset less people. By this activities permanent job opportunities can provide to the people .

EXIT PROTOCOL

The main source of financial assistance for the post implementation period is Watershed Development Fund (WDF). One of the mandatory conditions for the selection of villages for watershed projects is people's contribution towards WDF. The Contribution to WDF shall be a minimum 10 % of the cost of NRM works executed on private land only. However, in case of SC/ST, small and marginal farmers, the minimum contribution shall be 5 % of cost of NRM works executed on their land. These contributions would be acceptable either in cash at the time of execution of works or voluntary labour. A sum equivalent to the monetary value of the voluntary labour would be transferred from the watershed project account to the WDF bank account that will be distinct from the Watershed Committee (WC) bank account. User charges, sales proceeds and other contributions, disposal amounts of intermediate usufruct rights shall also be deposited in the WDF bank account. Income earned from assets created under the project on common property resources shall also be credited to WDF. For other cost intensive farming system based livelihood activities/interventions such as Aquaculture, Horticulture, Agro-Forestry, Animal Husbandry etc. on private land directly benefiting the individual farmers, the contribution of farmers will be 20 percent for general category and 10 percent for SC/ST beneficiaries and the project funds will 96 meet the cost of farming system activity to a maximum limit of an amount equal to double of the unit cost of the project for watershed development (i.e. Rs 12,000/15,000 per ha, as the case may be). Farmers' contribution i.e. 20 percent for general category and 10 percent for SC/ST of this amount (i.e. a maximum of Rs 4800/6000 and Rs 2400/3000 as the case may be, respectively for general category and SC/ST beneficiaries) will go to WDF. The Secretary, Watershed Committee (WC) shall maintain a completely separate account of the income and expenditure of the WDF. Rules for operation of the fund should be prepared by the Watershed Committee (WC) and ratified by the Gram Sabha. The WDF bank account should be operated by the President of the Gram Panchayath and any member from the SHG nominated by the Gram Sabha. Alternatively, the guidelines for the management and utilization of the WDF may be evolved by the concerned Nodal Ministry. After completion of Phase II, at least 50% of the WDF funds shall be reserved for maintenance of assets created on community land or for common use under the project. Works taken up on private land shall not be eligible

for repairing/ maintenance out of this Fund. The remaining money may be used as a revolving fund to advance loans to the villagers of the project area who have contributed to the fund. Individuals as well as charitable institutions should be encouraged to contribute generously to this Fund.

PROJECT SUMMARY AND CONCLUSION

Areacode (IWMP-B2) project is located in Areacode blockPanchayath of Malappuram district. The project comprises of seven micro-watersheds namely Urngattiri-Kolarthodu (24C14a), Chundathupoyil (24C12f), Therattammal (24C12n), Moozhipadam-Vakkalloor(24C62/63 a),Kottampara-Poolakkomthodu (24C12h), Kavumngichola-Cherangad24C12l) and Thottumukkom (24C12g). The project area covers the Grama Panchayats of Kavanur and Urangattiri, There are 5732 households in the project area and the total population is 29265. The total project cost of the Areacode IWMP-B2 project is Rs. 467.40000lakhs. Department of Local Self Government is the nodal department for the implementation of IWMP at the state level. State Level Nodal Agency (SLNA) is coordinating and providing guidelines for the effective planning and implementation of the individual IWMP projects. District Planning Committee (DPC) is responsible for the planning and implementation of the projects at the district level. To help the DPC and to coordinate the project level activities, Watershed Cell Cum Data Centre (WCDC) is working at the district level. The Areacode Block Panchayath is the Programme Implementing Agency (PIA) of the Areacode IWMP-B2 project. A Block Level Coordination Committee (BLCC) has been formed for the timely implementation of the project and to provide help to the PIA in technical and administrative matters related to the project. Watershed Development Team (WDT) has been formed under the PIA. Rajiv Youth Foundation is the Technical Support Organisation (TSO). A cluster approach was followed in the preparation of DPR. The preparation of the DPR involved several rounds of discussions with elected representatives, officials and other stakeholders. A situational analysis was undertaken using secondary data and information collected from different sources. A baseline survey covering all the households in the project area was also conducted. A Logical Framework Analysis was done at the project level for identifying the important problems as

well as for the purpose of assessing the present situation. Other PRA techniques like transect walk, social mapping, resource mapping, seasonal calendar, etc., were employed in each micro watershed area. GIS and remote sensing devices have been made use in the preparation of DPR. 1: 4000 scaled cadastral maps of each village formed the base map for planning. Depth interviews with officials, farmers, fisher folk, entrepreneurs of micro-enterprises etc. were also undertaken. Field level verification of the identified interventions was undertaken by the DPR preparation team.

The seven micro watersheds in the project area face many common problems because of the similarities existing among the micro watersheds. The major problems identified through PRA techniques which have led to the identification of the interventions to be undertaken under the IWMP project are acute drinking water shortage, dumping of waste in to streams, Paddy land conversion, Shortage of agricultural labours and in accessible roads.

CONVERGENCE

WATERSHEDS	ACTIVITIES								
	Agro Forestry (Agri – Dept)	Mixed Crop (Agri – Dept)	Polyhouse (Agri – Dept)	Earthern Bund (MGNREGS)	Stone Pitched Bund (MGNREGS)	Water Absorption Pit (MGNREGS)	Central Pital Terracing (MGNREGS)	Mulching (MGNREGS)	Psciculture (Fisheries Dept)
	(Ha)	(Ha)	(Ha)	(Ha)	(Ha)	Nos	Nos	Nos	NOS
Chundathpoyil	12	2	-	8	13	321	296	389	2
Therattammal	8	3	0.04	18	3.6	115	395	468	5
Kavungin Chola Cherangad	12.3	-	-	-	15.5	134	261	170	3
Thottumukkam	-	-	0.04	2.5	19	211	293	481	2
Kottampara Poolakkamthod	11	-	-	7.4	17.3	-	258	315	5
Urngatiri Kolathod	9.	-	-	8	4.6	127	383	354	6
MoozhipadamVakkaloor	2.7	--	-	5.9	1	169	94	79	1

APPENDIX

APPENDIX-2: WATERSHED WISE FUNDING PATTERN

NAME OF WATERSHED	CODE	TOTAL AREA	TREATABLE AREA	TOTAL AMOUNT	EPA AMOUNT	NRM	PSM	LSS	ADMINISTRATION COST	MONITORING	EVALUATION	INSTITUTION & CAPACITY BUILDING	DPR	CONSOLIDATION PHASE
CHUNDATHPOYIL	24 C 12 f	586	586	7032000	281280	3937920	703200	632880	703200	70320	70320	351600	70320	210960
THOTTUMUKKAM	24C 12 g	362	362	4344000	173760	2432640	434400	390960	434400	43440	43440	217200	43440	130320
KOTTAMPARA-POOLAKKANTHODE	24C 12 h	936	934	11208000	448320	6276480	1120800	1008720	1120800	112080	112080	560400	112080	336240
KAVUNGINCHOLA - CHERANGAD	24C 12 I	509	509	6108000	244320	3420480	610800	549720	610800	61080	61080	305400	61080	183240
THERATTAMMAL	24C 12 n	347	347	4164000	166560	2331840	416400	374760	416400	41640	41640	208200	41640	124920
URNGATTIRI - KARATHODE	24C 14 a	862	862	10344000	413760	5792640	1034400	930960	1034400	103440	103440	517200	103440	310320
MOOZHIPADAM - VAKKALLOOR	24C62/63 a	295	295	3540000	141600	1982400	354000	318600	354000	35400	35400	177000	35400	106200
TOTAL		**3897**	**3895**	**46740000**	**1869600**	**26174400**	**4674000**	**4206600**	**4674000**	**467400**	**467400**	**2337000**	**467400**	**1402200**

APPENDIX-3 MASTER PLAN OF PROJECT AREA

	Total treatable area - 976	3895						Total amount - 3895X 12000/ HA = 46740000			
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	584250	93480	46740	1869600	116850	467400	0	0	0	0	3178320
%	1.25	0.20	0.10	4.00	0.25	1.00	0.00	0.00	0.00		6.80
SECOND	1635900	116850	116850	0	934800	0	11154360	1635900	1869600	0	17994900
%	3.50	0.25	0.25		2.00		23.86	3.50	4.00		38.50
THIRD	1635900	116850	116850	0	934800	0	11734440	1635900	1869600	0	17994900
%	3.50	0.25	0.25		2.00		25.11	3.50	4.00	0.00	38.50
FOURTH	817950	140220	186960	0	350550	0	3285600	934800	934800	1402200	7571880
%	1.75	0.30	0.40		0.75		7.03	2.00	2.00	3.00	16.20
TOTAL	4674000	467400	467400	1869600	2337000	467400	26174400	4206600	4674000	1402200	46740000
%	10.00	1.00	1.00	4.00	5.00	1.00	56.00	9.00	10.00	3.00	100.00

APPENDIX-4: YEAR WISE FUNDING PATTERN FOR WATERSHED WISE

FUNDING PATTERN - MASTER PLAN FOR 4 YEARS											
CHUNDATHPOYIL											
	Total treatable area - 586							Total amount - 586X 12000/ HA = 7032000			
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	87900	14064	7032	281280	17580	70320	0	0	0	0	478176
%	1.25	0.20	0.10	4.00	0.25	1.00	0.00	0.00	0.00		6.80
SECOND	246120	17580	17580	0	140640	0	832800	246120	281280	0	2707320
%	3.50	0.25	0.25		2.00		25.00	3.50	4.00		38.50
THIRD	246120	17580	17580	0	140640	0	2320560	246120	281280	0	2707320
%	3.50	0.25	0.25		2.00		25.00	3.50	4.00	0.00	38.50
FOURTH	123060	21096	28128	0	52740	0	0	140640	140640	210960	1139184
%	1.75	0.30	0.40		0.75		00	2.00	2.00	3.00	16.20
TOTAL	703200	70320	70320	281280	351600	70320	3937920	632880	703200	210960	7032000
%	10.00	1.00	1.00	4.00	5.00	1.00	56.00	9.00	10.00	3.00	100.00

FUNDING PATTERN - MASTER PLAN FOR 4 YEARS											
THOTTUMUKKAM											
	Total treatable area -362							Total amount - 362 X 12000/ HA =4344000			
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	54300	8688	4344	173760	10860	43440	0	0	0	0	295392
%	1.25	0.20	0.10	4.00	0.25	1.00	0.00	0.00	0.00		6.80
SECOND	152040	10860	10860	0	86880	0	868800	152040	173760	0	1672440
%	3.50	0.25	0.25		2.00			3.50	4.00		38.50
THIRD	152040	10860	10860	0	86880	0	868800	152040	173760	0	1672440
%	3.50	0.25	0.25		2.00			3.50	4.00	0.00	38.50
FOURTH	76020	13032	17376	0	32580	0	695040	86880	86880	130320	703728
%	1.75	0.30	0.40		0.75			2.00	2.00	3.00	16.20
TOTAL	434400	43440	43440	173760	217200	43440	2432640	390960	434400	130320	4344000
%	10.00	1.00	1.00	4.00	5.00	1.00	56.00	9.00	10.00	3.00	100.00

FUNDING PATTERN - MASTER PLAN FOR 4 YEARS											
THERATTAMMAL											
	Total treatable area - 347							Total amount - 347 X 12000/ HA = 3975000			
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	52050	8328	4164	166560	10410	41640	0	0	0	0	283152
%	1.25	0.20	0.10	4.00	0.25	1.00	0.00	0.00	0.00		6.80
SECOND	145740	10410	10410	0	83280	0	832800	145740	166560	0	1603140
%	3.50	0.25	0.25		2.00			3.50	4.00		38.50
THIRD	145740	10410	10410	0	83280	0	1499040	145740	166560	0	1603140
%	3.50	0.25	0.25		2.00			3.50	4.00	0.00	38.50
FOURTH	72870	12492	16656	0	31230	0		83280	83280	124920	674568
%	1.75	0.30	0.40		0.75			2.00	2.00	3.00	16.20
TOTAL	416400	41640	41640	166560	208200	41640	2331840	374760	416400	124920	4164000
%	10.00	1.00	1.00	4.00	5.00	1.00	56.00	9.00	10.00	3.00	100.00

FUNDING PATTERN - MASTER PLAN FOR 4 YEARS											
KAVUNGINCHOLA											
	Total treatable area -509							Total amount - 509 X 12000/ HA = 4500000			
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	76350	12216	6108	244320	15270	61080	0	0	0	0	415344
%	1.25	0.20	0.10	4.00	0.25	1.00	0.00	0.00	0.00		6.80
SECOND	213780	15270	15270	0	122160	0	1527000	213780	244320	0	2351580
%	3.50	0.25	0.25		2.00		25.00	3.50	4.00		38.50
THIRD	213780	15270	15270	0	122160	0	1527000	213780	244320	0	2351580
%	3.50	0.25	0.25		2.00		25.00	3.50	4.00	0.00	38.50
FOURTH	106890	18324	24432	0	45810	0	366480	122160	122160	183240	989496
%	1.75	0.30	0.40		0.75		6.00	2.00	2.00	3.00	16.20
TOTAL	610800	61080	61080	244320	305400	61080	3420480	549720	610800	183240	6108000
%	10.00	1.00	1.00	4.00	5.00	1.00	56.00	9.00	10.00	3.00	100.00

FUNDING PATTERN - MASTER PLAN FOR 4 YEARS											
KOTTAMPARA POOLAKMTHOD											
	Total treatable area -934							Total amount - 934 X 12000/ HA = 2925000			
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	140100	22416	11208	448320	28020	112080	0	0	0	0	762144
%	1.25	0.20	0.10	4.00	0.25	1.00	0.00	0.00	0.00		6.80
SECOND	392280	28020	28020	0	224160	0	2802000	392280	448320	0	4315080
%	3.50	0.25	0.25		2.00		25.00	3.50	4.00		38.50
THIRD	392280	28020	28020	0	224160	0	2802000	392280	448320	0	4315080
%	3.50	0.25	0.25		2.00		25.00	3.50	4.00	0.00	38.50
FOURTH	196140	33624	44832	0	84060	0	672480	224160	224160	336240	1815696
%	1.75	0.30	0.40		0.75		6.00	2.00	2.00	3.00	16.20
TOTAL	1120800	112080	112080	448320	560400	112080	6276480	1008720	1120800	336240	11208000
%	10.00	1.00	1.00	4.00	5.00	1.00	56.00	9.00	10.00	3.00	100.00

FUNDING PATTERN - MASTER PLAN FOR 4 YEARS											
URNGATTIRI KOLARTHOD											
	Total treatable area -862							Total amount - 862 X 12000/ HA = 10344000			
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	129300	20688	10344	413760	25860	103440	0	0	0	0	703392
%	1.25	0.20	0.10	4.00	0.25	1.00	0.00	0.00	0.00		6.80
SECOND	362040	25860	25860	0	206880	0	2586000	362040	413760	0	3982440
%	3.50	0.25	0.25		2.00			3.50	4.00		38.50
THIRD	362040	25860	25860	0	206880	0	1655040	362040	413760	0	3982440
%	3.50	0.25	0.25		2.00			3.50	4.00	0.00	38.50
FOURTH	181020	31032	41376	0	77580	0	1551600	206880	206880	310320	1675728
%	1.75	0.30	0.40		0.75			2.00	2.00	3.00	16.20
TOTAL	1034400	103440	103440	413760	517200	103440	5792640	930960	1034400	310320	10344000

%	10.00	1.00	1.00	4.00	5.00	1.00	56.00	9.00	10.00	3.00	100.00

FUNDING PATTERN - MASTER PLAN FOR 4 YEARS											
MOOZHIPPADAM VAKKALOOR											
	Total treatable area -295							Total amount - 295 X 12000/ HA =3540000			
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	44250	7080	3540	141600	8850	35400	0	0	0	0	240720
%	1.25	0.20	0.10	4.00	0.25	1.00	0.00	0.00	0.00		6.80
SECOND	123900	8850	8850	0	70800	0	920400	123900	141600	0	1362900
%	3.50	0.25	0.25		2.00		26.00	3.50	4.00		38.50
THIRD	123900	8850	8850	0	70800	0	1062000	123900	141600	0	1362900
%	3.50	0.25	0.25		2.00		30.00	3.50	4.00	0.00	38.50
FOUR	61950	10620	14160	0	26550	0		70800	70800	106200	573480

TH											
%	1.75	0.30	0.40		0.75			2.00	2.00	3.00	16.20
TOTAL	354000	35400	35400	141600	177000	35400	1982400	318600	354000	106200	3540000
%	10.00	1.00	1.00	4.00	5.00	1.00	56.00	9.00	10.00	3.00	100.00