INTEGRATED WATERSHED MANAGEMENT PROGRAMME

(BATCH – IV -2011-12)

IN KUTTIPURAM BLOCK PANCHAYAT
MALAPPURAM DISTRICT
KERALA STATE

DETAILED PROJECT REPORT

PIA – KUTTIPURAM BLOCK PANCHAYAT
TSO – RAJIVYOUTH FOUNDATION

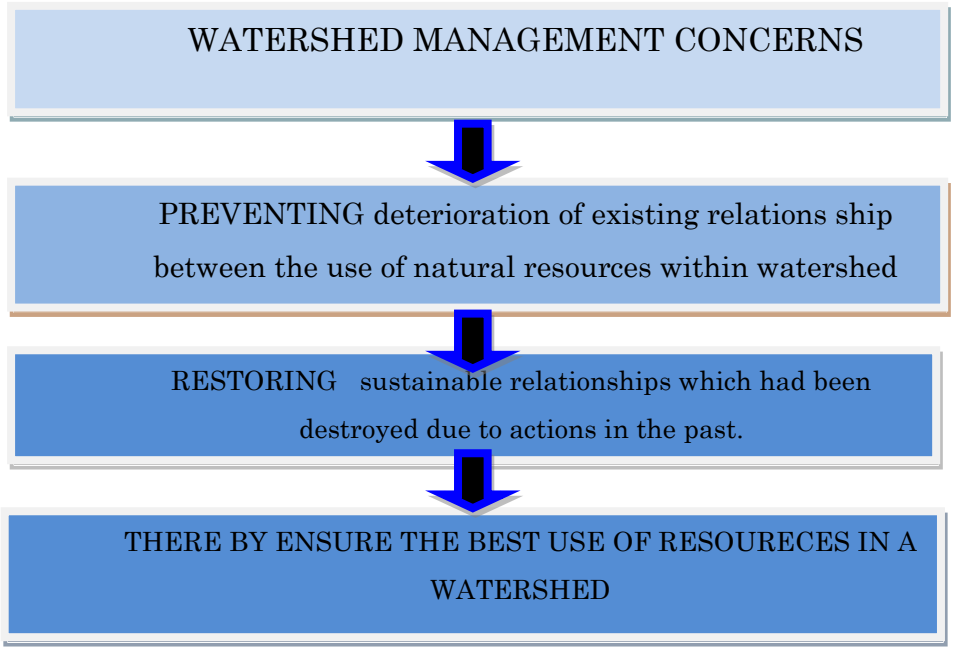
PART I

CHAPTER -I

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 well being of it. Every watershed has to be identified as a unique watershed ecosystem. These balances are jeopardized due to disproportionate and irrational interventions of the watershed community. Man spearheads and thus watershed deterioration begins. This basically inflicts upon the water cycle. This has resulted in drinking water scarcity, agricultural drought, fall in farm production, denial of hydel power generation, crisis in industries and ecological problems. Main reasons are topography, intensity and duration of rainfall, land use pattern and population. Watershed development is an integration of technology within the natural boundary of a drainage area for optimum development of land, water and plant resources to meet the basic minimum needs of people in a sustained manner. A developed watershed provides food, fuel, fibre, fodder, fruits, drinking water and employment. Thus scientific water management approach is the only tool to develop a watershed.



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

1.2 Need and scope for watershed development

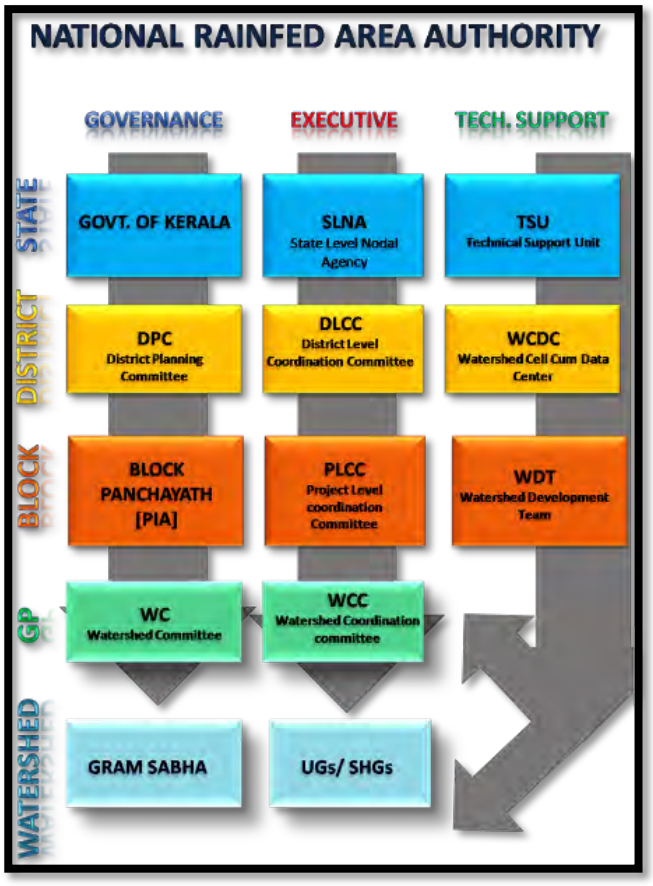
Loss of vegetative cover following by soil degradation through various forms of erosion has resulted into lands which are thirsty in terms of water as well as hungry in terms of soil nutrients. All these regions have predominantly live stock centred farming systems; less biomass for animals not only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

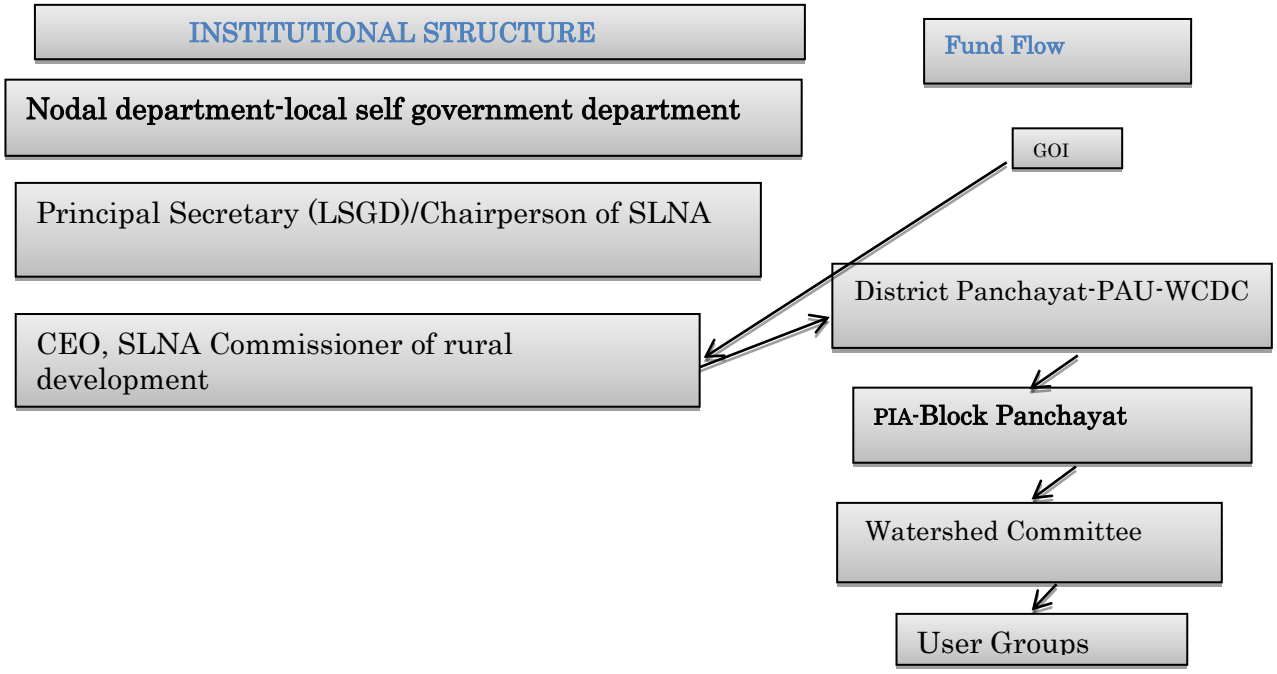
1. Main objective of IWMP is to preserve and conserve the ecology, restore and develop degraded natural resources by arresting soil loss, improving soil health and soil moisture.
2. Rain water harvesting and recharging of ground water enables multi cropping and introduction of diverse agro based activities 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 Institutional 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

1.5 Funding flow



1.6 Funding pattern

Sl. No.	Particulars	Percentage of Fund	Amount
01.	Administration Cost	10.00	6699600
02.	Monitoring	1.00	669960
03.	Evaluation	1.00	669960
04.	Entry Point Activities	4.00	2679840
05.	Institution & Capacity Building	5.00	3349800
06.	DPR	1.00	669960
07.	Watershed Development Works	56.00	37517760
08.	Livelihood Activities	9.00	6029640
09.	Production System & Micro Enterprises	10.00	6699600
10.	Consolidation Phase	3.00	2009880
Total		100%	6,69,96,000

CHAPTER - II

WATERSHED ACTIVITIES

2.1 Institution Building

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)
- Neighbourhood Groups (NHG)
- Self Help Groups (SHGs)
- User Groups (UGs)

2.1.1 State Level Nodal Agency

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

2.1.2 Watershed Cell cum Data Centre (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.

Table: Institution Building at District Level

Si no	Name	Designation
1	Chairman	District Panchayat President
2	Member Secretary	District Collector
3	Convener	Project manager IWMP (project director- PAU)
4	Joint-Programme Co-ordinator (JDA – Agriculture)	Members
5	District Planning office	Members
6	District Soil survey Officer	Members
7	District Soil conservation officer	Members
8	Deputy Director, Fisheries	Members
9	Executive engineer, Minor Irrigation/LSGD.KWA	Members
10	Divisional forest officers	Members
11	District Officer, GWD	Members
12	Rep. KRWSA	Members
13	District mission co-ordinator, Kudumbashree	Members
14	District Co-ordinator, IKM	Members
15	District Co-ordinator, Horticulture Mission	Members

2.1.3 Project Implementing Agency

The Block Panchayat 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 this project, the Kuttippuram Block Panchayat is being selected as the Project Implementing Agency.

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

- Details of project implementation agency (PIA)

Name of the project	**IWMP –IV – 2011/12**
PIA	Kuttipuram Block Panchayat
Implementation Officer	Block Development Officer – kuttipuram block
Address of the PIA	Secretary, kuttipuram Block Panchayat, thozhuvanoor, pin : **676557**
Telephone	Phone: 0494 2644310
Email	bdoktpm@gmail.com

2.1.4 Watershed development team (WDT)

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 / 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.

2.1.5 Watershed committee (WC)

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 8 micro watersheds of IWMP-A5 project area. The IWMP-A5 is a cluster of 5 Grama Panchayats coming under Kuttippuram Block Panchayath. Watershed Committee members are briefed about the project objectives and a workshop is also conducted in this regard at every Panchayath. The watershed committee has a pivotal role to play during and after the project implementation period. The Watershed Committee has a separate bank account to receive funds for watershed projects and will utilise the same for undertaking its activities.

2.1.6 Neighbourhood Groups (NHG)

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

2.1.7 Self Help Groups (SHG)

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.

2.1.8 User Groups (UG)

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-A5 project are:

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

2.1.9 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 Approach and methodology of preparing the detailed project report (DPR)

This envisages a broader vision of Geo-hydrological unit which involves treating a cluster of micro-watershed. The Kuttipuram -A5 Project consists of 8 micro-watersheds namely 20B2a, 20B3a, 20B3b, 20B3c, 21T13b, 21T13e, 21T13f and 21T13g as their respective codes.

The project comprises of eight 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 this project given below,

- Delineation of watershed map from the Toposheet
- Collection of cadastral map from revenue department
- Boundary identification
- Identification of EPA activities
- Baseline data collection - 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
- Approval of the DPR

2.2.1 Delineation of watershed map from the Toposheet

Use a toposheet to locate the water bodies, streams and contour (elevation). Determine the direction of drainage in the area and start drawing from the mouth of the watershed which is also the lowest elevation of the watershed, connect all the elevated points. The completed line is the watershed

2.2.2 Boundary identification

This is the process of action of determining legal position of a cadastral boundary in the land

2.2.3 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.

2.2.4 Base line Survey

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

2.2.5 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 seasonal calendars were used to realize the physical and social orientation of the village in general and watershed in specific. These tools put the villagers in simplicity than the complicated questionnaires. Various tools like Matrix ranking, Venn diagram were used to identify various local vegetations (apt for afforestation), Fodders crops, various institutions and their significance in the life of the farmers.

Following methodologies were adopted to find out the feasible community based activities. They are:

1) Participatory Rural Appraisal (PRA)
2) Household survey
3) Primary &Secondary Data collection
4) NHG formation
5) Group gathering and Meetings
6) Trainings/Awareness creation
7) Field Visit

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.

- Socio Economic Dimension Ranking (Sample)
- Problem Tree Analysis
- Resource Inflow and Out Flow
- Pair wise and Matrix
- Livelihood Planning

➢ **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

- photos of Panchayath level meetings

2.2.6 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.

2.2.7 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 Top sheet and imageries.

2.2.8 Planning

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

2.2.9 Hydrological modelling

Hydrology modelling 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	
Cadastral map	Yes
Village boundaries	Yes
Drainage	Yes
Soil (Soil nutrient status)	Yes
Land use	Yes
Ground water status	Yes
Watershed boundaries	Yes
Activity	Yes
Crop simulation models#	
Integrated coupled analyzer/ near infrared visible spectroscopy/ medium spectroscopy for high speed soil nutrient analysis	
Normalized difference vegetation index (NDVI)#	
Weather Stations	yes
(B)Inputs	
Bio-pesticides	
Organic manures	Yes
Vermi compost	
Bio-fertilizer	
Water saving devices	Yes
Mechanized tools/ implements	
Bio-fencing	Yes
Nutrient budgeting	
Automatic water level recorders & sediment samplers	From GWD Mlpm

2.2.10 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.

2.2.11 Planning and Implementation

- **Planning for natural resource management**

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

ii. Prepare master plan of NRM based on the ridge to valley system

iii. Apply general works ridge to valley in the cluster area

- **Planning for production system management**

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

ii. Prepare master plan of PSM (agriculture) activities based on the need of the project area

- **Planning for lively hood activities**

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.

2.2.12 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 5-20 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.

2.2.13 Capacity Building and information, education, communication (IEC) activities

The capacity building needs of watershed people, 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. Detailed action plan for capacity building plan given below

- **Information, Education & Communication (IEC) Activities**

Information, Education and Communication (IEC) is an important component and has a vital role in creating awareness, mobilizing people and lays the basis for successful implementation of integrated Watershed Management Programme.IEC plays a very crucial role in bringing in awareness about IWMP by informing, Educating and persuading people about their roles and responsibilities in watershed management.

TRAINING AND CAPACITY BUILDING PLAN

CAPACITY BUILDING AT COMMUNITY LEVEL

Sl. No.	Title of training	Rationale	Objectives	Target group	Duration Day/s	No of participants-	No. of batches	Amount (Rs. In lakhs)	Expected outcomes
1	Awareness program of IWMP	The watershed community must be made aware of the Program, the concepts, the need and to motivate them to become the part of the programme.	a. To familiarise the concept &basics of IWMP b. For the awareness of present natural condition of the watershed area. c. The scope of water shed development in their area. d. To ensure their Participation for the success of the project	Watershed community	One day	50/60	15	1.5	Community awareness and ensure peoples participation
2	Awareness program of IWMP On production system and micro enterprises (P S &M)&LSS	For the awareness of various PS &M & LSS progammes envisaged in the project, group formation, credit support through Banks, accounting procedures etc.	a. To motivate the community to initiate various PS&M . b. To generate additional income from such activities. c. To aware the concept and necessity of programme. d. To attain self sustainability and women empowerment	SHGs rearing cattle, fodder cultivation pisiculture, apiculture,horticulture,mushroom cultivation, food processing, garment Making, pottery bamboo product making etc or in the concerned trade the Group engaged.	2 Days	10 -25	For each of the above group one batch (10 batch or more) In each watershed	10.4	1.Increase the awareness of the project 2. Increase the standard of living through better per capita income and attain self sustainability

3	Planning and implementation of projects related to creation of common assets.	Creating awareness among UGs regarding the role of creation of common assets.	1.Creating awareness among UGs regarding their responsibility 2. Establishment of common assets. 3.The mode of operation in establi-shing common assets. 4. Financial procedures involved.	UGs	1 Day	2-3 person from each UG	1-2 per watershed	3.888	Empower the UGs to take up the responsibility of creating common assets as well as their future maintenance
4	Awareness program of IWMP Concept of the watershed management , rules and responsibilities	Impart awareness among the watershed communities regarding the concepts of watershed management roles and responsibilities, operational guide lines and financial management etc.	1. To create awareness among the WCs regarding the concept of watershed management. 2. To define the rules and responsibilities of WCs. 3. Financial management of the project. 4. Management of WDT.	Watershed Committee	1 day	30 per batches	4	0.04	Empowerment of WCs for effective implementation of the project and proper maintenance of commonly created assets
5	Empowering peoples representatives in IWMP.	The need for the watershed based development programmes, concepts involved in watershed	1.To create awareness among the people responsibilities regarding the need of watershed based development programmes.	Block &Grama Panchayath members	2 days with 1 day exposure visit	200	5	1.0	Ensure smooth implementation of the project interfere with issues if any in

		development IWMP-its objectives, steps involved in the implementation, financial management etc.	2.Concept of IWMP(awareness) 3.Projects involved in the programmes 4.Scope of the project 5.Rules and responsibilities 6. Financial management.						implementation stage, financial transperancy, ensure peoples participations etc.
6	Awareness program of IWMP Family meeting	Each and every member of a watershed must be aware of the Seriousness of the programme.	a. To familiarise the concept watershed community b. To familiarise the necessity of the project c. To ensure their participation for the success of the project	Watershed community	1 hour(evening)	50/60	2-3 batches per ward	1.0	Individual awareness and ensure peoples participation.
7	Awareness program of IWMP	The school students must be made aware of the programme	1.To familiarise the concept 2. For the awareness of present natural condition of watershed area. 3.Active participation	School students	2 hours	One per school.	In all Aided & Unaided &GOVT school	0.5	The young generation will be conscious about the natural condition
			TOTAL :					**18,68,800**	

Time Table for Community Level Capacity Building

Sl. No	**Title of training**	**Target group**	**Duration Day/s**	**No of partici pants-**	**No. of batches**	Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Au	Sep	Oct	Nov	Dec
1	Awarenes s program of IWMP	1.Farmers 2.Diary farms 3.Youth clubs 4.Rtd.Teacher s 5.Rtd.Staffof Agriculture	One day	50/6 0	15	2012-13												
						2013-14												
						2014-15	* *	* *	* *	*	*	*	*	*	*	*	*	*
2	Awareness program of IWMP On production system and micro enterprises (P S & M) &LSS	SHGs activity wise batches	2 Days	10 - 25	For each of the above group one batch (10 batch or more) In each watershed	2012-13												
						2013-14										* *	*	*
						2014-15	*	*	*	*	*	*	*	*	*	*		
3	Planning and implementa tion of projects related to creation of common assets.	UGs	1 Day	2-3 perso n from each UG	1-2 per watershe d	2012-13												
						2013-14											* * *	* * *
						2014-15	*	*	*	*	*	*		*		*	*	*

4	Awareness program of IWMP Concept of the watershed management , rules and responsibilities	WCs	1 day	30 per batches	4	2012-13												
						2013-14										*	*	*
						2014-15				*								
5	Empowering peoples representatives in IWMP.	GP members BP Members & DP Members	2 days with 1 day exposure visit		5	2012-13												
						2013-14												
						2014-15				*	*	*	*			*		
6	Awareness program of IWMP Family meeting	Family meeting	1 hour(evening)		2-3 batches per ward	2012-13												
						2013-14												
						2014-15					* * * * *	* * * * *	* * * * *	* * * * *	* * * * *	* * * * *	* *	*
7	Awareness program of IWMP	Different schools at watershed area	2 hours		In all Aided & Unaided &GOVT school	2012-13												
						2013-14	*	*	*									
						2014-15	* *	* *	*	*	*	*	*	*	*	*	*	*

CAPACITY BUILDING AT INSTITUTIONAL LEVEL

Sl. No.	Title of training	Rationale	Objectives	Target group	Duration Day/s	No of participants-	No. of batches	Amount (Rs.)	Expected outcomes
1	TOT	Trainers selection and module preparation	1.Concept oriented training 2.To create well trained trainers	Selected persons &officials	2 days	20	2	25000	
2	Awareness of the programme	Subject oriented	1.To families with the objective of programme	WDT,EOs,VEOs,Clercks of BP,Agri,Veterinery,Dairy Departments	1 day	30	1	9000/-	
3	Training on GIS	To familiarise GIS	GIS concept study	WCDC,WDT,VEOs,EOs	3 days	30	1	27000/-	
4	SHG formation	SHG formation PSM&LSS	Aware extension methods of SHG formation	WDT,VEOs,EOs	1 day	20	1	7000/-	
5	Different refreshment program	Upto date guidelines	To make thorow about the guidelines & new GOVT orders	WCDC,WDT,VEOs,Eos, Clercks & Line department staff	1 day	45	4	50000/-	
			TOTAL :					**1.18000**	
			Total to be trained :					**145**	

Time Table for Institutional Level Capacity Building

Sl. No	Title of training	Target group	Duration Day/s	No of participants-	No. of batches	Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Au	Sep	Oct	Nov	Dec
1	TOT	Trainers selection and module preparation	2 days	20	2	2012-13												
						2013-14	*											
						2014-15	*											
2	Awareness of the programme	Subject oriented	1 day	30	1	2012-13												
						2013-14											*	
						2014-15												
3	Training on GIS	To familiarise GIS	3 days	30	1	2012-13												
						2013-14											*	
						2014-15												
4	SHG formation	SHG formation PSM&LSS	1 day	20	1	2012-13												
						2013-14										*		
						2014-15												
5	Different refreshment program	Upto date guidelines	1 day	45	4	2012-13												
						2013-14												
						2014-15			*			*		*				*

IEC PLAN

Sl No	Particulars	Rate (Rs)	Nos	Amount (Rs)
1	Watershed Map Board	7000/-	24	1.68000
2	Dance Drama based on watershed concept	20000	10	2.00000
3	Cloth bags	50	2000	1.00000
4	Sticker, poster with watershed messages		4000	20,000
5	Procession with Band set	30000	12	4.80000
6	Celebration of natural important .days Quiz competition, drawing painting etc.		10	50,000
7	Exposure visit		3	1.50000
8	Lap-top		1	45,000
9	Hand book		3000	1.50000
			Total	**13.63000**

Time Table for IEC Activities

Sl. No	**Title of training**	Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Au	Sep	Oct	Nov	Dec
1	Watershed Map Board	2012-13												
		2013-14												
		2014-15					*							
2	Dance Drama based on waters hed concept	2012-13												
		2013-14												
		2014-15						*	*	*	*	*	*	*
3	Cloth bags	2012-13												
		2013-14												
		2014-15					*							
4	Sticker, poster with watershed messages	2012-13												
		2013-14	*	*	*									
		2014-15												
5	Procession with Band set	2012-13												
		2013-14												
		2014-15												*
6	Celebration of natural important .days Quiz competition, drawing painting etc.	2012-13												
		2013-14			*									
		2014-15			*			*	*	*		*		
7	Exposure visit	2012-13												
		2013-14												
		2014-15				*						*		
8	Lap-top	2012-13												
		2013-14												
		2014-15						*						
9	Hand book	2012-13												
		2013-14												*
		2014-15												

2.2.14 Eligibility for availing the production system funds:

a. 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.

b. Selection of beneficiaries will be done by PIA, in consultation with WC.

c. 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.

d. 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.

e. The beneficiary contribution of farmers will be 20 percent for general category and 10 percent for SC/ST.

2.3 Project management

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

2.3.1 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.

2.3.2 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)

2.3.3 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

2.4 Project Activities

2.4.1 Entry point activities

Entry point activity aims to mobilize the community in support of the subsequent interventions under the project. EPA helps to create rapport with the village community. Entry point activities are identified with a view to showcase them as model intervention which, in turn, would generate the interest of the community in watershed development activities. As noted earlier, community participation is essential to maximize the impact of the project and ensure the sustainability of the project outcomes. In cluster area most of the EPA activities are related to water harvesting like side protection of ponds, VCB construction, Rainwater harvesting tank at Schools and Anganwadies and Solar panel installation at Govt. institutions. EPA activities will implement in the first year. The EPA activities are showing below

- **Entry point activities of cluster**

No	Name Of Watershed & Code	Entry Point Activities suggested	IWMP Amount	Latitude	Longitude
1	Kolakkad (20B2a)	1.Chengamkuzhi Chola Side Protection And Check Dam Construction	3,72,960	$10^0$51'20.2"	$76^0$3'24.30"
		2. Agriculture Nursery	170000		
2	Kattipparuthipadam(20B3a)	1.Choorottukulam side protection 2.Kaithakkulam pond renovation 3. Rain water harvesting tank at Perassannur HSS 4. Biogas plant at Vanitha canteen of PIA.	9,46,560	$10^0$53'16.76" $10^0$51'9.11"	$76^0$2'58.01" 76^0 4' 5.44"

3	Kadungad (20B3b)	Kadungad thodu side protection	2,65,920	$10^0$51'14.29"	76^0.3'19.53"
4	Kothayath thodu (20B3c)	Kolvakkalchira-side protection &shutter installation.	1,02,720	$10^0$54'32.7"	76^0.4'15.63"
5	Poonchola (21T13b)	Solar panel installation at Govt. institutions.	3,95,040	$10^0$55'22.16" E $076^0$2'2.36"	
6	Mannekkara (21T13e)	Solar panel installation at Govt. institutions	2,14,080		
7	Parithi (21T13f)	Solar panel installation at Govt. institutions	2,00,640		
8.	Pakaranallur (21T13g)	1. Rain water harvesting tank at Anganwadi (NO.101),Pakaranellur	1,81,920	N $10^0$52'41.1" E $076^0$01'11.1"	

2.4.2 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 flavours 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 flavouring 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.

- **Paddy Cultivation**

Rice is the seed of the monocot plants Oryza sativa (Asian rice) or Oryza glaberrima (African rice). As a cereal grain, it is the most widely consumed staple food for a large part of the world's human population, especially in Asia. It is the grain with the second-highest worldwide production, after maize (corn).Since a large portion of maize crops are grown for purposes other than human consumption, rice is the most important grain with regard to human nutrition and caloric intake, providing more than one fifth of the calories consumed worldwide by the human species. Rice cultivation is well-suited to countries and regions with low labour costs and high rainfall, as it is labour-intensive to cultivate and requires ample water. Rice can be grown practically anywhere, even on a steep hill or mountain. Although its parent species are native to Asia and certain parts of Africa, centuries of trade and exportation have made it commonplace in many cultures worldwide.

- **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

Detailed estimate

Estimate amount: 14352/100m

Estimate for a 100 m length:

1. Cleaning grass and other ove
2. r growth of vegetation etc. Complete.

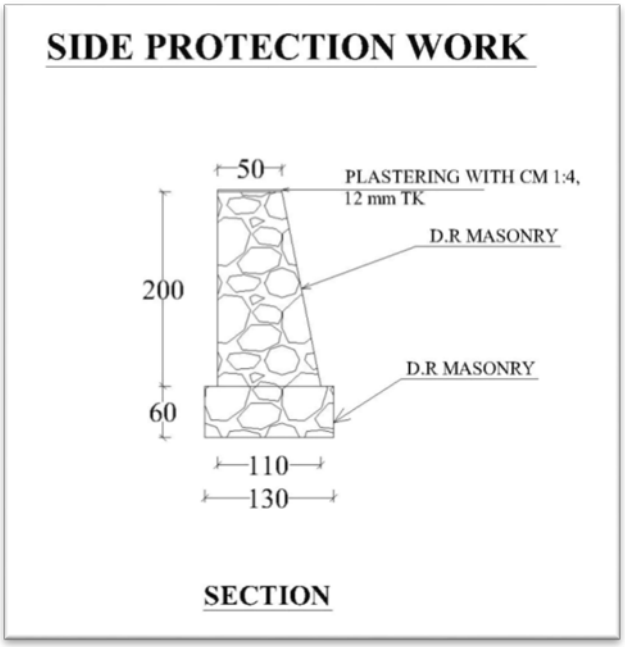
   1*100.00*1.00=100m^2
   Sa y 10m^2 @ Rs.177/100m^2----------Rs.172.00
3. Earth work excavation in ordinary soil for foundation and initial lead up to 50m and left up to 1.50m including breaking clods, watering , Ramming and sectioning of soil tank etc complete.
   1*100.00*0.30*0.20=6m^3
   Say 6m^3 @ Rs.1115.92/10m3----------Rs.669.55
4. Pitching work with locally available dry rubble and back filling of the bund including all cost of materials and labour charges, conveyance etc. complete.
   L.S Rs.13510.4

   14352.00
   ========

   (Rupees fourteen thousand three hundred and fifty two only)
   Rs. 14352/100^{m2} or
   Rs. 14352/100m length of 1m height
   or Rs. 143.52/m

- **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.



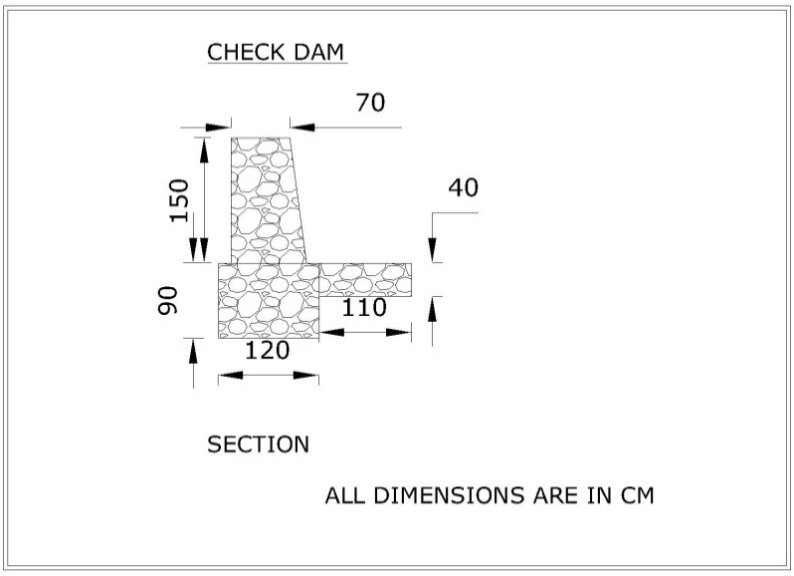
- **Farm pond**

Means a deepwater 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, bio swale, or drainage ditch. Similar to drop structures in purpose, they reduce erosion and gulling 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 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.

2.4.3 Production system and microenterprises

- **Bee Keeping**

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.

- **Pisiculture**

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**

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 is also 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
- Farm Pond Renovation
- Well Construction
- Water absorption Pit
- Tuber Crops

2.4.4 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 fibre. 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 giving birth. Their gestation period ranges to 31 days. They are prolific breeder.

CHAPTER - III
GENERAL DESCRIPTION OF THE PROJECT AREA

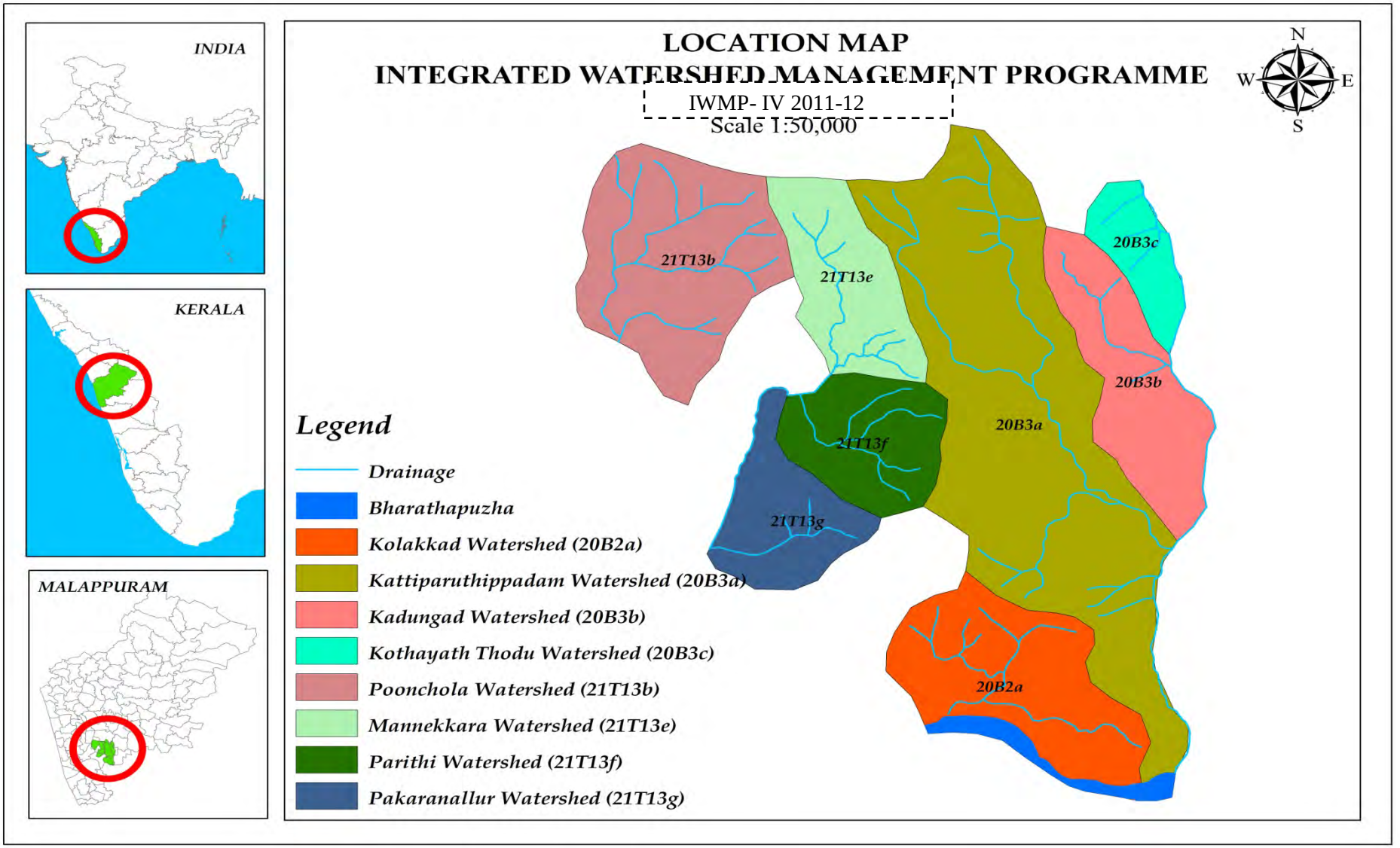
Project Area

Kuttippuram Block is mainly on the catchment area of the Bharathapuzha with 27 small Watersheds. Among these 8 Micro watersheds (In 5 Panchayat) are to be treated in IWMP Project. Total area of watershed is 5583 Ha.

The total land area of Kuttippuram block is 178.68 square Km. Out of this 75% of land is suitable for agriculture. The highest places of these areas are abundended due to hard laterite stones. Small and micro natural water flows enriched the valleys. Natural calamities as well as the deliberate interferences of modern human beings reduced the productivity. The unavailability of labours and increasing cost of production tend the farmer to leave farming. The over exploitation of sand kills our beloved 'Nila'. There is a tendency to leave agriculture fields. Still the old generation loves agriculture.

3.1 Location and Extent

The IWMP- IV 2011-12 Project area is situated in the central part of the Kuttippuram Block. The total extent of the cluster is 5583 hectares. The cluster area bounded on the North by Marakkara Grama Panchayath, east by Irimbiliyam Grama Panchayath and south Bharathappuzha River.


INDIA
KERALA
MALAPPURAM
LOCATION MAP
INTEGRATED WATERSHED MANAGEMENT PROGRAMME
IWMP- IV 2011-12
Scale 1:50,000
N
W
E
S
21T13b
21T13e
20B3c
20B3b
20B3a
21T13f
21T13g
20B2a
Legend
Drainage
Bharathapuzha
Kolakkad Watershed (20B2a)
Kattiparuthippadam Watershed (20B3a)
Kadungad Watershed (20B3b)
Kothayath Thodu Watershed (20B3c)
Poonchola Watershed (21T13b)
Mannekkara Watershed (21T13e)
Parithi Watershed (21T13f)
Pakaranallur Watershed (21T13g)

3.3 Basic information of the project area

State	District	Taluk	Block	Project	Watersheds				Gramapanchayat	Wards covered	Total Area	Treatable area	Project Amount (Rs) (In lakhs)
					Name	Code No	Area (Ha)	Treatable Area					
Kerala	Malappuram	Tirur	Kuttipuram	IWM[P –IV 2011-12	KOLAKKAD	20B2a	777	777	Kuttipuram	7,8,9,11,12,13,14,6	5583 Ha	5583 Ha	66996000
					KATTIPARUTHIPPADAM	20B3a	1972	1972	Kuttipuram ,	9,11,10			
									Valanjeri,	1,2,13,14,15,17,18,19,20,21 ,12,16,3,4			
									Athavanad	6			
									Marakkara	11			
					KADUNGAD	20b3b	554	554	Vallanjeri	3, 4, 5, 6, 9, 11, 12 & 16.			
					KOTHAYATH THOD	20B3c	214	214	Edayure	16,17,18			
					POONCHOLA	21T13b	823	823	Athavanad	19,20,21,22,15,16,17,18			
					MANNEKKARA	21T13e	446	446	Athavanad	5,7,6,8,9,13,14			
					PARITHI	21T13f	418	418	Athavanad	10,9,11,13			
					PAKARANALLUR	21T13g	379	379	Kuttipuram	3,22,21			
									Athavanad	11			

3.4 Weightage of the cluster area

No	Name of the project	No of micro watershed to be proposed	Proposed project area	Proposed Cost	Weightage under the criteria													
																		Average
1	IWMP – IV – 2011/12	8	5583 Ha	Rs: 66996000	38	24	0	80	16	0	120	58	45	0	50	120	0	69

3.5 Criteria for Selection

SL NO	Criteria for selection of watershed	Maximum score			Range and scores	
1	Poverty index (% of poor to population)	10	Above 80%(10)	80 to 50% (7.5)	50to 20%(5)	Below 20% (2.5)
2	%SCST population	10	More than 40%(10)	20 to 40% (5)	Less than 20%(3)	
3	Actual wages	5	Actual wages are significantly lower than minimum wages(5)	Actual wages are equal to or higher than minimum wages(0)		
4	% of small and marginal farmers	10	More than 80%(10)	50to 80%(5)	Less than 50%(3)	
5	Groundwater status	5	Over exploited(5)	Critical(3)	Sub critical(2)	Safe(0)
6	Moisture index/DPAP/DDP block	15	-66.7 &below(15)DDP Block	-33.3 to -66.6(10) DPAP Block	0 to-33.2(0)non DPAP/DDP Block	
7	Area under rain fed agriculture	15	More than 90%(15)	80to 90%(10)	70 to 80%(5)	Above 70%(rejected)
8	Drinking water	10	No source(10)	Problematic village(7.5)	Partially covered(5)	Fully covered(0)
9	Degraded land	15	High-above 20%(15)	Medium-10 to 20%(10)	Low-less than 10% of TGA(5)	
10	Productivity potential of land	15	Lands with low production &where productivity can be significantly enhanced with reasonable efforts(15)	Lands with moderate production &where productivity can be enhance with reasonable efforts(10)	Lands with high production &where productivity can marginally enhanced with reasonable efforts(5)	
11	Contiguity to another watershed that has already been developed/treated	10	Contiguous to previously treated watershed &contiguity within the micro watersheds in the project(10)	contiguity within the micro watersheds in the project but non contiguous to previously treated watershed(5)	Neither contiguous to previously treated watershed nor contiguity within the micro watershed in the project(0)	
12	Cluster approach in the plains(more than one contiguous micro watersheds in the project)	15	Above 6 micro watersheds in cluster(15)	4to6microwatershed(10)	2 to 4 micro water sheds in cluster(5)	
	Cluster approach in the hills(more than one contiguous micro watersheds in the project)		Above 5 micro watersheds in the cluster(15)	3 to 5 micro watersheds in the cluster(10)	2 to 5 micro watersheds in cluster(5)	

Source: IWMP PPR, Kerala, The weight age of the cluster area is 67 as per SPSP

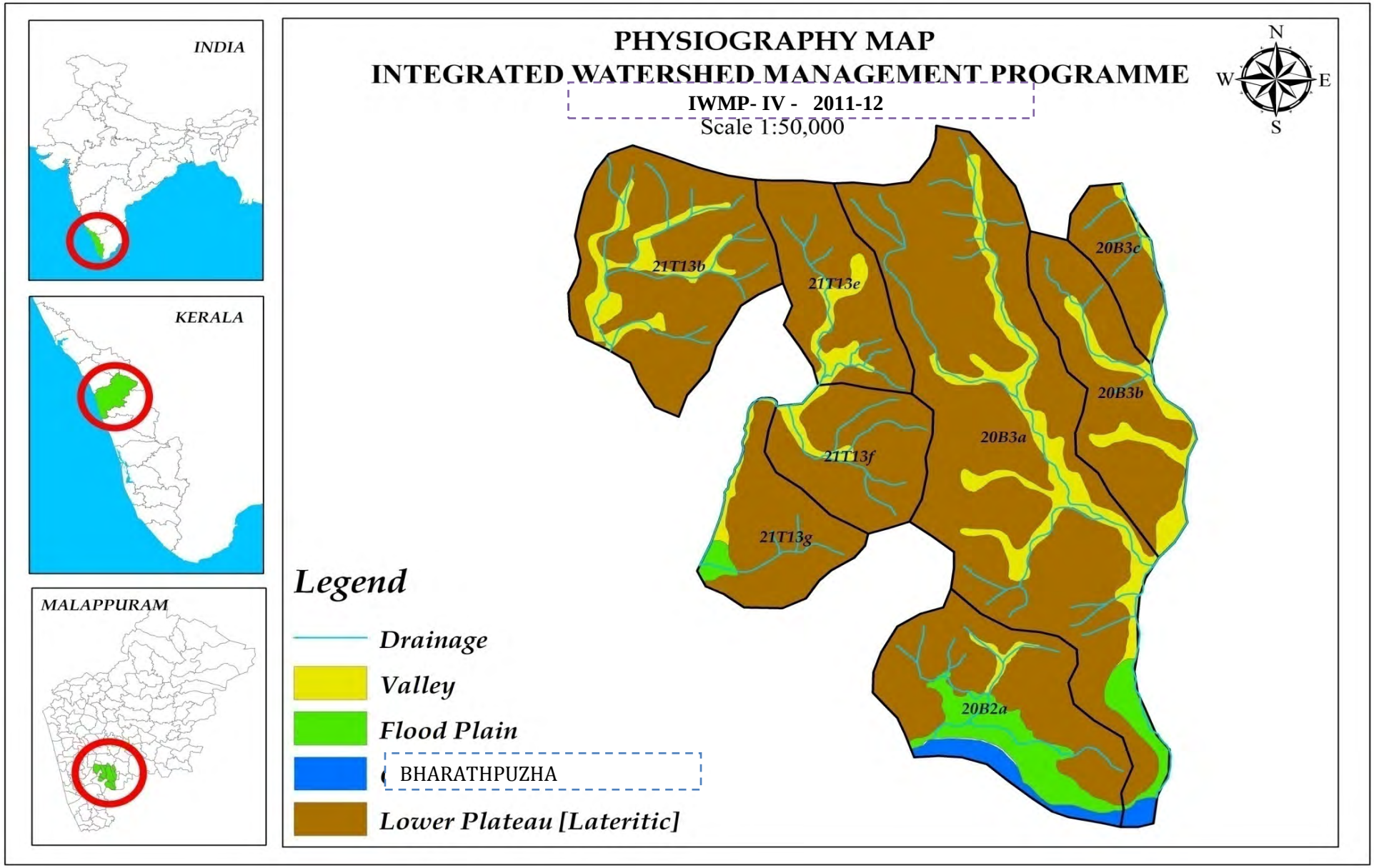
3.6 Physiography

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. River Bharathapuzha is flowing through the Southern portion of the cluster area. Most of the streams are joining to Bharathapuzha.

Major drains in the project area

Major drains	1. punchapadam thod 2.kolothod thod 3. Valandi chira thod 4. Ithiri thod 5. Pannikandam thod 6. Kaippuram thod 7. kadungad thod 8. chelappra thod

Project Name	Elevation	Topography	Major Drainage
IWMP –IV- 2011/12	140 Metre (MSL)	Flat, Undulating Topography	Bharathapuzha


INDIA
KERALA
MALAPPURAM
PHYSIOGRAPHY MAP
INTEGRATED WATERSHED MANAGEMENT PROGRAMME
IWMP- IV - 2011-12
Scale 1:50,000
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21T13b
21T13e
20B3c
20B3b
20B3a
21T13f
21T13g
20B2a
Legend
Drainage
Valley
Flood Plain
BHARATHPUZHA
Lower Plateau [Lateritic]

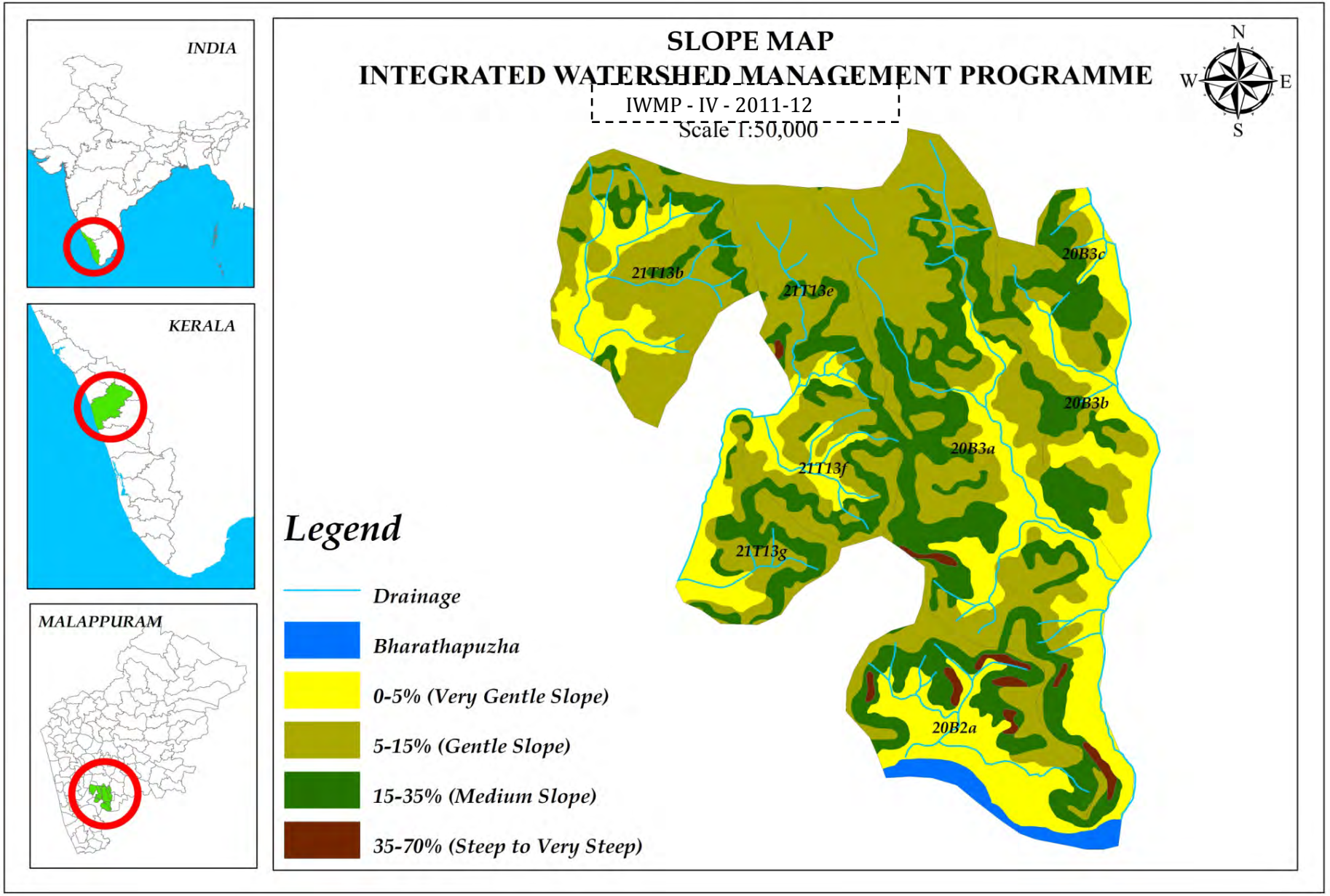
3.7 Slope

Majority of the area is constituted by Gentle Slope (0 – 5%) (2522 hectares) which is 45.17% of the total area. Moderately sloping area covered 1516 hectares which is 27.15%, Very Gentle Slope covered 1500 hectares which is 28.86 % and steep to very steep slopes covered 45 hectares which is 0.80 % of the total area

- Slope categories of cluster area

Slope	Area In Ha	Area At %	% of slope
Very Gentle Slope	1500	26.86	0 - 5%
Gentle Slope	2522	45.17	5 -15%
Moderately Slope	1516	27.15	15 -35
Steep to Very Steep slope	45	.80	35 -70
Total	5583	100	

Source: ASTER G


INDIA
KERALA
MALAPPURAM
SLOPE MAP
INTEGRATED WATERSHED MANAGEMENT PROGRAMME
IWMP - IV - 2011-12
Scale 1:50,000
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21T13b
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20B3c
20B3b
20B3a
21T13f
21T13g
20B2a
Legend
Drainage
Bharathapuzha
0-5% (Very Gentle Slope)
5-15% (Gentle Slope)
15-35% (Medium Slope)
35-70% (Steep to Very Steep)

3.8 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 some years 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.

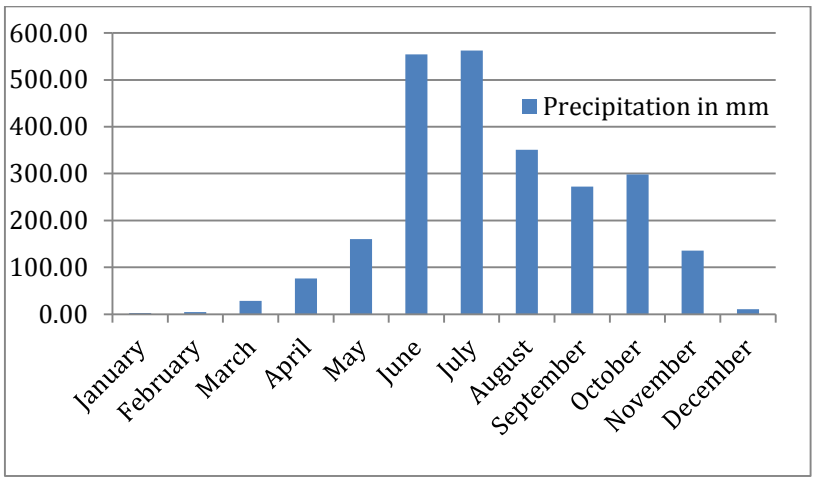


Figure No.3: Monthly Mean Precipitation (2002-2012)

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

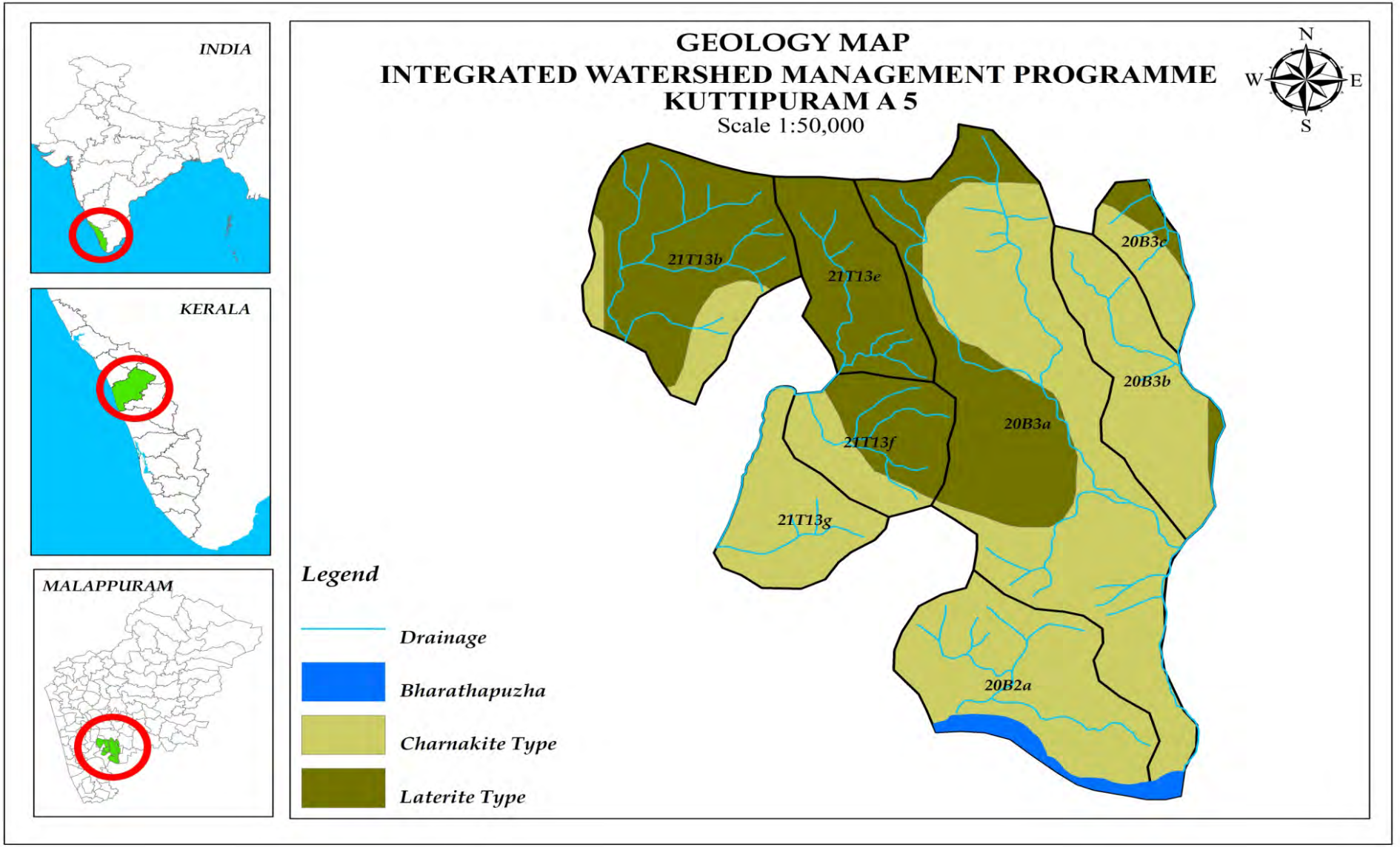
- **Monthly wise Rainfall**

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

3.9 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. Charnakite group of rocks comprises 61% of total project area i.e. about 3456 ha. 523.62 And Laterite type Comprises 39% of total project area about 2127 ha.


INDIA
KERALA
MALAPPURAM
GEOLOGY MAP
INTEGRATED WATERSHED MANAGEMENT PROGRAMME
KUTTIPURAM A 5
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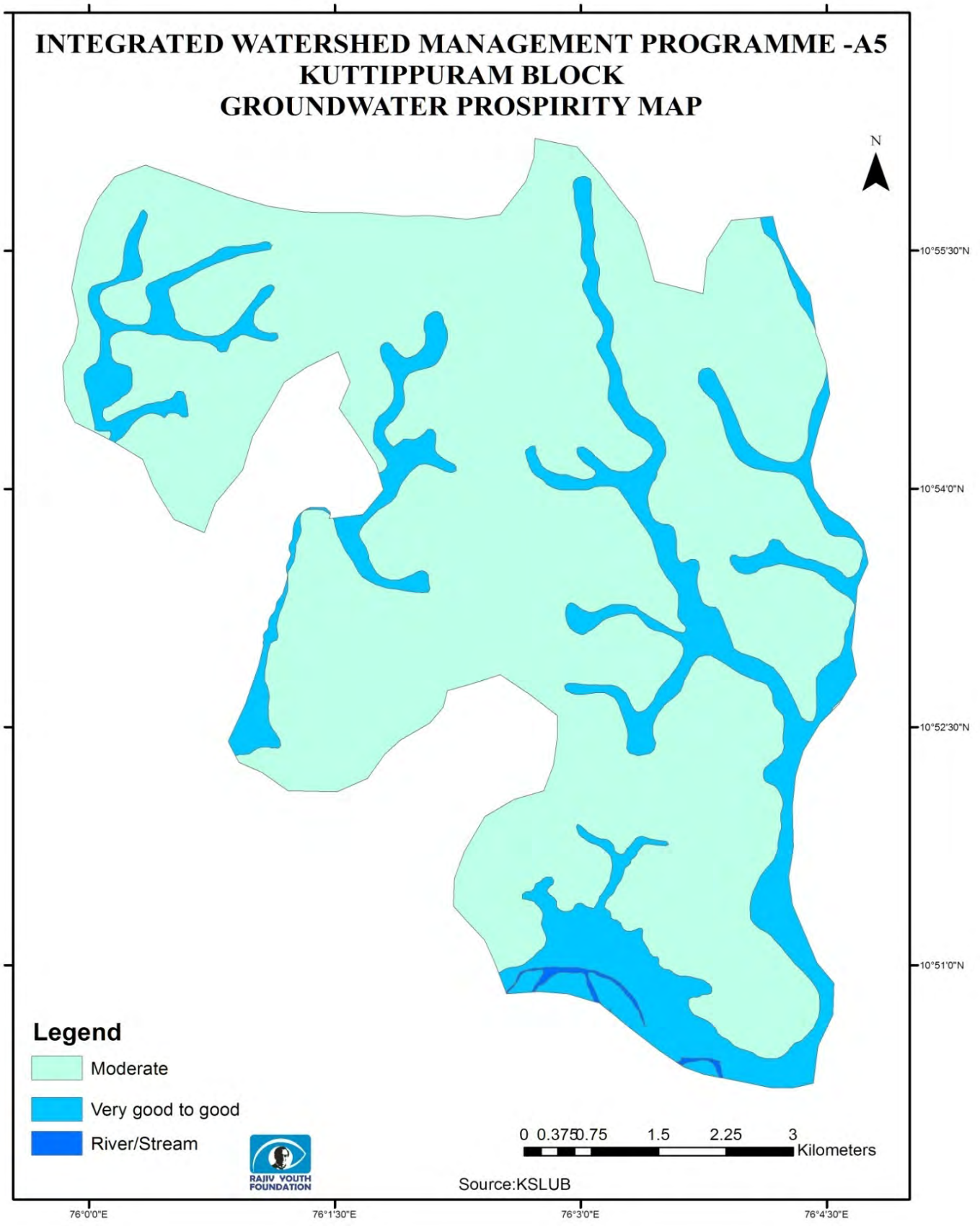
20B3c
20B3b
20B3a
21T13f
21T13g
20B2a
Legend
Drainage
Bharathapuzha
Charnakite Type
Laterite Type

3.10 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.

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



(Ground water map of IWMP –IV- 2011/12)

3.11 Water supply

Watershed Name	Water supply Of G.P	KWA	Block Panchayath
Kattiparuthipadam	1.Kothol drinking water supply scheme, 2.Palliparamba water supply scheme 3.Parambolam water supply scheme 4.Vattappara water supply scheme 5.Mailadi water supply scheme 6.Kalattuchola 7.Hilltop colony 8. Manhappara sc colony	Japan drinking water supply.	Rajiv Gandhi Swajaldhara drinking water scheme
Kolakkad	1 Kodikunnu drinking water supply scheme 2. Chembanadan SC colony drinking water supply scheme. 3. Perumparambu drinking water supply scheme 4. Edachalam drinking water supply scheme 5. Hill top colony drinking water supply scheme		
Kattiparuthipadam	1.Kothol drinking water supply scheme, 2.Palliparamba water supply scheme 3.Parambolam water supply scheme 4.Vattappara water supply scheme 5.Mailadi water supply scheme 7.Hilltop colony 8. Manhappara sc colony	Japan drinking water supply.	Rajiv Gandhi Swajaldhara drinking water scheme
Poonchola	Mulakkathodi, Chakkala colony , Chakkumthodi , Kavungal Kunnu , Pazhiyottumana drinking water scheme		
Mannekara	Koottadammal , rahath nagar , rayinpadi , chottur , mannekkara , parakkunnath drinking water supply scheme		
Parithi	Asaripadi , thenayi , parapuram , kajappadi drinking water scheme		
Pakaranallur	1. Narikulam Water supply scheme, 2. Jalanidhi		
Kadungal	Pacheeri Water supply Moochikkal dweep water supply scheme Mailady Water supply scheme		

- **Irrigation**

Source	Area	%
Streams	221.8	1.8
Ponds	83.5	1.49
Well	100 Ha	3.97

Source: Baseline Survey

3.12 Socio-Economic Condition

Watershed Name	House Holds	Total Population	Male	Female	SC	ST	BPL	Small Farmers	Marginal farmers	Land less
Kolakkad	2782	11759	6011	5748	189	Nil	1009	2128	518	136
Kattipparuthipadam	5514	28397	14457	13940	356	Nil	1787	3970	1460	84
Kadungad	1237	6285	3214	3071	93	Nil	313	848	383	6
Kothayath thodu	835	3526	1831	1695	167	Nil	335	508	310	17
Poonchola	1961	10789	5623	5166	48	Nil	513	1428	449	84
Mannekkara	1208	6418	3316	3102	20	Nil	418	919	283	6
Parithi	472	2458	1243	1215	43	Nil	145	269	201	2
Pakaranallur	510	2528	1305	1223	55	Nil	175	354	156	0
Total	14519	72160	37000	35160	971	Nil	4695	10424	3760	335

Source: Baseline Survey

3.12.1 Age Wise Classification

Watersheds	Particulars	0-5	15	15-40	40-60	60 Above	Total
Kolakkad	Male	332	1193	2393	1579	524	6011
	Female	284	1121	2343	1518	482	5748
Kattipparuthipadam	Male	1119	2464	6104	3927	843	14457
	Female	1047	2351	5982	3753	807	13940
Kadungad	Male	101	424	1774	702	213	3214
	Female	96	405	1695	670	204	3071
Kothayath thodu	Male	92	375	715	476	173	1831
	Female	84	344	660	439	168	1695
Poonchola	Male	169	922	2997	1369	166	5623
	Female	142	816	2811	1277	128	5174
Mannekkara	Male	220	438	1830	724	104	3316
	Female	206	409	1712	677	98	3102
Parithi	Male	49	164	686	271	73	1243
	Female	45	160	677	265	68	1215
Pakaranallur	Male	87	172	720	284	42	1305
	Female	81	161	680	267	34	1223

Source: Baseline Survey

3.12.2 Employment Analysis

Sl No.	Employment	Total
1	Agriculture	11278
2	Business	528
3	Coolie	14539
4	Government	1066
5	MGNREGS	3978
6	Pension	2475
7	Student	15246
8	others	631
	Total	49741

Source: Baseline Survey

3.12.3 Income Analysis

Sl No.	Income	Total
1	0-5000	7502
2	5001-10000	5562
3	10001-25000	1300
4	25001-50000	155
5	50001-100000	nil
6	Above 100001	nil
	Total	14519

Source: Baseline Survey

3.12.4 Type of Dwelling

House Type	No. of Families
Concrete	7223
Tiled	6341
Huts	829
Temporary Shelter	231
Total	14624

Source: Baseline Survey

3.13 Live Stock Population

Watersheds	Cow	Milk /yr /litre	Buffalo	Milk /yr /litre	Goat	Milk/Yr/ litre	Poultry	Duck	Rabbit	Piggery	Milk Marketing Societies
Kolakkad	138	99360	20	7200	251	25423	2129	133	32	Nil	1
Kattipparuthipadam	332	239040	17	6120	1079	120848	5076	500	133	Nil	2
Kadungad	96	69120	1		149	13410	1445	280	6	Nil	Nil
Kothayath thodu	90	64800	6	485	114	18240	577	48	16	Nil	Nil
Poonchola	236	169920	27	8451	545	46325	3530	378	112	Nil	1
Mannekkara	151	108720	21	7455	357	49980	1866	146	32	Nil	Nil
Parithi	34	24480	1		96	8736	543	26	4	Nil	Nil
Pakaranallur	66	47520	8	3854	94	8460	497	22	Nil	Nil	Nil

Source: Baseline Survey

3.14 Details of self help groups and neighbourhood groups

Watershed Name	No Of SHGS/UGS	People Registered Under MGNREGS	No Of Federations Of SHGS
Kolakkad	3	795	Nil
Kattipparuthipadam	13	1980	Nil
Kadungad	13	275	Nil
Kothayath thodu	3	234	Nil
Poonchola	12	355	2
Mannekkara	3	156	Nil
Parithi	3	49	Nil
Pakaranallur	5	134	

Source: Baseline Survey

3.15 Infrastructure

Infrastructure	Number	Electricity	Drinking Water Facility	Toilet
Angan Wadies	71	Yes	Yes	Yes
Lp School	18	Yes	Yes	Yes
Up School	7	Yes	Yes	Yes
High School	3	Yes	Yes	Yes
Phc	12	Yes	Yes	Yes
CLINIC(Pvt.Hospitals)	3	YES	YES	YES
Ayurveda &Homeo Hospital	4	Yes	Yes	Yes
Post Office	4	Yes	No	Yes
Ration Shop	3	Yes	No	No
Market	2	Yes	No	No

Temple	21	Yes	Yes	Yes
Mosque	61	Yes	Yes	Yes
Banks		Yes	Yes	Yes
Colony	15	Yes	Yes	Yes
Library	3	Yes	No	No
Clubs	37	Yes	No	No
Madrassa	45	Yes	Yes	Yes
Village Office	3	Yes	Yes	Yes
Agriculture Office	2	Yes	Yes	Yes
Milk Society	3	Yes	No	No
Dispensary	2	Yes	Yes	Yes

Source: Baseline Survey

3.16 Land Holding Size

Project Name	0-5 Cents	5-50	50-250	250-500	Above 500 cents
IWMP –IV – 2011-12	3566	7387	2527	871	168

Source: Baseline Survey

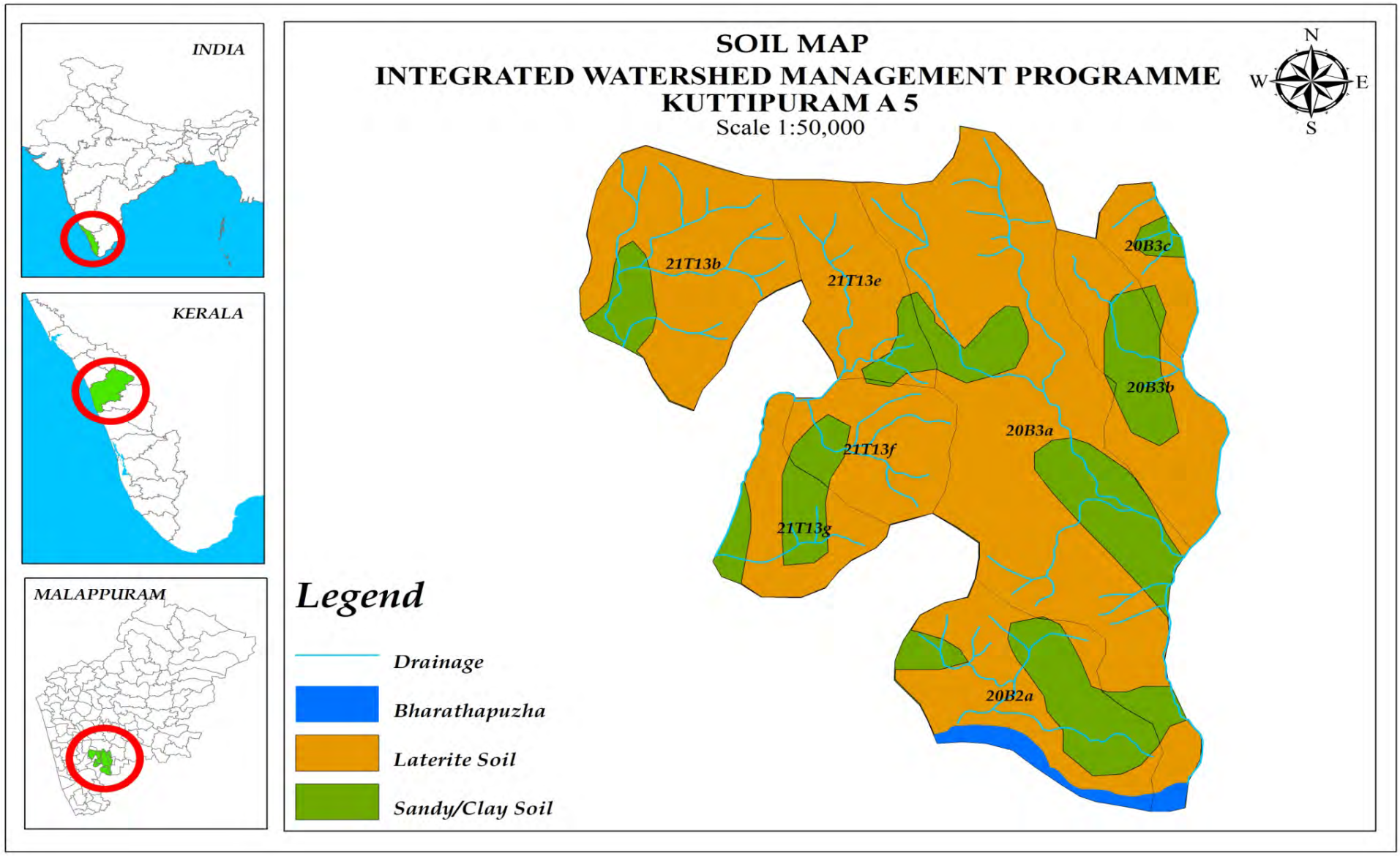
3.17 Soils

Major part of the cluster area is underlained by Laterite Soil, Constitute 4289 Ha. The characteristics of this soil is deep, well drained, gravelly clay soil with moderate surface gravelliness, and ironstone layer at gently sloping mid land laterities, with moderate erosion associated with lateritic outcrops. The cluster area also Constitute Sandy/Clay Soil about 1294 Ha the characteristics of this soil is Very Deep, Moderately well drained, clayey soils with moderately shallow water table in nearly level narrow valleys, with slight erosion associated with very deep, imperfectly drained, clayey soils with moderately shallow water table on nearly level lands

Details of soils in the project area

Soil	Area/Ha	Area at %
Laterite	4289	76.82
Sandy/Clay soil	1294	23.17
Total	5583	100

Source: Department of Soil Conservation, Malappuram


INDIA
KERALA
MALAPPURAM
SOIL MAP
INTEGRATED WATERSHED MANAGEMENT PROGRAMME
KUTTIPURAM A 5
Scale 1:50,000
N
W
E
S
21T13b
21T13e
20B3c
20B3b
20B3a
21T13f
21T13g
20B2a
Legend
Drainage
Bharathapuzha
Laterite Soil
Sandy/Clay Soil

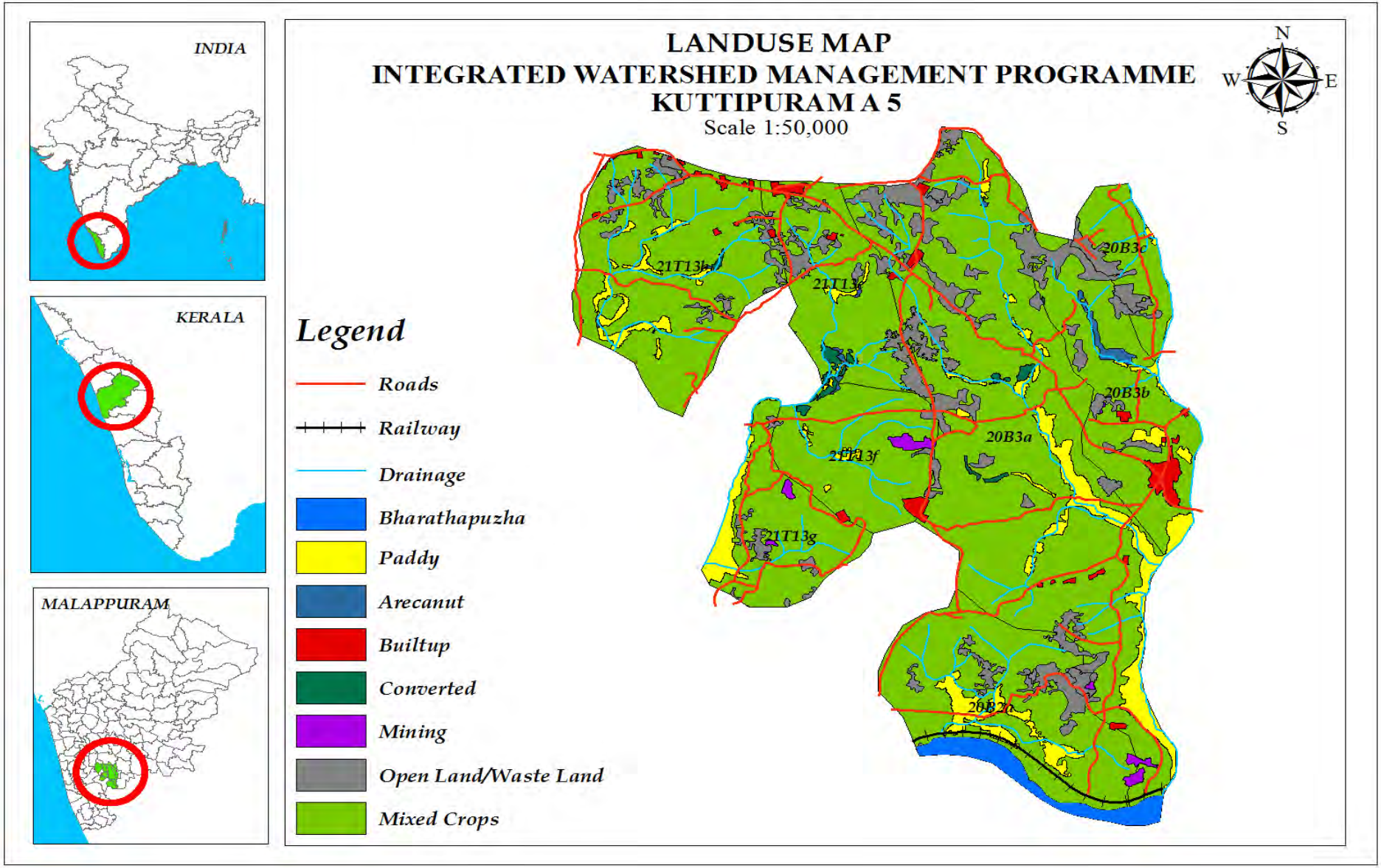
3.18 Land Use

	20B3	21T13B	20B3C	21T3E	20B3B	21T13F	21T13G	20B2A	TOTAL
Coconut	52.42	30.95	6.92	10.28	51.64	1.14	0	11.83	165.18
Paddy	110.51	57.09	21.11	33.92	40.06	25.04	29.33	104.77	421.83
Mixed	1544.64	670.39	146.41	332.39	374.18	356	305.5	527.12	4256.63
Open Land	225.28	57.58	27.13	58.61	72.37	6.42	22.91	61.55	531.85
Water	28.85	0	4.22	3.52	7.5	9	3.22	30.95	87.26
Built Up	10.3	6.99	0	7.28	6.25	6.25	1.89	24.63	63.59
Mining			8.21	0	2	16.15	16.15	16.15	58.66
TOTAL	**1972**	**823**	**214**	**446**	**554**	**420**	**379**	**777**	**5585**

3.19 Cropping Pattern

	Coconut	Rubber	Paddy	Banana	Areacanut	Pepper	Cashew	Mixed crop	TAPIOCA	TOTAL
KOLAKKAD 20B2A	24.32	70.13	102.21	121.42	131.51	47.01	24.17	65.12	57.83	643.72
KATTIPARUTHIPADAM 20B3A	196.34	115.6	110.54	305.4	275.2	86.65	77.4	344.04	196.4	1707.57
KADUNGAL 20B3B	61.64	83.4	40.06	94.2	27.75			82.31	76.52	465.88
KOTHAYATH THOD 20B3C	12.04	47.13	21.12	34.31	12.02			21.5	26.32	174.44
POONCHOLA 21T13B	70.45	124.64	57.4	136.42	106.6			164.4	98.52	758.43
MANNEKARA 21T 13E	20.06	58.12	33.92	86.04	81.42	12.5	7.4	51.03	26.1	376.59
PARITHI 21T 13F	8.01	112.41	25.04	140.13	55.04			25.54	16.01	382.18
PAKARANELLOOR 21T13G	13.32	89.21	29.33	74.41	48.52			37.53	42.51	334.83
Total	**406.18**	**700.64**	**419.62**	**992.33**	**738.06**	**146.16**	**108.97**	**791.47**	**540.21**	**4843.64**

Source: baseline survey


INDIA
KERALA
MALAPPURAM
LANDUSE MAP
INTEGRATED WATERSHED MANAGEMENT PROGRAMME
KUTTIPURAM A 5
Scale 1:50,000
N
W
E
S
Legend
Roads
Railway
Drainage
Bharathapuzha
Paddy
Arecanut
Builtup
Converted
Mining
Open Land/Waste Land
Mixed Crops
21T13h
21T13
20B3c
20B3b
20B3a
21T13f
21T13g
20B2c

CHAPTER-IV

PROBLEMS

4.1 Agricultural sector:

1. Lack of Irrigation Facilities
2. Lack of bio-fertilizers
3. Inflation of Chemical fertilizers
4. Ignorance about scientific agriculture.
5. Lack of skilled of Labours.
6. Pest attack on account trees.
7. Hike in cost of productivity and lack of getting fair value for crops due to following the traditional agricultural methods.

4. 2. Animal husbandry sector:

1. Scarcity of hybrid cows and goats.
2. Hike in price of cattle feed.
3. Lack of proper facilities for milk selling.
4. Lack of scientific, modernized cow shed.

4.3 Water and soil conservation sector:

1. Soil erosion from places like Thaniyappankunnu mala, and Mailadikunnu hills
2. 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. Water reservoirs being made impure by sewage disposal.
6. Over use of chemical fertilizers and insecticides.

4.4 Suggestions

- 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 and earthworms compost.
- Use bio-insecticides instead of chemical insecticides.
- Construction of new ponds and water reservoirs to encourage, summer vegetable cultivation.
- Implement school vegetable garden project.
- Implement drip irrigation.
- 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 schools and other institution.
- Construction of rain water harvesting pits, and reservoirs and biogas plants.
- Make high yielding cattle available.
- Encourage fodder grass - azoles cultivation.
- Protection of side walls of lakes.
- Establishment of factories for the production of cattle feed at government level.

PART II

INDIVIDUAL WATERSHEDS

KOLAKKAD WATERSHED (20B2a)

1. Introduction

. Kolakkad watershed (20B2a) is situated in Kuttipuram Grama panchayath and it covers wards 6, 7, 8,12,13,14 completely and 9 and 11 partially. The total area of the watershed is 777 Hectors. The boundary of the watershed is North Pandikashala,Kodikunnu area, south Bharathapuzha, East Perassannur and West by karattuchola,Manukutty Padi. The important places are Manukutipadi, Karimbana peedika, Perumparambu, Cholakkal Jumamasjid, Kundukad Niskarapalli, Moothazhath chola, Karattuchola etc.

2. Physiography

Kolakkad watershed is located in midland area. The highest elevated area(314 mtrs msl) of watershed located in northern part, which is near to National Highway 17.The lowest point located near to Bharathapuzha ,which is southern boundary of the watershed. The slope is from north to south also most of the streams are originating from the northern part.

3. Watershed character

The shape of the watershed is Triangular. The major streams are kallicholakaithodu, Kidappu chola.Moothazhath chola, Kizhakkekara thodu, Pannikottu thodu, Karattuchola and Irumbalikulam. The total length of major in the watershed is 2.5 kms, which is starting from Perumparambu.

4. Irrigation

Watershed Name	Well	Pond	Stream
Kolakkad	8 Ha	4 Ha	24.3 Ha

Source: Baseline survey

5. Live Stock

Watershed Name	Cow	Milk (Litre)	Buf falo	Milk (Litre)	Goat	Milk (Litre)	Poultry	Duck	Rabbit	Milk Marketing Societies
Kolakkad	138	99360	20	7200	251	25423	2129	133	32	1

Source: Baseline Survey

6. Inferences

Kolakkad watershed is located near to Bharathapuzha. Northern part of the watershed faces extreme water scarcity in summer season.

ESTIMATES

7. Watershed development funding pattern

Entry Point	*4%*	*372960*
Natural Resource Management	*56%*	*5221440*
Productive System And Micro Enterprises	*10%*	*932400*
Livelihood Support	*9%*	*839160*
Management Component	*21%*	*1958040*
TOTAL(In Rupees)		*9324000*

8. Entry point activities

Activity: Chengamkuzhi Chola Side Protection and Check Dam Construction

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.

SL NO	NAME OF WORK :	ESTIMATE COST
1	Chengamkuzhi Chola Side Protection and Check Dam Construction	372960
2	agro nursery	170000

9. Natural resource management (NRM)

The Kolakkad watershed is located in an elevated area. So that suitable interventions to be made for this area. In the first year, is going with DPR preparation and Implementation of entry point activities and all other developmental activities are doing from the second year onwards. Master plan and year wise plan for NRM given below.

10. Master plan and year wise plan of natural resource management

KOLAKAD WATERSHED- MASTER PLAN	Unit	Volume/Units	Unit cost	Total IWMP Share
AFFORESTATION				
TEAK,MAHAGANI	Ha	4	16000	64,000
NEEM	Ha	2.25	2580	5,805
HORTICULTURE			0	-
FRUIT PLANTS	Nos./KIT	3035	150	4,55,250
AGRICULTURE				-
VEGETABLE GARDEN	/hectare	4.5	37500	1,68,750
BANANA CULTIVATION (Tissue culture)	/hectare	5	50000	2,50,000
SPICES CULTIVATION (Ginger, Turmeric)	/hectare	3.5	30000	1,05,000
TUBER CROPS	/hectare	5	30000	1,50,000
FODDER GRASS CULTIVATION	/hectare	2.5	6000	15,000
MEDICINAL PLANT CULTIVATION				
1.KATTARVAAZHA		0.5	50000	25,000
2.CHITTAADALODAKAM		0.5	50000	25,000
SOIL & MOISTURE CONSERVATION				-
STONE PITCHED BUND	/hectare	11	12000	1,32,000
EARTHERN BUND	/hectare	14	12000	1,68,000
VEGETATIVE AND ENGINEERING STRUCTURES				-
SIDE PROTECTION OF STREAMS				-
1.ITHIRI THODU KAYPRA THODU	m3	400	3275	13,10,000
2.MUTHAZHATH CHOLA (KAITHODU)	m3	120	1417	1,70,000

3.KIZHAKEKARA THODU	m3	200	2650	5,30,000
WATER HARVESTING STRUCTURE(NEW CREATED)				
CHECK DAMS	Nos	8	20000	1,60,000
ITHIRI THODU KAYPRA THODU , .MUTHAZHATH CHOLA , KIZHAKEKARA THODU				
WELL RECHARGE	Nos	80	15000	12,00,000
WATER ABSORBTION PIT	Nos	584	107.14	62,570
WATER HARVESTING STRUCTURE(RENOVATION)				
FARM POND (MOOTHAZHATH CHOLA , KIZHAKAKARA)	Nos	2	105000	2,10,000
WELL (PATHIPARAMBA COLONY WELL)	Nos	1	15000	15,000
ROUNDED FIGURE				65
TOTAL				52,21,440

Second Year				
	Unit	Volume/Units	Unit cost	Total IWMP Share
AFFORESTATION				
TEAK,MAHAGANI	Ha	4	16000	64,000
NEEM	Ha	1	2580	2,580
FRUIT PLANTS	Nos./KIT	2036	150	3,05,400
AGRICULTURE				
VEGETABLE GARDEN	Ha	2	37500	75,000

BANANA CULTIVATION (*Tissue culture)*	Ha	2	50000	1,00,000
SPICES CULTIVATION *(Ginger, Turmeric)*	Ha	2	30000	60,000
TUBER CROPS	Ha	2	30000	60,000
FODDER GRASS CULTIVATION	Ha	2	6000	12,000
MEDICINAL PLANT CULTIVATION				
1.KATTARVAAZHA	Ha	0.5	50000	25,000
2.CHITTAADALODAKAM	Ha	0.5	50000	25,000
SOIL & MOISTURE CONSERVATION				
STONE PITCHED BUND	Ha	11	12000	1,32,000
EARTHERN BUND	Ha	2	12000	24,000
VEGETATIVE AND ENGINEERING STRUCTURES				
SIDE PROTECTION OF STREAMS				
1 .KIZHAKEKARA THODU	m3	200	2650	5,30,000
WATER HARVESTING STRUCTURE(NEW CREATED)				
CHECK DAMS*(KIZHAKAKARA THOD- 2) , (ITHIRI THOD - 2)*	Nos	4	20000	80,000
WELL RECHARGE	Nos	40	15000	6,00,000
WATER ABSORBTION PIT	Nos	103	107.14	11,035
WATER HARVESTING STRUCTURE(RENOVATION)				
FARM POND *(MOOTHAZHATH CHOLA , KIZHAKKEKARA)*	Nos	2	105000	2,10,000
WELL *(PATHIPARAMB COLONY)*	Nos	1	15000	15,000
ROUNDED FIGURE				-15
TOTAL				23,31,000

THIRD YEAR				
	Unit	Volume/Units	Unit cost	Total Iwmp Share
NEEM	Ha	1.25	2580	3,225
HORTICULTURE				
FRUIT PLANTS	Nos./KIT	999	150	1,49,850
AGRICULTURE				
VEGETABLE GARDEN	Ha	1	37500	37,500
BANANA CULTIVATION (Tissue culture)	Ha	2	50000	1,00,000
SPICES CULTIVATION (Ginger, Turmeric)	Ha	1	30000	30,000
TUBER CROPS	Ha	2	30000	60,000
FODDER GRASS CULTIVATION	Ha	0.5	6000	3,000
EARTHERN BUND	Ha	8	12000	96,000
VEGETATIVE AND ENGINEERING STRUCTURES				
SIDE PROTECTION OF STREAMS				
1.ITHIRI THODU KAYPRA THODU	m3	400	3275	13,10,000
WATER HARVESTING STRUCTURE(NEW CREATED)				
CHECK DAMS (*ITHIRI THOD*)	Nos	2	20000	40,000
WELL RECHARGE	Nos	31	15000	4,65,000
WELL CONSTRUCTION	Nos			
WATER ABSORBTION PIT	Nos	340	107.14	36,428
WATER HARVESTING STRUCTURE(RENOVATION)				
ROUNDED FIGURE				-3
TOTAL				23,31,000

FOURTH YEAR				
	UNIT	VOLUME/UNITS	Unit cost	TOTAL IWMP SHARE
AGRICULTURE				
VEGETABLE GARDEN	/hectare	1.5	37500	56,250
BANANA CULTIVATION (Tissue culture)	/hectare	1	50000	50,000
SPICES CULTIVATION (Ginger, Turmeric)	/hectare	0.5	30000	15,000
TUBER CROPS	/hectare	1	30000	30,000
FODDER GRASS CULTIVATION	/hectare	0	6000	
SOIL & MOISTURE CONSERVATION				
EARTHERN BUND	/hectare	4	12000	48,000
VEGETATIVE AND ENGINEERING STRUCTURES				
SIDE PROTECTION OF STREAMS				
1.MOOTHAZHATH CHOLA KAITHOD	m3	120	1417	170,000
WATER HARVESTING STRUCTURE(NEW CREATED)				
CHECK DAMS (Moothazhath Chola)	Nos	2	20000	40,000
WELL RECHARGE	Nos	9	15000	135,000
WATER ABSORBTION PIT	Nos	141	107.14	15,107
ROUNDED FIGURE				83
TOTAL				559,440

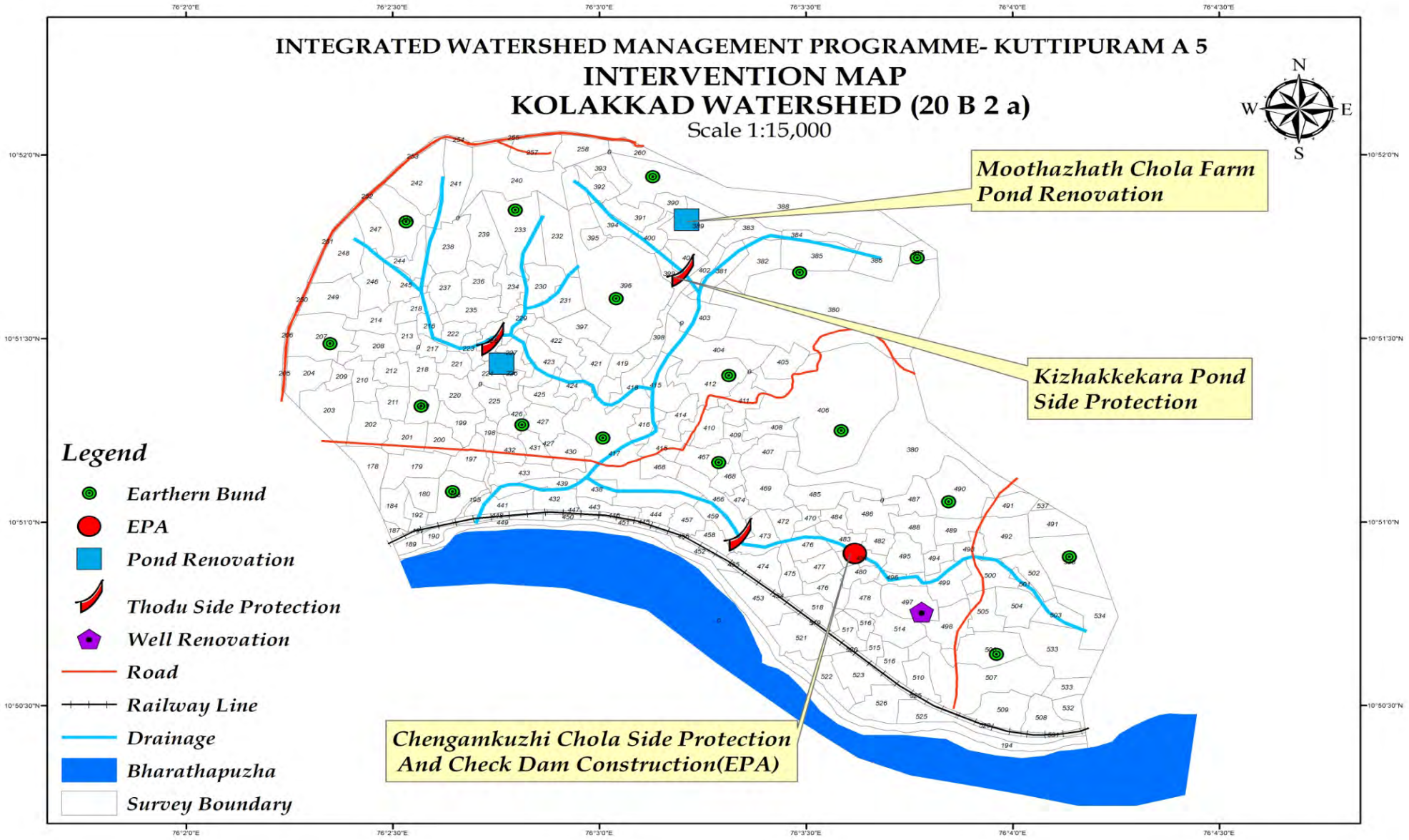
11. Master plan and year wise plan of production system management

MASTER PLAN – ACTIVITIES	UNITS	Unit cost	IWMP SHARE/UNIT	TOTAL IWMP	TOTAL AMOUNT	CONVERGENCE (BANK LOAN)
BEEKEEPING	3	6000	6000	18000	18000	0
POULTRY	460	1,150	1150	529000	529000	0
DAIRY	15	40000	24000	360000	600000	240000
VERMICOMPOST	2	10000	10000	20000	20000	0
AZOLLA	10	500	500	5000	5000	0
TOTAL				**932000**	**1172000**	**240000**
Rounded figure				400		
SECOND YEAR						
ACTIVITIES	UNITS	Unit cost	IWMP SHARE/UNIT	TOTAL IWMP	TOTAL AMOUNT	CONVERGENCE (BANK LOAN)
POULTRY	180	1,150	1,150	207000	207000	0
DAIRY	6	40000	24000	144000	240000	96000
VERMICOMPOST	2	10000	10000	20000	20000	0
AZOLLA	4	500	500	2000	2000	0
TOTAL				**372960**	**469000**	**96000**
Rounded figure				-40		
THIRD YEAR						
ACTIVITIES	UNITS	Unit cost	IWMP SHARE/UNIT	TOTAL IWMP	TOTAL AMOUNT	CONVERGENCE (BANK LOAN)
BEEKEEPING	3	6000	6000	18000	18000	0
POULTRY	182	1,150	1,150	209300	209300	0
DAIRY	6	40000	24000	144000	240000	96000
AZOLLA	4	500	500	2000	2000	0
TOTAL				**372960**	**469300**	**96000**
Rounded figure				-340		

FOURTH YEAR						
ACTIVITIES	UNITS	Unit cost	IWMP SHARE/UNIT	TOTAL IWMP	TOTAL AMOUNT	CONVERGENCE (BANK LOAN)
POULTRY	98	1,150	1,150	112700	112700	0
DAIRY	3	40000	24000	72000	120000	48000
AZOLLA	2	500	500	1000	1000	0
TOTAL				**186480**	**233700**	**48000**
ROUNDED FIGURE				780		

12. Master plan and year wise plan of livelihood activities

MASTER PLAN						
Activities	UNITS	UNIT COST	IWMP SHARE/ UNIT	TOTAL IWMP	TOTAL AMOUNT	CONVERGENCE (BANK LOAN)
GOAT REARING	29	30000	24000	696000	870000	174000
RABBIT REARING	16	5000	5000	80000	80000	0
AGRICULTURAL NURSERY	1	CONVERGENCE (AGRI. DEPT)				
COCONUT CLIMBER	21	3000	3000	63000	63000	0
TOTAL				**839160**	**1013000**	**174000**
Rounded figure				160		
SECOND YEAR						
GOAT REARING	11	30000	24000	264000	330000	66000
RABBIT REARING	8	5000	5000	40000	40000	0
AGRICULTURAL NURSERY	1	CONVERGENCE (AGRI. DEPT)				
COCONUT CLIMBER	7	3000	3000	21000	21000	0
TOTAL				**326340**	**391000**	**66000**
Rounded figure				1340		
THIRD YEAR						
GOAT REARING	11	30000	24000	264000	330000	66000
RABBIT REARING	6	5000	5000	30000	30000	0
COCONUT CLIMBER	11	3000	3000	33000	33000	0
TOTAL				**326340**	**393000**	**66000**
Rounded figure				-660		
FOURTH YEAR						
GOAT REARING	7	30000	24000	168000	210000	42000
RABBIT REARING	2	5000	5000	10000	10000	0
COCONUT CLIMBER	3	3000	3000	9000	9000	0
TOTAL				**186480**	**229000**	**42000**
Rounded figure				-520		


INTEGRATED WATERSHED MANAGEMENT PROGRAMME- KUTTIPURAM A 5
INTERVENTION MAP
KOLAKKAD WATERSHED (20 B 2 a)
Scale 1:15,000
N
W
E
S
Moothazhath Chola Farm Pond Renovation
Kizhakkekara Pond Side Protection
Chengamkuzhi Chola Side Protection And Check Dam Construction(EPA)
Legend
Earthern Bund
EPA
Pond Renovation
Thodu Side Protection
Well Renovation
Road
Railway Line
Drainage
Bharathapuzha
Survey Boundary
76°2'0"E
76°2'30"E
76°3'0"E
76°3'30"E
76°4'0"E
76°4'30"E
10°52'0"N
10°51'30"N
10°51'0"N
10°50'30"N

KATTIPPARUTHIPADAM WATERSHED

(20B3a)

1. Introduction

Kattiparuthipadam watershed (20B3a) covers Valancheri, Athavanad, Kuttippuram and Marakkara Grama Panchayats of Kuttipuam Block Panchayath in the District of Malappuram. The total area of the watershed is 1972 Hectors. The fully covered wards of the watersheds are 1,2,13,14,15,17,18,19,20,21 and 3,4,12,16 partially in Valacnheri panchayath ,Ward 11 partially covered by Marakkara, Wards 6 partialy covered by Atahavanad and in Kuttippuram Grama Panchayats ward 10 completely and 9,11 partially covered. The boundary of the watershed is North Malayilkunnu in Marakkara Grama Panchayat, south Bharathapuzha in Kuttipuram Grama Panchayat, and East Thaniyappan Kunnu in Valancheri grama panchayath and West Paridhi, Mannekkara watershed, Kuttipuramkunnu-Killinkunnu road (Moodal bypass). The major places of the watershed are Malayil Koottadammal , Kalyana Uaravu, Orngathukundu Mala, Vattappara, Moorkkanpattu, Kanjippura, Ambalaparambu, Parambolam, Kakkamkulam, Karthala chungam , Njaval kadu, Kasam kunnu, Vadakkekara, Mekkolamba, Kavumpuram, Kanchirathadam,Markaz Moodal, Changampally Ayurveda Oushadashala, Pandikashala, PaikannoorTemple, Kattiparuthi,Cholavalavu, Punjappadam,Ayur jeeva (Ayurvedic PanchakarmaCentre).

2. Phyisiography

Kattiparuthipadam watershed is located in midland area. The highest elevated area(161 mtrs msl) of watershed located in northern part, which is near to Kadampuzha .The lowest point located near to Bharathapuzha which is southern boundary of the watershed. The slope is from West to Eastern side in southern portion and North to south in northern portion also most of the streams are originating from the hilly area.

3. Watershed Character

The shape of the watershed is palm. The major stream starting from Engamkuzhi, which is in Marakkara grama panchayth and it passes through Athavanad,Valancheri and Kuttipuram panchayaths and it joining to Bharathapuzha. The total length of the major stream is 11.04 kms. The major streams of the watersheds are Kaithakulam, Cherukulam, Karippam kulam, Kalyana uravu, Chullichola, Parambolam Kayal, Kakkam Kulam, Choorottukulam,

Srambikkalkulam, Mundakkattukulam, Kattathikulam, Madakkana chola, Paramban Kulam, Parana Kulam, Kalattu chola, Kunnathu thodu, Punchappadam Thodu etc.

4. Irrigation

Watershed Name	Well	Pond	Stream
Kattiparuthipadam	35.6 Ha	26 Ha	86 Ha

Source: Baseline survey

5. Live Stock

Watershed Name	Cow	Milk (Litre)	Buffalo	Milk (Litre)	Goat	Milk (Litre)	Poultry	Duck	Rabbit	Milk Marketing Societies
Kattiparuthipadam	332	239040 Litre	17	6120 litre	1079	120848 Litre	5076	500	133	2

Source: Baseline survey

6. Inferences

Kattiparuthipadam watershed is one of the largest watersheds in this project, which comes under four gram Panchayaths. The slope of the watershed is north to south direction. Paddy is largely cultivated in this watershed area compared to others.

ESTIMATES

7. Watershed Development Funding Pattern

Entry Point	4%	9,46,560
Natural Recourse Management	56%	1,32,51,840
Productive System And Micro Enterprises	10%	23,66,400
Livelihood Support	9%	21,29,760
Management Component	21%	49,69,440
Total(in rupees)	100	2,36,64,000

8. Entry Point Activities

- **Side Protection of Choorottukulam**

The total area of this pond is 7 cents, is located in ward 17 of Valancheri Grama panchayath, which is near to Kavumpuram – Karthala chungam road, having water throughout the year. This work will help to benefit an area of 30 hectares.

- **Rain water harvesting Tank**

The installation of rainwater harvesting tank at Perassanur higher secondary school of Kuttipuram Grama Panchayath is purely meant for making capable of drinking water purpose. The capacity of the tank is 30000 litres, and more than 1500 numbers including students and staffs in the school will be benefitted.

- **Kaithakulam pond renovation**

Nearly 50 families residing here depend on this project and present EPA activity can be decrease the water availability.

- **Biogas plant at Vanitha canteen of kuttipuram block Panchayat**

9. Natural resource management (NRM)

The Kolakkad watershed is located in an elevated area. So that suitable interventions to be made for this area. In the first year, is going with DPR preparation and Implementation of entry point activities and all other developmental activities are doing from the second year onwards. Master plan and year wise plan for NRM given below.

- **Master Plan and Year Wise Plan Of Natural Resource Management Programme**

KATTIPARUTHI PADAM WATERSHED- MASTER PLAN	UNIT	VOLUME/UNITS	RATE	IWMP SHARE/UNIT	TOTAL IWMP
AFFORESTATION					
TEAK,MAHAGANI,NEEM	Ha	10	16000	16000	160000
HORTICULTURE					
FRUIT PLANTS	Nos./Kit	6000	150	150	900000
PINEAPPLE	/hectare	0.2	200000	239437	47887.4
AGRICULTURE					
VEGETABLE GARDEN	/hectare	6	37500	37500	225000
BANANA CULTIVATION	/hectare	8	50000	50000	400000
SPICES CULTIVATION	/hectare	8	30000	30000	240000
TUBER CROPS	/hectare	8	30000	30000	240000
FODDER GRASS CULTIVATION	/hectare	4	6000	6000	24000
MEDICINAL PLANT CULTIVATION					
1.KATTARVAAZHA		2	50000	50000	100000
2.CHITTAADALODAKAM		1	50000	50000	50000
SOIL & MOISTURE CONSERVATION					
STONE PITCHED BUND	/hectare	28.75	12000	12000	345000
EARTHERN BUND	/hectare	35	12000	12000	420000
VEGETATIVE AND ENGINEERING STRUCTURES					
SIDE PROTECTION OF STREAMS					
1. THAZHATHAPADAM RAMP -					75000
2.VELLATTU PADI-MATTACHIRA THODU	m3	157	2114.15	2114.15	323000
3.MUNDAKKAL THODU (1)	M3	101.222714	2114.15	2114.15	214000

4.MUNDAKKAL THODU (11)	m3	88.9246269	2114.15	2114.15	188000
5.KANAKKANTHARA THODU	m3	141.901	2114.15	2114.15	300000
6.CHULLICHOLA SIDE PROTECTION	m3	30.7452168	2114.15	2114.15	65000
7.CHULLI CHOLA THODU	m3	242.177707	2114.15	2114.15	512000
8.PARAMBAN THODU (CHERU THODU)	m3	30.7452168	2114.15	2114.15	65000
9.MEKULAMBU AKATHE CHOLA	m3	20.8121467	2114.15	2114.15	44000
10.VALLADIPADAM -AAKKIPADAM THODU	m3	165.551167	2114.15	2114.15	350000
11.MOOCHI KUNDU CHERUPADAM THODU	m3	576.118062	2114.15	2114.15	1218000
12.POOLAKUNDU CHERU THODU	m3	45.4083201	2114.15	2114.15	96000
13.CHELAPPARA THODU	m3	80.8835702	2114.15	2114.15	171000
14.ENGAM KUZHI PALAM THODU	m3	368.942601	2114.15	2114.15	780000
15.VALIYAKUNNU PADASHEKARAM CHALMUNAR THODU)	m3	12.2980867	2114.15	2114.15	26000
16.CHERUKULAM-KARIPPOLTHODU	m3				500000
17.CONSTRUCTION OF VCB ACROSS KOTHOLTHODU					800000
18.POONGOTTUKULAM SIDE PROTECTION				1500000	1500000
WATER HARVESTING STRUCTURE(NEW CREATED)					
CHECK DAMS					
1.CHEMBADATHUKUZHI CHECK DAM (WARD 14), VALANCHERI	Nos	1	15000	15000	15000
2.CHULLICHOLA CHECK DAM WARD -21, VALANCHERI	Nos	1	12000	12000	12000
3.KOTHOLTHODU CHECK DAM,WARD -20, VALANCHERI	Nos	1	30000	30000	30000
4.KOTHOLTHODU CHECK DAM,WARD -20, VALANCHERI	Nos	1	22500	22500	22500
5. ENGAMKUZHI CHECK DAM, MARAKKARA	Nos	1	17500	17500	17500
CHIRA IN STREAMS USING DEPT RUBBLES (KALLYANA ORAVA-PUNCHAPPADAM POND)	Nos	15	641	641	9615
WELL RECHARGE	Nos	156	15000	15000	2340000
WATER ABSORBTION PIT	Nos	320	107.14	107.14	34284.8
WATER HARVESTING STRUCTURE(RENOVATION)					

FARM POND					
1. MOORIYARKKUNDU POND (KUTTIPPURAM GP)	Nos	1	63000	63000	63000
2. PUNCHAPPADAM POND (KUTTIPPURAM)	Nos	1	10000	10000	10000
3.AAKKIPPADAM PADASEKHARAM POND	Nos	2	25000	50000	50000
4.KATTIPPARUTHI PADASEKHARAM POND,	Nos	2	25000	50000	50000
PARAMBOLAM KAYAL WELL	Nos	1	122000	122000	122000
VALANCHERI PANCHAYATH OPEN WELL	Nos	1	18500	18500	18500
CHELAPPARA LAKSHAM VEEDU COLONY WELL	Nos	1	18500	18500	18500
PERASSANNUR HSS OPEN WELL	Nos	1	60000	60000	60000
TOTAL (ROUNDED FIGURE – 52.8)					**13251840**

SECOND YEAR					
	UNIT	VOLUME/UNITS	RATE	IWMP SHARE/UNIT	TOTAL IWMP
AFFORESTATION					
TEAK,MAHAGANI,NEEM	Ha	5	16000	16000	80000
HORTICULTURE					
FRUIT PLANTS	Nos./Kit	3499	150	150	524850
PINEAPPLE	/hectare	0.2	200000	239437	47887.4
AGRICULTURE					
VEGETABLE GARDEN	/hectare	3	37500	37500	112500
BANANA CULTIVATION	/hectare	2	50000	50000	100000
SPICES CULTIVATION	/hectare	4	30000	30000	120000
TUBER CROPS	/hectare	4	30000	30000	120000
FODDER GRASS CULTIVATION	/hectare	2	6000	6000	12000
MEDICINAL PLANT CULTIVATION					
1.KATTARVAAZHA		2	50000	50000	100000

2.CHITTAADALODAKAM		1	50000	50000	50000
SOIL & MOISTURE CONSERVATION					
STONE PITCHED BUND	/hectare	13.9	12000	12000	166800
VEGETATIVE AND ENGINEERING STRUCTURES					
SIDE PROTECTION OF STREAMS					
1.VELLATTU PADI-MATTACHIRA THODU	m3	157	2114.15	2114.15	323000
2.MUNDAKKAL THODU 1	M3	101.222714	2114.15	2114.15	214000
3.MUNDAKKAL THODU 11	m3	88.9246269	2114.15	2114.15	188000
4.THAZHATHAPADAM RAMB	m3				75000
5.CHULLICHOLA SIDE PROTECTION	m3	30.7452168	2114.15	2114.15	65000
6.CHULLI CHOLA THODU	m3	242.177707	2114.15	2114.15	512000
7.PARAMBAN THODU (CHERU THODU)	m3	30.7452168	2114.15	2114.15	65000
8.VALLADIPADAM -AAKKIPADAM THODU	m3	165.551167	2114.15	2114.15	350000
9.POOLAKUNDU CHERU THODU	m3	45.4083201	2114.15	2114.15	96000
10.CHELAPPARA THODU	m3	80.8835702	2114.15	2114.15	171000
11.ENGAM KUZHI PALAM THODU	m3	368.942601	2114.15	2114.15	780000
12.VALIYAKUNNU PADASHEKARAM CHALMUNAR THODU	m3	12.2980867	2114.15	2114.15	26000
13.CHERUKULAM-KARIPPOLTHODU	m3				500000
14.CONSTRUCTION OF VCB ACROSS KOTHOLTHODU					800000
WATER HARVESTING STRUCTURE(NEW CREATED)					
CHECK DAMS					
1.CHEMBADATHUKUZHI CHECK DAM	Nos	1	15000	15000	15000
3.KOTHOLTHODU CHECK DAM	Nos	1	30000	30000	30000
4.KOTHOLTHODU CHECK DAM	Nos	1	22500	22500	22500
5. ENGAMKUZHI CHECK DAM, MARAKKARA	Nos	1	17500	17500	17500
WATER HARVESTING STRUCTURE (RENOVATION)					
1. AAKKIPPADAM PADASEKHARAM POND	Nos	1	25000	50000	25000

2 .KATTIPPARUTHI PADASEKHARAM POND	Nos	1	25000	50000	25000
PARAMBOLAM KAYAL WELL	Nos	1	122000	122000	122000
PERASSANNUR HSS OPEN WELL	Nos	1	60000	60000	60000
TOTAL (ROUNDED FIGUR- -37)					**5916000**

THIRD YEAR					
	UNIT	VOLUME/UNITS	RATE	IWMP SHARE/UNIT	TOTAL IWMP
AFFORESTATION					
TEAK,MAHAGANI,NEEM	Ha	5	16000	16000	80000
HORTICULTURE					
FRUIT PLANTS	Nos./Kit	2496	150	150	374400
AGRICULTURE					
VEGETABLE GARDEN	/hectare	3	37500	37500	112500
BANANA CULTIVATION	/hectare	6	50000	50000	300000
SPICES CULTIVATION	/hectare	4	30000	30000	120000
TUBER CROPS	/hectare	4	30000	30000	120000
FODDER GRASS CULTIVATION	/hectare	2	6000	6000	12000
SOIL & MOISTURE CONSERVATION					
STONE PITCHED BUND	/hectare	10	12000	12000	120000
EARTHERN BUND	/hectare	10	12000	12000	120000
VEGETATIVE AND ENGINEERING STRUCTURES					
SIDE PROTECTION OF STREAMS					
1. KANAKKANTHARA THODU	m3	141.9	2114.15	2114.15	300000
2. MEKULAMBU AKATHE CHOLA	m3	20.812	2114.15	2114.15	44000
3. MOOCHI KUNDU CHERUPADAM THODU	m3	576.12	2114.15	2114.15	1218000
4. POONGOTTUKULAM SIDE PROTECTION				1500000	1500000

WATER HARVESTING STRUCTURE(NEW CREATED)					
CHECK DAMS					
1.CHULLICHOLA CHECK DAM	Nos	1	12000	12000	12000
CHIRA IN STREAMS USING DEPT RUBBLES (KALLYANA ORAVA- PUNCHAPPADAM POND)	Nos	15	641	641	9615
WELL RECHARGE	Nos	86	15000	15000	1290000
WATER ABSORBTION PIT	Nos	220	107.14	107.14	23570.8
WATER HARVESTING STRUCTURE (RENOVATION)					
FARM POND					
1. MOORIYARKKUNDU POND	Nos	1	63000	63000	63000
2. PUNCHAPPADAM POND	Nos	1	10000	10000	10000
3.AAKKIPPADAM PADASEKHARAM POND	Nos	1	25000	50000	25000
4.KATTIPPARUTHI PADASEKHARAM POND	Nos	1	25000	50000	25000
WELL					
VALANCHERI PANCHAYATH OPEN WELL	Nos	1	18500	18500	18500
CHELAPPARA LAKSHAM VEEDU COLONY WELL	Nos	1	18500	18500	18500
TOTAL (ROUNDED FIGURE - -85.8)					**5916000**

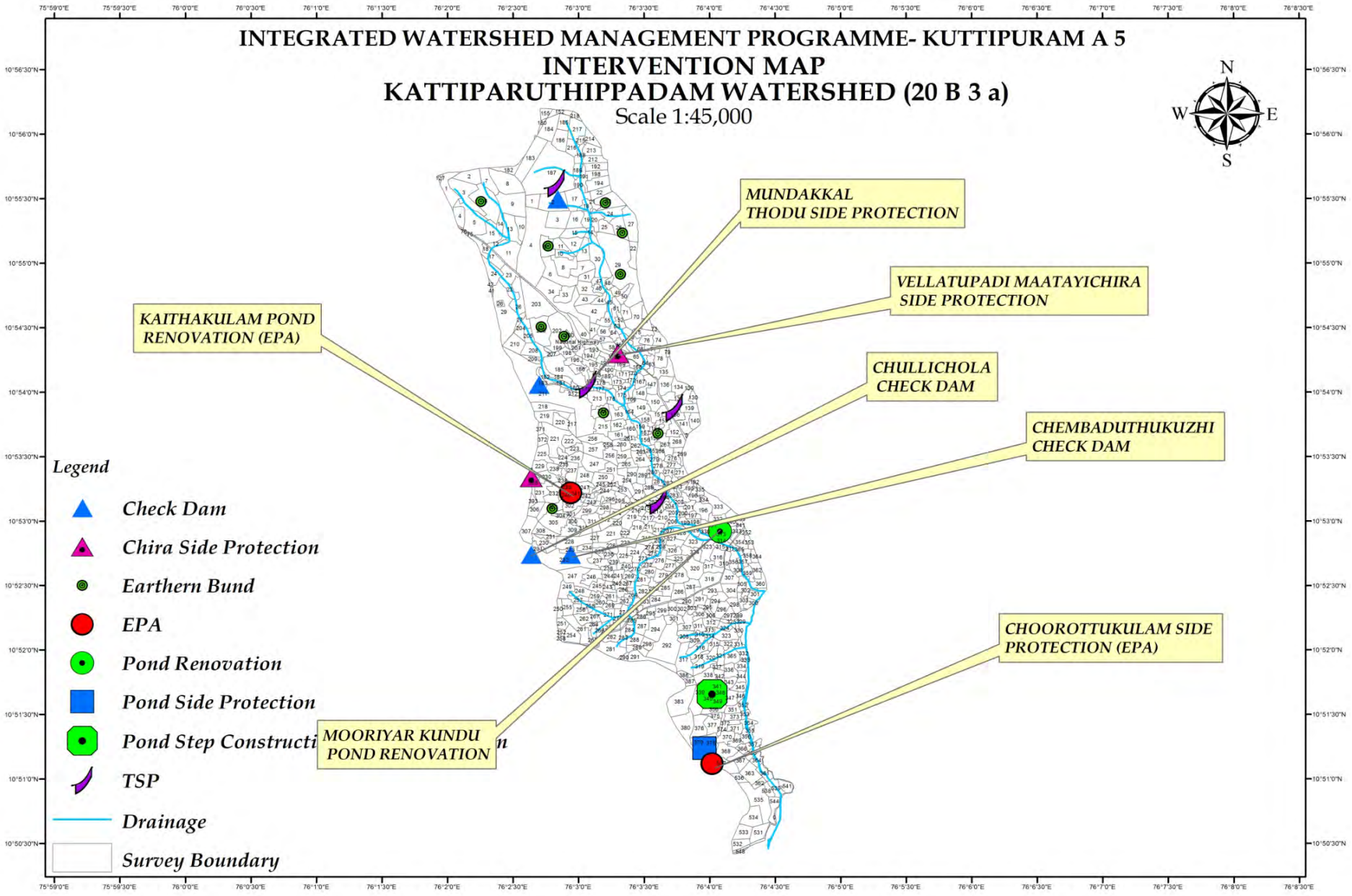
FOURTH YEAR					
	UNIT	VOLUME/UNITS	RATE	IWMP SHARE/UNIT	TOTAL IWMP
HORTICULTURE					
FRUIT PLANTS	Nos./Kit	5	150	150	750
SOIL & MOISTURE CONSERVATION					
STONE PITCHED BUND	/hectare	4.85	12000	12000	58200
EARTHERN BUND	/hectare	25	12000	12000	300000
WATER HARVESTING STRUCTURE(NEW CREATED)					
WELL RECHARGE	Nos	70	15000	15000	1050000
WATER ABSORBTION PIT	Nos	100	107.14	107.14	10714
TOTAL (ROUNDED FIGURE - 176)					**1419840**

10. Master plan and year wise plan of production system management

Master plan – *Activities*	UNITS	Unit cost	IWMP SHARE/UNIT	TOTAL IWMP	TOTAL AMOUNT	CONVERGENCE (BANK LOAN)
BEEKEEPING	10	6000	6000	60000	60000	0
POULTRY	663	1,150	1,150	762450	762450	0
DAIRY	62	40000	24000	1488000	2480000	992000
VERMICOMPOST	5	10000	10000	50000	50000	0
AZOLLA	11	500	500	5500	5500	0
ROUNDED FIGURE				450		
TOTAL				**2366400**	**3357950**	**992000**
SECOND YEAR						
	UNITS	Unit cost	IWMP SHARE/UNIT	TOTAL IWMP	TOTAL AMOUNT	CONVERGENCE (BANK LOAN)
BEEKEEPING	5	6000	6000	30000	30000	0
POULTRY	228	1,150	1150	262200	262200	0
DAIRY	25	40000	24000	600000	1000000	400000
VERMICOMPOST	5	10000	10000	50000	50000	0
AZOLLA	8	500	500	4000	4000	0
ROUNDED FIGURE				360		
TOTAL				**946560**	**1346200**	**400000**
THIRD YEAR						
	UNITS	Unit cost	IWMP SHARE/UNIT	TOTAL IWMP	TOTAL AMOUNT	CONVERGENE(BANK LOAN)
BEEKEEPING	5	6000	6000	30000	30000	0
POULTRY	274	1,150	1150	315100	315100	0
DAIRY	25	40000	24000	600000	1000000	400000
AZOLLA	3	500	500	1500	1500	0
ROUNDED FIGURE				-40		
TOTAL				**946560**	**1346600**	**400000**
FOURTH YEAR						
PSM	UNITS	Unit cost	IWMP SHARE/UNIT	TOTAL IWMP	TOTAL AMOUNT	CONVERGENE (BANK LOAN)
POULTRY	161	1,150	1150	185150	185150	0
DAIRY	12	40000	24000	288000	480000	192000
ROUNDED FIGURE				130		
TOTAL				**473280**	**665150**	**192000**

11. Master plan and year wise plan of livelihood support system

MASTER PLAN – ACTIVITIES	UNITS	Unit cost	IWMP SHARE/ UNIT	TOTAL IWMP	TOTAL AMOUNT	CONVERGENCE (BANK LOAN)
GOAT REARING	80	30000	24000	1920000	2400000	480000
RABBIT REARING	25	5000	5000	125000	125000	0
COCONUTCLIMBER	28	3000	3000	84000	84000	0
ROUNDED FIGURE				760		
TOTAL				**2129760**	**2609000**	**480000**
SECOND YEAR						
	UNITS	Unit cost	IWMP SHARE/ UNIT	IWMP SHARE	TOTAL AMOUNT	CONVERGENCE (BANK LOAN)
GOAT REARING	30	30000	24000	720000	900000	180000
RABBIT REARING	15	5000	5000	75000	75000	0
COCONUT CLIMBER	11	3000	3000	33000	33000	0
ROUNDED FIGURE				240		
TOTAL				**828240**	**1008000**	**180000**
THIRD YEAR						
	UNITS	Unit cost	IWMP SHARE/ UNIT	IWMP SHARE	TOTAL AMOUNT	CONVERGENCE (BANK LOAN)
GOAT REARING	32	30000	24000	768000	960000	192000
RABBIT REARING	6	5000	5000	30000	30000	0
COCONUT CLIMBER	10	3000	3000	30000	30000	0
ROUNDED FIGURE				240		
TOTAL				**828240**	**1020000**	**192000**
FOURTH YEAR						
	UNITS	Unit cost	IWMP SHARE/ UNIT	IWMP SHARE	TOTAL AMOUNT	CONVERGENCE (BANK LOAN)
GOAT REARING	18	30000	24000	432000	540000	108000
RABBIT REARING	4	5000	5000	20000	20000	0
COCONUT CLIMBER	7	3000	3000	21000	21000	0
ROUNDED FIGURE				280		
TOTAL				**473280**	**581000**	**108000**


INTEGRATED WATERSHED MANAGEMENT PROGRAMME- KUTTIPURAM A 5
INTERVENTION MAP
KATTIPARUTHIPPADAM WATERSHED (20 B 3 a)
Scale 1:45,000
N
W
E
S
MUNDAKKAL THODU SIDE PROTECTION
VELLATUPADI MAATAYICHIRA SIDE PROTECTION
KAITHAKULAM POND RENOVATION (EPA)
CHULLICHOLA CHECK DAM
CHEMBADUTHUKUZHI CHECK DAM
CHOOROTTUKULAM SIDE PROTECTION (EPA)
MOORIYAR KUNDU POND RENOVATION
Legend
Check Dam
Chira Side Protection
Earthern Bund
EPA
Pond Renovation
Pond Side Protection
Pond Step Constructi
TSP
Drainage
Survey Boundary

KADUNGAL (KADUNGAD) WATERSHED - (20B3b)

1. Introduction

Kadungal watershed is coming under Valancheri Gram panchayath with an area of 554 Ha. The completely covered wards are 5, 6, 9 and partially 3, 4,16,11,12. The boundary of the watershed is North Thaniyappan kunnu, South Mukilapeedika, East Kallingal thodu and West Kavumpuram-Chathankavu road, Block office, Panchyath office Myladikunnu, Kuwwakunnu and Kattiparuthipadam watershed.

2. Physiography

Kadungal watershed is located in midland area. The highest elevated area(142 mtrs msl) of watershed located in northern part, which is near to Kaliyala .The lowest point located(13 mtrs msl) in near to boundary of Irimbiliyam gram panchayath. The slope is from north to south side. Thaniyappan kunnu is the important elevated area in this watershed.

3. Watershed character

The shape of the watershed is palm, the major stream starting from Thaniyappan kunnu and Kaliyala. The total length of major stream is 6.7 kms which is starting from the Kaliyala. Kaliyala, Kadungad, Pangattuchira and Kallingal are major streams in the watershed.

4. Irrigation

Watershed name	Well	Pond	Streams
Kadungal	13 Ha	7.5 Ha	19 Ha

Source: Baseline survey

5. Live Stock

Watershed Name	Cow	Milk(Litters)	Buffalo	Milk(Litres)	Goat	Milk(Litters)	Poultry	Duck	Rabbit
Kadungal	96	69120	1	NA	149	13410	1445	280	6

Source: Baseline survey

6. Inferences

The south west portion of the watershed is covered by Valancheri town, Bus stand, Market, Panchayath office, Block Office, Village office and Krishibhavan. The most of the commercial places are comes under this watershed, so conservation measures should be applied in the left portion of the watershed.

ESTIMATES

7. Watershed development funding pattern

ENTRY POINT	***4%***	***2,65,920***
natural resource management	*56%*	*37,22,880*
production system and micro enterprises	*10%*	*6,64,800*
livelihood support system	*9%*	*5,98,320*
management component	*21%*	*13,96,080*
TOTAL(In Rupees)	*100%*	*66,48,000*

8. Entry point activities

Name of work - Side Protection of Kadungad thodu

Kadungad thodu is located at eastern part of the Kadungal watershed. The aim of the work is to make the paddy field area capable of cultivation. Due to the breakage of side walls, water is overflowing to the paddy filed and causes damages to the cultivated area. The total length of the side protection of both side of thodu is70 meters and an area of 30 hectares are benefitted by this.

9. Natural resource management (NRM)

The Kolakkad watershed is located in an elevated area. So that suitable interventions to be made for this area. In the first year, is going with DPR preparation and Implementation of entry point activities and all other developmental activities are doing from the second year onwards. Master plan and year wise plan for NRM given below.

- **Master plan and year wise plan of natural resource management programme**

KADUNGAD WATERSHED – **MASTER PLAN**	UNIT	VOLUME/UNITS	RATE	IWMP SHARE/UNIT	TOTAL IWMP SHARE
AFFORESTATION					
TEAK,MAHAGANI	Ha	4	16000	16000	64000
FRUIT PLANTS	Nos./Kit	2000	150	150	300000
AGRICULTURE					
VEGETABLE GARDEN	/hectare	4	37500	37500	150000
BANANA CULTIVATION	/hectare	3	50000	50000	150000
SPICES CULTIVATION	/hectare	3	30000	30000	90000
TUBER CROPS	/hectare	3	30000	30000	90000
MEDICINAL PLANT CULTIVATION					
1.KATTARVAAZHA		0.5	50000	50000	25000
2.CHITTAADALODAKAM		0.5	50000	50000	25000
SOIL & MOISTURE CONSERVATION					
STONE PITCHED BUND	/hectare	7	12000	12000	84000
EARTHERN BUND	/hectare	8	12000	12000	96000
VEGETATIVE AND ENGINEERING STRUCTURES					
SIDE PROTECTION OF STREAMS					
1.CHOLAKKAD THODU	m3				229000
2.KADUNGAD THODU	m3				265920
3.PANGATT CHIRA THODU	m3				476000
4.THEKUMPUZHA THODU	m3				186000
5.KARAD THODU	m3				154000
6. PACHEERITHODU SIDE PROTECTION	m3				136000
7. KALLINGAL THODU SIDE PROTECTION	m3				450000
WATER HARVESTING STRUCTURE(NEW CREATED)					
KADUNGADU THODU CHECK DAMS	Nos	1	17500	17500	17500
KARAD THODU CHECK DAMS	Nos	1	17500	17500	17500
WELL RECHARGE	Nos	41	15000	15000	615000

WATER ABSORBTION PIT	Nos	153	107.14	107.14	16392.42
WATER HARVESTING STRUCTURE(RENOVATION)					
FARM POND					
1.KURUDITHODU POND	Nos	1	42000	42000	42000
2.THAMARAKKULAM	Nos	1	22000	22000	22000
WELL (MUKKILAPPEDIKA)	Nos	1	21500	21500	21500
ROUNDED FIGURE					67.58
TOTAL					**3722880**

SECOND YEAR	UNIT	VOLUME/UNITS	RATE	IWMP SHARE/UNIT	TOTAL IWMP SHARE
AFFORESTATION					
TEAK,MAHAGANI	Ha	4	16000	16000	64000
HORTICULTURE					
FRUIT PLANTS	Nos./Kit	2000	150	150	300000
AGRICULTURE					
VEGETABLE GARDEN	/hectare	2	37500	37500	75000
BANANA CULTIVATION	/hectare	1	50000	50000	50000
SPICES CULTIVATION	/hectare	1	30000	30000	30000
TUBER CROPS	/hectare	2	30000	30000	60000
MEDICINAL PLANT CULTIVATION					
1.KATTARVAAZHA		0.5	50000	50000	25000
2.CHITTAADALODAKAM		0.5	50000	50000	25000
VEGETATIVE AND ENGINEERING STRUCTURES					
SIDE PROTECTION OF STREAMS					
1.CHOLAKKAD THODU	m3				229000
2.KADUNGAD THODU	m3				265920

3.THEKUMPUZHA THODU	m3				186000
4.KARAD THODU	m3				154000
5. PACHEERITHODU SIDE PROTECTION	M3				136000
WATER HARVESTING STRUCTURE(NEW CREATED)					
KADUNGAD THOD CHECK DAMS	Nos	1	17500	17500	17500
WATER HARVESTING STRUCTURE(RENOVATION)					
FARM POND					
1.THAMARAKKULAM	Nos	1	22000	22000	22000
WELL (MUKKILAPPEDIKA)	Nos	1	21500	21500	21500
ROUNDED FIGURE					1080
TOTAL					1662000

THIRD YEAR					
KADUNGAD WATERSHED	UNIT	VOLUME /UNITS	RATE	IWMP SHARE/UNIT	TOTAL IWMP SHARE
AGRICULTURE					
VEGETABLE GARDEN	/hectare	2	37500	37500	75000
BANANA CULTIVATION	/hectare	1	50000	50000	50000
SPICES CULTIVATION	/hectare	1	30000	30000	30000
TUBER CROPS	/hectare	1	30000	30000	30000
SOIL & MOISTURE CONSERVATION					
STONE PITCHED BUND	/hectare	5	12000	12000	60000
EARTHERN BUND	/hectare	4	12000	12000	48000
VEGETATIVE AND ENGINEERING STRUCTURES					

SIDE PROTECTION OF STREAMS					
1.PANGATT CHIRA THODU	m3				476000
2. KALLINGAL THODU SIDE PROTECTION	m3				450000
WATER HARVESTING STRUCTURE(NEW CREATED)					
KARAD THODU CHECK DAMS	Nos	1	17500	17500	17500
WELL RECHARGE	Nos	25	15000	15000	375000
WATER ABSORBTION PIT	Nos	75	107.14	107.14	8035.5
WATER HARVESTING STRUCTURE(RENOVATION)					
FARM POND					
1.KURUDITHODU POND	Nos	1	42000	42000	42000
Rounded figure					464.5
TOTAL					1662000

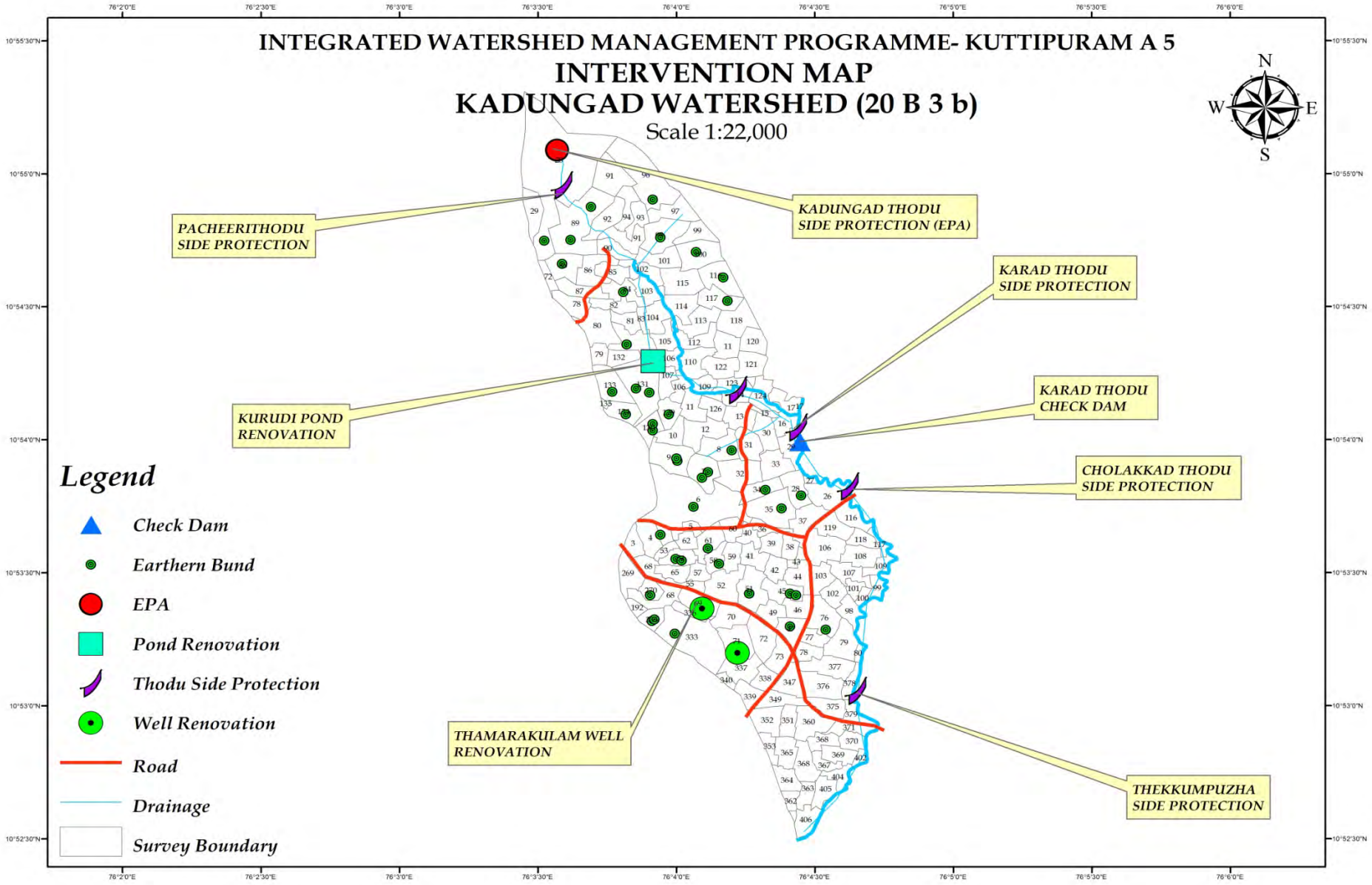
FOURTH YEAR					
KADUNGAD WATERSHED	UNIT	VOLUME /UNITS	RATE	IWMP SHARE/UNIT	TOTAL IWMP SHARE
AGRICULTURE					
BANANA CULTIVATION	/hectare	1	50000	50000	50000
SPICES CULTIVATION	/hectare	1	30000	30000	30000
SOIL & MOISTURE CONSERVATION					
STONE PITCHED BUND	/hectare	2	12000	12000	24000
EARTHERN BUND	/hectare	4	12000	12000	48000
WATER HARVESTING STRUCTURE(NEW CREATED)					
WELL RECHARGE	Nos	16	15000	15000	240000
WATER ABSORBTION PIT	Nos	78	107.14	107.14	8356.92
TOTAL (rounded figure - -1476.92)					398880

10. Master plan and year wise plan of production system management

MASTER PLAN - ACTIVITIES	UNITS	Unit cost	IWMP SHARE/UNIT	TOTAL IWMP	TOTAL AMOUNT	CONVERGENCE (BANK LOAN)
BEEKEEPING	2	6000	6000	12000	12000	0
POULTRY	235	1,150	1,150	270250	270250	0
DAIRY	15	40000	24000	360000	600000	240000
VERMICOMPOST	2	10000	10000	20000	20000	0
AZOLLA	5	500	500	2500	2500	0
Rounded figure				50		
TOTAL				**664800**	**904750**	**240000**
SECOND YEAR						
	UNITS	Unit cost	IWMP SHARE/UNIT	TOTAL IWMP	TOTAL AMOUNT	CONVERGENCE (BANK LOAN)
POULTRY	97	1,150	1,150	111550	111550	0
DAIRY	6	40000	24000	144000	240000	96000
VERMICOMPOST	1	10000	10000	10000	10000	0
Rounded figure				370		
TOTAL				**265920**	**361550**	**96000**
THIRD YEAR						
	UNITS	Unit cost	IWMP SHARE/UNIT	TOTAL IWMP	TOTAL AMOUNT	CONVERGENCE (BANK LOAN)
POULTRY	96	1,150	1,150	110400	110400	0
DAIRY	6	40000	24000	144000	240000	96000
VERMICOMPOST	1	10000	10000	10000	10000	0
AZOLLA	3	500	500	1500	1500	0
Rounded figure				20		
TOTAL				**265920**	**361900**	**96000**
FOURTH YEAR						
	UNITS	Unit cost	IWMP SHARE/UNIT	TOTAL IWMP	TOTAL AMOUNT	CONVERGENCE (BANK LOAN)
BEEKEEPING	2	6000	6000	12000	12000	0
POULTRY	42	1,150	1,150	48300	48300	0
DAIRY	3	40000	24000	72000	120000	48000
AZOLLA	2	500	500	1000	1000	0
Rounded figure				-340		
TOTAL				**132960**	**181300**	**48000**

11. Master plan and year wise plan of livelihood activities

MASTER PLAN	UNITS	Unit cost	IWMP SHARE/UNIT	TOTAL IWMP	TOTAL AMOUNT	CONVERGENCE (BANK LOAN)
GOAT REARING	20	30000	24000	480000	600000	120000
RABBIT REARING	14	5000	5000	70000	70000	0
COCONUT CLIMBER	16	3000	3000	48000	48000	0
Rounded figure				320		
TOTAL				**598320**	**718000**	**120000**
SECOND YEAR						
	UNITS	Unit cost	IWMP SHARE/UNIT	IWMP SHARE	TOTAL AMOUNT	CONVERGENCE (BANK LOAN)
GOAT REARING	9	30000	24000	216000	270000	54000
COCONUT CLIMBER	6	3000	3000	18000	18000	0
Rounded figure				-1320		
TOTAL				**232680**	**288000**	**54000**
THIRD YEAR						
	UNITS	Unit cost	IWMP SHARE/UNIT	IWMP SHARE	TOTAL AMOUNT	CONVERGENCE (BANK LOAN)
GOAT REARING	7	30000	24000	168000	210000	42000
RABBIT REARING	7	5000	5000	35000	35000	0
COCONUT CLIMBER	10	3000	3000	30000	30000	0
Rounded figure				-320		
TOTAL				**232680**	**275000**	**42000**
FOURTH YEAR						
	UNITS	Unit cost	IWMP SHARE/UNIT	IWMP SHARE	TOTAL AMOUNT	CONVERGENCE (BANK LOAN)
GOAT REARING	4	30000	24000	96000	120000	24000
RABBIT REARING	7	5000	5000	35000	35000	0
Rounded figure				1960		
TOTAL				**132960**	**155000**	**24000**


INTEGRATED WATERSHED MANAGEMENT PROGRAMME- KUTTIPURAM A 5
INTERVENTION MAP
KADUNGAD WATERSHED (20 B 3 b)
Scale 1:22,000
N
W
E
S
PACHEERITHODU SIDE PROTECTION
KADUNGAD THODU SIDE PROTECTION (EPA)
KARAD THODU SIDE PROTECTION
KURUDI POND RENOVATION
KARAD THODU CHECK DAM
CHOLAKKAD THODU SIDE PROTECTION
THAMARAKULAM WELL RENOVATION
THEKKUMPUZHA SIDE PROTECTION
Legend
Check Dam
Earthern Bund
EPA
Pond Renovation
Thodu Side Protection
Well Renovation
Road
Drainage
Survey Boundary
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
10°55'30"N
10°55'0"N
10°54'30"N
10°54'0"N
10°53'30"N
10°53'0"N
10°52'30"N

KOTHAYATH THODU WATERSHED

(20B3c)

1. Introduction

Kothayaththodu Watershed Is Coming Under Western Part Of The Edayur Grama Panchayath. The Total Area Of The Watershed Is 214ha. This Watershed Includes Wards 16, 17 and 18 Partially. The Major Places of the Watershed Are Kakkanchira, Thindalam, and Manakkalpadi,

2. Physiography

The highest elevated area (104 Mtrs Msl) is located in the eastern part of the watershed, which is in Thaniyappankunnu.

3. Watershed character

The shape of the watershed is palm like. The total length of the major stream is 4.04 Kms ,which starts from Olanthichira and flows through Kavungal chira,Maliyakkal chira, Thindalam, Kakkan chira, and joins at Kallingal thodu of Valancheri Grama panchayath,which is a major stream of Kadungad watershed.

4. Irrigation

Watershed Name	Well	Pond	Streams
Kothayath thodu	6.5 Ha	2 Ha	11.5 Ha

Source: Baseline Survey

5. Live Stock

Watershed Name	Cow	Milk	Buffalo	Milk	Goat	Milk	Poultry	Duck	Rabbit
Kothayath Thodu	90	64800 Litters	6	485 Litre	114	18240 Litters	577	48	16

Source: Baseline Survey

6. Inferences

Scheduled Caste population is very high in this watershed area compared to other watersheds of the project. The construction of VCB at Kolvakkal chira(EPA work) will overcome the scarcity of water in future.

ESTIMATES

7. Watershed development funding pattern

Entry Point	***4%***	**1,02,720**
Natural Resource Management	*56%*	1,438,080
Production System And Micro Enterprises	*10%*	2,56,800
Livelyhood Support System	*9%*	2,31,120
Management Component	*21%*	5,39,280
Total (In Rupees)	*100%*	25,68,000

8. Entry point activities

Name of Work - Kolvakkal Chira- side protection and Shutter installation.

. The main aim of the work is protecting the soil erosion and Over flow water in to the agriculture land. It will also reduce the scarcity of water in the work area.

9. Natural resource management (NRM)

In the first year, is going with DPR preparation and Implementation of entry point activities and all other developmental activities are doing from the second year onwards. Master plan and year wise plan for NRM given below.

Master plan and year wise plan of natural resource management programme

MASTER PLAN	UNIT	VOLUME/ UNITS	RATE	IWMP SHARE/UNI	TOTAL IWMP SHARE
AFFORESTATION					
TEAK,MAHAGANI	/hectare	2	16000	16000	32000
HORTICULTURE					
FRUIT PLANTS	Nos /kit	500	150	150	75000
AGRICULTURE					
SPICES CULTIVATION	/hectare	3	30000	30000	90000
TUBER CROPS	/hectare	2	30000	30000	60000
FODDER GRASS CULTIVATION	/hectare	0.5	6000	6000	3000
SOIL & MOISTURE CONSERVATION					
EARTHERN BUND	/hectare	4.5	12000	12000	54000
VEGETATIVE AND ENGINEERING STRUCTURES					
SIDE PROTECTION OF STREAMS					
1.KARADAVU PADASHEKARAM THOD	m3	42.51	1811.32	1811.32	76999.2132
2. KOLUVAKKAL VALLUVAMPADAM THOD FUJARADI	m3				285000
3. OLANTHI KAVUNGAL THOD					470001
WATER HARVESTING STRUCTURE(NEW CREATED)					
WATER ABSORBTION PIT	Nos	155	107.14	107.14	16606.7
MUTHUCHIRA VCB SHUTTER	Nos	1	8450	8450	8450
KAKKANCHIRA VCB SHUTTER	Nos	1	14000	14000	14000
WATER HARVESTING STRUCTURE(RENOVATION)					
1.FARM POND (PUTHANKULAM)	Nos		175000		175000
2.KAVUNGALCHIRA-NADUVATHUKUZHI KAITHODU					38000
3.EDAYUR PANCHAYATH POND	m3				40000
TOTAL (Rounded figure - 23)					1438080

SECOND YEAR	UNIT	VOLUME/ UNITS	RATE	IWMP SHARE/UNIT	TOTAL IWMP SHARE
AFFORESTATION					
TEAK,MAHAGANI	/hectare	1	16000	16000	16000
HORTICULTURE					
FRUIT PLANTS	NOS/KIT	203	150	150	30450
AGRICULTURE					
SPICES CULTIVATION	/hectare	1	30000	30000	30000
TUBER CROPS	/hectare	1	30000	30000	30000
FODDER GRASS CULTIVATION	/hectare	0.5	6000	6000	3000
VEGETATIVE AND ENGINEERING STRUCTURES					
SIDE PROTECTION OF STREAMS					
1.EDAYUR PANCHAYATH POND SIDE PROTECTION	m3				40000
2. OLANTHI KAVUNGAL THOD	m3				470001
WATER HARVESTING STRUCTURE(NEW CREATED)					
MUTHUCHIRA VCB SHUTTER	Nos	1	8450	8450	8450
KAKKANCHIRA VCB SHUTTER		1	14000	14000	14000
Rounded figure					99
TOTAL					642000

THIRD YEAR	UNIT	VOLUME/ UNITS	RATE	IWMP SHARE/UNIT	TOTAL IWMP SHARE
AGRICULTURE					
SPICES CULTIVATION	/hectare	2	30000	30000	60000
TUBER CROPS	/hectare	1	30000	30000	30000

SOIL & MOISTURE CONSERVATION					
EARTHERN BUND	/hectare	3.1	12000	12000	37200
VEGETATIVE AND ENGINEERING STRUCTURES					
SIDE PROTECTION OF STREAMS					
1. KOLUVAKKAL VALLUVAMPADAM THOD FUJARADI SIDE PROTECTION	m3				285000
WATER HARVESTING STRUCTURE(NEW CREATED)					
WATER ABSORBTION PIT	Nos	155	107.14	107.14	16606.7
WATER HARVESTING STRUCTURE(RENOVATION)					
FARM POND (PUTHANKULAM)	Nos	1	175000		175000
KAVUNGALCHIRA-NADUVATHUKUZHI KAITHODU					38000
Rounded figure					193.3
TOTAL					642000

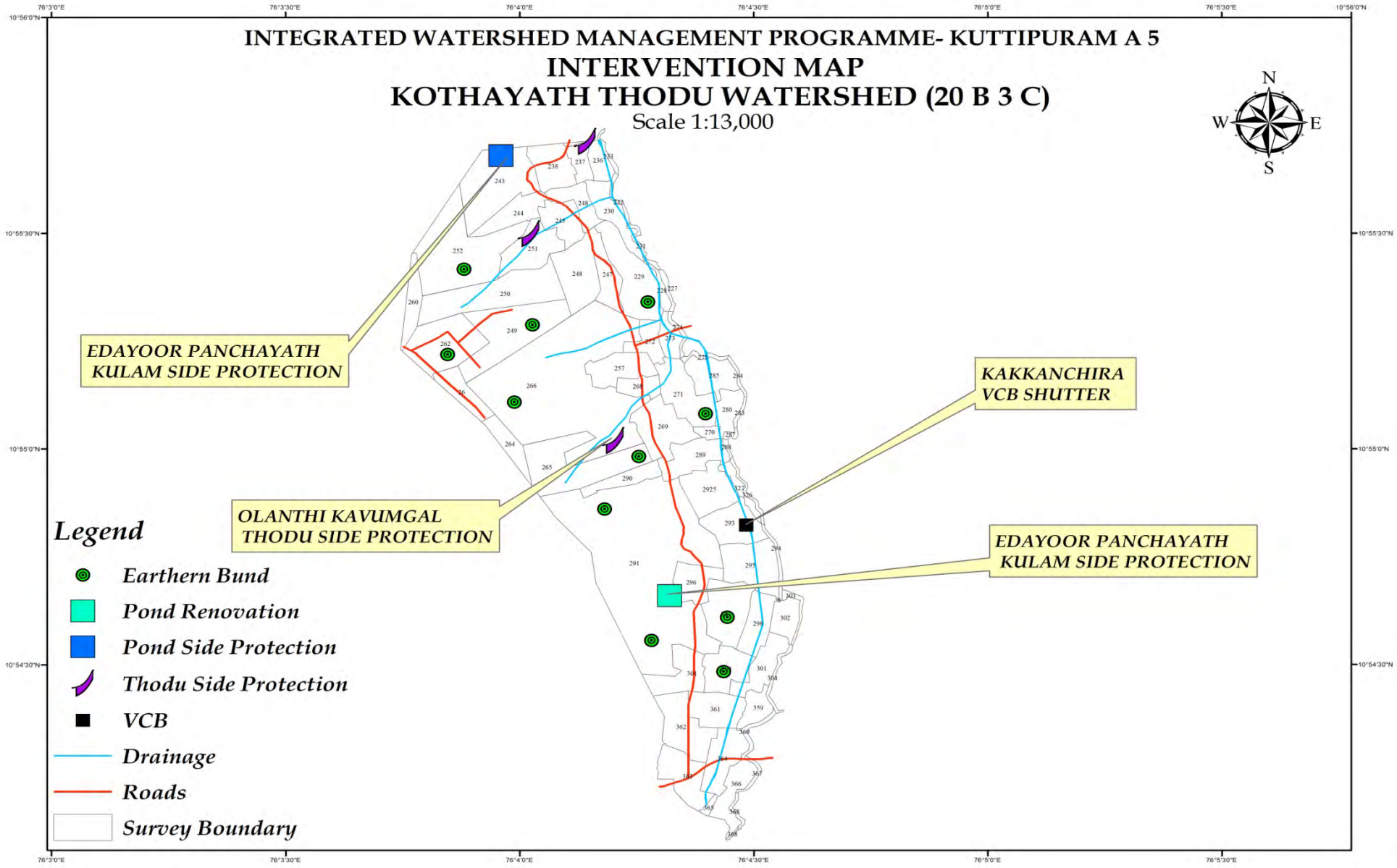
FOURTH YEAR					
MASTER PLAN	UNIT	VOLUME/UNITS	RATE	IWMP SHARE/UNIT	TOTAL IWMP SHARE
AFFORESTATION					
TEAK,MAHAGANI	/hectare	1	16000	16000	16000
HORTICULTURE					
FRUIT PLANTS	NOS/KIT	297	150	150	44550
SOIL & MOISTURE CONSERVATION					
EARTHERN BUND	/hectare	1.4	12000	12000	16800
VEGETATIVE AND ENGINEERING STRUCTURES					
SIDE PROTECTION OF STREAMS					
1.KARADAVU PADASHEKARAM THOD	m3	42.51	1811.32	1811.32	76999.2132
Rounded figure					-269
TOTAL					154080

10. Master plan and year wise plan of production system management

MASTER PLAN	UNITS	Unit cost	IWMP SHARE/UNIT	TOTAL IWMP	TOTAL AMOUNT	CONVERGENCE (BANK LOAN)
BEEKEEPING	2	6000	6000	12000	12000	0
POULTRY	57	1,150	1,150	65550	65550	0
DAIRY	7	40000	24000	168000	280000	112000
VERMICOMPOST	1	10000	10000	10000	10000	0
AZOLLA	2	500	500	1000	1000	0
Rounded figure				250		
TOTAL				**256800**	**368550**	**112000**
SECOND YEAR						
	UNITS	Unit cost	IWMP SHARE/UNIT	TOTAL IWMP	TOTAL AMOUNT	CONVERGENCE (BANK LOAN)
POULTRY	27	1,150	1,150	31050	31050	0
DIARY	3	40000	24000	72000	120000	48000
Rounded figure				-330		
TOTAL				**102720**	**151050**	**48000**
THIRD YEAR						
	UNITS	Unit cost	IWMP SHARE/UNIT	TOTAL IWMP	TOTAL AMOUNT	CONVERGENCE (BANK LOAN)
BEEKEEPING	2	6000	6000	12000	12000	0
POULTRY	15	1,150	1,150	17250	17250	0
DIARY	3	40000	24000	72000	120000	48000
AZOLLA	2	500	500	1000	1000	0
Rounded figure				470		
TOTAL				**102250**	**150250**	**48000**
FOURTH YEAR						
	UNITS	Unit cost	IWMP SHARE/UNIT	TOTAL IWMP	TOTAL AMOUNT	CONVERGENCE (BANK LOAN)
POULTRY	15	1,150	1,150	17250	17250	0
DIARY	1	40000	24000	24000	40000	16000
VERMICOMPOST	1	10000	10000	10000	10000	0
Rounded figure				110		
TOTAL				**51250**	**67250**	**16000**

11. Master plan and year wise plan of livelihood activities

MASTER PLAN	UNITS	Unit cost	IWMP SHARE/UNIT	TOTAL IWMP	TOTAL AMOUNT	CONVERGENCE (BANK LOAN)
GOAT REARING	7	30000	24000	168000	210000	42000
RABBIT REARING	6	5000	5000	30000	30000	0
COCONUT CLIMBER	11	3000	3000	33000	33000	0
Rounded figure				120		
TOTAL				**231120**	**273000**	**42000**
SECOND YEAR						
	UNITS	Unit cost	IWMP SHARE/UNIT	IWMP SHARE	TOTAL AMOUNT	CONVERGENCE (BANK LOAN)
GOAT REARING	2	30000	24000	48000	60000	12000
RABBIT REARING	4	5000	5000	20000	20000	0
COCONUT CLIMBER	7	3000	3000	21000	21000	0
Rounded figure				880		
TOTAL				**89880**	**101000**	**12000**
THIRD YEAR						
	UNITS	Unit cost	IWMP SHARE/UNIT	IWMP SHARE	TOTAL AMOUNT	CONVERGENCE (BANK LOAN)
GOAT REARING	3	30000	24000	72000	90000	18000
RABBIT REARING	1	5000	5000	5000	5000	0
COCONUT CLIMBER	4	3000	3000	12000	12000	0
Rounded figure				880		
TOTAL				**89880**	**107000**	**18000**
FOURTH YEAR						
	UNITS	Unit cost	IWMP SHARE/UNIT	IWMP SHARE	TOTAL AMOUNT	CONVERGENCE (BANK LOAN)
GOAT REARING	2	30000	24000	48000	60000	12000
RABBIT REARING	1	5000	5000	5000	5000	0
Rounded figure				-1640		
TOTAL				**51360**	**65000**	**12000**


INTEGRATED WATERSHED MANAGEMENT PROGRAMME- KUTTIPURAM A 5
INTERVENTION MAP
KOTHAYATH THODU WATERSHED (20 B 3 C)
Scale 1:13,000
N
W
E
S
EDAYOOR PANCHAYATH
KULAM SIDE PROTECTION
KAKKANCHIRA
VCB SHUTTER
OLANTHI KAVUMGAL
THODU SIDE PROTECTION
EDAYOOR PANCHAYATH
KULAM SIDE PROTECTION
Legend
Earthern Bund
Pond Renovation
Pond Side Protection
Thodu Side Protection
VCB
Drainage
Roads
Survey Boundary
76°3'0"E
76°3'30"E
76°4'0"E
76°4'30"E
76°5'0"E
76°5'30"E
10°56'0"N
10°55'30"N
10°55'0"N
10°54'30"N

POONCHOLA WATERSHED (21T13b)

1. Introduction

.Poonchola watershed coming under Athavanad Grama panchayath and total area of the watershed is 823 Ha. The completely covered wards are 19, 20, 21 and 22 and 15, 16, 17, 18 partially. The boundary of the watershed is north Cherakkal kadu, National highway and Chellur Palli, South Vadasseri chandanakkavu, West Pooncholakkunnu and Thirunavaya-Kalapakancheri and east Poolamangalam – Athavanad road and Mannekkara watershed. The important places of the watershed are Cherukol,Pakkath Mana,Pazhiyode Manappadi, Kiliyan kunnu,GUPS Koodasseri, Poolamangalam High School,Poolamangalam UP School, Kattamkunnu Juma Masjid, Vadasseri Vishnu Temple, Poolamangalam Juma masjid, Health Centre, and Chakirippara.

2. Physiography

Poonchola watershed is located in midland area. The highest elevated area 92 meters from msl, which is located at Kuttikalathani. The lowest point located at Kurumbathur, which is southern portion of the watershed. The slope is from North to South also most of the steams are originated.

3. Watershed character

The shape of the watershed is like rectangular and most of the streams are originating from the northern side of the watershed. The major streams of the watersheds are Mathichira thodu, Pakkachira, Ammanchira, Cherukol, Pakkath thodu, Poonchola Bavappadi thodu, Edasserikkavu thodu and Vadasseri Chandanakkavu thodu.

4. Irrigation

Watershed Name	Well	Pond	Stream
Poonchola	12.3 Ha	17 Ha	21.5 Ha

Source: Baseline Survey

5. Live Stock

(Source : Baseline Survey)

Cow	Milk	Buffalo	Milk in Litres	Goat	Milk in Litres	Poultry	Duck	Rabbit
236	169920	27	8451	545	46325	3530	378	112

ESTIMATES

6. Watershed development funding pattern

ENTRY POINT	*4%*	*395040*
NATURAL RESOURSE MANAGEMENT	*56%*	*5530560*
PRODUCTIVE SYSTEM AND MICRO ENTERPRISES	*10%*	*987600*
LIVELYHOOD SUPPORT	*9%*	*888840*
MANAGEMENT COMPONENT	*21%*	*2073960*
TOTAL(In Rupees)	*100%*	*9876000*

7. Entry point activities

NAME OF WORK:

SL NO	NAME OF WORK :	ESTIMATE COST
1	Solar panel installation at Govt institution	372960
	TOTAL(In Rupees)	372960

8. Natural Resource Management (NRM)

In the first year, is going with DPR preparation and Implementation of entry point activities and all other developmental activities are doing from the second year onwards. Master plan and year wise plan for NRM given below

Master Plan And Year Wise Plan Of Natural Resource Management Programme

MASTER PLAN	UNIT	VOLUME/ UNITS	RATE	IWMP SHARE/UNIT	TOTAL IWMP
AFFORESTATION					
TEAK,MAHAGANI	Ha	6	16000	16000	96000
HORTICULTURE					
FRUIT PLANTS	/hectare	5	18000	18000	90000
AGRICULTURE					
VEGETABLE GARDEN	/hectare	4	37500	37500	150000
BANANA CULTIVATION	/hectare	6	50000	50000	300000
TUBER CROPS	/hectare	3	30000	30000	90000
VEGETATIVE AND ENGINEERING STRUCTURES					
SIDE PROTECTION OF STREAMS					
1.BHARANI PADAM THODU	m3	1	500000	500000	500000
WATER HARVESTING STRUCTURE(NEW CREATED)					
FARM POND - AMMANCHIRAKULAM	Nos	1	1000000	1000000	1000000
WELL CONSTRUCTION - KILIYANKUNNU	Nos	1	170000	170000	170000
WELL RECHARGE	Nos	110	15000	15000	1650000
WATER ABSORBTION PIT	Nos	229	107.14	107.14	24535.06
WATER HARVESTING STRUCTURE(RENOVATION)					
FARM PONDS					
1.MATHICHIRA	Nos	1		530000	530000
2.THEKKILAKKULAM	Nos	1		330000	330000
WELL CONSTRUCTION - MUKKILAPEEDIK	Nos	1		600000	600000
ROUNDED FIGURE					24.94
TOTAL					**5530560**

SECOND YEAR	UNIT	VOLUME/ UNITS	RATE	IWMP SHARE/UNIT	TOTAL IWMP
AFFORESTATION					
TEAK,MAHAGANI	Ha	6	16000	16000	96000
HORTICULTURE					
FRUIT PLANTS	/hectare	2	18000	18000	36000
AGRICULTURE					
VEGETABLE GARDEN	/hectare	2	37500	37500	75000
BANANA CULTIVATION	/hectare	2	50000	50000	100000
TUBER CROPS	/hectare	1	30000	30000	30000
WATER HARVESTING STRUCTURE(NEW CREATED)					
FARM POND - AMMANCHIRAKULAM		1	1000000	1000000	1000000
WATER ABSORBTION PIT	Nos	20	107.14	107.14	2142.8
WATER HARVESTING STRUCTURE(RENOVATION)					
FARM PONDS					
1.MATHICHIRA	Nos	1			530000
2.MUKKILAPEEDIKA WELL CONSTRUCTION	Nos	1			600000
ROUNDED FIGURE					-142.8
TOTAL					**2469000**

THIRD YEAR	UNIT	VOLUME/ UNITS	RATE	IWMP SHARE/UNIT	TOTAL IWMP
HORTICULTURE					
FRUIT PLANTS	/hectare	3	18000	18000	54000

AGRICULTURE					
VEGETABLE GARDEN	/hectare	2	37500	37500	75000
BANANA CULTIVATION	/hectare	2.6	50000	50000	130000
TUBER CROPS	/hectare	2	30000	30000	60000
VEGETATIVE AND ENGINEERING STRUCTURES					
SIDE PROTECTION OF STREAMS					
1.BHARANI THODU	m3	1	500000	500000	500000
WATER HARVESTING STRUCTURE(NEW CREATED)					
WELL CONSTRUCTION - KILIYANKUNNU	Nos	1	170000	170000	170000
WELL RECHARGE	Nos	97	15000	15000	1455000
WATER ABSORBTION PIT	Nos	209	107.14	107.14	22392.26
ROUNDED FIGURE					2607.74
TOTAL					**2469000**

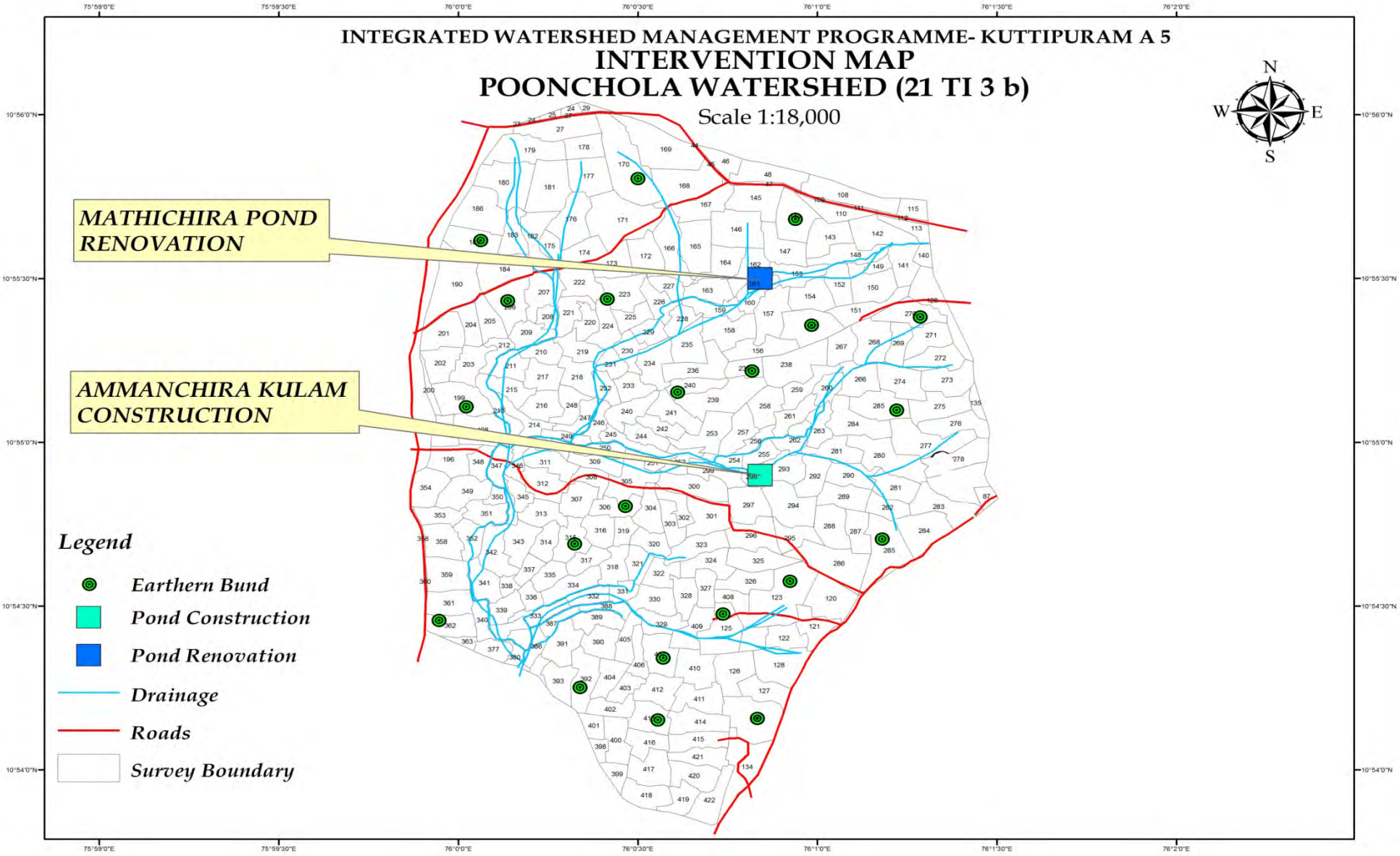
FOURTH YEAR	UNIT	VOLUME/ UNITS	RATE	IWMP SHARE/UNIT	TOTAL IWMP
AGRICULTURE					
BANANA CULTIVATION	/hectare	1.4	50000	50000	70000
WATER HARVESTING STRUCTURE(NEW CREATED)					
WELL RECHARGE	**Nos**	**13**	**15000**	**15000**	**195000**
WATER HARVESTING STRUCTURE(RENOVATION)					
FARM PONDS					
2.THEKKILAKKULAM		1			330000
ROUNDED FIGURE					-2440
TOTAL					592560

9. Master plan and year wise plan of production system management

MASTER PLAN	UNITS	Unit cost	IWMP SHARE/UNIT	TOTAL IWMP	TOTAL AMOUNT	CONVERGENCE (BANK LOAN)
BEEKEEPING	2	6000	6000	12000	12000	0
POULTRY	910	575	575	523250	523250	0
DAIRY	18	40000	24000	432000	720000	288000
VERMICOMPOST	2	10000	10000	20000	20000	0
ROUNDED FIGURE				350		
TOTAL				**987600**	**1275250**	**288000**
SECOND YEAR	UNITS	Unit cost	IWMP SHARE/UNIT	TOTAL IWMP	TOTAL AMOUNT	CONVERGENCE (BANK LOAN)
BEEKEEPING	1	6000	6000	6000	6000	0
POULTRY	408	575	575	234600	234600	0
DAIRY	6	40000	24000	144000	240000	96000
VERMICOMPOST	1	10000	10000	10000	10000	0
ROUNDED FIGURE				440		
TOTAL				**395040**	**490600**	**96000**
THIRD YEAR	UNITS	Unit cost	IWMP SHARE/UNIT	TOTAL IWMP	TOTAL AMOUNT	CONVERGENCE (BANK LOAN)
BEEKEEPING	1	6000	6000	6000	6000	0
POULTRY	326	575	575	187450	187450	0
DAIRY	8	40000	24000	192000	320000	128000
VERMICOMPOST	1	10000	10000	10000	10000	0
ROUNDED FIGURE				-410		
TOTAL				**395040**	**523450**	**128000**
FOURTH YEAR	UNITS	Unit cost	IWMP SHARE/UNIT	TOTAL IWMP	TOTAL AMOUNT	CONVERGENCE (BANK LOAN)
POULTRY	176	575	575	101200	101200	0
DAIRY	4	40000	24000	96000	160000	64000
ROUNDED FIGURE				320		
TOTAL				197520	261200	64000

10. Master plan and year wise plan of livelihood system

MASTERPLAN	UNITS	Unit cost	IWMP SHARE/UNIT	TOTAL IWMP	TOTAL AMOUNT	CONVERGENCE (BANK LOAN)
GOAT REARING	33	30000	24000	792000	990000	198000
RABBIT REARING	12	5000	5000	60000	60000	0
COCONUT CLIMBER	12	3000	3000	36000	36000	0
Rounded Figure				840		
TOTAL				**888840**	**1086000**	**198000**
SECOND YEAR	UNITS	Unit cost	IWMP SHARE/UNIT	IWMP SHARE	TOTAL AMOUNT	CONVERGENCE (BANK LOAN)
GOAT REARING	13	30000	24000	312000	390000	78000
RABBIT REARING	4	5000	5000	20000	20000	0
COCONUT CLIMBER	4	3000	3000	12000	12000	0
Rounded Figure				1660		
TOTAL				**345660**	**422000**	**78000**
THIRD YEAR	UNITS	Unit cost	IWMP SHARE/UNIT	IWMP SHARE	TOTAL AMOUNT	CONVERGENCE (BANK LOAN)
GOAT REARING	13	30000	24000	312000	390000	78000
RABBIT REARING	5	5000	5000	25000	25000	0
COCONUT CLIMBER	2	3000	3000	6000	6000	0
Rounded Figure				2660		
TOTAL				**345660**	**421000**	**78000**
FOURTH YEAR	UNITS	Unit cost	IWMP SHARE/ UNIT	IWMP SHARE	TOTAL AMOUNT	CONVERGENCE
GOAT REARING	7	30000	24000	168000	210000	42000
RABBIT REARING	3	5000	5000	15000	15000	0
COCONUT CLIMBER	6	3000	3000	18000	18000	0
Rounded Figure				-3480		
TOTAL				**197520**	**243000**	**42000**


INTEGRATED WATERSHED MANAGEMENT PROGRAMME- KUTTIPURAM A 5
INTERVENTION MAP
POONCHOLA WATERSHED (21 TI 3 b)
Scale 1:18,000
N
W
E
S
MATHICHIRA POND RENOVATION
AMMANCHIRA KULAM CONSTRUCTION
Legend
Earthern Bund
Pond Construction
Pond Renovation
Drainage
Roads
Survey Boundary
75°59'0"E
75°59'30"E
76°0'0"E
76°0'30"E
76°1'0"E
76°1'30"E
76°2'0"E
10°56'0"N
10°55'30"N
10°55'0"N
10°54'30"N
10°54'0"N

MANNEKKARA WATERSHED
(21T13e)

1. Introduction

Mannekkara watershed is located in the eastern part of the Athavanad grama panchayath. The total area of the watershed is 446 Ha. This watershed includes wards 5, 7 completely and 6,8,9,13,14 partially. The boundary of the watershed is north National highway and Vettichira, south near to Ambalaparambu` to Pattarnadakkavu road and Paridhi watershed, East Kuttipuramkunnu-Killinkunnu road and West Poolamangalam - Athavanadu road and Poonchola watershed. The important places of the watershed are Vettichira Jumamasjid, Kambivalappu, Marancherikkundu, Rubberkadu niskarapalli, Mattummal GHS, Mattummal PHC, Chottur padam, Villoor padi, Cholakkadu, Alungal Crusher, Vadakkekulambu and Mannekkara

2. Physiography

The highest elevated area is located at northern (Vetichira) part of the watershed, which is 135 Meters from mean sea level. The lowest point of the watershed is located southern part which is 20 meters msl (Vadakkekulambu).

3. Watershed character

The shape of the water shape is rectangular. The major stream which is starting from northern part of the watershed. The major streams of the watershed are Marancherikkundu thodu, Rubber kadu thodu, Kannankulam, Cholakkad thodu, Alungal thodu, Mannekkara thodu and Vadakke kulambu thodu

4. Irrigation

Watershed Name	Well	Pond	Stream
Mannekkara	9 Ha	16 Ha	24.5 Ha

Source: baseline survey

5. Live Stock

Cow	Milk	Buffalo	Milk ltr	Goat	Milk ltr	Poultry	Duck	Rabbit
151	108720	21	7455	357	49980	1866	146	32

Source: baseline survey

6. Inferences

Mannekkara water shed lies near to National Highway 1 7.The total area of the paddy cultivation in the watershed is 32 hectares. Most of the peoples are working in Primary sector. Drinking supply schemes are in large numbers because this area faces extreme scarcity of water

ESTIMATES

7. Watershed Development Fund

ENTRY POINT	*4%*	2,14,080
NATURAL RESOURCE MANAGEMENT	*56%*	29,97,120
PRODUCTION SYSTEM AND MICRO ENTERPRISES	*10%*	5,35,200
LIVELYHOOD SUPPORT	*9%*	4,81,680
MANAGEMENT COMPONENT	*21%*	11,23,920
TOTAL(In Rupees)	*100%*	53,52,000

8. Entry point activities

SL NO	NAME OF WORK :	ESTIMATE COST
1	Solar Panel Installation At Govt Institution	2,14,080
	TOTAL(In Rupees)	2,14,080

9. Natural resource management (NRM)

In the first year, is going with DPR preparation and Implementation of entry point activities and all other developmental activities are doing from the second year onwards. Master plan and year wise plan for NRM given below

Master plan and year wise plan of natural resource management programme

MASTER PLAN	UNIT	VOLUME/ UNITS	RATE	IWMP SHARE/UNIT	TOTAL IWMP SHARE
AFFORESTATION					
TEAK,EETTY,MAHAGANI	Ha	4	16000	16000	64000
HORTICULTURE					
MANGO	/hectare	5	18000	18000	90000
AGRICULTURE					
VEGETABLE GARDEN	/hectare	0.8	37500	37500	30000
VEGETATIVE AND ENGINEERING STRUCTURES					
SIDE PROTECTION OF STREAMS					
1.CHOTTUR PADA THODU	m3	300	1600		480000
2.AALINGAL THODU	m3	151	2443		369000
3. PAARIKKUZHI THODU SIDE PROTECTION	m3				500000
WATER HARVESTING STRUCTURE(NEW CREATED)					
1.THINNAKAN CHIRA ARIPPAN THODU CHECK DAM	Nos				500000
WATER ABSORBTION PIT	Nos	66	107.14	107.14	7071
WELL CONSTRUCTION	Nos				
VADAKKEKOLAMBA ANGANWADI-OPENWELL	Nos	1			141000
CHOTTUR GLPS OPENWELL	Nos	1			141000
POND CONSTRUCTION					
KARIPPOL CHOLAKKAD POND	Nos	1			350000
WATER HARVESTING STRUCTURE(RENOVATION)					
MUNDAKKOTTU CHIRA POND	Nos	1	325000	325000	325000
Rounded figure					49
TOTAL					**2997120**

SECOND YEAR	UNIT	VOLUME/ UNITS	RATE	IWMP SHARE/UNIT	TOTAL IWMP SHARE
AFFORESTATION					
TEAK,EETTY,MAHAGANI	Ha	4	16000	16000	64000
HORTICULTURE					
MANGO	/hectare	5	18000	18000	90000
AGRICULTURE					
VEGETABLE GARDEN	/hectare	0.8	37500	37500	30000
VEGETATIVE AND ENGINEERING STRUCTURES					
SIDE PROTECTION OF STREAMS					
1.AALINGAL THODU	m3	151	2443		369000
WATER HARVESTING STRUCTURE(NEW CREATED)					
CHECK DAMS	Nos				
1.THINNAKAN CHIRA ARIPPAN THODU CHECK DAM	Nos	1			500000
2.VADAKKEKOLAMBA ANGANWADI-OPENWELL	Nos	1			141000
3.CHOTTUR GLPS OPENWELL	Nos	1			141000
Rounded figure					3000
TOTAL					1338000

THIRD YEAR	UNIT	VOLUME/ UNITS	RATE	IWMP SHARE/UNIT	TOTAL IWMP SHARE
VEGETATIVE AND ENGINEERING STRUCTURES					
SIDE PROTECTION OF STREAMS					
1.CHOTTUR PADA THODU -300M	m3	300	1600		480000
2. PAARIKKUZHI THODU SIDE PROTECTION	m3				500000
WATER HARVESTING STRUCTURE(NEW CREATED)					

WATER ABSORBTION PIT	Nos	66	107.14	107.14	7071
WATER HARVESTING STRUCTURE(RENOVATION)					
FARM PONDS					
MUNDAKKOTTU CHIRA POND	Nos	1	325000	325000	325000
Rounded figure					25929
TOTAL					1338000

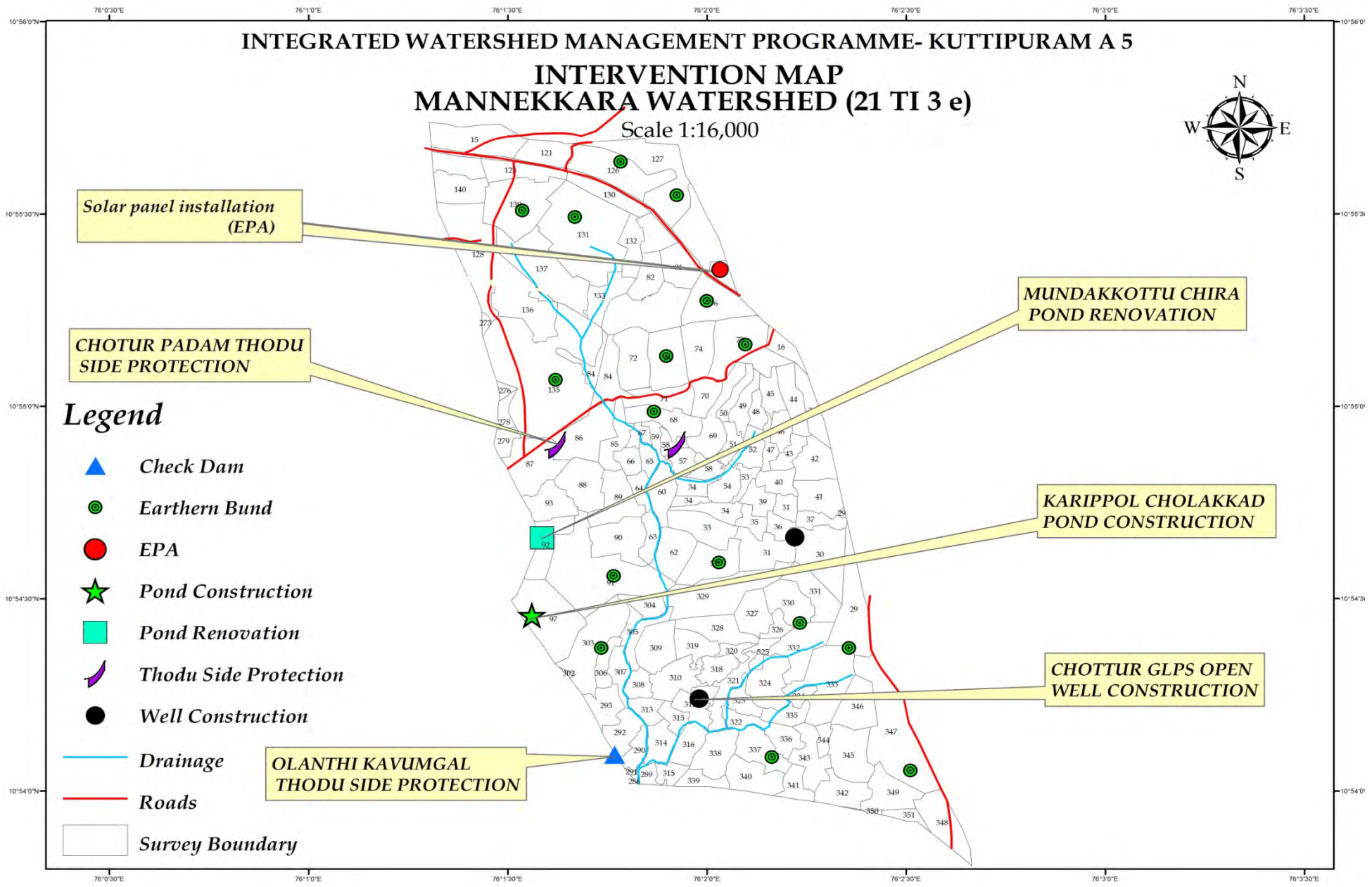
FOURTH YEAR	UNIT	VOLUME /UNITS	RATE	IWMP SHARE/UNIT	TOTAL IWMP SHARE
WATER HARVESTING STRUCTURE(NEW CREATED)					
POND CONSTRUCTION					
KARIPPOL CHOLAKKAD POND	Nos	1			350000
Rounded figure					-28880
TOTAL					321120

10. Master plan and year wise plan of production system management

MASTER PLAN	UNITS	Unit cost	IWMP SHARE/UNIT	TOTAL IWMP	TOTAL AMOUNT	CONVERGENCE (BANK LOAN)
BEEKEEPING	3	6000	6000	18000	18000	0
POULTRY	484	575	575	278300	278300	0
DAIRY	9	40000	24000	216000	360000	144000
VERMICOMPOST	2	10000	10000	20000	20000	0
AZOLLA	5	500	500	2500	2500	0
Rounded figure				400		
TOTAL				535200	678800	144000
Second Year	UNITS	Unit cost	IWMP SHARE/UNIT	TOTAL IWMP	TOTAL AMOUNT	CONVERGENCE (BANK LOAN)
BEEKEEPING	1	6000	6000	6000	6000	0
POULTRY	152	575	575	87400	87400	0
DAIRY	5	40000	24000	120000	200000	80000
AZOLLA	1	500	500	500	500	0
Rounded figure				180		
TOTAL				214080	293900	80000
Third Year	UNITS	Unit cost	IWMP SHARE/UNIT	TOTAL IWMP	TOTAL AMOUNT	CONVERGENCE (BANK LOAN)
BEEKEEPING	2	6000	6000	12000	12000	0
POULTRY	192	575	575	110400	110400	0
DAIRY	3	40000	24000	72000	120000	48000
VERMICOMPOST	2	10000	10000	20000	20000	0
Rounded figure				-320		
TOTAL				214080	262400	48000
Fourth Year	UNITS	Unit cost	IWMP SHARE/UNIT	TOTAL IWMP	TOTAL AMOUNT	CONVERGENCE (BANK LOAN)
POULTRY	140	575	575	80500	80500	0
DAIRY	1	40000	24000	24000	40000	16000
AZOLLA	4	500	500	2000	2000	0
Rounded figure				540		
TOTAL				107040	122500	16000

11. Master plan and year wise plan of livelihood system

MASTER PLAN	UNITS	Unit cost	IWMP SHARE/UNIT	TOTAL IWMP	TOTAL AMOUNT	CONVERGENCE (BANK LOAN)
GOAT REARING	17	30000	24000	408000	510000	102000
RABBIT REARING	11	5000	5000	55000	55000	0
COCONUT CLIMBER	6	3000	3000	18000	18000	0
Rounded figure				680		
TOTAL				**481680**	**583000**	**102000**
SECOND YEAR	UNITS	Unit cost	IWMP SHARE/UNIT	IWMP SHARE	TOTAL AMOUNT	CONVERGENCE (BANK LOAN)
GOAT REARING	6	30000	24000	144000	180000	36000
RABBIT REARING	6	5000	5000	30000	30000	0
COCONUT CLIMBER	4	3000	3000	12000	12000	0
Rounded figure				1320		
TOTAL				**187320**	**222000**	**36000**
THIRD YEAR	UNITS	Unit cost	IWMP SHARE/UNIT	IWMP SHARE	TOTAL AMOUNT	CONVERGENCE (BANK LOAN)
GOAT REARING	7	30000	24000	168000	210000	42000
RABBIT REARING	2	5000	5000	10000	10000	0
COCONUT CLIMBER	2	3000	3000	6000	6000	0
Rounded figure				3320		
TOTAL				**187320**	**226000**	**42000**
FOURTH YEAR	UNITS	Unit cost	IWMP SHARE/UNIT	IWMP SHARE	TOTAL AMOUNT	CONVERGENCE (BANK LOAN)
GOAT REARING	4	30000	24000	96000	120000	24000
RABBIT REARING	3	5000	5000	15000	15000	0
Rounded figure				-3960		
TOTAL				**107040**	**135000**	**24000**


INTEGRATED WATERSHED MANAGEMENT PROGRAMME- KUTTIPURAM A 5
INTERVENTION MAP
MANNEKKARA WATERSHED (21 TI 3 e)
Scale 1:16,000
N
W
E
S
Solar panel installation (EPA)
CHOTUR PADAM THODU SIDE PROTECTION
MUNDAKKOTTU CHIRA POND RENOVATION
KARIPPOL CHOLAKKAD POND CONSTRUCTION
CHOTTUR GLPS OPEN WELL CONSTRUCTION
OLANTHI KAVUMGAL THODU SIDE PROTECTION
Legend
Check Dam
Earthern Bund
EPA
Pond Construction
Pond Renovation
Thodu Side Protection
Well Construction
Drainage
Roads
Survey Boundary
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
10°56'0"N
10°55'30"N
10°55'0"N
10°54'30"N
10°54'0"N

PARUTHI WATERSHED (PARITHI)

(21T13f)

1. Introduction

Paridhi watershed comes under Athavanad Grama panchayath and its total area is 418 Ha. The fully covered ward is 10 and 9, 11, 13 are partially. The boundary of the watershed is north Chottur Mala, South Kuttipuram Grama panchayath, West kavaungal, east Mazhoor Temple. The important places of the watershed are Paridhi, Mecherichira, Thattarupadi, Athavanad. .etc

2. Physiography

Paruthi watershed is located in midland area. The highest elevated area 120 meters from msl, which is located at northen part. The lowest point located at eastern part, which is 14 meters mean sea level. The slope is from South to north also most of the steams are originated.

3. Watershed Character

The shape of the watershed is like triangular and most of the streams are originating from the northern side of the watershed. The major streams of the watersheds are Mecherichira, Chotturmalathodu, and Mazhoor Temple thodu. These three streams are originating from eastern part of the watershed and flow towards western direction and finally meet at Kavungal thodu.

4. Irrigation

Well	Pond	Stream
3 Ha	7 Ha	17 Ha

Source: Baseline Survey

5. Live Stock

Cow	Milk(ltr)	Buffalo	Milk(ltr)	Goat	Milk(ltr)	Poultry	Duck	Rabbit
34	24480	1	N.A	96	8736	543	26	4

Source: Baseline Survey

6. Inference

The slope of the watershed is east to west and south to north and mentioned areas are facing the drinking water problems.

ESTIMATE

7. Watershed development funding pattern

Entry Point	*4%*	*2,00,640*
Natural Resource Management	*56%*	*28,08,960*
Productive System And Micro Enterprises	*10%*	*50,1,600*
Livelihood Support	*9%*	*4,51,440*
Management Component	*21%*	*10,53,360*
Total(In Rupees)	*100%*	*50,16,000*

8. Entry point activities

SL NO	NAME OF WORK :	ESTIMATE COST
1	SOLAR PANEL INSTALLATION AT GOVT INSTITUTION	*2,00,640*
	TOTAL(In Rupees)	*2,00,640*

9. Natural Resource Management (NRM)

In the first year, is going with DPR preparation and Implementation of entry point activities and all other developmental activities are doing from the second year onwards. Master plan and year wise plan for NRM given below

Master plan and year wise plan of natural resource management programme

MASTER PLAN	UNIT	VOLUME /UNITS	RATE	IWMP SHARE/UNIT	TOTAL IWMP SHARE
AFFORESTATION					
TEAK,MAHAGANI,EETTY	Ha	2	16000	16000	32000
HORTICULTURE					
FRUIT PLANTS	/hectare	4	18000	18000	72000
AGRICULTURE					
VEGETABLE GARDEN	/hectare	3	37500	37500	112500
BANANA CULTIVATION	/hectare	5	50000	50000	250000
TUBER CROPS	/hectare	2.8	30000	30000	84000
WATER HARVESTING STRUCTURE(NEW CREATED)					
KAVUNGAL THODU CHECK DAM	Nos	1	400000	400000	400000
WELL RECHARGE	Nos	32	15000	15000	480000
WELL CONSTRUCTION					
1.PARAPPURAM VILLAGE OPEN WELL	Nos	1			141000
2.PARITHIPADAM OPEN WELL CONSTRUCTION	Nos	1	400000	400000	400000
WATER ABSORBTION PIT	Nos	162	107.14	107.14	17356.68
WATER HARVESTING STRUCTURE(RENOVATION)					
1.MENOTTUKULAM	Nos	1		800000	800000
2.PARAKKUNNU PARAMBA COLONY OPEN WELL	Nos	1	20000	20000	20000
Rounded figure					103.32
TOTAL					2808960

SECOND YEAR	UNIT	VOLUME/ UNITS	RATE	IWMP SHARE/UNIT	TOTAL IWMP SHARE
AFFORESTATION					
TEAK,MAHAGANI,EETTY	Ha	2	16000	16000	32000
HORTICULTURE					
FRUIT PLANTS	/hectare	4	18000	18000	72000
AGRICULTURE					
VEGETABLE GARDEN	/hectare	3	37500	37500	112500
BANANA CULTIVATION	/hectare	1	50000	50000	50000
TUBER CROPS	/hectare	1	30000	30000	30000
WATER HARVESTING STRUCTURE(NEW CREATED)					
KAVUNGAL THODU CHECK DAM	Nos	1	400000	400000	400000
WELL CONSTRUCTION					
1.PARAPPURAM VILLAGE OPEN WELL	Nos	1	141000	141000	141000
2.PARITHIPADAM OPEN WELL CONSTRUCTION	Nos	1	400000	400000	400000
WATER ABSORBTION PIT	Nos	162	107.14	107.14	17356.68
Rounded figure					-856.68
TOTAL					1254000

THIRD YEAR	UNIT	VOLUME/ UNITS	RATE	IWMP SHARE/UNIT	TOTAL IWMP SHARE
AGRICULTURE					
BANANA CULTIVATION (Tissue culture)	/hectare	2	50000	50000	100000
TUBER CROPS	/hectare	1	30000	30000	30000
WATER HARVESTING STRUCTURE(NEW CREATED)					
WELL RECHARGE	Nos	20	15000	15000	300000
WATER HARVESTING STRUCTURE(RENOVATION)					
POND RENOVATION					

1.MENOTTUKULAM	Nos	1		800000	800000
PARAKKUNNU PARAMBA COLONY OPEN WELL	Nos	1	20000	20000	20000
Rounded figure					4000
TOTAL					1254000

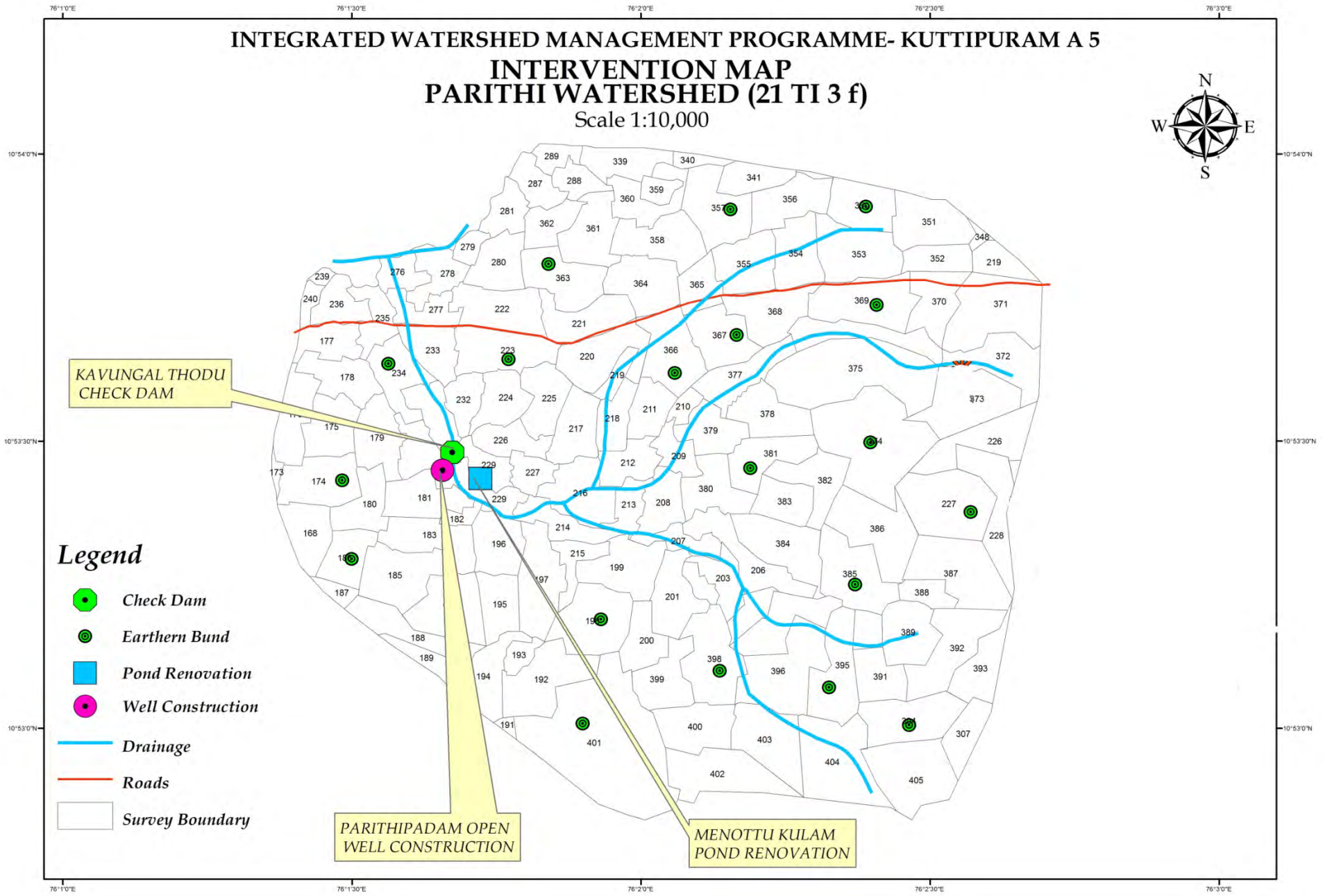
FOURTH YEAR	UNIT	VOLUME/ UNITS	RATE	IWMP SHARE/UNIT	TOTAL IWMP SHARE
AGRICULTURE					
BANANA CULTIVATION	/hectare	2	50000	50000	100000
TUBER CROPS	/hectare	0.8	30000	30000	24000
WATER HARVESTING STRUCTURE(NEW CREATED)					
WELL RECHARGE	Nos	12	15000	15000	180000
WELL CONSTRUCTION					
Rounded figure					-3040
TOTAL					300960

10. Master plan and year wise plan of production system management

MASTER PLAN	UNITS	Unit cost	IWMP SHARE/UNIT	TOTAL IWMP	TOTAL AMOUNT	CONVERGENCE (BANK LOAN)
BEEKEEPING	3	6000	6000	18000	18000	0
POULTRY	261	575	575	150075	150075	0
DAIRY	13	40000	24000	312000	520000	208000
VERMICOMPOST	2	10000	10000	20000	20000	0
AZOLLA	3	500	500	1500	1500	0
Rounded figure				25		
TOTAL				**501600**	**709575**	**208000**
SECOND YEAR	UNITS	Unit cost	IWMP SHARE/UNIT	TOTAL IWMP	TOTAL AMOUNT	CONVERGENCE (BANK LOAN)
POULTRY	140	575	575	80500	80500	0
DAIRY	5	40000	24000	120000	200000	80000
AZOLLA	1	500	500	500	500	0
Rounded figure				-360		
TOTAL				**200640**	**281000**	**80000**
THIRD YEAR	UNITS	Unit cost	IWMP SHARE/UNIT	TOTAL IWMP	TOTAL AMOUNT	CONVERGENCE (BANK LOAN)
POULTRY	121	575	575	69575	69575	0
DAIRY	5	40000	24000	120000	200000	80000
VERMICOMPOST	1	10000	10000	10000	10000	0
Rounded figure				1065		
TOTAL				**200640**	**279575**	**80000**
FOURTH YEAR	UNITS	Unit cost	IWMP SHARE/UNIT	TOTAL IWMP	TOTAL AMOUNT	CONVERGENCE (BANK LOAN)
BEEKEEPING	3	6000	6000	18000	18000	0
POULTRY		575	575	0	0	0
DAIRY	3	40000	24000	72000	120000	48000
VERMICOMPOST	1	10000	10000	10000	10000	0
AZOLLA	2	500	500	1000	1000	0
Rounded figure				-680		
TOTAL				**100320**	**149000**	**48000**

11. Master plan and year wise plan of livelihood activities

MASTER PLAN	UNITS	Unit cost	IWMP SHARE	TOTAL IWMP	TOTAL AMOUNT	CONVERGENCE (BANK LOAN)
GOAT REARING	16	30000	24000	384000	480000	96000
RABBIT REARING	6	5000	5000	30000	30000	0
COCONUT CLIMBER	12	3000	3000	36000	36000	0
Rounded figure				1440		
TOTAL				**451440**	**546000**	**96000**
SECOND YEAR	UNITS	Unit cost	IWMP SHARE/UNIT	IWMP SHARE	TOTAL AMOUNT	CONVERGENCE (BANK LOAN)
GOAT REARING	6	30000	24000	144000	180000	36000
RABBIT REARING	2	5000	5000	10000	10000	0
COCONUT CLIMBER	7	3000	3000	21000	21000	0
Rounded figure				560		
TOTAL				**175560**	**211000**	**36000**
THIRD YEAR	UNITS	Unit cost	IWMP SHARE/UNIT	IWMP SHARE	TOTAL AMOUNT	CONVERGENCE (BANK LOAN)
GOAT REARING	6	30000	24000	144000	180000	36000
RABBIT REARING	3	5000	5000	15000	15000	0
COCONUT CLIMBER	5	3000	3000	15000	15000	0
Rounded figure				1560		
TOTAL				175560	210000	36000
FOURTH YEAR	UNITS	Unit cost	IWMP SHARE/UNIT	IWMP SHARE	TOTAL AMOUNT	CONVERGENCE (BANK LOAN)
GOAT REARING	4	30000	24000	96000	120000	24000
RABBIT REARING	1	5000	5000	5000	5000	0
Rounded figure				-680		
TOTAL				**100320**	**125000**	**24000**


INTEGRATED WATERSHED MANAGEMENT PROGRAMME- KUTTIPURAM A 5
INTERVENTION MAP
PARITHI WATERSHED (21 TI 3 f)
Scale 1:10,000
N
W
E
S
76°1'0"E
76°1'30"E
76°2'0"E
76°2'30"E
76°3'0"E
10°54'0"N
10°53'30"N
10°53'0"N
KAVUNGAL THODU CHECK DAM
PARITHIPADAM OPEN WELL CONSTRUCTION
MENOTTU KULAM POND RENOVATION
Legend
Check Dam
Earthern Bund
Pond Renovation
Well Construction
Drainage
Roads
Survey Boundary

PAKARANALLUR WATERSHED

(21T13g)

1. Introduction

The watershed lie down between 10°52'15.269"N 10°53'54.123"North latitude and 76°0'44.198"E 76°1'51.946"East longitude. This watershed situated in Athavanad and Kuttipuram Grama Panchayaths of Kuttipuram Block.

2. Physiography

Pakaranallur watershed is located in midland area. The highest elevated area (89 mtrs msl) of watershed located in western part as well as lowest point located near to Bharathapuzha which is southern boundary of the watershed. The slope is from West to Eastern side in southern portion and North to south in northern portion also most of the streams are originating from the hilly area.

3. Watershed character

The shape of the watershed is triangular. The major stream of the watershed is Kavungal thodu, which is coming from Mannekkara and passing through Pridhi watershed. The total length of the Kavungal thodu is 3.4 kms and lastly it joining to Bharathapuzha. The stream, which is starting from western part is joining with Kavunagal as well as the total length of the stream, is 2.46 kms.

4. Irrigation

Watershed Name	Well	Pond	Stream
Pakaranallur	13.5 Ha	4 Ha	18 Ha

Source: baseline Survey

5. Live Stock

Cow	Milk(Litre)	Buffalo	Milk(Litre)	Goat	Milk(Litre)	Poultry	Duck
66	47520	8	3854	94	8460	497	22

Source: Baseline Survey

6. Inferences

This watershed situated in Athavanad and Kuttipuram Grama panchayaths. The major portion of the watershed is paddy land.

ESTIMATES

7. Watershed development funding pattern

Entry Point Activity	*4%*	*1,81,920*
Natural Resource Management	*56%*	*25,46,880*
Productive System And Micro Enterprises	*10%*	*4,54,800*
Livelihood Support	*9%*	*4,09,320*
Management Component	*21%*	*9,55,080*
Total (In Rupees)	*100%*	*45,48,000*

8. Entry point activities

Name of works: Rain water harvesting tank at NO, 101-Anganwadi, (Kolathole) Pakaranallur.

Construction of rainwater harvesting tank will provide drinking water facility to the little kids of the Anganwadi. The Anganwadi is located in S.C colony. The surrounding area of the watershed is facing shortage of water, after completion of this work will help them to overcome this problem to a limit. The total capacity of the water holding structure is 25000 litres.

9. Natural Resource Management (NRM)

In the first year, is going with DPR preparation and Implementation of entry point activities and all other developmental activities are doing from the second year onwards. Master plan and year wise plan for NRM given below,

- **Master plan and year wise plan of natural resource management**

MASTER PLAN	UNIT	VOLUME/ UNITS	RATE	IWMP SHARE/UNIT	TOTAL IWMP SHARE
AFFORESTATION					
TEAK,MAHAGANI,EETTY	Ha	2.5	16000	16000	40000
HORTICULTURE					
FRUIT PLANTS	NOS/KIT	1000	150	150	150000
AGRICULTURE					
VEGETABLE GARDEN	/hectare	2	37500	37500	75000
BANANA CULTIVATION	/hectare	2	50000	50000	100000
SPICES CULTIVATION	/hectare	1.5	30000	30000	45000
TUBER CROPS	/hectare	1.5	30000	30000	45000
FODDER GRASS CULTIVATION	/hectare	1.5	6000	6000	9000
MEDICINAL PLANT CULTIVATION					
1.KATTARVAAZHA	/hectare	0.3	50000	50000	15,000
2.CHITTAADALODAKAM	/hectare	0.3	50000	50000	15,000
SOIL & MOISTURE CONSERVATION					
STONE PITCHED BUND	/hectare	6	12000	12000	72,000
EARTHERN BUND	/hectare	5	12000	12000	60,000
VEGETATIVE AND ENGINEERING STRUCTURES					
SIDE PROTECTION OF STREAMS					
1.KAVUNGAL THODU	m3				748000
WATER HARVESTING STRUCTURE(NEW CREATED)					
CHECK DAMS- CHANGAROTHUPADI&CHENAPARAMBA	Nos	2	15000	15000	30,000.00
WELL RECHARGE	Nos	74	15000	15000	11,10,000.00
WATER ABSORBTION PIT	Nos	73	107.14	107.14	7,821.22
WATER HARVESTING STRUCTURE(RENOVATION)					

PAREKKALAM SC COLONY OPENWELL	Nos	1			25,000.00
TOTAL (Rounded Figure - 58.78)					2546880

SECOND YEAR	UNIT	VOLUME/ UNITS	RATE	IWMP SHARE/UNIT	TOTAL IWMP SHARE
AFFORESTATION					
TEAK,MAHAGANI,EETTY	Ha	2.5	16000	16000	40000
HORTICULTURE					
FRUIT PLANTS	NOS/KIT	500	150	150	75000
AGRICULTURE					
VEGETABLE GARDEN	/hectare	1	37500	37500	37500
BANANA CULTIVATION	/hectare	1	50000	50000	50000
SPICES CULTIVATION	/hectare	1	30000	30000	30000
TUBER CROPS	/hectare	1	30000	30000	30000
SOIL & MOISTURE CONSERVATION					
STONE PITCHED BUND	/hectare	4	12000	12000	48,000.00
EARTHERN BUND	/hectare	2	12000	12000	24,000.00
VEGETATIVE AND ENGINEERING STRUCTURES					
SIDE PROTECTION OF STREAMS					
1.KAVUNGAL THODU	m3				748000
WATER HARVESTING STRUCTURE(NEW CREATED)					
CHECK DAMS- CHANGAROTHUPADI&CHENAPARAMBA	Nos	2	15000	15000	30,000.00
WATER ABSORBTION PIT	Nos	0	107.14	107.14	0.00
PAREKKALAM SC COLONY OPENWELL	Nos	1			25,000.00
TOTAL (Rounded Figure - -500)					1137000

THIRD YEAR	UNIT	VOLUME/ UNITS	RATE	IWMP SHARE/UNIT	TOTAL IWMP SHARE
HORTICULTURE					
FRUIT PLANTS	NOS/KIT	500	150	150	75000
AGRICULTURE					
VEGETABLE GARDEN	/hectare	1	37500	37500	37500
BANANA CULTIVATION	/hectare	1	50000	50000	50000
SPICES CULTIVATION	/hectare	0.5	30000	30000	15000
TUBER CROPS	/hectare	0.5	30000	30000	15000
FODDER GRASS CULTIVATION	/hectare	1	6000	6000	6000
MEDICINAL PLANT CULTIVATION					
1.KATTARVAAZHA	/hectare	0.3	50000	50000	15,000.00
2.CHITTAADALODAKAM	/hectare	0.3	50000	50000	15,000.00
SOIL & MOISTURE CONSERVATION					
STONE PITCHED BUND	/hectare	2	12000	12000	24,000.00
EARTHERN BUND	/hectare	3	12000	12000	36,000.00
WATER HARVESTING STRUCTURE(NEW CREATED)					
WELL RECHARGE	Nos	56	15000	15000	8,40,000.00
WATER ABSORBTION PIT	Nos	73	107.14	107.14	7,821.22
TOTAL (Rounded Figure - 678.78)					1137000

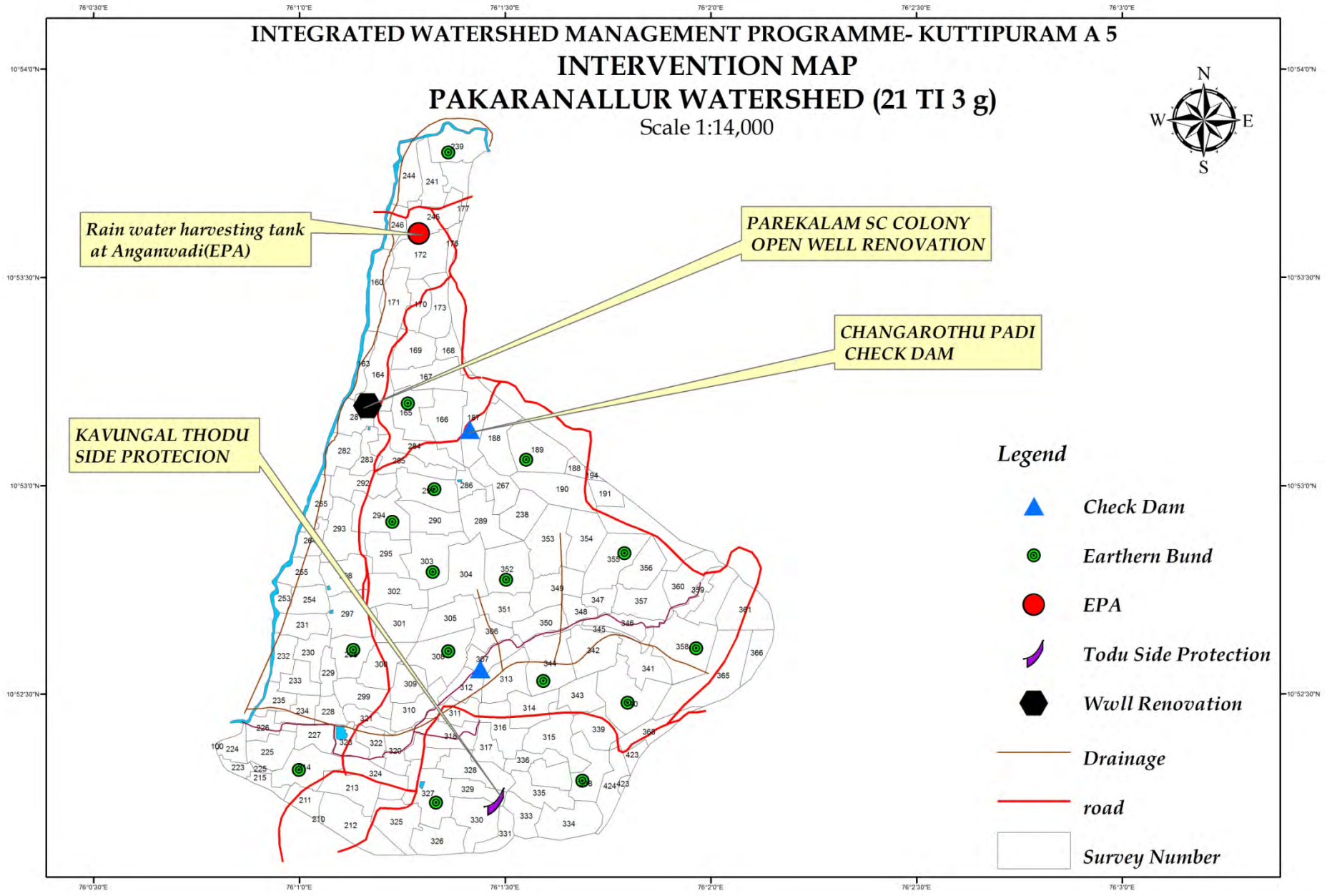
FOURTH YEAR	UNIT	VOLUME/U NITS	RATE	IWMP SHARE/UNIT	TOTAL IWMP SHARE
AGRICULTURE					
FODDER GRASS CULTIVATION	/hectare	0.5	6000	6000	3000
WATER HARVESTING STRUCTURE(NEW CREATED)					
WELL RECHARGE	Nos	18	15000	15000	2,70,000
TOTAL (Rounded figure - -120.00)					272880

10. Master plan and year wise plan of production system management

MASTER PLAN	UNITS	Unit cost	IWMP SHARE/UNIT	TOTAL IWMP	TOTAL AMOUNT	CONVERGENCE (BANK LOAN)
BEEKEEPING	2	6000	6000	12000	12000	0
POULTRY	401	575	575	230575	230575	0
DAIRY	8	40000	24000	192000	320000	128000
VERMICOMPOST	2	10000	10000	20000	20000	0
Rounded figure				225		
TOTAL				**454800**	**582575**	**128000**
SECOND YEAR	UNITS	Unit cost	IWMP SHARE/UNIT	TOTAL IWMP	TOTAL AMOUNT	CONVERGENCE (BANK LOAN)
BEEKEEPING	2	6000	6000	12000	12000	0
POULTRY	153	575	575	87975	87975	0
DAIRY	3	40000	24000	72000	120000	48000
VERMICOMPOST	1	10000	10000	10000	10000	0
Rounded figure				-55		
TOTAL				**181920**	**229975**	**48000**
THIRD YEAR	UNITS	Unit cost	IWMP SHARE/UNIT	TOTAL IWMP	TOTAL AMOUNT	CONVERGENCE (BANK LOAN)
POULTRY	215	575	575	123625	123625	0
DAIRY	2	40000	24000	48000	80000	32000
VERMICOMPOST	1	10000	10000	10000	10000	0
Rounded figure				295		
TOTAL				181920	213625	32000
FOURTH YEAR	UNITS	Unit cost	IWMP SHARE/UNIT	TOTAL IWMP	TOTAL AMOUNT	CONVERGENCE (BANK LOAN)
POULTRY	33	575	575	18975	18975	0
DAIRY	3	40000	24000	72000	120000	48000
Rounded figure				-15		
TOTAL				90960	138975	48000

11. Master plan and year wise plan of lively hood system

MASTER PLAN	UNITS	Unit cost	IWMP SHARE/UNIT	TOTAL IWMP	TOTAL AMOUNT	CONVERGENCE (BANK LOAN)
GOAT REARING	15	30000	24000	360000	450000	90000
RABBIT REARING	5	5000	5000	25000	25000	0
COCONUT CLIMBER	8	3000	3000	24000	24000	0
Rounded figure				320		
TOTAL				**409320**	**499000**	**90000**
SECOND YEAR	UNITS	Unit cost	IWMP SHARE/UNIT	IWMP SHARE	TOTAL AMOUNT	CONVERGENCE (BANK LOAN)
GOAT REARING	6	30000	24000	144000	180000	36000
RABBIT REARING	3	5000	5000	15000	15000	0
Rounded figure				180		
TOTAL				159180	195000	36000
THIRD YEAR	UNITS	Unit cost	IWMP SHARE/UNIT	IWMP SHARE	TOTAL AMOUNT	CONVERGENCE (BANK LOAN)
GOAT REARING	5	30000	24000	120000	150000	30000
RABBIT REARING	2	5000	5000	10000	10000	0
COCONUT CLIMBER	8	3000	3000	24000	24000	0
Rounded figure				5180		
TOTAL				159180	184000	30000
FOURTH YEAR	UNITS	Unit cost	IWMP SHARE/UNIT	IWMP SHARE	TOTAL AMOUNT	CONVERGENCE (BANK LOAN)
GOAT REARING	4	30000	24000	96000	120000	24000
Rounded figure				-5040		
TOTAL				90960	120000	24000


INTEGRATED WATERSHED MANAGEMENT PROGRAMME- KUTTIPURAM A 5
INTERVENTION MAP
PAKARANALLUR WATERSHED (21 TI 3 g)
Scale 1:14,000
N
S
E
W
Rain water harvesting tank at Anganwadi(EPA)
PAREKALAM SC COLONY OPEN WELL RENOVATION
CHANGAROTHU PADI CHECK DAM
KAVUNGAL THODU SIDE PROTECION
Legend
Check Dam
Earthern Bund
EPA
Todu Side Protection
Wwll Renovation
Drainage
road
Survey Number
76°0'30"E
76°1'0"E
76°1'30"E
76°2'0"E
76°2'30"E
76°3'0"E
10°54'0"N
10°53'30"N
10°53'0"N
10°52'30"N

PART III

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

EXPECTED OUTCOMES

INTERVENTIONS	ACTIVITIES	OUTCOME
Natural Resource Management Programme	1. Afforestation Teak , Mahagani , Eetty 2. Horticulture - Mango 3. Agriculture - Vegetable Garden , Banana Cultivation , Spices Cultivation , Fodder Grass , Tuber Crop , Mixed Crop 4. Medicinal Plant Cultivation - Kattarvazha , Chitadalodakam 5. Soil and Moisture Conservation 6. Vegetative And Engineering Structure 7. Water harvesting structure (new created) 8. Water harvesting structure (renovation)	41.75 Ha tree planting and 13000 seedlings (horticulture) brings soils together which prevents soil erosion in the project area. In agriculture section additional 164.1 Ha crop cultivation, 5.6 Ha medicinal plant cultivation also added to this project for preventing of soil erosion through increasing crop production. In Soil and Moisture Conservation section 284.5 Ha land treating in this project Important 34 streams protect under vegetative and engineering structure. Also 20 check dams, "chira , 337 well recharge , construction of 9 farm ponds , 7 well construction and increased ground water levels the major expected post Project 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 Renovation 4 pond and 6 well decreases the water scarcity for 10 Ha

Production System And Micro Enterprises	1. Beekeeping 2. Poultry 3. Diary 4. Vermicompost 5. Mushroom cultivation 6. Psciculture	Perfect execution of 27 beekeeping unit , 3429 poultry , 143 cow ,17 vermicompost , 36 azolla cultivation and 17 psciculture help the people of project area to a sustainable production method by the help of capacity building programmes
Lively hood activities	1. Goat rearing 2. Rabbit rearing 3. Weed cutter 4. Coconut climber 5. Agriculture nursery 6. 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.

CONVERGENCE

WATERSHED	ACTIVITIES										
	Agro Forestry (Agri. – Dept)	Mixed Crop (Agri. – Dept)	Banana (Agri. – Dept)	Vegetable(Agri. – Dept)	Paddy(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)	(Ha)	(Ha)	Nos	Nos	Nos	NOS
Kolakkad	-	2	2	1	2	5	4	350	300	300	2
Kattipparuthipadam	5	3	2	-	5	30	35	500	500	500	4
Kadungal	-	2	2			7	5	134	350	350	2
Kothayath thodu	-	2	6	4	-	2	5	300	450	450	2
Mannekkara	-	-	3	2	-	5	3	300	350	350	3
Paruthi	-	2	1.5	-	-	2	2	300	250	250	2
Poonchola	-	--	2	-	5	30	35	351	250	250	2
Pakaranallur	-	2	1.5	-	-	2	2	300	250	250	2

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.

PROJECT SUMMARY AND CONCLUSION

Kuttippuram (IWMP-A5) project is located in Kuttippuram block Panchayath of Malappuram district. The project comprises of eight micro-watersheds namely Kolakkad (20B2a), Kattiparuthipadam (20B3a) Kadungal(20B3b), Kothayath thodu (20B3c), Poonchola (21T13b),Mannekkara(21T13e),Paruthi(21T13f)and Pakaranallur(21T13g). The project area covers the Grama Panchayats of Valancheri,Athavanad,Marakkara,Edayur and Kuttippuram.,There are 14519 households in the project area and the total population is 72160. The total project cost of the Kuttippuram IWMP-A5 project is Rs. 669.96000 lakhs. 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 Kuttippuram Block Panchayath is the Programme Implementing Agency (PIA) of the Kuttippuram IWMP-A5 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 eight 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.

APPENDIXES

1. Transportation in the project area

Watershed Name	Pwd Roads	Panchayath Roads,
Poonchola	Kattamkunnu-Cherulal Road	Thattan padi-Changamthodi
	Kattamkunnu -Alungal padi Road	Kiliyankunnu-Menothil padi
	Chungam-Changamthodi-Poolamangalam Road	Choloor padi-Alungal
	.Pallippara-Padippuram Road	Bavappadi-Poonchola
	Kuttikalathani-Padippuram Road, etc	Cherulal-Thakarakkattu
		Pakkachira-Majmah Road
		Changamthodi-Chenkoli,etc.
Pakaranallur	Pakaranallur-Kuttippuram,	Ooroth palliyal-Chola Road,
	Pakaranallur-Athavanad	Narikkulam-Pakaranallur,
	.Ooroth palliyal-Spinning mill Road,etc.	Ooroth palliyal-Chengarath padi
Mannekkara	.Vettichira-Kattilangadi	.Rubber kadu-Niskarapalli Road
	Mattummal-Chottur	Koottadammal-Al huda Road
	Karippol-Koottadammal	Thonikkal-Rahath Nagar Road
	NH-Karippankulam,etc.	Glamour city-Perunkulam Road
		Karippol-Pattekkallu Road
		Mattummal-Kalakkaran padi
		Mannekkara-
		Parikkuzhikulambu Road,
Kolakkad.	NH –Civil station,	Pariyankad-Chembanad,

	NH-Kolakkad,	Chembinkalayi-Irumpali,
	PHC-Mukkilapeedika	NH-Thazhangadi,
	Karuvampadi-Perumparamba,	.GLPS-Manuttipadi road,
	Pandikasala-Kannamparamba	Pathiparamba-Anappadi,
	Kodikkunnu-Kolakkad,	Bilal Nagar-Perassannur
	Moodal-Kumbalamkunnu,	
Kattiparuthipadam	Calicut–Kuttippuram(NH)	Valancheri-Kattiparuthi,
	Markaz moodal-Kanjippura	Kanjippura-Malayil
	Moochikkal –Chungam	koottadammal
	Pandikasala-Abudhabipadi,	Karippol –Koottadammal,
		Karthala-Palliparamba
		Kavumpuram-Mekkolamba
Kadungad	Kuttippuram-Calicut Road	Kavumpuram-Block Road
	Valancheri-Pattambi Road	Kavumpuram-High school Road
	Valancheri-Perinthalmanna Road	Valancheri-Vaikkathur Road
	Valancheri-Kadampuzha Road	

2. Master plan of IWMP IV-2011/12 Project

	Total treatable area - 5583					Total amount = 5583X 12000/ HA = 66996000					
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	837450	133992	66996	2679840	167490	669960	0	0	0	0	4555728
%	1.25	0.20	0.10	4.00	0.25	1.00	0.00	0.00	0.00		6.80
SECOND	2344860	167490	167490	0	1339920	0	16749000	2344860	2679840	0	25793460
%	3.50	0.25	0.25		2.00		25.00	3.50	4.00		38.50
THIRD	2344860	167490	167490	0	1339920	0	16749000	2344860	2679840	0	25793460
%	3.50	0.25	0.25		2.00		25.00	3.50	4.00	0.00	38.50
FOURTH	1172430	200988	267984	0	502470	0	4019760	1339920	1339920	2009880	10853352
%	1.75	0.30	0.40		0.75		6.00	2.00	2.00	3.00	16.20
TOTAL	6699600	669960	669960	2679840	3349800	669960	37517760	6029640	6699600	2009880	66996000
%	10.00	1.00	1.00	4.00	5.00	1.00	56.00	9.00	10.00	3.00	100.00

3. Year wise funding pattern of watershed wise

KOLAKKAD WATERSHED											
	Total treatable area -777							Total amount - 777X 12000/ HA = 9324000			
YEAR	ADMINISTRATION	MONITORING	EVALUATION	ENTRY POINT ACTIVITY	INSTITUTION & CAPACITY BUILDING	DPR PREPERATION	NATURAL RESOURCE MANAGEMENT ACTIVITIES	LIVELIHOOD ACTIVITIES	PRODUCTION SYSTEM & MICRO ENTERPRISES	CONSOLIDATION PHASE	TOTAL IWMP PROJECT
FIRST	116550	18648	9324	372960	23310	93240	0	0	0	0	634032
%	1.25	0.20	0.10	4.00	0.25	1.00	0.00	0.00	0.00		6.80
SECOND	326340	23310	23310	0	186480	0	2331000	326340	372960	0	3589740
%	3.50	0.25	0.25		2.00		25.00	3.50	4.00		38.50
THIRD	326340	23310	23310	0	186480	0	2331000	326340	372960	0	3589740
%	3.50	0.25	0.25		2.00		25.00	3.50	4.00	0.00	38.50
FOURTH	163170	27972	37296	0	69930	0	559440	186480	186480	279720	1510488
%	1.75	0.30	0.40		0.75		6.00	2.00	2.00	3.00	16.20
TOTAL	932400	93240	93240	372960	466200	93240	5221440	839160	932400	279720	9324000
%	10.00	1.00	1.00	4.00	5.00	1.00	56.00	9.00	10.00	3.00	100.00

KATTIPPARUTHIPPADAM WATERSHED											
	Total treatable area -1972						Total amount - 1972 X 12000/ HA =23664000				
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	295800	47328	23664	946560	59160	236640	0	0	0	0	1609152
%	1.25	0.20	0.10	4.00	0.25	1.00	0.00	0.00	0.00		6.80
SECOND	828240	59160	59160	0	473280	0	5916000	828240	946560	0	9110640
%	3.50	0.25	0.25		2.00		25.00	3.50	4.00		38.50
THIRD	828240	59160	59160	0	473280	0	5916000	828240	946560	0	9110640
%	3.50	0.25	0.25		2.00		25.00	3.50	4.00	0.00	38.50
FOURTH	414120	70992	94656	0	177480	0	1419840	473280	473280	709920	3833568
%	1.75	0.30	0.40		0.75		6.00	2.00	2.00	3.00	16.20
TOTAL	2366400	236640	236640	946560	1183200	236640	13251840	2129760	2366400	709920	23664000
%	10.00	1.00	1.00	4.00	5.00	1.00	56.00	9.00	10.00	3.00	100.00

KADUNGAL WATERSHED											
	Total treatable area - 554						Total amount - 554 X 12000/ HA =6648000				
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	83100	13296	6648	265920	16620	66480	0	0	0	0	452064
%	1.25	0.20	0.10	4.00	0.25	1.00	0.00	0.00	0.00		6.80
SECOND	232680	16620	16620	0	132960	0	1662000	232680	265920	0	2559480
%	3.50	0.25	0.25		2.00		25.00	3.50	4.00		38.50
THIRD	232680	16620	16620	0	132960	0	1662000	232680	265920	0	2559480
%	3.50	0.25	0.25		2.00		25.00	3.50	4.00	0.00	38.50
FOURTH	116340	19944	26592	0	49860	0	398880	132960	132960	199440	1076976
%	1.75	0.30	0.40		0.75		6.00	2.00	2.00	3.00	16.20
TOTAL	664800	66480	66480	265920	332400	66480	3722880	598320	664800	199440	6648000
%	10.00	1.00	1.00	4.00	5.00	1.00	56.00	9.00	10.00	3.00	100.00

KOTHAYATH THODU WATERSHED											
	Total treatable area -214							Total amount - 214 X 12000/ HA = 2568000			
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	32100	5136	2568	102720	6420	25680	0	0	0	0	174624
%	1.25	0.20	0.10	4.00	0.25	1.00	0.00	0.00	0.00		6.80
SECOND	89880	6420	6420	0	51360	0	642000	89880	102720	0	988680
%	3.50	0.25	0.25		2.00		25.00	3.50	4.00		38.50
THIRD	89880	6420	6420	0	51360	0	642000	89880	102720	0	988680
%	3.50	0.25	0.25		2.00		25.00	3.50	4.00	0.00	38.50
FOURTH	44940	7704	10272	0	19260	0	154080	51360	51360	77040	416016
%	1.75	0.30	0.40		0.75		6.00	2.00	2.00	3.00	16.20
TOTAL	256800	25680	25680	102720	128400	25680	1438080	231120	256800	77040	2568000
%	10.00	1.00	1.00	4.00	5.00	1.00	56.00	9.00	10.00	3.00	100.00

POONCHOLA WATERSHED											
	Total treatable area -823						Total amount - 823 X 12000/ HA = 9876000				
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	123450	19752	9876	395040	24690	98760	0	0	0	0	671568
%	1.25	0.20	0.10	4.00	0.25	1.00	0.00	0.00	0.00		6.80
SECOND	345660	24690	24690	0	197520	0	2469000	345660	395040	0	3802260
%	3.50	0.25	0.25		2.00		25.00	3.50	4.00		38.50
THIRD	345660	24690	24690	0	197520	0	2469000	345660	395040	0	3802260
%	3.50	0.25	0.25		2.00		25.00	3.50	4.00	0.00	38.50
FOURTH	172830	29628	39504	0	74070	0	592560	197520	197520	296280	1599912
%	1.75	0.30	0.40		0.75		6.00	2.00	2.00	3.00	16.20
TOTAL	987600	98760	98760	395040	493800	98760	5530560	888840	987600	296280	9876000
%	10.00	1.00	1.00	4.00	5.00	1.00	56.00	9.00	10.00	3.00	100.00

MANNEKKARA WATERSHED											
	Total treatable area -446							Total amount -446 X 12000/ HA =5352000			
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	66900	10704	5352	214080	13380	53520	0	0	0	0	363936
%	1.25	0.20	0.10	4.00	0.25	1.00	0.00	0.00	0.00		6.80
SECOND	187320	13380	13380	0	107040	0	1338000	187320	214080	0	2060520
%	3.50	0.25	0.25		2.00		25.00	3.50	4.00		38.50
THIRD	187320	13380	13380	0	107040	0	1338000	187320	214080	0	2060520
%	3.50	0.25	0.25		2.00		25.00	3.50	4.00	0.00	38.50
FOURTH	93660	16056	21408	0	40140	0	321120	107040	107040	160560	867024
%	1.75	0.30	0.40		0.75		6.00	2.00	2.00	3.00	16.20
TOTAL	535200	53520	53520	214080	267600	53520	2997120	481680	535200	160560	5352000
%	10.00	1.00	1.00	4.00	5.00	1.00	56.00	9.00	10.00	3.00	100.00

PARUTHI WATERSHED											
	Total treatable area -418							Total amount - 418 X 12000/ HA =5016000			
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	62700	10032	5016	200640	12540	50160	0	0	0	0	341088
%	1.25	0.20	0.10	4.00	0.25	1.00	0.00	0.00	0.00		6.80
SECOND	175560	12540	12540	0	100320	0	1254000	175560	200640	0	1931160
%	3.50	0.25	0.25		2.00		25.00	3.50	4.00		38.50
THIRD	175560	12540	12540	0	100320	0	1254000	175560	200640	0	1931160
%	3.50	0.25	0.25		2.00		25.00	3.50	4.00	0.00	38.50
FOURTH	87780	15048	20064	0	37620	0	300960	100320	100320	150480	812592
%	1.75	0.30	0.40		0.75		6.00	2.00	2.00	3.00	16.20
TOTAL	501600	50160	50160	200640	250800	50160	2808960	451440	501600	150480	5016000
%	10.00	1.00	1.00	4.00	5.00	1.00	56.00	9.00	10.00	3.00	100.00

PAKARANALLUR WATERSHED											
	Total treatable area -379							Total amount - 379 X 12000/ HA =4548000			
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	56850	9096	4548	181920	11370	45480	0	0	0	0	309264
%	1.25	0.20	0.10	4.00	0.25	1.00	0.00	0.00	0.00		6.80
SECOND	159180	11370	11370	0	90960	0	1137000	159180	181920	0	1750980
%	3.50	0.25	0.25		2.00		25.00	3.50	4.00		38.50
THIRD	159180	11370	11370	0	90960	0	1137000	159180	181920	0	1750980
%	3.50	0.25	0.25		2.00		25.00	3.50	4.00	0.00	38.50
FOURTH	79590	13644	18192	0	34110	0	272880	90960	90960	136440	736776
%	1.75	0.30	0.40		0.75		6.00	2.00	2.00	3.00	16.20
TOTAL	454800	45480	45480	181920	227400	45480	2546880	409320	454800	136440	4548000
%	10.00	1.00	1.00	4.00	5.00	1.00	56.00	9.00	10.00	3.00	100.00