INTEGRATED WATERSHED MANAGEMENT PROGRAMME - IWMP

IRITTY BLOCK PANCHAYATH

KANNUR DISTRICT

DETAILED PROJECT REPORT

IWMP – III/2011-12

Prepared by:

SUSTHIRA

Centre for Sustainable Development Studies and Action

(TECHNICAL SUPPORT ORGANIZATION)

Kerala State, India. Web:www.susthira.com, E-mail:susthira@yahoo.co.in, Ph: 0497 - 2650170, 9744888122

Central Office: Kannur, Pariyaram Medical College P.O., Pin - 670 503, E-mail:susthiraprm@yahoo.com
Regional Office: Kottayam, Manimala, Karikkattoor P.O. - 686 544,9744983222,
E-mail:suthiraktm@yahoo.com

Nodel Office: Thiruvananthapuram, Kanyakulangara, Vembayam – P.O., Pin: 695615,
E-mail:suthiratvm@yahoo.com

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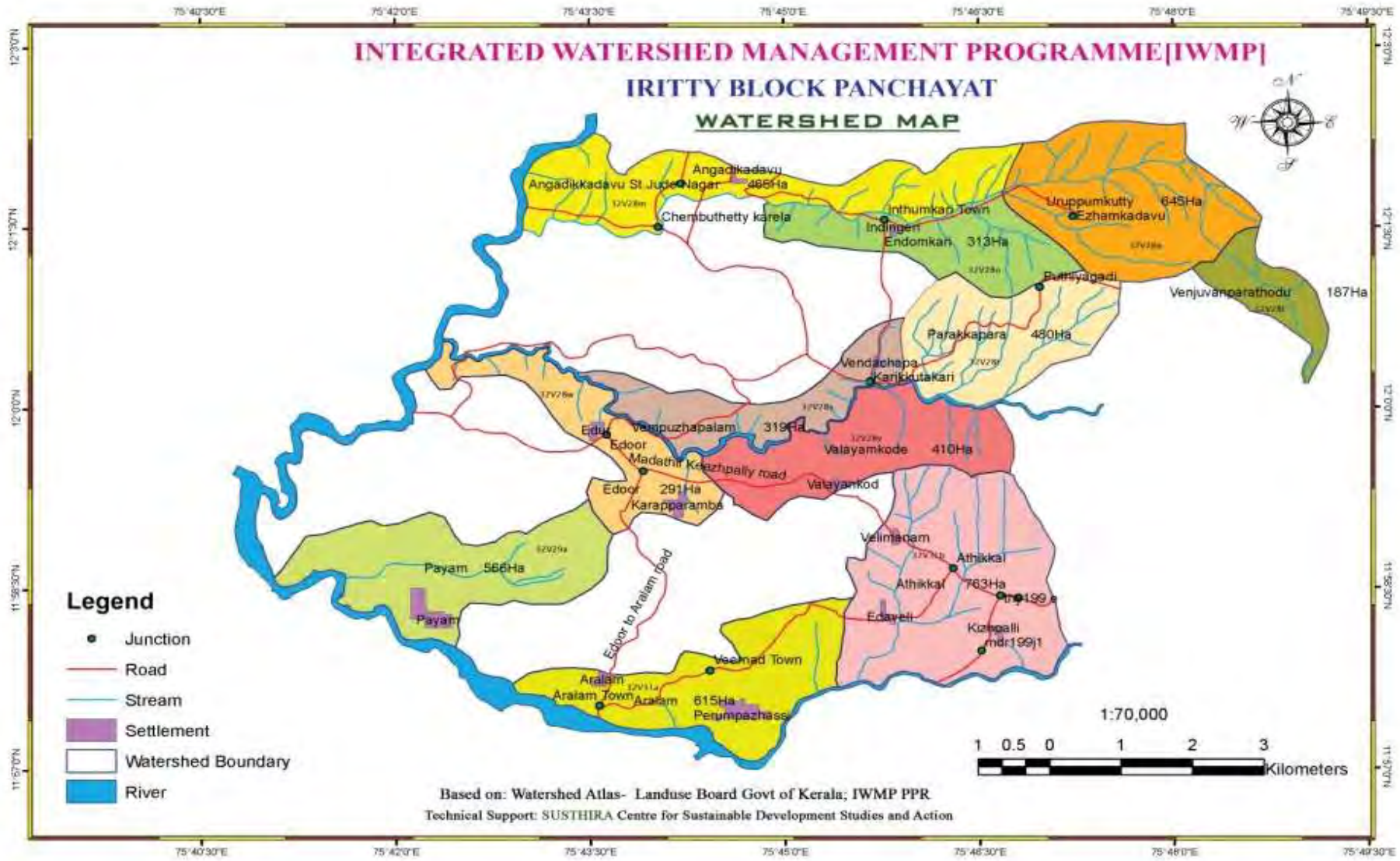
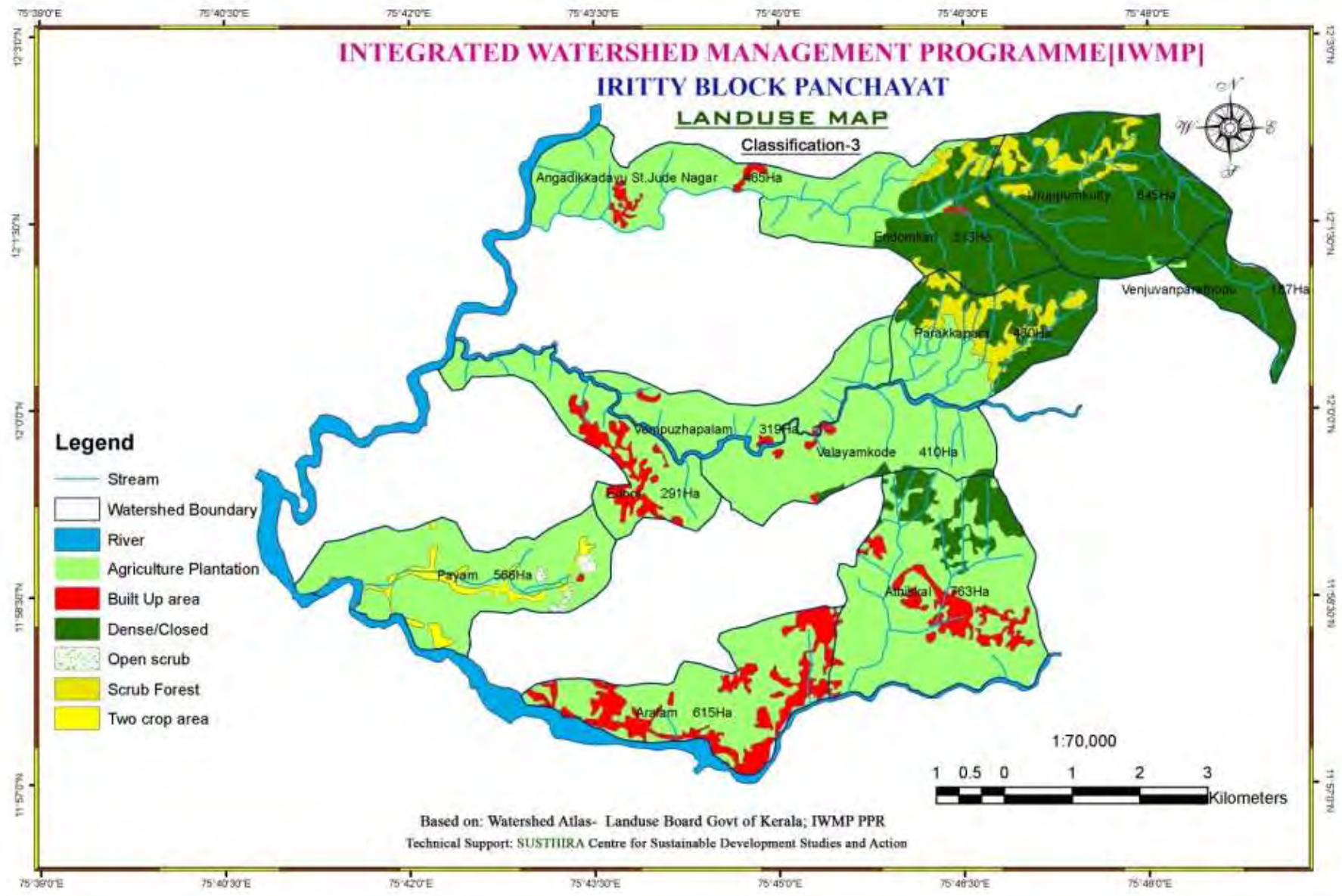

INTEGRATED WATERSHED MANAGEMENT PROGRAMME[IWMP]
IRITTY BLOCK PANCHAYAT
WATERSHED MAP
Angadikkadavu St Jude Nagar
Angadikkadavu
466Ha
Chembuthetty karela
Inthumkan Town
Indingen
Endomkan
313Ha
Uruppumkutty
645Ha
Ezhamkadavu
Puthiyagadi
Venjuvanparathodu
187Ha
Parakkapara
480Ha
Vendachapa
Kankkidutakari
Edoor
Vempuzhapalam
319Ha
Edoor
Madathil Kizhpally road
Valayamkode
410Ha
Valayamkod
Edoor
291Ha
Karapparamba
Velimanam
Athikkal
Athikkal
763Ha
Edayeli
Kizhpalli
Payam
566Ha
Payam
Edoor to Aralam road
Veemad Town
Aralam
Aralam Town
Aralam
615Ha
Perumpazhass
Legend
Junction
Road
Stream
Settlement
Watershed Boundary
River
1:70,000
1 0.5 0 1 2 3
Kilometers
Based on: Watershed Atlas- Landuse Board Govt of Kerala; IWMP PPR
Technical Support: SUSTHIRA Centre for Sustainable Development Studies and Action
75°40'30"E
75°42'0"E
75°43'30"E
75°45'0"E
75°46'30"E
75°48'0"E
75°49'30"E
12°3'0"N
12°1'30"N
12°0'0"N
11°58'30"N
11°57'0"N


INTEGRATED WATERSHED MANAGEMENT PROGRAMME[IWMP]
IRITTY BLOCK PANCHAYAT
LANDUSE MAP
Classification-3
Angadikkadavu St.Jude Nagar 465Ha
Venpuzhapalam 319Ha
Valayamkode 410Ha
291Ha
Payam 566Ha
Arakam 615Ha
763Ha
Legend
Stream
Watershed Boundary
River
Agriculture Plantation
Built Up area
Dense/Closed
Open scrub
Scrub Forest
Two crop area
1:70,000
1 0.5 0 1 2 3
Kilometers
Based on: Watershed Atlas- Landuse Board Govt of Kerala; IWMP PPR
Technical Support: SUSTHIRA Centre for Sustainable Development Studies and Action

"Taking the lead to empower the Farmers in their village and beyond"

INTEGRATED WATERSHED MANAGEMENT PROGRAMME (IWMP)
IRITTY BLOCK PANCHAYAT, KANNUR DISTRICT
DETAILED PROJECT REPORT (DPR)

CHAPTER – 1
INTRODUCTION & PROJECT BACKGROUND

Soil, Water, Animals, Plants and Forests are the Nation's most vital and basic natural resources. In rural areas, livelihood and natural resources such as land, water vegetation and livestock are inter-linked. Watershed management brings the best possible balance between ecosystem and human system. These are vital indicators of a sustainable environment and good quality human life.

Soil erosion is the single most important cause of land degradation. Soil erosion causes enormous loss to our country. A good deal of our land has already been degraded. Soil erosion also affects the environment in several ways.

Integrated Watershed Management Programme (IWMP) promotes two vital objectives - water conservation and soil enrichment: thus enabling farmers to extend the cultivation cycle and return to multiple cropping for sustainable production. Integrated approach and total participation of village communities are the main features.

Integrated Watershed Management Programme

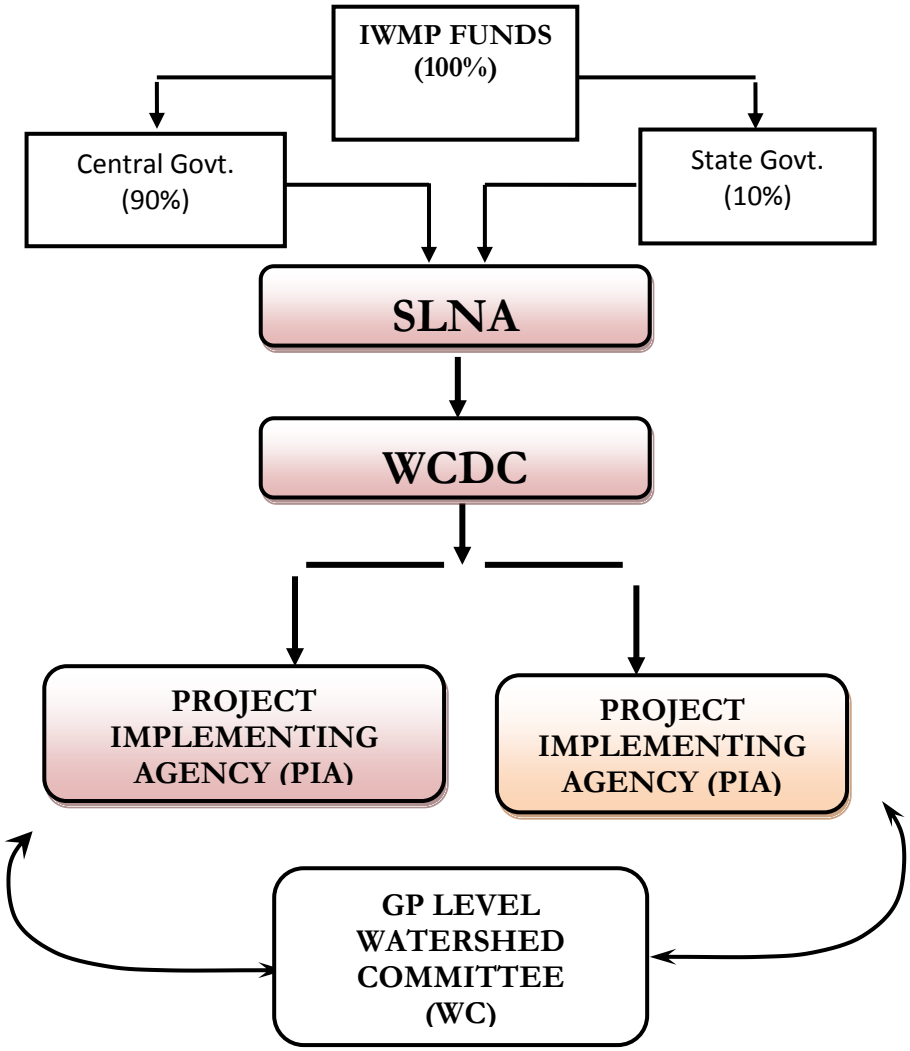
The Integrated Watershed Management Programme (IWMP) is taken up to reduce the severity of drought especially in dry lands and bring them under productive use through soil conservation and other water resource development activities such as construction of major and minor check dams, percolation ponds, renovation of tanks, farm ponds, developing agro forestry plantation, horticulture, tree plantation, home-stead plantation etc.

IWMP –project is located in Iritty Block Panchayat in Thaliparamba Taluk, Kannur Distirct of Kerala State. The project is a cluster of 11 micro watersheds of which the names and Code Numbers with area is listed below:

Sl. No.	Code No. of the Watershed	Name of Watershed	Name of Grama Panchayat	Total Area of the watershed
1.	32V28f	Venchuvan parathodu	Aralam & Ayyankunnu	187
2.	32V28m	Angadikkadavu, St. Jude Nagar	Ayyankunnu	465
3.	32V28n	Uruppumkutty	Ayyankunnu	645
4.	32V28o	Eanthomkari	Ayyankunnu	313
5.	32V28s	Vempuzhappalam	Ayyankunnu	319
6.	32V28t	Parakkappara	Ayyankunnu	480
7.	32V28v	Valayamkodu	Aaralam	410
8.	32V28w	Edoor	Aaralam & Payam	291
9.	32V29a	Payam	Aaralam & Payam	566
10.	32V31a	Aaralam	Aaralam	615
11.	32V31b	Athikkal	Aaralam	763
			Total	**5054**

The total **5054** ha are being undertaken for treatment under Integrated Watershed Management Programme (IWMP). The project area lies in the **Valapattanam River Basin**. The Project Implementing Agency is the **Iritty Block Panchayat** and the **TSO** is **'Susthira',** (Centre for Sustainable Development Studies and Action) Pariyaram, Kannur District, Kerala.

FLOW CHART SHOWING FUND FLOW



THE METHODOLOGY

The methodology of planning, implementation and monitoring are designed based on the approach that had been stated above. IWMP adopts a collaborative method rather than a mere participatory method in the process of the Project Cycle Management (PCM) with regard to Integrated Watershed Management Project (IWMP) under Iritty Block Panchayat. The general methodology of IWMP implementation has three phases. Project Planning includes P.R.A, L.F.A, net planning, and preparing action plan.

1. Base line Survey

Baseline information and data on natural resources, human resources, agro-socio-economic details, infrastructure etc are collected at Village levels through secondary sources of information. Primary information and data are also collected from households. All the households in the villages are covered under the baseline census survey. The information and data are found to be comprehensive and encompassing all the relevant socio-economic aspects pertaining to the people of the village. The data collected from primary sources are by adopting interview method with the help of specific format prepared specifically for the purpose. The information is collected by the well trained volunteers under the supervision and guidance of TSO. The data thus collected are compiled and analyzed under the strict supervision of the Director of TSO and the findings are made use for formulating the project proposal. Besides the consolidated data sheets are kept as a bench mark for further monitoring and evaluation.

2. Formation of Watershed Neighbourhood Clusters

Neighbourhood clusters are formed in every watershed combining 50 families each living as clusters. These 50 families have further divided into clusters of seven from which a person/leader had been selected to represent these seven families in the watershed committee. The list of the families had been prepared by visiting individual watershed by the TSO members along with the people's representatives, (in most cases they were the ward members). Grouping had been made with the assistance of the ward members and their suggestions were also taken as a directive guideline for the selection of group leaders.

SL No.	Watershed	No.of NHG	No.of Sub Groups
1.	Venchuvan parathodu	4	28
2.	Angadikadavu St.Jude Nagar	10	70
3.	Uruppumkutti	3	21
4.	Endomkari	5	36
5.	Vempuzhapalam	7	51
6.	Parakkapara	4	28
7.	Valayamkode	7	52
8.	Edoor	7	51
9.	Payam	12	84
10.	Aralam	26	184
11.	Athikkal	20	142
Total		**104**	**787**

3. Formation of Watershed Committees

Watershed Committees are necessary to ensure timely implementation and early fund release to the individual beneficiaries. This will also ensure the transparency and subsidiarity of the programme and the expected results will be obtained in time as it is envisaged in the project plan.

Watershed committees are formed in all the eleven watersheds taken for treatment under IWMP. The watershed Committee comprises the representatives of watershed communities and nominated representatives from the elected members of the Grama Panchayat in which the watershed is included. The General Structure of the Watershed Committee is as follows:

Sl. No.	**Designation**	**Position**
1	GP President	Chairperson
2	VEO	Secretary
3	Ward Members	Member
4	SHG Representative	Member
5	User Group Repredentative	Member
6	SC/ST representative Women	Member
7	Representatives of Landless person	Member
8	TSO Representative	Member
9	Representatives of Marginal Farmers	Member
10	Block Panchayat members with in the watershed boundary	Member

If more than one Grama Panchayat is included in the watershed the second Grama Panchayat president is become the Co-chairman of the watershed committee. Besides this, the existing Self Help Groups under the Kudumbasree Mission in each watershed shall also be fostered and promoted to take up programmes coming under PSM and LHS. The SHGs are functioning properly and in a most effective manner under the supervision of the Grama Panchayats.

Participatory Rural Appraisal – PRA

Participatory Rural Appraisal (PRA) in the Watersheds is conducted by SUSTHIRA team under the guidance and close supervision of an expert. In this exercise, the team had taken care to ensure the participation of a cross section of the community at the watershed level, so as to get all relevant details and for an opportunity to cross check the information collected and knowledge generated during the exercise. In this cross section of the community special emphasis had been given to the women folk and even children to provide an opportunity for them also to express their interests and feedbacks.

Tools Applied in the Participatory Rural Appraisal in The Watersheds:

Though there are several tools that can be applied in assessing the situation and to carry aout the situational analysis and knowledge generation, for want of time and space, eight most important tools have applied in the PRA exercise conducted in the watershed. They are Mapping, Focus Group Discussion (FGD), SWOT Analysis, Seasonality calendar Problem Tree Analysis, Scoring & Ranking (Pair-wise & Matrix Ranking and Transect Walk. Given below is a brief description of the tools.

a. Social and Resource Mapping

The basic objective of Resource Mapping was to document and understand the natural resources and the institutions (schools, farms etc) of the watershed. It is the visual representation of the basic facilities and the geographical terrain of the watersheds. It also shows how far each hamlet is situated from the other and how many households are there in each hamlet. This basic grassroots level information is crucial in planning any interventions at the micro-level.

b. Seasonality Calendar

Seasonal calendars are tools for collection of information relevant to seasonal happenings of natural conditions and associated socio-economic-cultural activities of a community during a one year cycle. Calendars help develop understanding of water availability, agricultural produce, Pests and pest control measures, behavior choice, activity patterns, local market economics and can support annual work plans and allocate resources in a timely manner.

c. Scoring & Ranking

Preference ranking method helps to quickly get a good idea of what people think are the priority problem or preferences. The criteria attached to make up a choice are used to consider in the action plan. Individuals or groups vote on the items from most important to least important item. The choices could be between crop varieties, water points, food diets, livestock species, problems, solutions and many different issues, which require preferences. Pair wise ranking is used to compare between two items and make up a choice. It is more useful for exploring the reasons why people prefer one possibility over another. The moment a preference is made lots of criteria are explored to compare items using a group of criteria before a choice. Community action plans are developed on the basis of peoples preferences. The problems, solutions technical inputs etc are arranged on the interests of the users.

d. Transect:

Transect is one of the most important tools which was drawn up by transverse the watershed area with a group of people from upper reaches to lower reaches to study present land status, soil type, present land use pattern, Crop yield, present problems and suggestive measures.

4. Focus Group Discussion

The purpose of focus group discussions is to gain knowledge about a particular topic or need by interviewing a group of people directly affected by the issue. Focus group data can be used to collect information for many purposes, such as conducting a needs assessment or evaluating a program. Below are brief pointers regarding the “why” and “how” of focus groups. **Focus Groups are appropriate when one want to Explore** the depth and nuances of opinions regarding an issue, Understand differences in perspectives, Understand what factors influence opinions or behavior, Test materials or products, Test reactions to actual or proposed services, Design a large study or understand its results, Capture opinions and

perspectives of a program's target audience and Learn about participants by observing their interactions

5. Problem Tree Analysis

The group members were asked to brainstorm on the first level of causes, directly leading to such a problem, then eventually goes to second level, third level until repetition occurs and no further causes emerge. For each cause, it was written on another chart paper and fixed again on the wall. Similarly, the groups looked for the possible effects of the problem and different levels of these. The group members were given considerable time to think and discuss. When facilitating the discussion, the group was reminded that none is completely true or completely false, but the majority's opinions shall be respected. Further, the problems were written in full sentence rather than in short hand. Additionally, causes/effects of the second level were linked to multiple causes/effects of the first level, so there are more causes/effects than two levels. This tool is very relevant to Problem Ranking; the difference is that ranking compares different problems, meanwhile the tree analyses one problem.

6. SWOT Analysis

SWOT is commonly used as part of strategic planning and looks at Internal strengths, Internal weaknesses, Opportunities in the external environment and Threats in the external environment. SWOT is a process which generates information that is helpful in matching a development goal programs, and capacities of a community, to the social environment in which it operates. Note that SWOT in itself is only a data capture – the analysis follows.

Strengths are the positive tangible and intangible attributes, internal to an organization and they are within the organization's control. **Weaknesses** are factors that are within a community's / organization's control that detract from its ability to attain the desired goal and this explains which areas the community /organization might improve.

Opportunities are external attractive factors that represent the reason for an organization to exist and develop. It also explains what opportunities exist in the environment, which will propel the organization. Identify them by their "time frames". **Threats are e**xternal factors, beyond an organization's control, which could place the organization mission or operation at risk. The organization may benefit by having contingency plans to address them if they should occur. Classify them by their "seriousness" and "probability of occurrence".

7. Study of literature

The TSO team had undertaken a study on different literature available with the Grama Panchayats, Block Panchayat, land Use Board, Soil Survey department and other government department concerned with land use and agriculture to collect secondary data regarding the situation of each and every watershed. MGNREGS Watershed Master Plan of the Payyanur Block Panchayat and of the two Grama Panchayats covered by IWMP is also studied seriously and relevant data are collected to incorporate in this plan document.

8. Capacity Building

Capacity building is an ongoing process through which individuals, groups, organizations and societies enhance their ability to identify and meet development challenges. This means that Capacity building takes place on an individual level, an institutional level and the societal level.

- **Individual level -** Capacity-building on an individual level requires the development of conditions that allow individual participants to build and enhance existing knowledge and skills. It also calls for the establishment of conditions that will allow individuals to engage in the "process of learning and adapting to change."
- **Institutional level -** Capacity building on an institutional level should involve aiding pre-existing institutions in the proposed geographic area for development. It should not involve creating new institutions, rather modernizing existing institutions and supporting them in forming sound policies, organizational structures, and effective methods of management and revenue control. But in this case, if found necessary, new institutions can also be formed and strengthened.
- **Societal level -** Capacity building at the societal level should support the establishment of a more "interactive public administration that learns equally from its actions and from feedback it receives from the population at large." Capacity building must be used to develop public administrators that are responsive and accountable. Such capacity building will lead to means such as Social audit that makes the whole process of implementation transparent and will keep a subsidiarity.

NRM steps followed for planning:

The boundary line of the watershed is delineated in the very first step with the help of village cadastral map and Topo-sheet. Then geographical transect is being done through survey by moving from plot to plot in upper reaches, middle reaches and lower reaches. During the

transect the major nalas, gullies and drainage lines are identified and are marked in the cadastral map. Lands are surveyed on the basis of land type, soil type, erosion class and slope and accordingly the whole watershed land is divided into various patches which are treated as individual mapping units. During the transect various resources like different water bodies, wells and farm ponds are identified and are marked in the cadastral map. The present land use is also studied during transect and accordingly present land use map is prepared using different notions and symbols. In the individual patch identified, the various treatments required are also finalized in consensus with the villagers.

GENERAL FEATURES OF THE PROJECT AREA

The project area under IWMP sanctioned for Iritty Block Panchayat has a total area of 5054Ha which is considered as land under agricultural use. This includes a total cultivable waste of 359 ha and the whole area is considered as rainfed. The project area is being selected for treatment based on certain criteria such as agro-climatic condition of the project area, demography and land distribution, livelihood, availability of irrigation facilities etc. Given below is a table showing the criteria and weightage for selection of watershed.

Criteria and weightage for selection of watershed

Criteria	**Maxi-mum score**	Ranges & scores			
		Above 80 % (10)	80 to 50 % (7.5)	50 to 20 % (5)	Below 20 % (2.5)
Poverty index (% of poor to population)	10	Above 80 % (10)	80 to 50 % (7.5)	50 to 20 % (5)	Below 20 % (2.5)
% of SC/ ST population	10	More than 40 % (10)	20 to 40 % (5)	Less than 20 % (3)	
Actual wages	5	Actual wages are significantly lower than minimum wages (5)	Actual wages are equal to or higher than minimum wages (0)		
% of small and marginal farmers	10	More than 80 % (10)	50 to 80 % (5)	Less than 50 % (3)	
Ground water status	5	Over exploited (5)	Critical (3)	Sub critical (2)	Safe (0)
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	
Area under rain-fed agriculture	15	More than 90 % (15)	80 to 90 % (10)	70 to 80% (5)	Above 70 % (Reject)
Drinking water	10	No source (10)	Problematic village (7.5)	Partially covered (5)	Fully covered (0)
Degraded land	15	High – above 20 % (15)	Medium – 10 to 20 %	Low- less than 10 % of TGA (5)	

			(10)		
Productivity potential of the land	15	Lands with low production & where productivity can be significantly enhanced with reasonable efforts (15)	Lands with moderate production & where productivity can be enhanced with reasonable efforts (10)	Lands with high production & where productivity can be marginally enhanced with reasonable efforts (5)	
Contiguity to another watershed that has already been developed/ treated	10	Contiguous to previously treated watershed & contiguity within the micro watersheds in the project (10)	Contiguity within the Micro watersheds in the project but non contiguous to previously treated watershed (5)	Neither contiguous to previously treated watershed nor contiguity within the micro watersheds in the project (0)	
Cluster approach in the plains (more than one contiguous micro-watersheds in the project)	15	Above 6 micro-watersheds in cluster (15)	4 to 6 micro watersheds in cluster (10)	2 to 4 micro watersheds in cluster (5)	
Cluster approach in the hills (more than one contiguous micro-watersheds in the project)	15	Above 5 micro-watersheds in cluster (15)	3 to 5 micro watersheds in cluster (10)	2 to 3 micro watersheds in cluster (5)	
Total	**150**	**150**	**90**	**41**	**2.5**

The total weightage obtained by the 11 eleven watersheds under the IWMP Iritty is 69.

THE DISTRICT OF KANNUR

Kannur District is one of the 14 districts in the state of Kerala, India. The town of Kannur is the district headquarters, and gives the district its name. The old name Cannanore is the anglicised form of the Malayalam name Kannur. Kannur District is bounded by Kasaragod District to the north, Kozhikode District to the south and Wayanad District to the south-east. To the east the district is bounded by the Western Ghats, which forms the border with Karnataka State, in its district of Kodagu. The Arabian Sea lies to the west.

Kannur District came into existence on January1; 1957. The literacy rate of the district is 92.59% and the altitude is 13 meters from the mean sea level (MSL). Total geographic area

of the district is 2966 Sq. Kms. There are 6 municipalities, 9 Block Panchayats and 81 Grama Panchayats in the district. Major Religions in the district are Hindu (1480748), Muslim (665648) and Christians (261019)

The district lies between latitudes 11° 40' to 12° 48' North and longitudes 74° 52' to 76° 07' East and covers an area of 2,996 km² . Kannur can be geographically divided into highland, midland and lowland regions. The district has a humid climate with an oppressive hot season from March to the end of May. This is followed by the South-West monsoon which continues till the end of September. The months of October and November form the post-monsoon [North-East Monsoon] or retreating monsoon season.

A majority of the population of the district is dependent directly or indirectly on agriculture for their livelihood. The main crops grown in the district are paddy, coconut, pepper, cashew, tapioca, areca nut and plantation crops like rubber. Asia's largest cinnamon estate producing cinnamon spice established by Lord Brown of British East India Company in the year CE 1767 is located at Anjarakandy in Kannur district.

Six rivers drain Kannur, the longest being the Valapattanam river with a length of 110 km. Other rivers flowing through Kannur district are Kuppam, Mahe River, Anjarakandi, Thalassery, Ramapuram and Perumba.

Kannur is one of the most urbanized districts in Kerala, with more than 50% of its residents living in urban areas. Kannur has an urban population of 1,212,898, which is the second largest in Kerala after Ernakulam district. The total population of the district according to 2001 census is 2408956 out of which 1152817 are male and 1256139 are female. There are 457368 households in the district. Total rural population is 1196058 (578544 male & 617514female). Out of the 1212898 urban populations 574273 are male and 638625 are female.

Total SC population of the district is 98991 out of which 48275 are male and 50716 are female. Among these 25693 males and 26749 females are living in rural area and 22582male and 23967female are living in urban area.

The district has a total 19969 ST population with 9793 males and 10176 females. The total rural population among the ST community is 19417 (9501 males and 9916 females) where as the urban population among the ST communities are 292 males and 260 females. In all the categories and in general, the female population outwits the male population with clear majority. The population density is 812 and the sex ratio is 1090

THE BLOCK PANCHAYAT – IRITTY

Iritty Block Panchayat is established in the year 1982 and its head quarters is at Iritty. Iritty Block Panchayat is situated in Thalassery Taluk. It consists of 7 revenue villages – Aaralam, Kizhallur, Thillankeri, Payam, Vilamana, Koodali and Pattanur with a total geographic area of 372.94 Sq. Kms. There are 7 Grama Panchayats in the Block - Aaralam, Ayyankunnu, Keezhallur, Thillankery, Koodali, Payam and Kizhur-Chavassery.

The Grama Panchayats

The Project Area under the Block Panchayats includes three Grama Panchayats. They are Ayyankunnu, Aaralam and Payam. Given below is a brief description of the Grama Panchayats coming under the IWMP area.

1. Ayyankunnu Grama Panchayat

Ayyankunnu GP was formed in 1977 dividing the Aaralam Panchayat into two. The Panchayatis embedded with small and medium size hills and valleys. The land is with slanting nature.The plains are only a very small portion. Ayyankunnu is part of the Western Ghats and situated adjacent to the Karnataka State Border and is exclusively an agricultural area. The total geographic area of the GP is 122.8. Sq. Kms. Ayyankunnu Panchayat which lies in the Midland Agro Climatic zone consists of about 55% of the total geographic area forest. The places of importance in the GP are Ayyankunnu Township, Vallithodu, Valavupara, Vempuzha, Vaniyappara, Kacherikkadavu, Charal, Randamkadavu, Angadikkadavu, Mundayamparamba, Koomanthodu, edapuzha and Endomkari.

The Grama Panchayat is bounded in its north and east by Karnataka Forest, in the south by Aaralam Grama Panchayat, in the west by Payam Panchayat. The whole Panchayat is rich with several of its natural water bodies like: Barapole river, Charal River, Mudayarinhi River, Kundur River, Vempuzha River, Edappazhakunnu River, Koomanthodukunnu River, Endomkarikkunnu River, Randamkadavu river and Palathinkadavu River and several small an medium streams.

2. Aralam Grama Panchayat

Aralam is both a revenue village as well as the name of a Grama Panchayat in the Iritty Block in Thalassery Taluk of Kannur District. There are areas belonging to Payam revenue village also. It has a total geographic area of 123.90 Sq. Kms. The name Aralam is derived from the word ‘arinte alam’ in vernacular, meaning the land of rivers. The GP is specifically

known for its Wild-Life Sanctuary which is part of the Western Ghats adjacent to the Karnataka Forest. Another special feature of the GP is the presence of the Central State Farm under the State Farm Corporation. This is situated in the southern part of the GP between the Bavali River and Uruttypuzha River. The Grama Panchayat is very bountiful with natural scenes and hill slopes and green valleys.

The GP gets more rainfall than the state average and hence is genrally abundant in water. Three rivers bound the south and north of the watershed – Aralam River, Vempuzha River and Bavali River. Besides the above mentioned, Urutty River is flowing through the GP area. Aralam is also known for its indigenous communities – the Paniyas, the Kurichiyars and Malayalars. They were once the landlords of the Grama Panchayats and in the beginning of the 20th century the migrants from the central Travancore occupied most of their landed properties. The Arlam Farm Tribal Settlement is one among the many Tribal Rehabilitations in the state.

The boundaries of the Grama Panchayats are as follows: In the North there is the Vempuzha River, and in the south there is the Bavali-Aralam Rivers. The eastern part is bounded by the Karnataka Forest and the western part is bounded by Payam Panchayat. Geographically the position of this Grama Panchayat is in Highland Agro-Climatic Zone and is divided into upper plains, moderate slopes, marginal slopes, valleys, plains and paddy fields.

3. Payam Grama Panchayat

Payam Panchayat is situated in the north-eastern side of the District of Kannur. This lies adjacent to the Karnataka State as it is seen at the bottom of the Coorg Hills of Karnataka State. The GP is formed on 10th November 1954. It has a total geographic area of 31.21 Sq. Kms., and has been divided into 18 wards. The Grama Panchayat is bounded its north by Ulikkal & Ayyankunnu GP along with Karnataka State and in the east is Ayyankunnu Grama Panchayat. Keezhur Chavassery GP, Muzhakkunnu GP and Padiyoor GP bound the south and Padiyoor and Ulikkal GPs bounds the west.

The Aanappanthikkavala and Vallithodu are the two important tourist spots in the Panchayat. There is a Park – Gandhi Park – in the Grama Panchayat at Peruvamparambu. Geographically, the area is in the high land agro-climativ zone and can be divided into hill slopes, plains in the top of the hills, valleys and plains. Three small rivers are flowing through the Grama Panchayat – Barapuzha, Payam Puzha and Vatyara Puzha (Puzha Means River)

THE PROJECT AREA

The project area consists of 11 watersheds with a total geographic area of 5054 Ha. These selected watersheds covers the portions of Aralam, Ayyankunnu and Payam Grama Panchayats.

Boundaries

The project area has Moonnamkadavu watershed and Angadikadavu in its North boundary and Aralam river in its south boundary. The eastern part of the project area is bounded by Manjodu watershed and Karnataka forest and the west part is bounded by Valapattanam river.

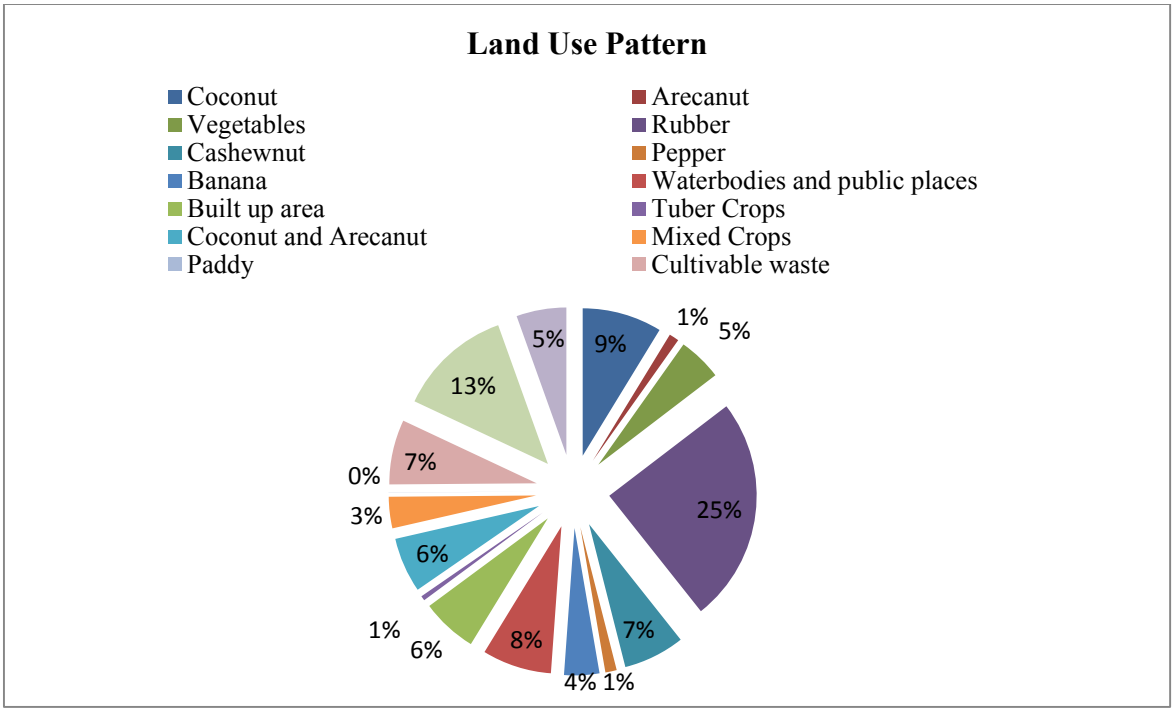
The project area is undulating with high peaks and small hillocks. The topography of major part is generally with steep slopes, medium slopes and some places- plains. The Aaralam wild life sanctuary which is adjoining to Karnataka Forest and the Tribal Settlement – Aaralam Farm are remarkably important to the people of the Block Panchayat. They are also proud of the Iritty River (Valapattanam River) and the Pazhassi Irrigation Project and the forthcoming Kannur International Air Port.

Land Use Pattern

The land use is almost similar in almost all the Grama Panchayats coming under the Block Panchayat with slight variations. While the hilly areas are rich in rubber cultivation, the midland is characterized by a mixed crop of coconut and areca nut. In hilly areas, especially in the upper reaches, spices are also cultivated along with coconut and areca nut. Earlier, there were paddy cultivation and vegetable cultivation. The slopes and valleys have been converted to rubber plantations.

The land use pattern of the project area is given below;

SLNo.	Item	Area(Ha)
1.	Coconut	441.46
2.	Arecanut	54.54
3.	Vegetables	242.87
4.	Rubber	1248.43
5.	Cashewnut	339.26
6.	Pepper	63.02
7.	Banana	195.12
8.	Waterbodies and public places	384.13
9.	Built up area	309.75
10.	Tuber Crops	26.12
11.	Coconut and Arecanut	304.8
12.	Mixed Crops	174
13.	Paddy	1
14.	Cultivable waste	359
15.	Un cultivable waste	633.5
16.	Forest land	277
Total		**5054**



Ground Water Resources

The district level ground water assessment done block wise as per GEC-1997 methodology computed based on the data as on March 2004 and these figures are used in this report. The district has a net annual ground water availability of 540.62 MCM with a net availability of 272.21 MCM for the future use. The maximum stage of development is in Thalasserry block (150.79%) and the minimum development is in Irrikkur block (30.19%). Groundwater resources and categorization of groundwater development of Iritty blocks **as on 31st March 2004** are furnished in the table.

Net Annual Ground Water Availability	Existing Gross Ground Water Draft for irrigation	Existing Gross Ground Water Draft for domestic and industrial water supply	Existing Gross Ground Water Draft for all uses	Allocation for domestic and industrial requirement supply up to next 25 years	Net Ground water Availability for future irrigation development	Stage of Ground water development (%)
59.57	17.11	6.56	23.67	8.27	34.19	39.73

Water scarcity is a severe problem faced by villagers living in hilly terrains due to the drying up of wells in summer season. Dug wells in the midland region also get dried due to the delay of monsoon rains or to the absence of summer showers.

General Socio-Economic Situation

The demographic details of the project area is given below;

Total households	**-**	**4895**			
Total population	-	22021	**ST Households**	-	**292**
Male	-	11007	Total ST Population	-	1482
Female	-	11014	Male	-	696
SC households	-	**169**	Female	-	789
Total SC population	-	839	**APL**	**-**	**2811**
Male	-	416	**BPL**	**-**	**2084**
Female	-	423			

Being an agricultural area, majority of the people are either farmers or farm labourers. The farmers mainly are small and marginal category. There are very few large scale farmers within the block limit. Due to unexpected climatic changes and change in rainy seasons, the agriculture is in danger and many farmers are forced to sell out their farm lands due to low production and high production costs. The left out farmers became job seekers, mainly in construction sectors, which is flourishing very fast, changing the facets of the villages to small townships and commercial centres. This has also resulted in migration of village male population, leaving their female counterparts in the dual responsibility of seeking labour and raring children.

Educational status, of the community is comparatively seems to be good, with Secondary and Higher Secondary School Education for more than 63% of the village communities. The abundance of educational institutions and other socio-cultural centers play an important role in keeping high standards of education among the watershed communities. In areas where migration had been taken place at its peak the religious institutions play an important role. Socio-cultural situations and political awareness among both male and female populations are also very high.

Health status of the families found to be good, where as the general hygienic condition is very pathetic. The fast growing townships creates serious problems in the safe disposal of solid and liquid wastes resulting to the spread of epidemics in the area. However, personal hygiene is of high standards. Most of the households have good latrine facilities, but poor waste disposal mechanisms. They seems to be forgotten the fact that the wastes

should be treated at its origin. Life expectancy for men is about 60-69 where as that of women is about 76-80 years. The number older people are increasing day by day due to this life expectancy rate, which is very crucial in the welfare of the whole community. This situation has been greatly worsened by the past ten years.

It has been further exacerbated by increasing urbanization, population pressure on the available natural resources, inappropriate domestic policies and market failures such as over-valuation of the local currency, exchange rate controls and use of subsidized prices in energy and rice. Illiteracy is very high among the SC/ST communities and large sections of the population remain unemployed, especially among the youths. In consequence, Iritty Block Panchayat is now classified as one of the poorest and least developed areas in the state of Kerala.

Claimate and Rainfall

Three important features are described under the head climate. These three features are Rain fall, temperature and relative humidity. The temperature is high during the months of March to May and is low during December and January. Relative humidity is more during south west monsoon season (ie June to September). It is more during morning hours and is less during evening hours.

The monthly temperature, rainfall and relative humidity is given below;

Month 2000	Temperature Max	Min	RH %	Rain fall (mm)	No. of rainy days
January	35.0	20.4	90.0	50.1	3
February	35.4	20.4	86.6		
March	37.2	22.1	83.8	3.0	1
April	36.6	24.8	85.2	105.9	7
May	35.8	24.4	86.3	197.1	9
June	29.1	22.5	94.6	850.6	29
July	29.4	22.0	95.0	513.2	20
August	28.8	22.4	95.0	606.2	24
September	31.2	22.8	92.2	188.9	16
October	31.2	22.2	93.7	344.5	18
November	32.9	21.5	88.3	110.4	2
December	33.1	18.7	91.5	1.9	2

2001	Temperature Max	Min	RH %	Rain fall (mm)	No. of rainy days
January	34.7	19.9	92.		
February	35.0	21.9	89.8	4.8	1
March	35.6	22.2	81.9		
April	35.5	23.9	84.3	155.8	12
May	33.8	24.0	90.3	276.3	12
June	28.0	22.8	95.5	1040.4	27
July	28.0	22.7	94.5	812.8	30
August	27.8	22.8	94.8	542.0	28
September	32.0	22.9	88.9	107.4	7
October	30.7	22.8	91.3	389.6	18
November	32.33	22.56	90.86	201.2	8
December	33.85	20.42	83.7		

2002	Temperature Max	Min	RH %	Rain fall (mm)	No. of rainy days
January	33.2	19.9	87.6		
February	34.8	22.5	86.0	15.2	1
March	37.7	22.6	84.1		
April	37.5		82.8	50.2	6
May	33.7		86.6	153.3	14
June	29.65		92.5	784.5	25
July	30.11	25.2	93.9	468.8	25
August	28.9	24.5	95.0	680.2	24
September	31.8	24.3	90.5	232.8	8
October	31.3	24.8	93.2	740.7	19
November	33.1	24.9	91.5	139.8	8
December	33.9	21.3	82.8	62.8	1

2003	Temperature Max	Min	RH %	Rain fall (mm)	No. of rainy days
January	34.5	29.2	84	-	-
February	35.8	24.5	87	-	-
March	37.2	25.8	83	7.6	1
April	36.7	27.4	81	65	4
May	35.7	27.3	78	55.8	4
June	31.4	25.4	90	972.3	20
July	28.9	24.5	94	888.9	28
August	29.8	25.0	92	459.9	24
September	31.0	24.3	90.3	105	9
October	31.2	24.5	90.1	260.5	12
November	34.0	24.5	87.5	31.1	4
December	34.5	21.9	92.4	-	-

2004	Temperature Max	Min	RH %	Rain fall (mm)	No. of rainy days
January	34	22	88.1	-	-
February	35.8	23.6	80.7	-	-
March	36.5	25.8	85	-	-
April	36.5	26.5	83.5	93.3	5
May	31.4	25.3	90	829.7	21
June	29.9	25.3	92.4	1230.6	26
July	28.8	24.5	91.6	578.3	26
August	28.9	24.8	90.3	670.2	24
September	31.6	25.1	88.6	196.7	13
October	32.3	24.8	88.8	247.8	14
November	33.3	23.4	91.9	193.3	10
December	34.9	20.9	94.4	-	-

2005	Temperature Max	Min	RH %	Rain fall (mm)	No. of rainy days
January 05	34.6	22.9	89.1	0.8	1
February 05	36.4	23.1	81.8	-	-
March 05	36.9	24.8	88.4	-	-
April 05	36.4	26.7	83.8	87.5	5
May 05	36.8	27.4	80.0	10.2	2
June 05	30.6	25.6	91.2	829.9	24
July 05	28.9	25.1	93.8	1024.9	29
August 05	30.4	24.9	92.1	300.7	22
September 05	29.7	24.7	93.2	406.6	20
October 05	31.7	25.1	89.9	248.4	14
November 05	32.4	24.2	85.6	147.8	9
December 05	33.5	22.6	87.4	16.0	1

2006	Temperature Max	Min	RH %	Rain fall (mm)	No. of rainy days
January 06	35.2	21.9	83.5	0.3	1
February 06	36.4	21.3	77.5	-	-
March 06	37.9	25.7	80.5	-	-
April06	34.5	24.9	82.3	-	-
May06	34.8	26.0	85.4	777.6	11
June06	30.0	24.8	90.6	878.6	19
July06	29.5	24.8	92.7	921.2	30
August 06	30.2	24.6	92.0	700.6	22
September 06	32.2	25.5	92.3	586.2	19
October 06	32.5	25.1	91.8	326.8	18
November 06	32.9	25.2	89.8	79.2	6
December 06	34.2	22.5	84.7	-	-

2007	Temperature Max	Min	RH %	Rain fall (mm)	No. of rainy days
January 07	34.4	22.4	72.7	-	-
February 07	35.5	22.2	88.1	-	-
March 07	36.1	25.6	89.7	-	-
April 07	36.8	26.8	83.3	43	3
May 07	35.5	26.4	81.9	137.6	7
June 07	30.7	25.8	86.9	1048.9	24
July 07	28.4	26.0	91.5	1342.8	31
August 07	28.9	24.9	91.5	846	23
September 07	29.5	25.4	91.3	812.4	27
October 07	31.2	24.6	90.6	296.1	19
November 07	33.3	22.8	*	103.8	3
December 07	34.4	22.9	*	-	-

2008	Temperature		RH %	Rain fall (mm)	No. of rainy days
	Max	Min			
January 08	33.9	21.8	89.6	-	-
February 08	34.9	21.9	84.9	-	-
March 08	34.8	24.2	84.3	329.8	11
April 08	34.4	26.4	85.4	71.4	9
May 08	33.5	25.9	84.9	130.5	7
June 08	30.2	25.3	90.2	769.9	28
July 08	28.8	24.9	89.4	607.8	23
August 08	29.3	24.8	90.9	478.5	18
September 08	30.5	24.2	90.8	433.9	19
October 08	31.4	25.1	89.7	443.9	17
November 08	30.3	25.4	90.4	3.4	1
December 08	34.4	23.2	90.6	7.4	1

2009	Temperature		RH %	Rain fall (mm)	No. of rainy days
	Max	Min			
January 09	34.7	22.5	85.64	-	-
February 09	35.8	24.1	90.89	-	-
March 09	36.4	26.0	91.03	10.2	3
April 09	35.5	27.2	92.6	117.9	11
May 09	34.2	26.7	93.67	234.2	12
June 09	31.2	25.5	92.3	509.8	21
July 09	28.3	24.8	95.00	1610.8	31
August 09	30.0	26.5	93.7	314.3	23
September 09	30.0	25.6	91.9	302.6	18
October 09	33.0	25.0	96.0	122.2	7
November 09	32.8	25.3	91.0	386.8	11
December 09	33.2	21.9	92.7	88.8	4

2010	Temperature		RH	Rainfall	No of Raing
Month	Max	Min	%	mm	Days
January	33.25	23.29	87.5	21.4	1
February	34.71	24.5	90.1	-	-
March	36.58	23.29	87.2	-	-
April	36.3	25.5	-	72.6	9
May	33.7	27.2	87.6	172.8	12
June	30.4	25.9	-	957.4	22
July	27.2	25	92	1188.2	27
August	28	25.29	-	591.2	28
September	29.73	25.49	95.8	357.3	23
October	31.35	23.76	92.12	299.7	18
November	31.01	24.6	91.4	328.6	16
December	32.28	23.20	88.09	0.5	1

BUDGET ALLOCATION

The Budget allocation of the IWMP Iritty block Panchayat is given below:

SL No.	Item	Percentage	Allocation
1.	Administrative Cost	10	6064800
2.	DPR Preparation	1	606480
3.	EPA	4	2425920
4.	Institution and Capacity Building	5	3032400
5.	NRM	56	33962880
6.	Production system & Micro enterprises	10	6064800
7.	Livelihood Activities	9	5458320
8.	Monitoring	1	606480
9.	Evaluation	1	606480
10.	Consolidation phase	3	1819440
		100	**60648000**

PROJECT COMPONENTS

Entry Point Activity (EPA)

Entry Point Activity is a short term activity to be initiated to attract the community and gain confidence before implementing the main programme. This activity should solve the pressing problems of the community and benefit larger sections of the society. Entry Point Activities (EPA) are part of community mobilization process to get more and more participation of the community in the micro watershed planning. Identification of EPA may be a bundle of different activities and not necessarily a single activity for a village. EPA need not be capital intensive. It can be no cost or low cost activities. Villagers should not be encouraged for such entry point activity which may disrupt communal harmony at village level.

Villagers should be facilitated for identification of EPA through a series of informal discussion in small groups and through village meeting. Resolute the EPA identified by the community should be passed though a resolution in the meeting. At planning stage the process to get maximum participation of villagers need to be ensured. Villagers should be encouraged for maximum contribution in physical and financial form. It is the responsibility of the PIA to facilitate the process to create an environment where a group of villagers take initiative to implement the identified EPA.

Entry point and other relevant promotional activities may help overcome many hurdles in the successful implementation of any programme. In IWMP, the objectives of these activities are two folded. One is to mobilize all stakeholders/the community and the other is to compensate the community for the loss due to ‘closure'.

Taking up entry point activities to establish credibility of the Watershed Development Team (WDT) and create a rapport with the village Community is part of the preparatory phase of IWMP. As per guidelines issued on IWMP, the Entry Point Activities, inter-alia, will include:

I. Works based on urgent needs of the local communities such as revival of common natural resources, drinking water, development of local energy potential, augmenting ground water potential etc.

II. Repair, restoration and up-gradation of existing common property assets and structures (such as village tanks) may be undertaken to obtain optimum and sustained benefits from previous public investments and traditional water harvesting structures.

III. Productivity enhancement of existing farming systems could also be an activity that helps in community mobilization and building rapport.

Sustainable watershed development through people's participation is a complex process as its ultimate goal is socio-economic and socio-political development of the people living in the watershed area. Identification of key indicators, their development through people's involvement is a multi-disciplinary phenomenon which is governed not only by the internal environment of watershed but also by the external environment. Systematic planning, project designing, implementation and capacity building of locals for future sustenance of the indigenous are the key factors for success. This will be ensured through the selection and implementation of proper and people centered Entry Point Activities right in the very beginning of the Project.

Based on the learning over last thirty years for people-centric holistic watershed management involving convergence; collective action, consortium approach, capacity development to address equity, efficiency, environment and economic concerns is urgently needed. Through the new paradigm, watershed management itself can be used as an entry point activity for improving livelihoods of rural poor. Concerted efforts by all the stakeholders and actors will make the watershed community survived in the area of inclusive and sustainable development in challenging rainfed areas to develop a watershed management a business model through public private partnerships harnessing the benefits of value chain and linking farmers to the market.

The details of EPA selected for the watersheds is given below;

A Bird's Eye View of EPAs

Sl. No	Name of Grama Panchayat	Name of Watershed	Ward No.	Problems to be solved	Name of EPA	Location	Objective
1.	Aralam & Ayyankunnu	Venchuvanparathodu	8th of Ayyankunnu 6th of Aralam	Non functional drinking water schemes	Renovation of OHG tank of Rajagiri Drinking Water Project	Rajagiri	Regular supply of adequate drinking water to the colonies ensured
					Construction of Pump House for Nirmala Giri Colony Drinking Water Project	Vazhathodu Nirmalagiri	
2.	Ayyankunnu	Angadikkadavu St. Jude Nagar	6	Unavailability of Drinking Water	RWH system for Angadikkadavu SH HSSS	Angadikkadavu	To provide drinking water for 1500 Students in the Higher Secondary School
3.	Ayyankunnu	Uruppumkutty	7	Poor irrigation and drinking water availability	Pond Construction	Thenkara	To ensure drinking and Irrigation water source for 16 households
4.	Ayyankunnu	Endomkari	7	Poor functioning of the community water supply scheme	Maintenance and repair works of the existing water supply scheme	Endomkari	To ensure regular supply of drinking water to 25 ST households
				Stream bank erosion	Stream bank Stabilization of Thupparambil Thodu	Thupparambu	To stabile the stream bank and check stream bank erosion
5.	Ayyankunnu	Vempuzhapalam	9,10 & 12	Lowering ground water table	Well Recharging	Watershed Area	To improve the water table of the locality.

A Bird's Eye View of EPAs……..contd..

Sl. No	Name of Grama Panchayat	Name of Watershed	Ward No.	Problems to be solved	Name of EPA	Location	Objective
6.	Ayyankunnu	Parakkappara	8	Drudgery of women and children in fetching drinking water	Palliparambu Drinking water supply scheme	Kizhanganam Palliparambu	Drinking water for 10 households in the colony ensured.
7.	Aralam	Valayamkode	2	Lowering Ground water table	Well Recharging	Watershed area	To improve the water table of the locality.
8.	Aralam& payam	Edoor	8 of Payam 1,11,17 of Aralam	Lowering Ground Water table	Well Recharging	Watershed area	To improve the water table of the locality.
9.	Aralam & payam	Payam	10^{th} of Payam	Drinking water scarcity	Drinking water Supply Scheme	Kariyal Laksham Veedu Colony	Drinking water for 30 households in the colony ensured.
10.	Aralam	Aralam	9,12,13,14,15 & 16	Lowering Ground Water Table	Well Recharging	Watershed area	To improve the water table of the locality
11.	Aralam	Athikkal	3,6 & 7	Lowering Ground Water Table	Well Recharging	Watershed area	To improve the water table of the locality

IRITTY BLOCK PANCHAYATH ENTRY POINT ACTIVITY FUND UTILIZATION PLAN AT A GLANCE

SL. NO	WATERSHED NAME	PANCHAYATH	AREA IN HECTARE	IWMP EPA FUND	IWMP PROJECT FUND	TOTAL ESTIMATE FUND	NATURE OF ACTIVITY
1.	Angadikkadavu St.Jude Nagar	Ayyankunnu	465	223200	500	223700	Rwh Syatm For Angadikkadavu Sacred Heart Higher Secondary School
2.	Aralam	Aralam	615	295200	2880	298080	Well Recharging
3.	Athikkal	Aralam	763	366240	22560	388800	Well Recharging
4.	Edoor	Aralam & Payam	291	139680	376320	516000	Well Recharging
5.	Endomkari	Ayyankunnu	313	150240	42560	192800	Maintanance And Repairing Works Of The Existing Drinking Wter Project At Endomkari St Colony.
6.	Parakkapara	Ayyankunnu	480	230400	158800	389200	Palliparambu Drinking Water Supply Scheme
7.	Payam	Aralam,Payam	566	271680	28120	299800	Drinking Water Supply Scheme For Kariyal Lakshamveedu Colony.
8.	Uruppumkutty	Ayyankunnu	645	309600	810	310410	Pond Construction At Thenkara
9.	Valayamkodu	Aralam	410	196800	348700	545500	Well Rechargin
10.	Vempuzhapalam	Ayyankunnu	319	153120	630	153750	Well Recharging
11.	Venchuvanparathodu	Aralam, Ayyankunnu	187	89760	2840	92600	Renovation Of OHTank Of Rajagiri Drinking Water Project, Construction Of Pump House For Nirmalagiri Colony Drinking Water Project, Construction Of Shutter Type Check Dam For Venchuvanparathodu.
	Total			**2453280**	**957360**	**3410640**	

CAPACITY BUILDING PROGRAMME PLAN

The term Capacity Development is understood as the development of peoples, organizations and societies capability to manage resources effectively and efficiently in order to realize their own goals on a sustainable basis. In this context, four dimensions have to be distinguished:

1. The development of the human resource or personnel development.
2. The strengthening of the effectiveness and efficiency of organization or organizational development.
3. The strengthening of cooperation between organizations and network development.
4. The promotion of institutional frameworks for development.

In this perspective, a **Capacity Development Programme** has multiple roles to play. It will enhance skills and competence of project staff to work with GPs. It will deepen the participatory process through imparting participatory rural appraisal skills and will initiate change in attitude among project staff. The success of trainings will be measured by the degree of institutional, organizational and attitudinal change, while recognizing that trainings have always to be reinforced by management. It will also be measured by the acquisition of new skills and competence, the performances of new tasks, and the performance of old tasks in a different way.

Objectives of Capacity Building

1. Develop proper conceptual understanding about Integrated Participatory Watershed Management including Equity and Environmental and Social sustainability among all the implementing agencies including PRIs as well as local communities.
2. Build necessary skills and competence among the project officials, PRIs, especially GPs and other Communities Based Organizations (CBOs) about planning, implementation and management of various project activities.
3. Help in the institutional development of Watershed Committees at the Gram Panchayat level and organizational development of watershed perspective at the district level.
4. Develop understanding about the Environmental and Social issues including application of an Environmental and Social Management Framework.
5. Build and enhance the capability of all stakeholders for the sustainability of programmes initiated by the IWMP project.

Training Need Assessment

The first and foremost task in the process of Capacity Development is to assess the training requirements of the stakeholders at different levels. Watershed management being a multidisciplinary approach, it has to address the multi-dimensional needs of all the stakeholders. The training needs and requirements, thrust areas of training, contents and coverage and the project phase during which it is essential to be imparted are assessed for the concerned group of stakeholders. Besides, information available at training institutions located at different levels are also be utilized in the finalization of training proposals. A significant amount of emphasis is also placed on Behavioural Training touching upon a range of topics such as communications and listening sensitivity, interpersonal relations, leadership, teamwork and so on. This training will enhance the quality of the output of various individuals and organizations who are involved in Community Participation in Natural Resource Management.

- For the IWMP the capacity building strategy aims at the following target groups:
- Policy makers and executives of PRIs
- CWCDCs / PIAs
- Social mobilizers/TSO
- Watershed Committees
- CBOs and other community members
- Secretaries of WC appointed under the project
- Watershed Development Teams (WDTs)
- Finance Officer at State, District and PIA level

PART – I

INSTITUTION BUILDING – FORMATION OF NHGS AND UGS INCLUDING WATERSHED COMMITTEES

Title of the Programme	Rationale	Training Objectives	Target Group	Duration	No. of expected participants and Batches	Expected Outcome	Abstract Estimate
Institution Building – Formation of NHGs and UGs including WCs	The watershed community must be formed into groups as Neighbourhood clusters and UGs. WCs are responsible for taking up and implementing different programmes. Therefore institution building is necessary as strengthening the groups	To group the whole watershed community into groups by orienting them on IWMP and modalities of development interventions and functional operations of the NHGs, SHGs and WCs.	Watershed Community	One day	72 Groups	NHGs, UGs and WCs are formed and functionalized. Community Participation and awareness about IWMP and need of Participation in the process ensured.	Tea Expenses **Rs. 24375.00** Remuneration for Resource persons = **Rs. 11250.00** Training Materials = **Rs. 7500.00** Organizing Expenses like notice, banners, hall rent, mike rent, documentation, etc. = **Rs.52500.00** Total in this category =**Rs. 95625.00**

COMMUNITY LEVEL TRAINING PROGRAMME No. 1

Title of the Programme	Rationale	Training Objectives	Target Group	Duration	No. of expected participants and Batches	Expected Outcome	Abstract Estimate
Awareness Programme of IWMP	The watershed community must be made aware of the approach and methods of watershed development and IWMP programmes and its concepts, the need of the hour, motivate them to become part of the programme	To orient the participants on IWMP concept, basics of watershed, Scope of watershed Development, various activities for NRM, PS&M and LSS and different dimensions of participatory watershed management	Watershed Community	One day	100 participants per batch for 11 Batches = 1100	Community Participation and awareness about IWMP and need of Participation in the process ensured.	Food Expenses **Rs. 66000.00**
							Remuneration for Resource persons = **Rs.8250.00**
							Training Materials /Kits = **Rs. 22000.00**
							Organizing Expenses like notice, banners, hall rent, mike rent, documentation, etc. = **Rs.38500.00**
							Total in this category **= Rs. 134750.00**

COMMUNITY LEVEL TRAINING PROGRAMME No. 3

Title of the Programme	Rationale	Training Objectives	Target Group	Duration	No. of expected participants and Batches	Expected Outcome	Abstract Estimate
Planning & Implementation of Projects related to CPRs	Involvement of NHG/SHG/UG leaders in the very beginning of the planning of the IWMP will lead to increase their interest and involvement in creating Common Property Resources (CPRs)	• NHG Leaders made aware of their responsibilities • NHG Leaders made aware of the need of establishing common assets • NHG Leaders made aware of the mode of operation in establishing common assets • NHG Leaders made aware of the financial procedures involved	NHG Leaders /UG Leaders	One Day	71 Leaders 3 batches Total = 213	The NHG Leaders empowered to take up the responsibility of creating common assets as well as their future maintenance	Food Expenses = **Rs. 26000.00**
							Remuneration for Resource persons = **Rs.15000.00**
							Training Materials /Kits = **Rs. 10000.00**
							Organizing Expenses like notice, banners, hall rent, mike rent documentation, etc. = **Rs. 17500.00**
							Total in this category for one year= **Rs. 68500.00**

COMMUNITY LEVEL TRAINING PROGRAMME No. 4

Title of the Programme	Rationale	Training Objectives	Target Group	Duration	No. of expected participants and Batches	Expected Outcome	Abstract Estimate
Concept of Watershed Management, Roles & Responsibilities	Imparting awareness among Watershed Committee members regarding the concept of watershed management, roles and responsibilities, operational guidelines, financial management etc. is a pre-requisite for the smooth implementation of programmes and activities	• Awareness created among the WC members • Roles and Responsibilities defined • Accurate and transparent financial management ensured • Management of WDF ensured.	Watershed Community Members	One Day	60 per batch for 3 batches Total 180	People's representatives and community leaders empowered for effective implementation of the project and proper maintenance of commonly created assets.	Food Expenses =**Rs. 16500.00** Remuneration for Resource persons = **Rs.6000.00** Training Materials /Kits = **Rs. 5500.00** Travelling allowance for trainees = **Rs. 33000.00** Organizing Expenses like notice, banners, hall rent, mike rent, documentation, etc. = **Rs.15000.00** Total in this category **=Rs. 76000.00**

COMMUNITY LEVEL TRAINING PROGRAMME No. 5

Title of the Programme	Rationale	Training Objectives	Target Group	Duration	No. of expected participants and Batches	Expected Outcome	Abstract Estimate
Empowering People's representatives for IWMP	Involvement of the elected members to the PRIs is essential for the effective and transparent implementation of the Project components for which they should be aware of the concept, policies, strategies and functional operations.	• Awareness created among the People's Representatives • Roles and Responsibilities defined • Accurate and transparent financial management ensured • Management of WDF ensured.	Elected People's Representatives	Two Days	40 per batch for 3 batches Total 200	People's representatives and community leaders empowered for effective implementation of the project and proper maintenance of commonly created assets.	Food Expenses =**Rs. 70000.00** Remuneration for Resource persons = **Rs.15000.00** Training Materials /Kits = **Rs. 14000.00** Travelling allowance for trainees = **Rs. 50000.00** Organizing Expenses like notice, banners, hall rent, mike rent, documentation, etc. = **Rs.37500.00** Total in this category **=Rs. 186500.00**

INSTITUTIONAL LEVEL TRAINING PROGRAMME No.1

Title of the Programme	Rationale	Training Objectives	Target Group	Duration	No. of expected participants and Batches	Expected Outcome	Abstract Estimate
MIS Training	Physical Achievements as well as financial transactions involved in the IWMP has to be registered in the MIS as and when occurred	• The need of MIS and its functioning disseminated • A set of human resources with the skill at different level organized and capacitated • Proper & timely MIS ensured and fostered	MIS and Data Entry Operators	Two days	25 participants in 5 batches Total 125	Human Resource Development ensured at different level for effective MIS maintenance.	Food Expenses = **Rs. 37500.00** Remuneration for Resource persons = **Rs.15000.00** Training Materials /Kits = **Rs. 9325.00** Organizing Expenses like notice, banners, hall rent, mike rent, documentation, etc. = **Rs.18750.00** Total in this category = **Rs. 80625.00**

INSTITUTIONAL LEVEL TRAINING PROGRAMME No.2

Title of the Programme	Rationale	Training Objectives	Target Group	Duration	No. of expected participants and Batches	Expected Outcome	Abstract Estimate
Watershed, its concept, Planning and Implementation	Watershed development is the need of the hour. For the success of any watershed project a thorough knowledge of its concepts, methodology, planning, implementation etc. are needed. The institutions formed to meet the requisite must learn PCM & PMC as a managerial tool to ensure that the desired results are achieved	• PIAs as well as the officials engaged in the programme made aware about the concepts watershed development • Basics of watershed development and its methodology is familiarized • Process of Preparation of plan for the holistic development of the watershed initiated • Knowledge is created on financial management • Scope of convergence and cooperation explored • Post project management ensured	WCDC, PIA, WDT, MNREGS Cells and Line Departments	5 days	25 per batch for 2 batches Total = 50	• Smooth implementation of the project ensured • Systematic and effective project management ensured • Full professional support from line department ensured	Food Expenses = **Rs. 62500.00** Remuneration for Resource persons = **Rs.30000.00** Training Materials /Kits = **Rs. 5000.00** Organizing Expenses like notice, banners, hall rent, mike rent, documentation, etc = **Rs.37500.00** Total in this category **= Rs. 135000.00**

INSTITUTIONAL LEVEL TRAINING PROGRAMME No.3

Title of the Programme	Rationale	Training Objectives	Target Group	Duration	No. of expected participants and Batches	Expected Outcome	Abstract Estimate
DPR Preparation, RS and GIS and its application in Watershed Management	DPR preparation is a crucial activity in IWMP. Different maps have to be prepared in GIS platform. Various data need to be compiled for DPR Preparation	▸ DPR Technically sound prepared ▸ Various thematic maps on GIS platform prepared. ▸ The relevance of PRA in IWMP disseminated ▸ PRA based action plan prepared ▸ Convergence and integration plan prepared ▸ Proper exit protocol prepared	Members of TSO, PIA and WDT	Two Days	25each in two batches Total 50	▸ Activities implemented time bound ▸ Regular monitoring keeps the quality of the work done ▸	Food Expenses = **Rs. 25000.00** Remuneration for Resource persons = **Rs.12000.00** Training Materials /Kits = **Rs. 7500.00** Organizing Expenses like notice, banners, hall rent, mike rent documentation, etc. = **Rs.13000.00** Total in this category **= Rs. 68500.00**

INSTITUTIONAL LEVEL TRAINING PROGRAMME No.4

Title of the Programme	Rationale	Training Objectives	Target Group	Duration	No. of expected participants and Batches	Expected Outcome	Abstract Estimate
IWMP Interventions – a new approach	Interventions are mainly grouped under three categories, NRM, PS&M and LSS. A diversified group of activities can be undertaken in the watershed management.	▸ Various interventions under each category familiarized ▸ Location specific and need based DPR prepared ▸ Environmentally sound interventions selected and incorporated ▸ Different class of community satisfied by selecting different interventions according to their need and satisfaction	Members of TSO, PIA and WDT	One day	50 each in two batches Total 100	▸ Technically sound and economically feasible DPR prepared which is socially accepted.	Food Expenses = **Rs. 20000.00** Remuneration for Resource persons = **Rs.6000.00** Training Materials /Kits = **Rs. 10000.00** Organizing Expenses like notice, banners, hall rent, mike rent documentation, etc. = **Rs.13000.00** Total in this category **= Rs. 49000.00**

INSTITUTIONAL LEVEL TRAINING PROGRAMME No.5

Title of the Programme	Rationale	Training Objectives	Target Group	Duration	No. of expected participants and Batches	Expected Outcome	Abstract Estimate
IWMP- its concept , strategy and convergence	Since IWMP is an integrated programmes, line departments must know about the project , its concepts, strategy etc., so that they can define their roles themselves.	▪ The concept and strategy of IWMP familiarized ▪ The need of integration established ▪ Roles and Responsibilities defined ▪ Strategy for convergence established ▪ Pucca DPR satisfying all sections of the society prepared ▪ Strategy for future maintenance of assets created and developed	WCDC, WDT, PIA, TSO, MGNREGS Cell, Officials from Line Departments	One Day	50 participants in two batches Total 100	• Clarity in convergence and proper integration achieved • DPR satisfying all the technical requirements prepared • Role of the technical experts satisfactorily carried out in preparation of DPR, in Implementation of activities and valuation of engineering works	Food Expenses = **Rs. 20000.00** Remuneration for Resource persons = **Rs.12000.00** Training Materials /Kits = **Rs. 10000.00** Organizing Expenses like notice, banners, hall rent, mike rent documentation, etc. = **Rs.13000.00** Total in this category = **Rs. 55000.00**

INSTITUTIONAL LEVEL TRAINING PROGRAMME No.6

Title of the Programme	Rationale	Training Objectives	Target Group	Duration	No. of expected participants and Batches	Expected Outcome	Abstract Estimate
Preparation of Technical and Process Manual	Technical as well as process manual without defects is necessary for the proper and successful implementation of the project	▸ Defects in the existing manual rectified. ▸ Additional points that are not included in the existing manual incorporated ▸ Process and technical manual familiarized among the officials.	SLNA, WCDC and PDs	One day	10 participants each in three batches. Total 30	• A pucca technical and process manual devoid of all defects and drawbacks prepared and familiarized	Food expenses = **Rs. 7500.00** Remuneration for Resource persons = **Rs.4500.00** Travelling allowance per trainee per day = **Rs. 4500.00** Organizing Expenses like notice, banners, hall rent, mike rent documentation, etc. = **Rs.12000.00** Total in this category **= Rs. 28500.00**

INSTITUTIONAL LEVEL TRAINING PROGRAMME No.7

Title of the Programme	Rationale	Training Objectives	Target Group	Duration	No. of expected participants and Batches	Expected Outcome	Abstract Estimate
Develop Action Plan for PS&M and LSS	More than 50% of the communities are often landless agricultural labourers. For attain self sustainability LSS is the main option	▸ Various LSS activities envisaged in the project familiarized. ▸ The community acquainted with various LSS activities ▸ LSS action plan suitable for each watershed depending upon their sustainability prepared and incorporated.	PIA, members of PRIs and TSO	One day	15 participants each in two batches. Total =30	• Need based, location specific, economically feasible and communally acceptable Action Plan	Food expenses = **Rs. 7500.00** Remuneration for Resource persons = **Rs.3000.00** Travelling allowance per trainee per day @ Rs. 150- for one day = **Rs. 4500.00** Organizing Expenses like notice, banners, hall rent, mike rent, documentation, etc. = **Rs.8000.00** Total in this category **= Rs. 23000.00**

INSTITUTIONAL LEVEL TRAINING PROGRAMME No.8

Title of the Programme	Rationale	Training Objectives	Target Group	Duration	No. of expected participants and Batches	Expected Outcome	Abstract Estimate
Training of Trainers (ToT) in IWMP	Trainers are necessary for imparting training	▸ A team of faculties build for imparting training ▸ Awareness created among the communities and the institutional level officials. ▸ DPR preparation and Monitoring & Evaluation assisted	Officials from various departments and extension faculty members	Two days	10 participants each in three batches Total = 30	• A well trained faculty team who are capable of disseminating the concept of watershed and other activities related to watershed management	Food expenses = **Rs. 15000.00** Remuneration for Resource persons = **Rs.9000.00** Travelling allowance = **Rs. 9000.00** Organizing Expenses like notice, banners, hall rent, mike rent, documentation, etc. = **Rs.12000.00** Total in this category **= Rs. 45000.00**

PART – II – SKILL DEVELOPMENT TRAINING

Training No. 1: Cow Rearing

itle of the Programme	Rationale	Training Objectives	Target Group	Duration	No. of expected participants and Batches	Expected Outcome	Abstract Estimate
Training in Cow rearing	Cow rearing is supplemental to agriculture and an income generation scheme for the landless. Training in cow rearing will help the selected beneficiaries	▸ To provide skills and techniques of gainful cow rearing	Selected Beneficiaries	One day	15 participants from a watershed 45 per batch 5 batches Total 225	▸ 225 trained involved in cow rearing ▸ Increased milk production ▸ Supplementary income for 225 families ▸ Improved production system	Food Expenses = **Rs. 14625.00** Remuneration for Resource persons = **Rs. 5000.00** Training Materials /Kits = **Rs. 3375.00** Organizing Expenses like notice, banners, hall rent, mike rent, documentation, etc. = **Rs.12500.00** Total in this category **= Rs. 35500.00**

Training No. 2 – Goat Rearing

Title of the Programme	Rationale	Training Objectives	Target Group	Duration	No. of expected participants and Batches	Expected Outcome	Abstract Estimate
Training in goat rearing	Goat is the one of the profitable income generating scheme that can be adopted by the landless and training is required to ensure that the selected beneficiaries acquire knowledge in scientific and systematic goat rearing easiest	▸ To provide skills and techniques of gainful goat rearing	Selected Beneficiaries	One day	35 each from Watershed Total 15 batches Total 525	▸ 525 landless beneficiaries are trained in goat rearing ▸ 525 new goats reared in the watershed ▸ 525 beneficiaries increase their income ▸ Improved production system	Food Expenses = **Rs. 34125.00** Remuneration for Resource persons = **Rs.15000.00** Training Materials /Kits = **Rs. 10500.00** Organizing Expenses like notice, banners, hall rent, mike rent, documentation, etc. = **Rs.45000.00** Total in this category **= Rs. 104625.00**

Training No. 3 – Commercial Poultry Farming

Title of the Programme	Rationale	Training Objectives	Target Group	Duration	No. of expected participants and Batches	Expected Outcome	Abstract Estimate
Training in Commercial Poultry Farming	Backyard poultry farming had been a supplementary income generating programme for the household women. Recently this had been proved to be unfeasible. A commercial level farming alone would bring substantiating income to the family. In this process even the children can also be involved.	▸ To provide skills and techniques of gainful poultry farming	Selected Beneficiaries	One day	40 each from a watershed Total 15 batches Total 600 trainees	▸ 600 beneficiaries trained in Poultry Farming ▸ Increased income for 600 families ▸ Living standard of 600 landless people improved ▸ Improved production system	Food Expenses = **Rs. 39000.00** Remuneration for Resource persons = **Rs.15000.00** Training Materials /Kits = **Rs. 12000.00** Organizing Expenses like notice, banners, hall rent, mike rent, documentation, etc. = **Rs.45000.00** Total in this category = **Rs. 111000.00**

Training No. 4 – Vermin Composting

Title of the Programme	Rationale	Training Objectives	Target Group	Duration	No. of expected participants and Batches	Expected Outcome	Abstract Estimate
Training in Vermin Composting	Production system improvement and management is very important in watershed management programme. To ensure improvement of the PS in the watershed quality organic fertilizer is required and each watershed should be self sufficient in this regard	▸ To provide skills and techniques of Vermin Composting	Selected Beneficiaries	One Day	40 each in a Batch , one batch each from a watershed 15x 40 600 trainees	▸ Adequate and quality organic fertilizer available in each watershed ▸ Production system of the watershed improved ▸ Supplementary income for the involved ▸ Safe disposal of solid organic waste.	Food Expenses = **Rs. 51000.00** Remuneration for Resource = **Rs.22500.00** Training Materials /Kits = **Rs. 15000.00** Organizing Expenses like notice, banners, hall rent, mike rent documentation, etc. = **Rs.67500.00** Total in this category **= Rs. 156000.00**

Training No. 5 – Azola Cultivation

Title of the Programme	Rationale	Training Objectives	Target Group	Duration	No. of expected participants and Batches	Expected Outcome	Abstract Estimate
Training in Azola Cultivation	Supplementary feed for the poultry and dairying is always a question for those who involved in such trades. Azola cultivation is one of low cost income generation scheme. Nutrient filled fodder shall be availed through azola cultivation	▸ To make aware the participants of the methods and technology of Azola Cultivation	Selected Beneficiaries	One day	30 each in a Batch , 15 batches with 450 trainees	▸ 450 beneficiaries trained in Azola Cultivation ▸ Adequate and nutrient filled fodder is available within the watershed ▸ Supplementary income for 450 trained beneficiaries	Food Expenses = **Rs. 29250.00** Remuneration for Resource persons = **Rs.12000.00** Training Materials /Kits = **Rs. 9000.00** Organizing Expenses like notice, banners, hall rent, mike rent documentation, etc. = **Rs.30000.00** Total in this category **= Rs. 80250.00**

Training No. 6 – Agricultural Nursery

Title of the Programme	Rationale	Training Objectives	Target Group	Duration	No. of expected participants and Batches	Expected Outcome	Abstract Estimate
Training in Agricultural Plant Nursery	The watershed community involve in Horticulture for which they require quality ensured seeds and seedlings. One or two such nurseries will ensure the availability of required planting materials to the watershed and those who involved in will raise a supplementary income.	▸ To avail skills and courage to start a plant Nursery to the trainees	Selected Beneficiaries	3 days	15 each in a Batch , Total 4 batches Total = 60 Trainees	▸ 4 agriculture nurseries in different part of the watershed. ▸ Adequate supplementary income generated by the groups involved	Food Expenses = **Rs. 4200.00** Remuneration for Resource persons = **Rs.6000.00** Training Materials /Kits = **Rs. 4500.00** Organizing Expenses like notice, banners, hall rent, mike rent, documentation, etc. = **Rs.14000.00** Total in this category = **Rs. 28700.00**

Training No. 7 – Training Floriculture

Title of the Programme	Rationale	Training Objectives	Target Group	Duration	No. of expected participants and Batches	Expected Outcome	Abstract Estimate
Training in Floriculture	Flowers produced and marketed bring additional income for the farmers. But training is required to ensure the commercial basis and exploring possibilities of export and local marketing	• To avail skills and courage to start a Flower Plant Nursery to the trainees	Selected Beneficiaries	2 days	20 each in a Batch , Total 4 batches Total 80 trainees	• 4 Flower nurseries in different part of the watershed. • Adequate supplementary income generated by the groups involved	Food Expenses = **Rs. 5600.00** Remuneration for Resource persons = **Rs.12000.00** Training Materials /Kits = **Rs. 6000.00** Organizing Expenses like notice, banners, hall rent, mike rent, documentation, etc. = **Rs.14000.00** Total in this category **= Rs. 37600.00**

Training No. 8 – Pisci Culture Training

Title of the Programme	Rationale	Training Objectives	Target Group	Duration	No. of expected participants and Batches	Expected Outcome	Abstract Estimate
Training in Pisci culture	Fresh water ornamental fishery is of high demand and brings extra income for the clients those involved in it. Training need to be imparted to ensure best result of income generation in this trade	▸ To avail skills and courage to start a Freshwater ornamental fish rearing unit	Selected Beneficiaries	One day	15 each in a Batch , Total4 batches Total 60 trainees	▸ Supplementary income for the trained	Food Expenses @ Rs. 80/per day for 60 participants for One day= **Rs. 4200.00**
							Remuneration for Resource persons @ Rs. 1500/day for one persons each for a batch = **Rs.12000.00**
							Training Materials /Kits @ Rs. 20 per participants per training = **Rs. 4500.00**
							Organizing Expenses like notice, banners, hall rent, mike rent, documentation, etc. @ Rs. 3500/- per training for four training a year = **Rs.14000.00**
							Total in this category for one year **= Rs. 34700.00**

Training No. 9 – Rabbit Rearing

Title of the Programme	Rationale	Training Objectives	Target Group	Duration	No. of expected participants and Batches	Expected Outcome	Abstract Estimate
Training in Rabbit Rearing	Kerala depends on external market for its fat free meat requirements. Rabbit meat is considered as fat free and can be produced at lesser cost domestically. Training should be given to those who wanted to involve in rabbit rearing to ensure substantial income is raised without loss of the trade.	To impart knowledge and skill of Rabbit Rearing	Selected Beneficiaries	▸ One day	30 each in a Batch , Total 4 batches Total 120 Trainees	▸ Additional income for the farmers ensured ▸ Availability fat free meat in the market ensured ▸ Self sufficiency of the watershed community in meat production	Food Expenses @ Rs. 70/per day for 120 participants for One day= **Rs. 8400.00**
							Remuneration for Resource persons @ Rs. 1500/day for two persons each for a batch = **Rs.12000.00**
							Training Materials /Kits @ Rs. 20 per participants per training = **Rs. 9000.00**
							Organizing Expenses like notice, banners, hall rent, mike rent, documentation, etc. @ Rs. 3600/- per training for four training a year = **Rs.14400.00**
							Total in this category for one year **= Rs. 43800.00**

Training No. 10 – Organic Farming

Title of the Programme	Rationale	Training Objectives	Target Group	Duration	No. of expected participants and Batches	Expected Outcome	Abstract Estimate
Training in Organic Farming	The whole production system in the watershed needs to be converted into humus rich soil which helps to produce increased yield. Organic cultivation is one method to improve the system and to ensure food safety and security for the watershed communities	To impart knowledge and skill of Organic Farming	Selected Beneficiaries	One day	100 each in a Batch Total 15 batches Total 1500 trainees	▸ The humus of the soil retained ▸ Improved production system management ensured ▸ Added income from organically produced vegetables and fruits.	Food Expenses @ Rs. 70/per day for 1500 participants = **Rs. 105000.00**
							Remuneration for Resource persons @ Rs. 1500/day for two persons each for a batch = **Rs.45000.00**
							Training Materials /Kits @ Rs. 20 per participants per training = **Rs. 56250.00**
							Organizing Expenses like notice, banners, hall rent, mike rent, documentation, etc. @ Rs. 3500/- per training for four training a year = **Rs.52500.00**
							Total in this category for one year **= Rs. 258750.00**

Training No. 11- Masonry of water harvesting systems

Title of the Programme	Rationale	Training Objectives	Target Group	Duration	No. of expected participants and Batches	Expected Outcome	Abstract Estimate
Masonry Training in Water Harvesting Systems	Watershed management specifically insists rain water harvesting systems to save water loss and soil erosion. Such structures also made compulsory for newly constructed houses by the PRIs. Demand for masons are in this technology is ever increasing. The trained shall be offered themselves for such work undertakings.	To impart knowledge and skill of Organic Farming	Selected Beneficiaries	15 days	15 each in a Batch , 4 batches Total 60 trainees	▸ Availability trained masons ensured for construction of water harvesting systems ▸ Additional earning for the trained ▸ A new+ culture of water conservation promoted and fostered in the watershed	Stipend for the trainees @ Rs. 100 per day for 15 days **=60x100x15 Rs. 90000.00** Remuneration for Trainer @ Rs. 750/day for 15 days x 4 batches = **Rs.45000.00** Training /Kits @ Rs. 500 per participants = **Rs. 30000.00** Organizing Expenses like notice, banners, documentation, etc. @ Rs. 25000/- per training including material costs for four training a year = **Rs.100000.00** Total in this category for one year **= Rs. 265000.00**

PART- III:

GENERAL AWARENESS GENERATION CAMPAIGNS

PROGRAMME No. 1

Title of the Programme	Rationale	Training Objectives	Target Group	Duration	No. of expected participants and Batches	Expected Outcome	Abstract Estimate
Exposure Visit for different committees	The dynamism of the committee members can be make use of as peer groups for many purposes like environmental pollution and waste disposal etc., for which they must be given a proper awareness	• Selected members provided a living experience along with nature • Members become watch dogs against environment related issues • Members became the spokesperson about environmental protection	Members selected from different committees within the watershed	5 days	50 in two batches total 100	• Timely information received against environmental pollution • Common Property Assets created in the watersheds are properly protected • Streets and roadsides kept clean and green	Food & Accommodation Expenses = **Rs. 27500.00** Travelling expenses = **Rs.38500.00** Miscellaneous expenses **Rs. 22000.00** Total = 88000

PROGRAMME No. 2

Title of the Programme	Rationale	Training Objectives	Target Group	Duration	No. of expected participants and Batches	Expected Outcome	Abstract Estimate
Awareness Generation Campaigns/activities like Competitions for the school children and the general public	Campaigns are always helpful to ensure the involvement of different group of people in any activity. If it is for environmental protection, School Children and youth are the best option. They should be encouraged to involve in the planned interventions	• Students and youth involved in IWMP implementation actively • Message of environmental protection conveyed to properly	Youth and High School Children in the watershed	NA	NA	• Children and youth get opportunity to express their creativity regarding protection of nature • Message of watershed management is widely propagated	Tea & Snacks Expenses = **Rs. 2000.00** Cost of Materials = **Rs.5000.00** Cost of Prizes = **Rs. 2500.00** Organizing expenses = **Rs. 25000.00** Total in this category **= Rs. 34500.00**

PROGRAMME No. 3

Title of the Programme	Rationale	Training Objectives	Target Group	Duration	No. of expected participants and Batches	Expected Outcome	Abstract Estimate
Road Show & Exhibition	One of the reasons for the present deteriorated environmental condition is ignorance and proper orientation of the community. A visual illustration and detailed exhibition will definitely change the mentality of the people	• Environmental deterioration Illustrated • Message of environmental protection conveyed • Watershed Management techniques and water conservation mechanisms shown	General Public	Two days	NA	• People become the spokesperson of NRM • Care taken by the public towards natural resources • Water & Soil Conservation continued in the plots of the farmers	Food Expenses for the volunteers = **Rs. 10000.00** Cost of Materials = **Rs.50000.00** Vehicle Rent including all accessories and technicians = **Rs. 200000.00** Organizing expenses = **Rs. 12000.00** Total in this category **= Rs. 272000.00**

Printing & Publishing of IEC Materials

Sl. No.	Item	Total cost
1	Printing & Publishing of Leaflets on Systematic and scientific practices in watershed management	45000.00
2	Printing & distribution of Stickers among the watershed communities	42000.00
3	Message Boards in all micro watersheds	49500. 00
4	Board showing Project details in all watersheds	15000.00
5	Wall painting	15000.00
6	Name Slip Distribution	10000.00
7	Nattarivumela	25000.00
8	Vilambarajatha	121000.00
9	Debate	3975.00
10	Posters Printing	30000.00
11	Fixation of Watershed Name boards	82500.00

LIVELIHOOD ACTIVITIES FOR LANDLESS/ASSETLESS PERSONS

The IWMP project enables marginal and oppressed sections of the village community (landless, small and marginal farmers, women) to gain maximum benefit from the project. The project will offer these households opportunities for income generation through employment, preferential access to common property resources and non-land based activities. It aims at empowerment of women, enhancing their capacities and offering them access to resources and decision-making forums.

People will take initiatives to organize themselves around common interests in order to assure improved access to resources and services. The project will encourage such initiatives whenever they are within the common objectives. The implementation of non-land based livelihood support activities will be taken up through SHGs and user groups (UGs) representing the marginalized sections of the community and women.

In the current decade, according to estimates officially made and estimated during the baseline survey conducted in the watersheds more than 10 % of the total population of the watershed will be seeking work every year. Thus, to ensure full employment within a decade, new livelihoods will have to be generated every year. Given the magnitude of the problem, and the dearth of resources for livelihood promotion, the task of promoting livelihoods for the poor becomes all the more urgent. It calls for organizations to use their resources optimally to achieve maximum scale.

The primary reason to promote livelihoods is the belief in the essential right of all human beings to equal opportunity. Poor people do not have life choices nor do they have opportunities. Ensuring that a poor household has a stable livelihood will substantially increase its income, and over a period of time, asset ownership, self-esteem and social participation.

The second reason for livelihood promotion is to promote economic growth. The 'bottom of the pyramid' comprising more than 58% of the total watershed population, who do not have the purchasing power to buy even the bare necessities of life – food, clothing and shelter at an adequate rate. But as they get steadier incomes through livelihood promotion, they become customers of many goods and services, which then promote growth.

The third reason for promoting livelihoods is to ensure social and political stability. When people are hungry, they tend to take to violence, crime. Thus, we see that there are idealistic, utilitarian and plain self-interest based arguments for livelihood promotion. But whatever be the reason, we need to worry about – how to promote livelihoods?

Livelihood interventions are conscious efforts by an agency or an organization to promote and support livelihood opportunities for a large number of people (other than those directly or indirectly employed by them). Block Panchayat, through IWMP can be one of the largest agencies involved in such livelihood promotion efforts. Skills and knowledge are the driving forces of economic growth and social development of any country. They have become even more important given the increasing pace of globalization and technological changes provide both challenges that are taking place in the world. In order to address the vital need of generating more employment opportunities in the rural non-farm sector, IWMP proposes Entrepreneurship Development Programme so that opportunities can open up in rural watershed areas. Towards this end, we have identified some skills, based on need assessment studies.

The Livelihood Promotion Programme under IWMP will also focus on the livelihood security of watershed communities from the perspective of rights to the economic role of resource rights in sustaining livelihoods. Land and resource rights are highly sensitive issues, both culturally and politically. They must be addressed objectively and in conjunction with other variables in the equation of livelihood security, including among other factors, resource degradation and population increase.

All the livelihood promotion programmes planned under this project are aiming at developing the existing assets to be more beneficially make use of the improvement of life and means of livelihood of the watershed communities. The capacity building programmes stated and explained above will address the human asset development and personal assets development, enhancing the skills and knowledge base of the watershed communities. The SHG approach adopted to organize and facilitate the watershed community encourages the poor self potential through promoting saving and creating access for internal loan among them. The groups also mobilized external resources to meet their members' interest. Furthermore:

- Marginalized **women are organized into SHG/NHGs and form their apex body**
- Individual **capacity building efforts are necessary**
- Through **collective actions, organized women improve their social and economic life**
- SHG/**NHGs become vibrant local development partners**
- The **program has the power to replicate itself in other areas**

Baseline Livelihood Analysis generates the reference understanding of livelihood assets and strategies of people, including description, quantities, trends and key issues. This basic understanding of livelihoods is the starting point and foundation from which FSNAU analyses food security and vulnerability. Following the strong advocacy for sustainable livelihoods approaches in development from the 1990s it is not so easy to translate into practice, with inherited organizational forms, disciplinary biases and funding structures constructed around other assumptions and ways of thinking. However, IWMP makes an attempt to bring different categories of people like marginal farmers, the assetless, the SC/STs and women into the array of income generating programmes through promoting PS&M and LSS programmes which are intended to raise the income level of the people in the watersheds.

The following is the list of activities proposed under livelihood activities for landless/ Assetless persons:

SL No.	Scheme
1.	Banan chips making unit
2.	Rabbit Rearing
3.	Tailoring unit
4.	Mini Diary Farm
5.	Bag making unit
6.	Detergent powder making unit
7.	Consumer Store
8.	Mushroom Cultivation

PRODUCTION SYSTEM & MICRO-ENTERPRISES BASED LIVELIHOOD ACTIVITIES

One of the major problems that came across during the PRA and FGD at the time of planning of watershed activities is reducing soil fertility and the consequent poor yield that cause serious financial difficulties to those who entirely depending upon the agriculture for their livelihood. In a sense, this calls for a serious land use analysis and planning by which the villagers can carry out biophysical assessments of their farm lands. These assessments often raise issues concerning the use of manure, seeds, seedlings, irrigation facilities etc. The fragmentation of village land is another issue that needs considering when one thinks about the degradation of the farm land. Villagers often use land close to their settlements and further away, in line with traditional arrangements or owing to the limited availability of agricultural land.

In order to initiate the PS&M planning process in the watershed, the IWMP project assisted the watershed community first with a Situation Analysis to analyse their existing situation (problems and opportunities for development) and in the preparation of an action plan.

The PS&M Planning process started with natural resource issues are mentioned in the action plan. A watershed PS&M Planning committee was formed and installed within the watershed structure involving representatives from all the user groups, watershed committees, Kudumbasree units and the people's representatives. The feasibility studies of the various sectors were discussed and merged into a common scenario. The outcome of these discussions included technical proposals/inputs towards the PS&M Planning.

Micro Enterprise Development is a proven way to strengthen viable, small business resulting in increased household income and savings, and this alleviating the crunch of poverty. Micro Enterprises plays a critical role in the local development of any area.

Micro enterprises will help to develop entrepreneurship capacity among the population and serve as an example for the villagers to come up with similar initiatives at their own. It will increase the income levels of the people. Before the establishment, the beneficiaries must be trained about the technical and managerial know how of the same. For the activities like horticulture expansion, plantation and nursery, fund from MNREGA can be utilized. Other cost intensive intervention which involves a certain percentage of contribution of the beneficiaries.

Majority of the watershed community are meeting their livelihood needs from agriculture and horticulture production. And very few are meeting their livelihood needs from animal husbandry. But it is important to note that these families land holdings are very small and at the same time the numbers of cattle's are also less. A few of them are doing some work on daily wage basis to meet their daily needs. This is so in the case of almost all the BPL families in the watershed. The micro enterprises development activities proposed can bring significant changes in the watershed area. The Micro Enterprise will be leading the community to be self-reliant and live with dignity.

Upon the successful implementation of the livelihood enhancement programmes and PS&M programmes aimed at the empowerment of the watershed communities, especially that of the BPL families, SC communities and the vulnerable sections (women for example) of the society in the watershed area, the BPL status of the families will be changed. This will positively impact the integrated development of the watershed area. The success of these initiatives will further encourage the households to undertake new initiatives by expanding their area of operation. It will leads towards cluster development. It will increase the economic condition of the people and improve in quality-of-life of the local people in the watershed area.

The proposed PS& activites are tabled below:

Sl no.	Activity
1.	Banana Cultivation
2.	Organic Vegetable Cultivation
3.	Tuber Crops cultivation
4.	Cow Rearing
5.	Banana Chips making Unit
6.	Vermi Compost
7.	Rabbit Rearing
8.	Mushroom Cultivation
9.	Layer Distribution
10.	Goat Rearing
11.	Tailoring Machine Distribution
12.	Floor Cleaner making unit
13.	Bee Keeping
14.	Bio gas Plant

Development of sustainable livelihoods for the BPL families in the watershed area is a major objective of the project. It is observed and identified that there is a scope for the activities like pasture development in community lands, Horticulture Nursery Raising, Dairy Farming, and

Expansion of Horticulture in the watershed area. The small farmers can be assigned with the development of Agri-Horti Collection Centre in community land.

NATURAL RESOURCE MANAGEMENT (NRM) ACTIVITIES/WATERSHED DEVELOPMENT ACTIVITIES

Works component includes activities required to restore the health of the catchment area by reducing the volume and velocity of surface run-off, including regeneration of vegetative cover in common land, afforestation, staggered trenching, contour and graded bunding, bench terracing etc. Drainage line treatment with a combination of vegetative and engineering structures, such as earthen checks, brushwood checks, gully plugs, loose boulder checks, gabion structures, underground dykes etc., Development of water harvesting structures such as low-cost farm ponds, nalla bunds, check-dams, percolation tanks and ground water recharge through wells and other measures, Nursery raising for fodder, fuel, timber and horticultural species, as far as possible local species may be given priority. Land Development including in-situ soil and moisture conservation and drainage management measures like field bunds, contour and graded bunds fortified with plantation, bench terracing in hilly terrain etc. Crop demonstrations for popularizing new crops/varieties, water saving technologies such as drip irrigation or innovative management practices. As far as possible varieties based on the local germplasm may be promoted and Pasture development are the major works to be taken up.

Conservation works for soil and water cannot be separated from one another, because these to supplement each other and there is no existence for these components of the nature individually. When a soil conservation activity is taken up and implemented, it may also end in a water conservation work. Therefore a comprehensive approach is necessary in the case of soil and water in the watersheds.

A very thoughtful and targeted approach to achieve effective, efficient and site-specific soil and water conservation will be adopted. Ridge-to-valley treatment needs to be strictly followed. Contour trenches, staggered pits, gully control measures, drainage line treatment along with fodder development and plantations of suitable species are taken up on recharge zone. Contour bunds, earthen embankments, nalla bunds, sub-surface dykes, percolation tanks and other water conservation and harvesting structures are taken up in transition and discharge zone.

Agronomic measures like intercropping, intensive cropping etc. along with pasture development are taken up on transition and discharge zone. Intensive SWC treatment work has to be completed in the entire Grama Panchayats on a watershed basis.

Watershed Development activities, especially those related to soil and water conservation varies from watershed to watershed. These activities need further planning based on the felt need of the people, fitness to the watershed areas, feasibility, and sustainability. It should also be considered that how far such activities will contribute to make the area a self sustaining, self sufficient Green Village. A list of conventional soil and water conservation activities aimed at the watershed development is tabled below:

Sl no.	Activity
1.	Moisture Collection Pit
2.	Centri Petal Terracing
3.	Live Fencing
4.	Husk trench
5.	Construction of H-type check dam
6.	Stone Bunding
7.	Source Recharging
8.	Yard Water Collection pits
9.	Pond Renovation
10.	Heightening of existing stone bunds
11.	Source recharging
12.	Well construction
13.	Gully controlling structure
14.	Well renovation
15.	Stream bank stabilization
16.	Drinking water project
17.	Shutter type check dams
18.	Construction of Rain Water Harvesting tanks
19.	V.C.B.Repair
20.	Paddy field protection
21.	Construction of V.C.B.

MANAGEMENT & ADMINISTRATION OF THE PROJECT

For the effective management of the Integrated Watershed Management Programme (IWMP) several arrangements had been made at different levels. First is the institutional arrangement. This part of the administration needs further comments. At state level State Level Nodal Agency (SLNA) is formed and instituionlized. At the district level there are two bodies, one is District Level Co-ordination Committee (DLCC) and the other is Watershed Cell cum Data Centre. The Block Panchayat is the Project Implementing Agency (PIA) and in addition there is a block level coordination committee. When the Grama Panchayat takes an important role

in the management of the programme there is also a watershed coordination committee. A separate Watershed Development Team (WDT) is also constituted at PIA level, which is the responsible body for technical side of the project implementation. In each watershed there is a watershed committee (WC) under the chairmanship of the concerned Grama Panchayat.

The planning and DPR preparation is entrusted with a Technical Support Organization (TSO). In the case of IWMPof Payyanur Block, Susthira is the TSO and they carry out all the initial activities like Benchmark study, Participatory Rural Appraisal and Situational Analysis. DPR preparation is the first step and then the implementation. Monitoring and evaluation has been made integral part of the project, for which GIS platform had been established at SLNA level. To give feedback to the SLNA, there are monitoring and evaluation committees in each watershed. AT GP and Block level the responsibility is vested with WDT.

Fund flow is also arranged for a smooth implementation of the project. The Central Government fund is transferred to the state (SLNA) from where it is transferred to the account of the PIA> The PIA directly transfers this fund to the account of the Watershed Committee to avoid unnecessary proceedings which may delay the fund release to the farmers. The components of the Management and administration are Benchmark Study, Documentation, Awareness Generation Programmes and Capacity Building Trainings, Skill trainings, finance management and evaluation Studies

MONITORING, EVALUATION & DOCUMENTATION

Monitoring and Evaluation are the two words often used together and are essential ingradients of project planning and management. Monitoring is the processes of observing, measuring and reporting objectively on the benefits that appear during the project's life span. Monitoring is also applied to the systematic measuring of objectively veriable project indicators to determine the gains made towards the stated objectives.

Evaluation is the process which seeks to analyse and made sense of the data compiled through monitoring. Project achievement evaluation involves determining project benefits and identifying the reasons why (problems, constraints and impediments) a project may have failed to meet its target.

Monitoring should be specific and done at frequent intervals (Monthly, quarterly, bi-annual, annually) to allow project activities to be adjusted as they go along. All the stekholder

institutions that involve in the process of monitoring should have special monitoring tools and systems and adeqauate arrangements to record the findings.

A continuous monitoring and periodic evaluation of the implementation of the project activities on the watershed is necessary to assess whether the activity helps to meet the intended goal/objective. Any adjustment to be made has been discussed, agreed and endorsed by the village general assembly before they were implemented. The LFA given below shall be a guiding tool to carry out the monitoring and evaluation process.

As per government guidelines, monitoring & evaluation is an integral part of the IWMP project. Arrangements have been already made to take up the responsibility of monitoring and evaluation. There is an inbuilt GIS based monitoring system in the programme. Apart from this the PIA or the SLNA can make necessary arrangements by making use of the service of the empanelled NGOs, (e.g. SUSTHIRA) Government Agencies/departments, academic and resource agencies, who had the capacity and expertise to conduct monitoring asnd evaluation study and documention.

For any development project must be documented properly for generating further knowledge for the future planning and implementation of similar projects. IWMP is an important project which involves several processes and procedures. Every steps, right from the process of planning till the end of consolidation all that have been involved in the project need to be properly registered and documented.

Documentation can be **visual** like video documentation and photographic documentation. Documentation can also be **verbal** like process report making (Process documentation) Charts showing progress and improvements of different situation and project components (eg. Measurement of water table, progress in construction worlk of bunds and ponds, rainfall data and temperature data etc), display boards to illustrate the project area and project components with budget outlay (this will make the project more transparent) etc.

Since this part of the project is very important and inevitable, expertise and professional capacity is needed to carry out documentation. To meet the purpose, NGOs like SUSTHIRA can be involved and their expertise can be made use of.

CONVERGENCE WITH MGNREGS & OTHER SCHEMES

Based on the objectives like conservation of natural resources, sustainable agriculture practices and allied activities like animal husbandary, improve the living condition of the rural people there are large number of programs planned and implemented by various departments. Integrated Watershed Management Programme (IWMP) is one among them and has a wide opportunity to converge with suitable other existing schemes during its implementation phase. It should ensure that the convergence is according to the parameters of both schemes and able to conserve and protect the natural resources in addition to give employment and income to the people. IWMP can also converge with the various suitable schems implemented by the line departments like agriculture, animal husbandry, minor irrigation, etc.

Convergence is an evolving process and while broad principles can be laid out at the centre, the actual contours of convergence will be determined by the resources at the central, state, district and the project level. Also to fully identify the possibilities of convergence, it may be necessary to make a beginning with select programmes, so that the experience of implementation may further inform and refine strategies for convergence.

Integrated Watershed Management Programme (IWMP) of the Department of Land Resources (DoLR) has been identified as an important scheme for convergence with MGNREGS as more than 50% of the MGNREGS works relate to soil and water conservation. Based on several discussions, the modalities of convergence were identified.

The objectives of this convergence will be to switch-over to sustainable agriculture specifically organic agriculture in all IWMP villages before end of the project period; and to double the income of the farmers by decreasing cost of cultivation and reaping premier prices due to the pesticide-free products.

Covergence of IWMP with MGNREGS ssuggests very important objectives such as:

- Strenghtening democratic Decentralized decision making process which is taking place in the planning process of IWMP
- Enabling sustainable development which is envisaged in the IWMP process
- Further enhancing the benefits of MNREGS by providing the people, especially unskilled women labourers in the enhanced watershed development activities formulated for IWMP

- Enhancing economic opportunities by finding out additional sources for finance for the works assigned to the unskilled labourers from IWMP funds

The process of convergence involves following the MGNREGS guidelines and the Grama Panchayat Authorities need to be consulted for the identification of works with their written consent. In the process of convergence, the Grama Panchayat should be the focal point of implementation.

When works are selected for IWMP under MGNREGS, it should be selected very carefully so as to achieve long term sustainability. The broad areas of activities that can be undertaken for convergence with MGNRES are plantation works, desilting of check dams and ponds and all other unskilled labour requirementsof the works involved in IWMP. Other works that can be carried out through convergence are: constrcution of check dams, deepening and desilting of ponds, extension and renovation of existing irrigation projects, flood protection works, lift irrigation works, construction of new drains and renovation of existing drains.

Under MGNREGS almost all the activities required for watershed development are permitted. Convergence between MGNREGS and Watershed Programmes of DoLR will be mutually beneficial for rainfed areas. Parameters also had been set for convergence with MGNREGS and IWMP. The parameters are:

1. The cost of material components of project including the wages of the skilled and semi skilled workers taken up under the scheme shall not exceed 40% of the total project costs.
2. As far as practicable, a task funded under the scheme shall be performed by using manual labour and not machines.
3. No contractors shall be engaged in execution of the works
4. Where convergence between NREGA and watershed programme funded by DoLR is involved the tasks/structures/activities tro be undertaken by NREGA will be identified by the Programme Implementation Agency (PIA) preparing the DPR for the watershed programme.

Convergence with NREGA is mainly aimed at:

a. Knowledge sharing

Thisis intended for familiarizing of all the members of the group on guidelines of watershed and MGNREA Convergence. This will clarify the programme parameters for for what can be converged and what cannot.

b. Planning

The planning will be done as per the common guidelines and will reflect in the DPR prepared by the PIA of the watershed programme. Regarding the activities proposed for NREGA the group can chalk out processes, mile-stones and time frames.

c. Communication:

Since both the programmes aims at participatory processes effective IEC with the local community, Watershed Committees, User Groups and workers will have to be planned and implemented.

d. Training:

Training of personnel/agencies responsible for NREGS must be planned and implemented.

e. Technical Support

Selection of works that are to be undertaken by NREGA within the watershed area will be done in consultation with the PIA implementing that watershed programme for better coordination. However, NREGA will be responsible for the technical quality of the works undertaken by it.

f. Resource Pooling

a) ***Human:*** Under NREGA dedicated personnel is to be deployed. The responsibility of training of such personnel will lie with NREGS. The WDT may supplement such training programmes wherever feasible

b) ***Financial:*** Sharing of information on financial resources available and expected to be made available in the ensuing years. This will determine the quantum of works/activities that can be taken up and indicate where activity convergence will enable gap filling or augmentation in scale/valueand which activity is top be funded under which programme.

c) ***Informational:*** DoLR already has its own MIS in place for monitoring watershed programmes funded by the department. The data on activities/ structures/tasks undertaken by NREGS may be collected directly by NREGS and shared with the PIA/Watershed Cell in the DRDA/ZP/SLNA/DoLR

g. Monitoring & Evaluation

Joint monitoring and supervision of activities/structures/tasks undertaken by NREGA within the watershed funded by DoLR should be planned. Baselines assessment, concurrent appraisal, documentation and evaluation of impact of such activities/structures/tasks tasks undertaken by NREGA within the watershed funded by

DoLR on a set of indeicators on ground water recharge, increase in cultivable area, cropped area, change in cropping [pattern, and productivity, etc. could be initiated. Quantification of benefits uf works undertaken NREGA could also be taken up jointly

(Courtsey: Joint convergence guidelines of GoI, as per No. J-11019/2/208 – NREGA dtd: 29th May 2009)

The guidelines of MNREGA stipulate formulation of perspective plan to facilitate advance planning. The aim of perspective plan is to identify the type of works that should be encouraged and potential linkages between these works and long term employment generation and sustained development. As in the case of DPR of IWMP which includes year-wise action plans, MGNRES must also have included year-wise shelf of works to be taken up by the PIA.

When convergence has been brought into IWMP with MGNREGS care should be taken to ensure that only job card holders alone are provided with employment. Muster rolls must be maintained on work site with copies in the Grama Panchayat and to be electronically maintained on MGNREGS website. Social audit should be done on the works and records by the Grama Sabhas. Payment of wages must be carriedout only through banks.

CONSOLIDATION / EXIT STRATEGY

Consolidation and withdrawal phase is the most important and crucial phase in the participatory development projects. This phase facilitate the users to maintain the project activities in a sustainable manner during the post project period and initiate the new activities by users themselves. In this phase the resources augmented and economic plans developed as per common guidelines are made the foundation to create new nature-based, sustainable livelihoods and raise productivity levels. The classification of activities must not be understood in a rigid manner. Many of the activities may even start in many watersheds during the third year or fourth year. Phasing of activities need to have an internal logic and integrity that must flow through the entire action plan. This will depend on a host of factors such as the prevailing initial conditions, needs and possibilities in each village, response of the community etc. Such flexibility must be built into the action plan and is to be seen as a distinguishing feature of common guidelines 2008.

1. Activities to be undertaken during withdrawal phase

- Consolidation and completion of various works.
- Building the capacity of the community based organizations to carry out the new agenda items during post project period.
- Sustainable management of (developed) natural resources and Up-scaling of successful experiences regarding farm production systems / off-farm livelihoods

2. Completion of various works

- All the works initiated should be completed during first half of this phase.

3. Documentation of successful experiences / project interventions

- Successful stories of the farmers has to be documented either in the form of brochure or video clipping in local language.

4. Building the capacity of the community based organizations

- To carry out the new agenda items during post project period.
- To manage the developed natural resources.
- Improving the sustainability of various interventions under the project.
- Formal allocation of user's right over Common Property Resources (CPRs).
- Collection of user charges for CPRs.
- Repair, maintenance and protection of CPRs.

5. Sustainable utilization of developed natural resource.

- Intensification of farm production systems/off-farm livelihoods.
- Promotion of agro-processing and marketing enterprises.
- Maintenance of association including financial and records management.
- Farmers may also be encouraged to develop non pesticide management, low cost organic inputs, seed farms and links with wider markets to fetch competitive price.
- Project management related aspects.
- Creating awareness about various Government Schemes and facilitate them to approach appropriate organization.

6 Institutional linking with user groups / watershed associations

The PIA should make arrangements to link the watershed association and other user groups with appropriate external institutions for their self sustainability such as Research, Developmental and Training organizations, marketing agencies for procuring their on farm and off farm products and financial institutions for providing loan in future. Linkage with any other organizations whom the farmers needed support based on the activities implemented during the project period shall also be thought of.

7 Up scaling of successful interventions

Up scaling of successful experiences / interventions has to be attempted by availing revolving fund under the project as well as credit and technical support from external institutions.

8 Community enterprises

Community enterprises like a small agri or agro-processing units could be established by availing credit facilities from the financial institutions by watershed associations and the benefit can be used for post project management in addition to watershed development fund.

9 Formation of Federation

Federations could be formed at the level of a cluster of villages in order to support economic activities at scale. These would further strengthen and activate the linkages established with external resource agencies for knowledge, credit, input procurement, sale of local produce, carrying on processing activities to the point of exports.

10 Terminal evaluation

Terminal evaluation of project should be attempted by involving user groups for selected interventions on their impact based on pre and post project status. For example, the impact on water resources development could be gauged from additional area brought up under irrigation due to project interventions. Impact of production systems could be gauged from increase in yield. Impact of livestock and fisheries development could be gauged from additional income due to project interventions.

11 Consolidated Project Completion Report (CPCR) Preparation

Detailed completion report of the project which includes all intervention and activities implemented in the project has to be prepared in detail. The outline of the report will be as follows:

- Introduction and history of the watershed including special problems if any.
- Location, geographical and soils details etc. of the watershed.
- Details and maps of watershed.
- Budget allocation and utilization head wise.
- Details of the interventions, activities etc. implemented in watershed.
- Status of each intervention.
- Impact of interventions.
- Constraints.
- Any other matters PIA would like to highlight.
- Recommendations drawn based on lessons learnt for future use.

EXPECTED OUTCOME

After Completion of all activities, each watershed Development Project is expected to achieve the following results by the end of the project period.

1. All the activities that are planned for the treatment and development of the drainage lines, arable and non-arable lands in the watershed area are completed with the active participation and contribution of the user groups and the community at large.

2. The user groups have willingly taken over the operation and maintenance of the assets created and made suitable administrative and financial arrangements for their maintenance and further development.
3. All the members of the Watershed Committee and staff such as Watershed Secretary and Volunteers have been given orientation and training to improve their knowledge and upgrade technical/management and community organizational skills to a level that is appropriate for the successful discharge of their responsibilities on withdrawal of the Watershed Development Team from the Project.
4. The village community would have been organized into several homogeneous self-help groups for savings and other income generation activities, which would have achieved sufficient commitment from their members and built up financial resources to be self-sustaining.
5. The increase in cropping intensity and agricultural productivity reflecting in overall increase in agriculture production.
6. Increase in income of farmers and landless labourers in the project area.
7. Increase in groundwater table due to enhanced recharge by watershed interventions.

Some quantifiable indicators for outcomes of the programme are:

- About 279 Ha of cultivable waste land is bring under cultivation.
- Areas brought under single/multiple cropping, productivity and production of crops, horticulture, livestock, fodder, agro-forestry, fisheries products, farming systems, land use and commodity /crop diversification, wasteland area brought under cultivation, etc.
- Changes in water availability (surface storage and ground water table), quality of water, irrigated area, per capita income, creation of livelihood opportunities, out migration, cropping intensity, feed and fodder availability, etc.
- A good number of farmers, say 30 to 35% of the total will regain the animal husbandry practices and another 15% shall begin with new schemes.
- ***Employment generation:*** Regular Agricultural labourers, SHGs constituted and types of livelihood activities generated.
- ***Environmental impact:*** Change in soil loss, the perennially of flow and reducing peak flows, recharge of ground water, drinking water availability, etc.

CONSOLIDATED ANNUAL ACTION PLAN

Sl. No.	Physical Progress	Unit	Target									
			I year		II Year		III Year		IV Year		Total	
			Physical	Fianancial	Physical	Fianancial	Physical	Fianancial	Physical	Fianancial	Physical	Fianancial
I	**Land Development**											
a	Afforestation	Ha	0	0								0
b	Horticulture	Ha	0	0								0
c	Agriculture	Ha	0	0								0
d	Pasture	Ha	0	0								0
II	**Soil &Moisture Conservation (SMC)**											
a	Staggered trench		0	0								0
b	Contour Bunding	RM	19477.37	1409207	24046.23	1882357	29504.78	2765801	220552.59	1772795	293581	7830160
c	graded bunding		0	0							0	0
d	Bench terracing		0	0							0	0
e	Others	Nos.	29188	1680866	40115	1943290	42780	2143183	36240	1852634	148323	7619973
III	**Vegetative & Engineering Structures**											
a	Earthern checks		0	0							0	0
b	Brushwood Checks		0	0							0	0
c	Gully Plugs	Nos.	70	81900	175	204800	140	182000	85	110500	470	579200
d	Loose Boulder Checks		0	0							0	0
e	Gabion Structures		0	0							0	0
f	Others (Live fencing)	RM	34200	738720	32977.57	849229	41000	984000	40500	972000	148678	3543949

IV	**Water Harvesting Systems (WHS)**											
a	Farm Ponds	Nos.	1	153000	3	365000	2	225000	6	610000	12	1353000
b	Check Dam		0	0	17	383400	8	173000	2	158000	27	714400
c	Nallah Bunds		0	0							0	0
d	Percolation Tanks	Nos.	1	36000	0	0					1	36000
e	Ground Water Recharge Structures	Nos.	140	1638540	102	1243728	128	1658880	125	1620000	495	6161148
f	Others	Nos.	11	2235020	28	5265202	26	5744800	15	4465666	80	17710688
V	**Livelihood**											
a	No. of onfarm activities	Nos.	0	0	10159	2774164	0	0	0	0	10159	2774164
b	No. of Beneficiaries	Nos.	0	0	10159	2774164	0	0	0	0	10159	2774164
c	No. of Off-farm activities	Nos.	0	0	9445	2372660	125	3539040	0	0	9570	5911700
d	No. of beneficiaries	Nos.	0	0	9445	2372660	125	3539040	0	0	9570	5911700
VI	**Production System & Micro-enterprises (PSM)**											
a	Area	Ha.	0	0					0	0	0	0
b	No. of Beneficiaries	Nos.	0	0	1013	3167900	1017	3838500	0	0	2030	7006400
	Total			**7973253**		**25598554**		**24793244**		**11561595**		**69926646**

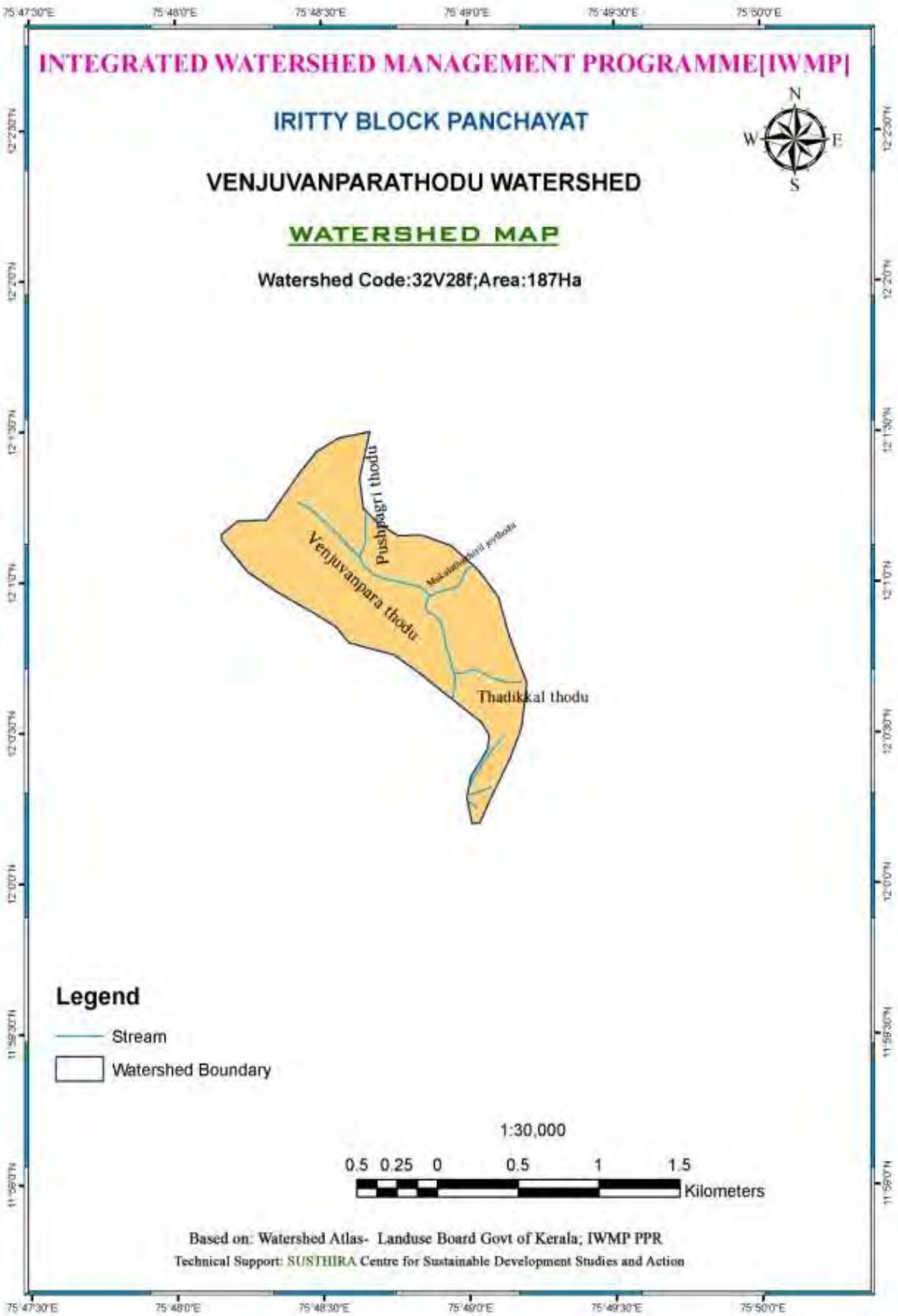
WATERSHEDS SELECTED FOR IWMP

Though there are seven Grama Panchayats included in Iritty Block, micro watersheds from only three Grama Panchayats had been selected and approved for intervention under this particular cluster programme. The details of the watersheds selected for IWMP project are as follows:

Sl. No.	Watershed Code Nos.	Name of Watershed	Name of Grama Panchayat	Total area proposed for treatment	Total Project Cost.
1.	32V28f	Venchuvan parathodu	Aaralam & Ayyankunnu	187	2244000
2.	32V28m	Angadikkadavu St. Jude Nagar	Ayyankunnu	465	5580000
3.	32V28n	Uruppumkutty	Ayyankunnu	645	7740000
4.	32V28o	Enthokari	Ayyankunnu	313	3756000
5.	32V28s	Vempuzhappalam	Ayyankunnu	319	3828000
6.	32V28t	Parakkappara	Ayyankunnu	480	5760000
7.	32V28v	Valayamkodu	Aralam	410	4920000
8.	32V28w	Edoor	Aralam, Payam	291	3492000
9.	32V29a	Payam	Aralam, Payam	566	6792000
10.	32V31a	Aralam	Aralam	615	7380000
11.	32V31b	Athikkal	Aralam	763	9156000
			Total	**5054**	**60648000**

DESCRIPTION OF INDIVIDUAL WATERSHEDS

There are eleven watersheds earmarked for treatment under IWMP of Iritty Block Panchayat as mentioned above. The physical characteristics of almost all the watershed are same and all are hilly areas forming the part of Western Ghat. The project covers only three Grama Panchayats with a total geographic area of 5054 Ha. A brief description of individual watersheds is given below:


INTEGRATED WATERSHED MANAGEMENT PROGRAMME[IWMP]
IRITTY BLOCK PANCHAYAT
VENJUVANPARATHODU WATERSHED
WATERSHED MAP
Watershed Code:32V28f;Area:187Ha
N
W
E
S
Pushpagiri thodu
Venjuvanpara thodu
Thadikkal thodu
Legend
Stream
Watershed Boundary
1:30,000
0.5 0.25 0 0.5 1 1.5
Kilometers
Based on: Watershed Atlas- Landuse Board Govt of Kerala; IWMP PPR
Technical Support: SUSTHIRA Centre for Sustainable Development Studies and Action

VENCHUVANPARATHODU WATERSHED

Introduction

Venchuvanparathodu watershed engulfs the 8th, ward of Ayyankunnu Grama Panchayat and 2nd ward of Aralam Grama Panchayat of Iritty block forms the with a total geographic area of 187 Ha. The watershed has a total length of 2.25 Kms. and a width of 1.9 Kms. The drainage density of the watershed is 14.71 m/ha. The important places are Valathodu, Venchuvan Parathodu Colony and Nirmalagiri Colony. The watershed is accessible through road from the nearest railway stations Thalassery & Kannur.

Location

Geographically the watershed area lies between the east longitude 75^0 48'0" and 75^0 49'30" and North latitude 12^0 0' 0" and 12^0 1'30" with an average elevation of 1193 meters.

Boundaries of the watershed

In the north the watershed is bounded by Karnataka forest, in the south by remaining part of Aralam Panchayat, in the east by Kerala Forest and in the west by Edapuzha and Manchodu watersheds.

Topography & Soil Type

The watershed is specifically noted for its heavy slanting nature. It lies adjacent to the forest. Black soil and forest soil are the prominent type of soil found in the watershed.

Water Bodies

Venchuvanparathodu forms the main stream of the watershed. This is originating from the Karnataka forest and flows along the watershed before entering into the Edapuzha watershed at Kalivilasam Bridge. Through the watershed the stream is flowing about 2 Kms. with a width varies from 2 to 5 meters. The average depth of the stream is 1.75 meters. Venchuvanparathodu is one of the tributaries of Anjarakkandy River. There are 3 sub-streams also flowing through the watershed enriching the main stream Venchuvanparathodu. They are Company thodu (Length 400 meters, Width 2 meter and depth 1 Meter), Achuthanthodu I (Length 300 meters, Width 1 meter and depth 1 Meter) and Achuthanthodu – II (Length 400 meters, Width 1.5 meter and depth 1 Meter)

Land use and Cropping Pattern

85% of the total area of the watershed is under crop coverage. Rubber is the main cultivation of the watershed. Coconut, areca nut, Banana, vegetables, tubers and cashew are also cultivated. The water bodies occupy nearly 8% of the total geographic area and remaining part is built up. Details of cropping and land use pattern are tabled below: The table is also accompanied by a graphic representation:

Crops	Area in Ha	% of the Area
Coconut	56.1	30
Areca nut	31.79	17
Rubber	35.53	19
Cashew nut	16.83	9
Pepper	7.48	4
Banana	9.35	5
Vegetables	9.35	5
Water Bodies	13.09	7
Built Up Area	7.48	4
Total	**187**	**100**

Socio-economic situation

Most of the people (about 90%) are involved in agriculture and allied activities for their livelihood. Agriculture contributes the major share towards their employment. Other employment provider is the construction sector, which is slowly flourishing in the watershed. Migration of the men, especially the youth, is taking place immediately after the rainy season. The living standard of the people is average. The real farmers are not getting the benefit of the increase in the income from wage employment and selling of commercial produce in the market. Rubber collects very good returns from the market, but the benefit reaches to the big land holders. The indigenous community is also struggling very hard. The demographic details of the watershed are given below:

The total no. of households	**211**	**Total No. of SC households**	**2**	**Total No. of ST households**	**4**	**APL/BPL Status**	
Total Population	**1243**	**Total Population**	**11**	**Total Population**	**18**	**Total Families**	**211**
Male	638	Male	6	Male	9	APL	136

Female	605	Female	5	Female	9	BPL	75

The people are poorly educated as they give less importance to education and poor accessibility to the educational institutions. The new generation is very much interested in getting educated in colleges and professional institutes. But they have to travel long distance. IT sector brings scope for the youngsters get employed outside. The new generation even among the tribal communities is less interested in continuing their traditional occupation - Agriculture - as they think that the sector will not provide them better prospect in the future.

They are living in comparatively good houses. Majority of the houses are tile roofed and some are with RCC roof. Health and Hygiene conditions are also satisfactory as all families have adequate sanitation facilities.

The main occupation of the people is agriculture or agriculture labour. The second bigger sector is wage labour. One man gets Rs. 500/- per day and the woman draws Rs. 250/-per day which means the average income for a working family is Rs. 750/- This economic gain reflects in the living standards of the families in the watershed.

Problem Identification

The watershed community was divided into 4 groups under the leadership of the ward members and community leaders. Each group was given a particular area for discussion. The first group discussed about the hydrology of the watershed, the second group about the soil situation, the third highlighted on agro-biodiversity and fourth concentrated on Animal Husbandry. The findings and sharing of each group was recorded.

First Group on Hydrology

- Drying up of water sources
- Depleting Water table
- Severe water scarcity
- Change in land use
- Reduced Storage capacity of the soil
- No control/conservation measures.
- Shrinking of Streams due to heavy sedimentation
- Poor awareness on soil conservation measures

Second Group on Soil

- Reduced Soil fertility
- Heavy soil erosion
- Gully formation
- Absence of vegetative cover on the surface soil

- Traditional Agriculture measures are not taken up
- Shifting to mono-crop.
- Poor and inadequate soil conservation measures
- Inadequate knowledge on soil conservation measures

Third Group on Agro-biodiversity

- Traditional/medicinal herbs extinct
- Wide spreading mono crops.
- Destruction of eco-system
- Leveling of paddy fields
- Change in eco-system
- Alienation of women from agriculture

Fourth Group on Animal Husbandry

- Poor animal husbandry Practices
- Farmers given up Animal Husbandry
- Poor returns from animal husbandry
- Inadequate marketing facilities
- Poor motivation from the authorities
- Non-availability of good breed of animals.
- High rearing cost
- Unavailability of both dry and green fodder.

ACTIVITIES PLANNED FOR WATERSHED DEVELOPMENT

Natural Resource Management

- **Moisture conservation pits**

  The purpose of the proposed activity is to conserve the rain water in the soil and to improve the ground water table. Also for soil conservation.
- **Centripetal Terracing**

  The purpose of the proposed activity is to conserve soil and water.
- **Live fencing**

  The purpose of the proposed activity is soil conservation through reducing soil erosion.
- **Husk trench**
- The purpose of the proposed activity is water conservation.
- **Construction of check dam in Venjuvanparathodu (EPA)**

  The purpose of the proposed activity is to store water and improve irrigation facilities.
- **Stone bunding**

  Soil and water conservation is the main objective of the proposed activity.

- **Source recharging**

  Rain water harvesting and improve the ground water table is the major objective of the proposed activity.
- **Yard water collection pits**

  Water conservation and to improve the level of ground water table is the purpose of the activity.
- **Pond renovation at Pushpagiri road**

  Water conservation and improved irrigation facilities is the purpose of the activity.
- **Heightening of existing stone bunding**

  Soil and water conservation is the main objective of the proposed activity.
- **Construction of a well near Pushpagiri road in the plot of Shri. Michael**

  Improved irrigation and drinking water facilities.
- **Gully controlling structures**

  Soil and water conservation is the main purpose of the activity.
- **Renovation of Well in Survey no:123**

  Improved irrigation and drinking water facilities.

Production System & Micro Enterprises	Livelihood Promotion Programmes
• Vermin Composting • Vegetable Gardening • Bio-gas Plants • Supply of Organic manure and lime. • Organic Farming	• Farm Nursery • Backyard Poultry • Small holder Dairy Farm • Stall-fed Goat rearing • Rabbit Rearing

Venchuvanparathodu Watershed

Development Project (Area – 187 Ha) - Master plan for Four Years - Funding pattern

Instal lment	Administ ration	Monito-ring	Evalua-tion	Entry Point Activity	Institutio n & Capacity Building	DPR prepar-ation	Watershed Develop-ment Activities	Liveli-hood Activi-ties	Productio n system & Micro Enterprise s	Consoli dation Phase	Total IWMP project fund
1St	44880	4488	4488	89760	67320	22440	215424	0	0	0	448800
%	2	0.2	0.2	4	3	1	9.6	0	0	0	20
2nd	56100	4488	4488	0	22440	0	372504	100980	112200	0	673200
%	2.5	0.2	0.2	0	1	0	16.6	4.5	5	0	30
3rd	67320	6732	6732	0	22440	0	356796	100980	112200	0	673200
%	3	0.3	0.3	0	1	0	15.9	4.5	5	0	30
4rd	56100	6732	6732	0	0	0	311916	0	0	67320	448800
%	2.5	0.3	0.3	0	0	0	13.9	0	0	3	20
Total	**224400**	**22440**	**22440**	**89760**	**112200**	**22440**	**1256640**	**201960**	**224400**	**67320**	**2244000**
%	10	1	1	4	5	1	56	9	10	3	100

Venjuvanparathodu Watershed

Action Plan Sector – I – Watershed Development Activities - I year

Sl No.	Name of Activity	Unit	Unit Cost	Target	IWMP Fund	MNREGS/Other Source	Total	WDF
1.	Moisture conservation pits	M3	26.23	2500	0	65575	65575	10 % General & 5 % SC / ST
2.	Centry Petal Terracing	Nos	29	200	0	5800	5800	
3.	Live fencing	Nos	24	3000	0	72000	72000	
4.	Husk trench	Nos	167	300	0	50100	50100	
5.	Construction of H check dam in Venjuvanparathodu (EPA)	Nos	2840	1	2840	0	2840	
6.	Stone bunding	m^2	80.39	1838.34	147784	0	147784	
7.	Source recharging	Nos	12960	5	64800	0	64800	
Total					**215424**	**193475**	**408899**	

Venjuvanparathodu Watershed

Watershed - Action Plan - Sector – I – Watershed Development Activities II year

Sl No.	Name of Activity	Unit	Unit Cost	Target	IWMP Fund	MNREGS/Other Source	Total	WDF
1.	Husk trench	Nos	167	250	0	41750	41750	10 % General & 5 % SC / ST
2.	Live fencing	RM	24	3800	0	91200	91200	
3.	Moisture conservation pits	M3	26.23	2700	0	70821	70821	
4.	Yard water collection pits	No	400	30	0	12000	12000	
5.	Pond renovation at Pushpagiri road	No	100000	1	100000	0	100000	
6.	Heightening of existing stone bunding	m2	80.39	500	40195	0	40195	
7.	Source recharging	Nos	12960	10	129600	0	129600	
8.	Stone bunding	m2	80.39	1277.64	102709	0	102709	
Total					**372504**	**215771**	**588275**	

Venjuvanparathodu Watershed

Watershed - Action Plan - Sector – I – Watershed Development Activities III year

Sl No.	Name of Activity	Unit	Unit Cost	Target	IWMP Fund	MNREGS/Other Source	Total	WDF
1.	Construction of a well near Pushpagiri road in the plot of Mycle	No	100000	1	100000	0	100000	10 % General & 5 % SC / ST
2.	Gully controlling structures	RM	1300	20	26000	0	26000	
3.	Live fencing	RM	24	4000	0	96000	96000	
4.	Husk trench	No	167	400	0	66800	66800	
5.	Moisture conservation pit	M^3	26.23	3300	0	86559	86559	
6.	Yard water collection pits	No	400	20	0	8000	8000	
7.	Stone bunding	m2	80.39	2870.95	230796	0	230796	
Total					**356796**	**257359**	**614155**	

Venjuvanparathodu Watershed

Watershed - Action Plan - Sector – I – Watershed Development Activities IV year

Sl No.	Name of Activity	Unit	Unit Cost	Target	IWMP Fund	MNREGS/Other Source	Total	WDF
1.	Renovation of Well in Survey no:123	No	50000	1	50000	0	50000	10 % General & 5 % SC / ST
2.	Gully controlling structures	RM	1300	15	19500	0	19500	
3.	Source recharging	No	12960	7	90720	0	90720	
4.	Stone bunding	m2	80.39	1887	151696	0	151696	
5.	Moisture conservation pits	m3	26.23	900	0	23607	23607	
6.	Live fencing	RM	24	2900	0	69600	69600	
7.	Husk trench	No	167	250	0	41750	41750	
8.	Centry petal terracing	No	29	250	0	7250	7250	
Total					**311916**	**142207**	**454123**	

Venjuvanparathodu Watershed

Action Plan - Sector – II – Livelihood Activities for Land less/Asset less

II year Action plan

Sl No	Name of Activity	unit	Unit cost	Target	IWMP fund	MNREGS / other source / Bank loan	Total
1	seed money for enterprising individuals	0	0	0	20196	0	20196
2	Seed money for SHGs	0	0	0	80784	0	80784
TOTAL					**100980**	**0**	**100980**

Venjuvanparathodu Watershed

Action Plan - Sector – II – Livelihood Activities for Land less/Asset less

III year Action plan

Sl No	Name of Activity	unit	Unit cost	Target	IWMP fund	MNREGS / other source / Bank loan	Total
1	Seed money for SHGs	0	0	0	40392	0	40392
Funding for Major Lively hood activities							
1	Banana chips making unit	Nos	76000	1	60588	15412	76000
TOTAL					**100980**	**15412**	**116392**

Funding pattern	
Seed money for enterprising individuals (10% of the allocation)	20196
Seed money for SHGs (60 % of the allocation)	121176
Funding for major livelihood activities (30% of the allocation)	60588
Total allocation	**201960**

Venjuvanparathodu Watershed

- Action Plan - Sector – III – Production System & Micro Enterprises based livelihood activities - II year Action plan

Sl No	Name of Activity	unit	Unit cost	Target	IWMP fund	Total	WDF
1	Banana cultivation	No	2500	40	100000	100000	20 % for General & 10 % for SC / ST
2	Organic vegetable cultivation	No	1525	8	12200	12200	
TOTAL					**112200**	**112200**	

Venjuvanparathodu Watershed

- Action Plan - Sector – III – Production System & Micro Enterprises based livelihood activities - III year Action plan

Sl No	Name of Activity	unit	Unit cost	Target	IWMP fund	Total	WDF
1	Organic vegetable cultivation	No	2000	54	108000	108000	20 % for General & 10 % for SC / ST
	Tuber crops cultivation	Nos	1050	4	4200	4200	
TOTAL					**112200**	**112200**	

Total allotment	**224400**

INTEGRATED WATERSHED MANAGEMENT PROGRAMME[IWMP]

IRITTY BLOCK PANCHAYAT

ANGADIKADAVU ST.JUDE NAGAR WATERSHED

INTERVENTION MAP

Watershed Code:32V28m;Area:465Ha

SL No.	Name of the Activity	Proposed Places	Amount (In lakhs)
1.	Construction of RWH Tank 80,000ltr capacity	S.H.H.S.Angadikadavu (Survey No.635)	0.0005
2.	Gully controlling structures	Kavanadithodu at the plots of Joseph Kavanadi and George Kavanadi(S.No.609/1) Joy Kavanadiyil (S. No.606/1) Mathew Kavanadiyi (S. No.606/1)	0.19
3.	Drinking water project in Angadikadavu (Pond renovation,pipe line,fixing motor,collection tank,electric conection)	Angadikadavu plot of Mathew Kavanadiyil (S No.606/1) and Sherly Thomas Kunnamkottte(S No.607)	6.0
4.	Construction of 2m width H-type check dam	Kolakkalchal in the plot of Panakkachalil Kurian (603/1),Jose Vallikavunkal (603/2)	0.48
5.	Construction of 3m width H-type check dam	Kolaykkalchal in the plot of Jose Vallikavunkal (603/2), Aleyamma Vallikavunkal(591/3)	0.72
6.	Renovation of pond in Anapandhi kunnu drinking water project	Plot of Mathew Vellaringatte (951/1)	0.25
7.	Stream bank protection	Vazhakund thodu,below culvert near the plot of Mathew Vellattes	0.96
8.	Digging of new canal	Near the plot of Edatta Sunny(627)	0.061
9.	3m Htype check dam	Across Kattakkypuram chal at the plot of Joseph Kattakkapuram(603/1)	0.54
10.	Stream bank protection	Kottarathilchal at the plot of Soman Kotiarathil (867)	0.29
11.	Construction of retaining wall	Below culvert along Maruthanal chal near the plot of George Thekkedath (867/2)	0.47
12.	Construction of Retaining wall 1.50m height	Plot of Sebastian Chandroth 876/5	1.41
13.	Velamparamb drinking water project in 7 th ward	Plot of Shaji Velamparambil (697/1)	5.00

Legend

- Junction
- Road
- Stream
- River
- Watershed Boundary
- Gully Controlled Checkdam
- Stream Bank Stabilization
- H Type Checkdam
- Pond
- RWH Tank
- Drinking water project
- Canal

0.8 0.4 0 0.8 1.6 2.4

1:50,000 Kilometers

Based on: Watershed Atlas- Landuse Board Govt of Kerala; IWMP PPR

Technical Support: SUSTHIRA Centre for Sustainable Development Studies and Action

ANGADIKKADAVU ST. JUDE NAGAR

Introduction

Angadikkadavu, St. Jude Nagar Watershed comes under the Ayyankunnu Grama Panchayat and spreads over 6th, 7th, 12th and 15th wards. The watershed has a total geographic area of 465 ha. Kalyathumkandi, Angadikkadavu, Vazhakkundu, Odichukuthu, St. Jude Nagar and Moonnamkutty are the important places in the watershed. The watershed has a length of 1.33 Kms and a width of 7 Kms. The drainage density of the watershed is 19.25 m/ha. The nearest railway station is Thalassery & Kannur which is accessible through Road.

Location

Geographically the watershed area lies between the east longitude 75^0 43'30" and 75^0 46'30" and North latitude 12^0 3' 0" and 12^0 0'0" with an average elevation of 463 meter.

Boundaries of the watershed

The watershed is bounded in its north by Angadikkadavu and in the south by Kundur River. Endomkari Watershed forms the eastern boundary of the watershed and the west is bounded by Varapuzha River.

Topography & Soil Type

The topography of the watershed shows 30% slopes, 40% moderate slopes and 30% plains. Red laterite soil, black soil, red soil mixed with pebbles is the common soil types in the watershed. Red soil mixed with pebbles is observed in the top portions of the watershed, especially in Odichukuthu and Angadikkadavu.

Water Bodies

The watershed forms the catchment area of the mainstream Kundur puzha. This stream is originating from Karnataka forest and flowing through Uruppumkutty and Endomkari watersheds before entering into St. Jude Nagar. Then the stream joins with the Charal River. The main stream is flowing around 6 Kms. along the watershed with a varying width of 5 to 20 meters and an average depth of 2 meters receiving water from 12 tributaries (streams). The details of the water bodies are given below:

Type of water bodies	Ponds		Open Wells		Bore Wells		Springs		Streams
	Public	Private	Public	Private	Public	Private	Public	Private	
Seasonal	1	4	2	0	0	0	0	2	4
Perennial	2	12	1	0	18	0	0	7	8
Total	**3**	**16**	**3**	**0**	**18**	**0**	**0**	**9**	**12**

Land use and Cropping Pattern

About 80% of the total geographic area of the watershed is under the coverage of different crops. The water bodies occupy 8% of the total area and remaining part is built up area. Details of cropping and land use pattern are tabled below: The table is also accompanied by a graphic representation:

Crops	Area in Ha	% of the Area	Productivity
Coconut	91.74	19.73	43046 Nos.
Areca nut	55.06	11.84	110.28
Rubber	148.15	31.86	474.09
Cashew nut	24.18	5.2	19.0
Pepper	14.88	3.2	81.78
Banana	59.52	12.8	49.70
Vegetables	5.63	1.21	18.49
Tuber Crops	4.74	1.02	-
Water Bodies	37.2	8.0	-
Built Up Area	23.90	5.14	-
Total	**465**	**100**	**-**

Socio-economic situation

The total families in the watershed are 487 with a total population of 1921. Among them 967 are males and 954 are females. There are 266 APL families and 221 BPL families in the

watershed. There are 50 SC families and 31 ST Families. Generally the people are depending on agriculture for their livelihood. Agriculture provides major share of the employment. Construction sector contributes the second. The living standard of the people has improved far better than that of 10 years back. This is because the increase in the market price of the rubber which is the major cultivation. However, those with lesser land occupation still remain in the earlier situation. They find it difficult to bring the both ends and they struggle more than those with landed properties.

Recently, the families began to give top priority for the education of their children. This is because of the knowledge that the agriculture will give lesser opportunities in the future generation as an effect of climate change and change in market due to globalization and liberalization.

Most of them are living in good houses either with RCC roof or with Tiled roof. Earlier, most of the watershed families were living in thatched huts which had been constructed in poor conditions. Hygiene conditions with adequate sanitation facilities also have improved. The SC/ST communities have not much developed from their earlier situations. This is because that the benefit of the increased price of the agricultural goods have not much helped or influenced them. They have little land and the agriculture in their land is at subsistence level.

Problems identified in the watershed

- Severe water scarcity especially in Odichukunnu and Kalayathumkandi Areas
- River Bank Erosion at Vazhakkunnu Region which leads to diversion of the river
- Heavy sedimentation in Kundur River
- Stream pollution due to waste disposal
- Stream Bank Erosion
- Soil Erosion at Endomkari, Attayoli, Angadikkadavu, Don-bosco nagar and Vazhakkundu areas
- Leveling of hills and hillocks
- Decreasing fertility of the soil
- Lack of proper soil and water conservation measures
- Lack of adequate irrigation facilities
- Indiscriminate use of Chemical fertilizers and pesticides
- High production cost and low income in agriculture
- Lesser interest among younger generation in Agriculture

- Spreading of mono crops in the area
- Poor animal husbandry practices among the farmers
- Non-availability of dry and green fodder
- Higher cost of factory feeds
- Unexpected animal diseases

ACTIVITIES PLANNED FOR WATERSHED DEVELOPMENT

Natural Resource Management

- **Source Recharging**

  Rain water harvesting and improve the ground water table is the major objective of the proposed activity.
- **Moisture conservation pits**

  The purpose of the proposed activity is to conserve the rain water in the soil and to improve the ground water table. Also for soil conservation.
- **Centripetal Terracing**

  The purpose of the proposed activity is to conserve soil and water.
- **Live fencing**

  The purpose of the proposed activity is soil conservation through reducing soil erosion.
- **Husk trench**

  The purpose of the proposed activity is water conservation.
- **Stone bunding**

  Soil and water conservation is the main objective of the proposed activity.
- **Yard water collection pits**

  Water conservation and to improve the level of ground water table is the purpose of the activity.
- **Construction of RWH Tank 80,000ltr capacity**

  Effective utilization of rain water and reduce water scardity is the main aim of the proposed activity.
- **Drinking water project in Angadikadavu (Pond renovation,pipe line,fixing motor,collection tank,electric conection)**

  Reduce the level of drinking water scarcity is the main aim of the proposed activity.
- **Gully controlling structures across Kavanadithodu**

- **Construction of 2m width H-type check dam across Kavanadi thodu**
- **Construction of 3m width H-type checkdam across Kavanadi thodu**
- **4.M H-type check dam across Kalayathumkandi Panakachal**
  Soil and water conservation is the main purpose of the proposed activities
- **Renovation of pond in Anapandhi kunnu drinking water project**
  Protection of the existing pond and reduce the level of drinking water scardity is the purpose of the activity.
- **Stream bank protection along Vazhakund thodu, below the culvert**
- **Side protection of Diversion channel – Don Bosco waiting shed to river**
- **Stream bank protection for Kottarathilchal**
- **Construction of retaining wall below culvert along Maruthanal chal**
- **Construction of Retaining wall 1,50m height**
  Protection of the stream and water and soil conservation is the main aim of the proposed activities.
- **Digging of new canal near the plot of Edatt Sunny**
  To improve irrigation facilities is the main aim of the proposed activity.
- **3m H-type check dam across Kattakkypuram chal**
  Improve the irrigation facilities is the main aim of the proposed activity.
- **Velamparamb drinking water project in 7th ward**
- To reduce the intensity of drinking water scarsity is the purpose of the proposed activity.

Production System & Micro Enterprises

- Organic Farming
- Vermin Composting
- Vegetable Gardening
- Bio-gas Plants
- Supply of Organic manure and lime

Livelihood Promotion Programmes

- Farm Nursery
- Backyard Poultry
- Small holder Dairy Farm
- Stall-fed Goat rearing
- Rabbit Rearing

Angadikadavu St.Jude Nagar Watershed

Development Project (Area – 465 Ha) - Master plan for Four Years - Funding pattern

Instal lment	Administ ration	Monito-ring	Evalua-tion	Entry Point Activity	Institutio n & Capacity Building	DPR prepar-ation	Watershed Develop-ment Activities	Liveli-hood Activi-ties	Productio n system & Micro Enterprise s	Consoli dation Phase	Total IWMP project fund
1St	111600	11160	11160	223200	167400	55800	535680	0	0	0	1116000
%	2	0.2	0.2	4	3	1	9.6	0	0	0	20
2nd	139500	11160	11160	0	55800	0	926280	251100	279000	0	1674000
%	2.5	0.2	0.2	0	1	0	16.6	4.5	5	0	30
3rd	167400	16740	16740	0	55800	0	887220	251100	279000	0	1674000
%	3	0.3	0.3	0	1	0	15.9	4.5	5	0	30
4rd	139500	16740	16740	0	0	0	775620	0	0	167400	1116000
%	2.5	0.3	0.3	0	0	0	13.9	0	0	3	20
Total	**558000**	**55800**	**55800**	**223200**	**279000**	**55800**	**3124800**	**502200**	**558000**	**167400**	**5580000**
%	10	1	1	4	5	1	56	9	10	3	100

Angadikadavu St.Jude Nagar Watershed

Action Plan Sector – I – Watershed Development Activities - I year

Sl No.	Name of Activity	Unit	Unit Cost	Target	IWMP Fund	MNREGS/Other Source	Total	WDF
1.	Source recharge	M^3	12960	25	324000	0	324000	10 % General & 5 % SC / ST
2.	Stone bunding	Nos	80.39	2384.37	191680	0	191680	
3.	Moisture conservation pits	m^2	26,23	4000	0	104920	104920	
4.	Centry petal terracing	Nos	29	1000	0	29000	29000	
5.	Husk trench	Nos	167	800	0	133600	133600	
6.	Live fencing	Nos	24	5000	0	120000	120000	
7.	Construction of RWH Tank 80,000ltr capacity	Rm	500	1	500	0	500	
8.	Gully controlling structures across Kavanadithodu	RM	1300	15	19500	0	19500	
Total					**535680**	**387520**	**923200**	

Angadikadavu St.Jude Nagar Watershed

Watershed - Action Plan - Sector – I – Watershed Development Activities II year

Sl No.	Name of Activity	Unit	Unit Cost	Target	IWMP Fund	MNREGS/Other Source	Total	WDF
1.	Drinking water project in Angadikadavu (Pond renovation,pipe line,fixing motor,collection tank,electric conection)	Nos	600000	1	600000	0	600000	10 % General & 5 % SC / ST
2.	Construction of 2m width H-type check dam across Kavanadi thodu	Nos	16000	3	48000	0	48000	
3.	Construction of 3m width H-type checkdam across Kavanadi thodu	Nos	18000	4	72000	0	72000	
4.	Stone bunding	m^2	80.39	1060.83	85280	0	85280	
5.	Renovation of pond in Anapandhi kunnu drinking water project	Nos	25000	1	25000	0	25000	
6.	Stream bank protection along Vazhakund thodu,below culvert	Nos	1920	50	96000	0	96000	
7.	Digging of new canal near the plot of Edatt Sunny	M^3	30.66	200	0	6132	6132	
8.	Husk trench	Nos	167	300	0	50100	50100	
9.	Live fencing	RM	24	4000	0	96000	96000	
Total					**926280**	**152232**	**1078512**	

Angadikadavu St. Jude Nagar Watershed

Watershed - Action Plan - Sector – I – Watershed Development Activities III year

Sl No.	Name of Activity	Unit	Unit Cost	Target	IWMP Fund	MNREGS/Other Source	Total	WDF
1.	Husk trench	Nos	167	300	0	50100	50100	10 % General & 5 % SC / ST
2.	Moisture conservation pit	M^3	26.23	4000	0	104920	104920	
3.	Live fencing	RM	24	5000	0	120000	120000	
4.	Centry petal terracing	Nos	29	1500	0	43500	43500	
5.	Side protection of Diversion channel - Donbosco waiting shed to river	RM	570	200	114000	0	114000	
6.	3m Htype check dam across Kattakkypuram chal	Nos	18000	3	54000	0	54000	
7.	Stream bank protection for Kottarathilchal	RM	714	40	28560	0	28560	
8.	Source recharge	Nos	12960	15	194400	0	194400	
9.	Construction of retaining wall below culvert along Maruthanal chal	RM	1570	30	47100	0	47100	
10.	4M Htype checkdam across Kalayathumkandi Panakachal	Nos	21000	4	84000	0	84000	
11.	Stone bunding	M^2	80.39	2784.68	223860	0	223860	
12.	Construction of Retaining wall 1,50m height	RM	1570	90	141300	0	141300	
Total					**887220**	**318520**	**1205740**	

Angadikadavu St.Jude Nagar Watershed

Watershed - Action Plan - Sector – I – Watershed Development Activities IV year

Sl No.	Name of Activity	Unit	Unit Cost	Target	IWMP Fund	MNREGS/Other Source	Total	WDF
1.	Velamparamb drinking water project in 7 th ward	m2	500000	1	500000	0	500000	10 % General & 5 % SC / ST
2.	Stone bunding	No	80.39	1010.33	81220	0	81220	
3.	Source recharging	m2	12960	15	194400	0	194400	
4.	Moisture conservation pits	No	26.23	2000	0	52460	52460	
5.	Live fencing	RM	24	5000	0	120000	120000	
6.	Husk trench	Nos	167	300	0	50100	50100	
7.	Yard water collection pits	RM	400	100	0	40000	40000	
Total					**775620**	**262560**	**1038180**	

Angadikadavu St.Jude Nagar Watershed

Action Plan - Sector – II – Livelihood Activities for Land less/Asset less - II year

Sl No	Name of Activity	unit	Unit cost	Target	IWMP fund	MNREGS / other source / Bank loan	Total
1	**seed money for enterprising individuals**	0	0	0	50220	0	50220
1	**Seed money for SHGs**	0	0	0	200880	0	200880
TOTAL					**251100**	**0**	**251100**

Angadikadavu St.Jude Nagar Watershed

Action Plan - Sector – II – Livelihood Activities for Land less/Asset less - III year

Sl No	Name of Activity	unit	Unit cost	Target	IWMP fund	MNREGS / other source / Bank loan	Total
1	Seed money for SHGs	0	0	0	100440	0	100440
Funding for Major Lively hood activities							
1	Rabbit rearing	Nos	30000	1	24000	6000	30000
2	Tailoring unit	Nos	85000	2	126660	43340	170000
TOTAL					**251100**	**49340**	**300440**

Funding pattern	
Seed money for enterprising individuals (10% of the allocation)	50220
Seed money for SHGs (60 % of the allocation)	301320
Funding for major livelihood activities (30% of the allocation)	150660
Total allocation	**502200**

Angadikadavu St.Jude Nagar Watershed

Action Plan - Sector – III – Production System & Micro Enterprises based livelihood activities - II year

Sl No	Name of Activity	unit	Unit cost	Target	IWMP fund	Total	WDF
1	Banana cultivation	Nos	3000	93	279000	279000	20 % for General & 10 % for SC / ST
TOTAL					**279000**	**279000**	

Angadikadavu St.Jude Nagar Watershed

Action Plan - Sector – III – Production System & Micro Enterprises based livelihood activities - III year

Sl No	Name of Activity	unit	Unit cost	Target	IWMP fund	Total	WDF
1	Cow rearing	Nos	31000	9	279000	279000	20 % for General & 10 % for SC / ST
TOTAL					**279000**	**279000**	

Total allotment	**558000**

INTEGRATED WATERSHED MANAGEMENT PROGRAMME[IWMP]

IRITTY BLOCK PANCHAYAT

URUPPUMKUTTI WATERSHED

INTERVENTION MAP

Watershed Code:32V28n;Area:645Ha

Legend

- Junction
- Road
- Stream
- Watershed Boundary
- Stream Bank Stabilization
- H Type Checkdam
- Storage Tank

Sl. No.	Name of the Activity	Proposed Places	Amount (in lakhs)
1.	Construction of retaining wall	Koondoor River near at the plot of Olikkal Binoy (S.No.1293)	3.00
2.	Construction of a storage tank for common purpose	Near spring in the plot of Jincy Philip Thondiyil (S.No.1293)	0.40
3.	Stream bank stabilization along	Koondor River at the plot of Jaison Karakkattu (S.No.1293)	9.50
4.	2m H type check dam	South Hill Thodu at the plot of E.S.Sebastian. (S.No.1293)	0.48
5.	Stream bank stabilization	KoorRiver Near the plot of Devasia Aleppattu and Babu Kalathil (S.No.1293)	9.60
6.	Stream bank protection	Njettithodu near the plot of Thomas Kappalumakkal (S.No.1293)	3.26
7.	Stream bank protection	Near the plot of Emmanual Olikkal	2.88

1 0.5 0 1 2 3

1:50,000 Kilometers

Based on: Watershed Atlas- Landuse Board Govt of Kerala; IWMP PPR

Technical Support: SUSTHIRA Centre for Sustainable Development Studies and Action

URUPPUMKUTTY WATERSHED

Introduction

Uruppumkutty Watershed included in Ayyankunnu Grama Panchayat and covers the 6th & 7th ward of the Grama Panchayat. The watershed has a total geographic area of 645 Ha. The watershed is lying adjacent to the forest. Therefore, cold and fog during monsoon are the peculiarities of the watershed. The important places of the watershed are Nhettiythodu, Ezhamkadavu and Thenkara. The watershed is 2.65 Kms in length and 3.6 Kms in width. The drainage density of the watershed is 25.97m/ha. The watershed is 56 Km away from the District Head Quarters which is accessible by road. Iritty is the nearest bus station of the watershed which is situated around 8 Km away in the west. Kannur railway Station is the nearest railway station of the watershed which is 56 Km away.

Location

Geographically the watershed area lies between the east longitude 75^0 46'30" and 75^0 49'0" and North latitude 12^0 2' 30" and 12^0 1'0" with an average elevation of 443 Meters.

Boundaries of the watershed: ***The boundaries of the watershed are tabled below:***

North	Moonnamkadavu Watershed
South	Edapuzha – Manchodu Watershed
East	Karnataka Forest
West	Endomkari & St. Jude Watersheds

Topography & Soil Type

Topographically the watershed is divided into three distinct areas: 60% steep slopes, 30% moderate slopes and the remaining 10% plain lands. Red soil, black soil, and sandy loam are the commonly seen soil types in the watershed. In the upper reaches forest soil is also observed. In the midland portion major part of the soil is black mixed with pebbles.

Water Bodies

The main stream that gives shape to the watershed is Kundurpuzha which is originating from Meppalli Hills of Karnataka forest and flows towards west and covers three more watersheds before it enter into Uruppumkutty. The stream flows about 5.2 Kms through the watershed with a width varying from 3 meters to 8 meters and then entering into Barapole River. The

average depth of the stream is 2.8 meters. There are 15 more sub-streams in the watershed flowing through different locations and at different length, width and depth. All these streams are enriching the main stream and keeping the watershed wet and with humus.

Land use and Cropping Pattern

80% of the total area of the watershed is under crop coverage. Rubber is the main cultivation of the watershed. Coconut, areca nut, Banana, vegetables, tubers and cashew are also cultivated. 12% of the total geographic area is built up and 8% of the land is occupied by the water bodies. Details of cropping and land use pattern are tabled below: The table is also accompanied by a graphic representation:

Type of land use	Area in Ha	%
Build up Area	77.40	12
Water bodies& Public Place	51.60	8
Coconut, Areca nut	154.80	24
Mixed Crop	70.95	11
Cashew	83.85	13
Rubber	206.40	32
Total	**645**	**100**

Socio-economic situation

There are 147 households in watershed area. The total population is 637. Out of this 295 are female and 342 are male. The SC and ST families are 2 and 7 respectively. Majority of the watershed working class community members (75%) depends on agriculture and allied activities for their livelihood. Nearly 10% depend on construction sector. There are a few involved in the traditional job market like carpentry and tree climbers. The remaining are among the wage labourers.

Generally the watershed community is backward in their socio-economic situation. There may be several reasons for the situation. The main reason is that the area is remote and the people are poorly educated. They are interested in their world of agriculture and employment that demand higher physical interventions. Most of the people have some sort of agriculture as their main source of income. Average per capita income is Rs. 6000 per month.

Christians, Hindus and Muslims are the main religions in the watershed. They live in harmony. It is appreciable that top communal harmony is maintained in the watershed. Majority (around 80%) of the people are belonging to Christian community. The economic status of a few families is satisfactory and they lead a comparatively higher standard of living. Out of the 600 families in the watershed around 400 (67%) are below poverty line.

Health status of the community is satisfactory. Endomkari Township and other townships are slowly contributes to its unhygienic condition leaving a chance for spreading diseases. Drinking water scarcity in summer is one of the problems in this watershed. Transportations facilities in this area are good. Very few houses at Ayamkuzhi and Pallikkunnu are not electrified. Sanitation facilities are also need special attention.

Problem Identification

- Heavy soil erosion
- Land Slides during monsoon
- Overflowing of the streams
- Water scarcity
- Lack of conservation measures
- Wild attack in the farm land

- Wind erosion and destruction of crops
- Crop Diseases
- Poor marketing facilities within the watershed
- Poor animal husbandry practices
- Increase in price of fodder
- Unavailability of green and dry fodder

ACTIVITIES PLANNED FOR WATERSHED DEVELOPMENT

Natural Resource Management

- **Source recharging**

  Rain water harvesting and improve the ground water table is the major objective of the proposed activity.

- **Stone bunding**

  Soil and water conservation is the main objective of the proposed activity.

- **Live fencing**

  The purpose of the proposed activity is soil conservation through reducing soil erosion.

- **Moisture conservation pits**

  The purpose of the proposed activity is to conserve the rain water in the soil and to improve the ground water table. Also for soil conservation.

- **Centripetal Terracing**

  The purpose of the proposed activity is to conserve soil and water.

- **Husk trench**

  The purpose of the proposed activity is water conservation.

- **Construction of retaining wall for Uruppumkutty ST colony**
- **Stream bank stabilization along Molekunnel thodu,starting from Pandarapalli George to Mathai**
- **Stream bank stabilization along the sides of the plot of Panachikal Kurian to Kizhakekara Joseph**
- **Stream bank protection - From Nirappel Kurian to Muthedathu Jose' plot**
- **Stream bank protection near the plot of Kochuparambil Mathew**

To protect the existing stream and also to conserve soil,water and surrounding biomass is the major aim of the proposed activity.

- **Construction of a open dugout pond(EPA)**
  To improve irrigation facilities is the purpose of the proposed activity.
- **Construction of a storage tank near spring in the plot of Jincy Philip Thottiyil for common purpose**
  To make the use of natural spring water with out causing any damage to the existing spring is the aim of the activity.
- **2m H type check dam**
  Water and soil conservation is the purpose of the proposed activity.
- **Yard water collection pits**
- Water conservation and to improve the level of ground water table is the purpose of the activity.
- **Heightening of existing stone bunding**
- Soil and water conservation is the main objective of the proposed activity.

Production System & Micro Enterprises

- Organic Farming
- Vermin Composting
- Vegetable Gardening
- Bio-gas Plants
- Supply of Organic manure and lime

Livelihood Promotion Programmes

- Farm Nursery
- Backyard Poultry
- Small holder Dairy Farm
- Stall-fed Goat rearing
- Rabbit Rearing

Uruppumkutty Watershed

Development Project (Area – 645 Ha) - Master plan for Four Years - Funding pattern

Instal lment	Administ ration	Monito-ring	Evalua-tion	Entry Point Activity	Institutio n & Capacity Building	DPR prepar-ation	Watershed Develop-ment Activities	Liveli-hood Activi-ties	Productio n system & Micro Enterprise s	Consoli dation Phase	Total IWMP project fund
1St	154800	15480	15480	309600	232200	77400	743040	0	0	0	1548000
%	2	0.2	0.2	4	3	1	9.6	0	0	0	20
2nd	193500	15480	15480	0	77400	0	1284840	348300	387000	0	2322000
%	2.5	0.2	0.2	0	1	0	16.6	4.5	5	0	30
3rd	232200	23220	23220	0	77400	0	1230660	348300	387000	0	2322000
%	3	0.3	0.3	0	1	0	15.9	4.5	5	0	30
4rd	193500	23220	23220	0	0	0	1075860	0	0	232200	1548000
%	2.5	0.3	0.3	0	0	0	13.9	0	0	3	20
Total	**774000**	**77400**	**77400**	**309600**	**387000**	**77400**	**4334400**	**696600**	**774000**	**232200**	**7740000**
%	10	1	1	4	5	1	56	9	10	3	100

Uruppumkutty Watershed

Action Plan Sector – I – Watershed Development Activities - I year

Sl No.	Name of Activity	Unit	Unit Cost	Target	IWMP Fund	MNREGS/Other Source	Total	WDF
1.	Source recharging	Nos	12960	19	246240	0	246240	10 % General & 5 % SC / ST
2.	Stone bunding	m^2	80.39	1940.41	155990	0	155990	
3.	Live fencing	RM	24	3000	0	72000	72000	
4.	Moisture conservation pits	M3	26.23	2500	0	65575	65575	
5.	Centry Petal Terracing	Nos	29	1000	0	29000	29000	
6.	Husk trench	Nos	167	400	0	66800	66800	
7.	Construction of retaining wall for Uruppumkutty ST colony	RM	300000	1	300000	0	300000	
8.	Construction of a open dugout pond(EPA)	Nos	810	1	810	0	810	
9.	Construction of a storage tank near spring in the plot of Jincy Philip Thottiyil for common purpose	Nos	40000	1	40000	0	40000	
Total					**743040**	**233375**	**976415**	

Uruppumkutty Watershed

Watershed - Action Plan - Sector – I – Watershed Development Activities II year

Sl No.	Name of Activity	Unit	Unit Cost	Target	IWMP Fund	MNREGS/Other Source	Total	WDF
1.	Stream bank stabilization along molekunnel thodu,starting from Pandarapalli George to Mathayi	RM	1920	495	950400	0	950400	10 % General & 5 % SC / ST
2.	Source recharge	Nos	12960	10	129600	0	129600	
3.	Stone bunding	m2	80.39	1950.99	156840	0	156840	
4.	2m H type check dam	No	12000	4	48000	0	48000	
5.	Moisture collection pits	M3	26.23	2000	0	52460	52460	
6.	Yard water collection pits	No	400	25	0	10000	10000	
7.	Live fencing	RM	24	3000	0	72000	72000	
Total					**1284840**	**134460**	**1419300**	

Uruppumkutty Watershed

Watershed - Action Plan - Sector – I – Watershed Development Activities III year

Sl No.	Name of Activity	Unit	Unit Cost	Target	IWMP Fund	MNREGS/Other Source	Total	WDF
1.	Stream bank stabilization along the sides of the plot of Panachikal Kurian to Kizhakekara Joseph	m2	1920	450	864000	0	864000	10 % General & 5 % SC / ST
2.	Heightening of existing stone bunding	RM	80.39	2500	200975	0	200975	
3.	Stone bunding	RM	80.39	2061.01	165685	0	165685	
4.	Live fencing	No	24	5000	0	120000	120000	
5.	Moisture conservation pits	m2	26.23	2500	0	65575	65575	
6.	Centry Petal Terracing	RM	29	1200	0	34800	34800	
7.	Husk trench	No	167	500	0	83500	83500	
Total					**1230660**	**303875**	**1534535**	

Uruppumkutty Watershed

Watershed - Action Plan - Sector – I – Watershed Development Activities IV year

Sl No.	Name of Activity	Unit	Unit Cost	Target	IWMP Fund	MNREGS/Other Source	Total	WDF
1.	Heightening of existing stone bunding	m2	80.39	2500	200975	0	200975	10 % General & 5 % SC / ST
2.	Stream bank protection - From Nirappel Kurian to Muthedathu jose plot	RM	1920	150	288000	0	288000	
3.	Stream bank protection near the plot of Kochuparambil Mathew	RM	1920	150	288000	0	288000	
4.	Source recharge	No	12960	10	129600	0	129600	
5.	Stone bunding	m2	80.39	2105.8	169285	0	169285	
6.	Live fencing	RM	24	4000	0	96000	96000	
7.	Husk trench	No	167	300	0	50100	50100	
8.	Centry petal terracing	No	29	800	0	23200	23200	
Total					**1075860**	**169300**	**1245160**	

Uruppumkutty Watershed

Action Plan - Sector – II – Livelihood Activities for Land less/Asset less - II year

Sl No	Name of Activity	unit	Unit cost	Target	IWMP fund	MNREGS / other source / Bank loan	Total
1	seed money for enterprising individuals	0	0	0	69660	0	69660
2	Seed money for SHGs	0	0	0	278640	0	278640
TOTAL					**348300**	**0**	**348300**

Uruppumkutty Watershed

Action Plan - Sector – II – Livelihood Activities for Land less/Asset less - III year

Sl No	Name of Activity	unit	Unit cost	Target	IWMP fund	MNREGS / other source / Bank loan	Total
1	Seed money for SHGs	0	0	0	139320	0	139320
Funding for Major Lively hood activities							
1	Mini diary farm	Nos	250000	1	208980	41020	250000
TOTAL					**348300**	**41020**	**389320**

Funding pattern	
Seed money for enterprising individuals (10% of the allocation)	69660
Seed money for SHGs (60 % of the allocation)	417960
Funding for major livelihood activities (30% of the allocation)	208980
Total allocation	**696600**

Uruppumkutty Watershed

- Action Plan - Sector – III – Production System & Micro Enterprises based livelihood activities - II year

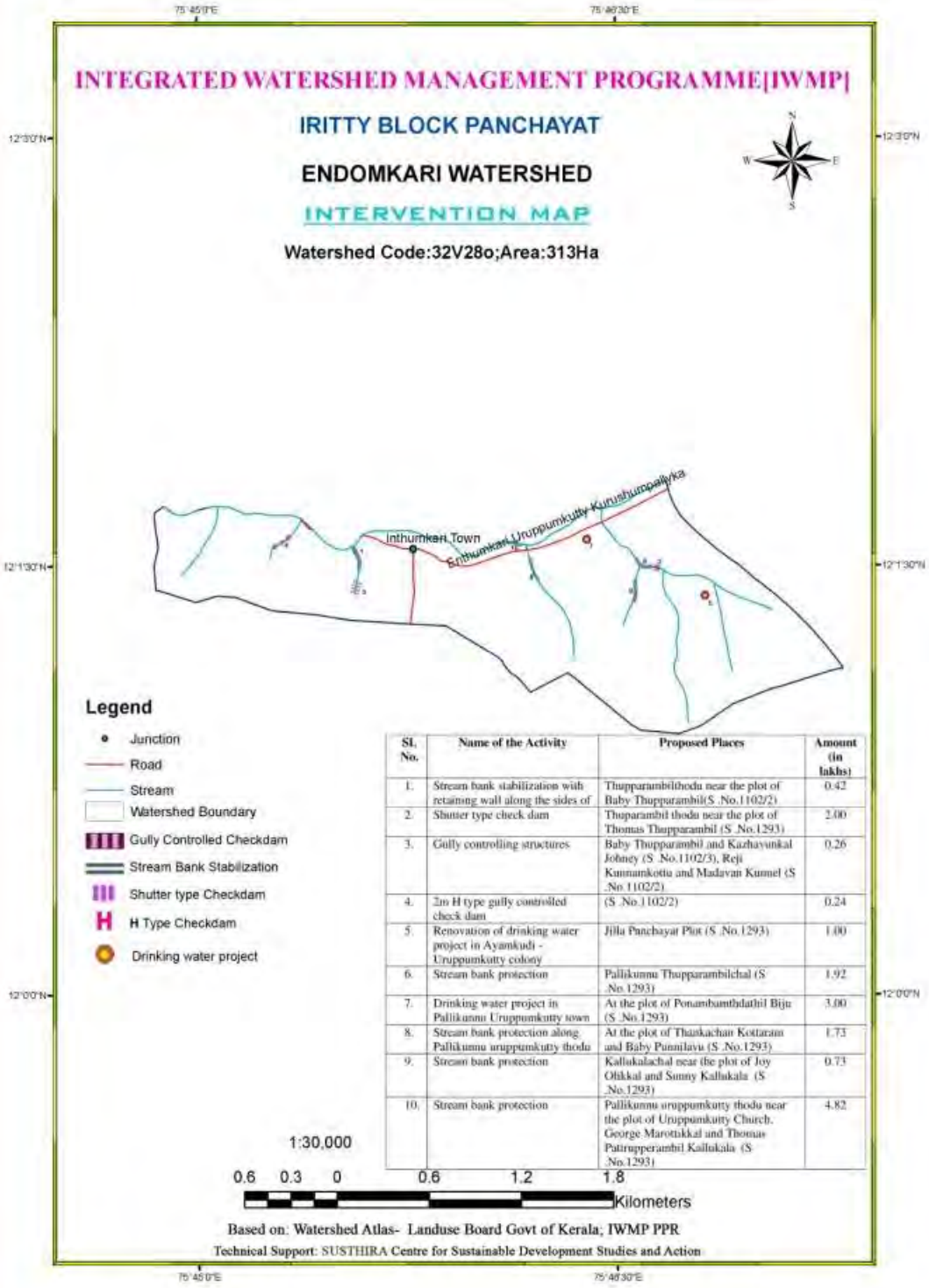
Sl No	Name of Activity	unit	Unit cost	Target	IWMP fund	Total	WDF
1	Banana cultivation	Nos	2500	48	120000	120000	20 % for General & 10 % for SC / ST
2	Banana chips making unit	Nos	40000	2	80000	80000	
3	Tuber crpos	Nos	1000	7	7000	7000	
	Vermi compost	Nos	9000	20	180000	180000	
TOTAL					**387000**	**387000**	

Urupumkutty Watershed

- Action Plan - Sector – III – Production System & Micro Enterprises based livelihood activities - III year

Sl No	Name of Activity	unit	Unit cost	Target	IWMP fund	Total	WDF
1	Organic vegetable cultivation	Nos	2000	50	100000	100000	20 % for General & 10 % for SC / ST
2	Tuber crps cultivation	Nos	1000	47	47000	47000	
3	Rabbit rearing	Nos	30000	5	150000	150000	
4	Mushroom cultivation	Nos	30000	3	90000	90000	
TOTAL					**387000**	**387000**	

Total allotment	**774000**



Sl. No.	Name of the Activity	Proposed Places	Amount (in lakhs)
1.	Stream bank stabilization with retaining wall along the sides of	Thupparambilthodu near the plot of Baby Thupparambil(S .No.1102/2)	0.42
2.	Shutter type check dam	Thuparambil thodu near the plot of Thomas Thupparambil (S .No.1293)	2.00
3.	Gully controlling structures	Baby Thupparambil ,and Kazhayunkal Johney (S .No.1102/3), Reji Kunnamkottu and Madavan Kunnel (S .No.1102/2)	0.26
4.	2m H type gully controlled check dam	(S .No.1102/2)	0.24
5.	Renovation of drinking water project in Ayamkudi - Uruppumkutty colony	Jilla Panchayat Plot (S .No.1293)	1.00
6.	Stream bank protection	Pallikunnu Thupparambilchal (S .No.1293)	1.92
7.	Drinking water project in Pallikunnu Uruppumkutty town	At the plot of Ponambamthdathil Biju (S .No.1293)	3.00
8.	Stream bank protection along Pallikunnu uruppumkutty thodu	At the plot of Thankachan Kottaram and Baby Punnilavu (S .No.1293)	1.73
9.	Stream bank protection	Kallukalachal near the plot of Joy Olikkal and Sunny Kallukala (S .No.1293)	0.73
10.	Stream bank protection	Pallikunnu uruppumkutty thodu near the plot of Uruppumkutty Church. George Marottikkal and Thomas Patirupperambil Kallukala (S .No.1293)	4.82

ENDOMKARI WATERSHED

Introduction

Endomkari Watershed covers the portion of ward VII of Ayyankunnu Gram panchayat and covers a total geographic area of 313 ha. Endomkari, Ayamkudi, Vallikunnu, etc are the main places in the watershed. The watershed has a total length of 1.5 Kms and a width of 4.1 Kms. The drainage density of the watershed is 17.57m/ha. Endomkari watershed is 57 Km away from the District Head Quarters which is accessible by road. Iritty is the nearest bus station of the watershed which is situated around 7 Km away in the west. Kannur railway Station is the nearest railway station of the watershed which is 57 Km away.

Location

Geographically the watershed area lies between the east longitude 75^0 45'0" and 75^0 46'30" and North latitude 12^0 3' 0" and 12^0 0'0" with an average elevation of 248 meters.

Boundaries of the watershed

In the north the watershed is bounded by Angadikkadavu St. Jude Nagar Watershed, in the south and west by Anapanthi Watershed and in the east by Uruppumkutty Watershed.

Topography & Soil Type

The topography of the watershed is divided into three distinct regions: 60% steep sloppy lands, 20% moderate slopes and 20% plain land. Black soil, alluvial soil, red soil mixed with pebbles, etc are the commonly found soil types in the watershed.

Water Bodies

The watershed is formed around the main stream Kundurpuzha which is originating from Karnataka forest and enters into the watershed at Uruppumkutty area. The stream flows about 6 km through the watershed with an average width of 8m and a depth of 4m and then entering into Angadikadavu St.Jude Nagar watershed before enter into the river Valapattanam.

There are three sub-streams in the watershed enriching the main stream the description of which is given below:

Sl. No.	Name of the Stream	Length	Width	Depth
1	Ayamkudithodu	2 Kms	6 M	1.8 M
2	Vallikkunnuthodu	2 Kms	6 M	1.9 M
3	Vaniyathodu	1.5 Kms	5 M	1.6 M

There are 2 ponds, 107 private wells, 3 community wells, 2 private bore-wells and one public bore-well in the watershed. Two drinking water supply schemes – Endomkari and Ayamkudi are functioning in the watershed.

Land use and Cropping Pattern

80% of the total area of the watershed is under crop coverage. Rubber is the main cultivation of the watershed. Coconut, areca nut, Banana, vegetables, tubers and cashew are also cultivated. The water bodies and public places occupy nearly 12% of the total geographic area and 8% is built up. Details of cropping and land use pattern are tabled below: The table is also accompanied by a graphic representation:

Type of land use	Area in Ha	%
Build up Area	14.40	4.6
Water bodies& Public Place	25.35	8.1
Coconut, Areca nut	77.00	24.6
Mixed Crop	37.25	11.9
Cashew	29.42	9.4
Rubber	129.58	41.4
Total	**313**	**100**

Socio-economic situation

There are 223 households in watershed area. The total population is 900. Out of this 448 are female and 452 are male. There are 2 Scheduled Caste families and 38 Scheduled Tribe families. The number of BPL families is 122 and that of APL is 101

Majority of the watershed working class community members (72%) depends on agriculture and allied activities for their livelihood. Nearly 21% depend on construction sector. Only 1% each of the people are employed in government services and working in Middle East respectively. The remaining 5% are in the traditional occupations. The tribal community is involved in collecting honey and other forest produce for their livelihood.

Generally the watershed community is backward in their socio-economic situation. There may be several reasons for the situation. The main reason is that the area is remote and the people are poorly educated. Their world has been reduced to the world of agriculture and employment that demand higher physical interventions. Most of the people have some sort of agriculture as their main source of income. Average per capita income is Rs. 6000 per month.

Christians, Hindus and Muslims are the main religions in the watershed. They live in harmony. It is appreciable that top communal harmony is maintained in the watershed. Majority (around 80%) of the people are belonging to Christian community.

The economic status of a few families is satisfactory and they lead a comparatively higher standard of living. Out of the 600 families in the watershed around 400 (67%) are below poverty line.

Health status of the community is satisfactory. Endomkari Township and other townships are slowly contributes to its unhygienic condition leaving a chance for spreading diseases. Drinking water scarcity in summer is one of the problems in this watershed. Transportations facilities in this area are good. Very few houses at Ayamkuzhi and Pallikkunnu are not electrified. Sanitation facilities are also need special attention.

Problem Identification

- Soil erosion
- Leveling of land
- Soil pollution
- Water scarcity
- Sliding of stream banks
- Water pollution
- Lack of water conservation measures
- Leveling of water sources
- Shift to mono crop cultivation
- Increased crop diseases
- Compartmentalization of land
- Conversion of paddy field
- Unavailability of good variety of animals
- Lack of interest in animal husbandry
- Poor returns
- Increase cost of fodder and unavailability of fodder grass
- Lack of awareness about the alternate / supplementary income generating schemes
- Lack of income generating micro – enterprises in the watershed

ACTIVITIES PLANNED FOR WATERSHED DEVELOPMENT

Natural Resource Management

- **Stone bunding**

  Soil and water conservation is the main objective of the proposed activity.
- **Source recharging**
- Rain water harvesting and improve the ground water table is the major objective of the proposed activity.
- **Moisture conservation pits**

  The purpose of the proposed activity is to conserve the rain water in the soil and to improve the ground water table. Also for soil conservation.
- **Live fencing**

  The purpose of the proposed activity is soil conservation through reducing soil erosion.

- **Husk trench**

  The purpose of the proposed activity is water conservation.
- **Yard water collection pits**

  Water conservation and to improve the level of ground water table is the purpose of the activity.
- **Stream bank stabilization with retaining wall along the sides of Thupparambilthodu**
- **Stream bank protection along Pallikunnu Thupparambilchal**
- **Stream bank protection along Pallikunnu uruppumkutty thodu**
- **Stream bank protection along Kallukalachal**
- **Stream bank protection along Pallikunnu uruppumkutty thodu**

  To protect the existing stream and to conserve the soil and water is the purpose of the proposed activity.
- **Shutter type check dam across Thuparambil thodu**

  To improve irrigation facilities is the purpose of the proposed activity.
- **Gully controlling structures**
- **2m H type gully controlled check dam**

  Soil and water conservation is the main purpose of the activity.
- **Renovation of drinking water project in Ayamkudi - Uruppumkutty colony**

  To ensure the availability of drinking water for the people in Ayamkudi Uruppumkutty colony.
- **Centripetal terracing**

  The purpose of the proposed activity is to conserve soil and water.
- **Drinking water project in Pallikunnu Uruppumkutty town (at the plot of Ponambamthdathil Biju)**

  To improve the drinking water facilities in Pallikunnu Uruppumkutty town.

Production System & Micro Enterprises	**Livelihood Promotion Programmes**
• Organic Farming	• Farm Nursery
• Vermin Composting	• Backyard Poultry
• Vegetable Gardening	• Small holder Dairy Farm
• Bio-gas Plants	• Stall-fed Goat rearing
• Supply of Organic manure and lime	• Rabbit Rearing

Eanthomkari Watershed

Development Project (Area – 313 Ha) - Master plan for Four Years - Funding pattern

Instal lment	Administ ration	Monito-ring	Evalua-tion	Entry Point Activity	Institutio n & Capacity Building	DPR prepar-ation	Watershed Develop-ment Activities	Liveli-hood Activi-ties	Productio n system & Micro Enterprise s	Consoli dation Phase	Total IWMP project fund
1St	75120	7512	7512	150240	112680	37560	360576	0	0	0	751200
%	2	0.2	0.2	4	3	1	9.6	0	0	0	20
2nd	93900	7512	7512	0	37560	0	623496	169020	187800	0	1126800
%	2.5	0.2	0.2	0	1	0	16.6	4.5	5	0	30
3rd	112680	11268	11268	0	37560	0	597204	169020	187800	0	1126800
%	3	0.3	0.3	0	1	0	15.9	4.5	5	0	30
4rd	93900	11268	11268	0	0	0	522084	0	0	112680	751200
%	2.5	0.3	0.3	0	0	0	13.9	0	0	3	20
Total	**375600**	**37560**	**37560**	**150240**	**187800**	**37560**	**2103360**	**338040**	**375600**	**112680**	**3756000**
%	10	1	1	4	5	1	56	9	10	3	100

Enthumkari Watershed

Action Plan Sector – I – Watershed Development Activities - I year

Sl No.	Name of Activity	Unit	Unit Cost	Target	IWMP Fund	MNREGS/Other Source	Total	WDF
1.	Stone bunding	m^2	80.39	1537.7	123616	0	123616	10 % General & 5 % SC / ST
2.	Source recharging	Nos	12960	15	194400	0	194400	
3.	Moisture conservation pits	M^3	26.33	2500	0	65825	65825	
4.	Live fencing	Rm	24	4000	0	96000	96000	
5.	Husk trench	Nos	167	500	0	83500	83500	
6.	Yard water collection pits	Nos	400	75	0	30000	30000	
7.	Stream bank stabilization with retaining wall along the sides of Thupparambilthodu	Rm	42560	1	42560	0	42560	
Total					**360576**	**275325**	**635901**	

Enthumkari Watershed

Action Plan - Sector – I – Watershed Development Activities II year

Sl No.	Name of Activity	Unit	Unit Cost	Target	IWMP Fund	MNREGS/Other Source	Total	WDF
1.	Shutter type check dam across Thuparambil thodu	Nos	200000	1	200000	0	200000	10 % General & 5 % SC / ST
2.	Gully controlling structures	Nos	1300	20	26000	0	26000	
3.	2m H type gully controlled check dam	Nos	8000	3	24000	0	24000	
4.	Renovation of drinking water project in Ayamkudi - Uruppumkutty colony	Nos	100000	1	100000	0	100000	
5.	Stream bank protection along Pallikunnu Thupparambilchal	RM	1920	100	192000	0	192000	
6.	Stone bunding	m^2	80.39	1013.76	81496	0	81496	
7.	Yard water collection pit	Nos	400	50	0	20000	20000	
8.	Live fencing	RM	24	2000	0	48000	48000	
9.	Moisture collection pits	M^3	26.33	3000	0	78990	78990	
10.	Centry petal terracing	Nos	29	800	0	23200	23200	
Total					**623496**	**170190**	**793686**	

Enthumkari Watershed

Action Plan - Sector – I – Watershed Development Activities III year

Sl No.	Name of Activity	Unit	Unit Cost	Target	IWMP Fund	MNREGS/Other Source	Total	WDF
1.	Husk trench	Nos	167	800	0	133600	133600	10 % General & 5 % SC / ST
2.	Yard water collection pits	M^3	400	60	0	24000	24000	
3.	Live fencing	RM	24	2500	0	60000	60000	
4.	Moisture collection pits	Nos	26.33	3500	0	92155	92155	
5.	Stone bunding	RM	80.39	631.97	50804	0	50804	
6.	Drinking water project in Pallikunnu Uruppumkutty town (at the plot of Ponambamthdathil Biju)	Nos	300000	1	300000	0	300000	
7.	Stream bank protection along Pallikunnu uruppumkutty thodu	RM	1920	90	172800	0	172800	
8.	Stream bank protection along Kallukalachal		920	80	73600	0	73600	
Total					**597204**	**309755**	**906959**	

Enthumkari Watershed

Action Plan - Sector – I – Watershed Development Activities IV year

Sl No.	Name of Activity	Unit	Unit Cost	Target	IWMP Fund	MNREGS/Other Source	Total	WDF
1.	Stream bank protection along Pallikunnu uruppumkutty thodu	m2	1920	250.984	481889	0	481889	10 % General & 5 % SC / ST
2.	Stone bunding	No	80.39	500	40195	0	40195	
3.	Moisture collection pits	m2	26.33	2500	0	65825	65825	
4.	Live fencing	No	24	3000		72000	72000	
5.	Husk trench	RM	167	800	0	133600	133600	
Total					**522084**	**271425**	**793509**	

Enthumkari Watershed

Action Plan - Sector – II – Livelihood Activities for Land less/Asset less - II year

Sl No	Name of Activity	unit	Unit cost	Target	IWMP fund	MNREGS / other source / Bank loan	Total
1	seed money for enterprising individuals	0	0	0	33804	0	33804
2	Seed money for SHGs	0	0	0	135216	0	135216
TOTAL					**169020**	**0**	**169020**

Enthumkari Watershed

Action Plan - Sector – II – Livelihood Activities for Land less/Asset less - III year

Sl No	Name of Activity	unit	Unit cost	Target	IWMP fund	MNREGS / other source / Bank loan	Total
1	Seed money for SHGs	0	0	0	67608	0	67608
Funding for Major Lively hood activities							
1	Bag making unit	Nos	80000	1	80000	0	80000
2	Detergent powder making	Nos	23500	1	21412	2088	23500
TOTAL					**169020**	**2088**	**171108**

Funding pattern	
Seed money for enterprising individuals (10% of the allocation)	33804
Seed money for SHGs (60 % of the allocation)	202824
Funding for major livelihood activities (30% of the allocation)	101412
Total allocation	**338040**

Enthumkari Watershed

- Action Plan - Sector – III – Production System & Micro Enterprises based livelihood activities - II year

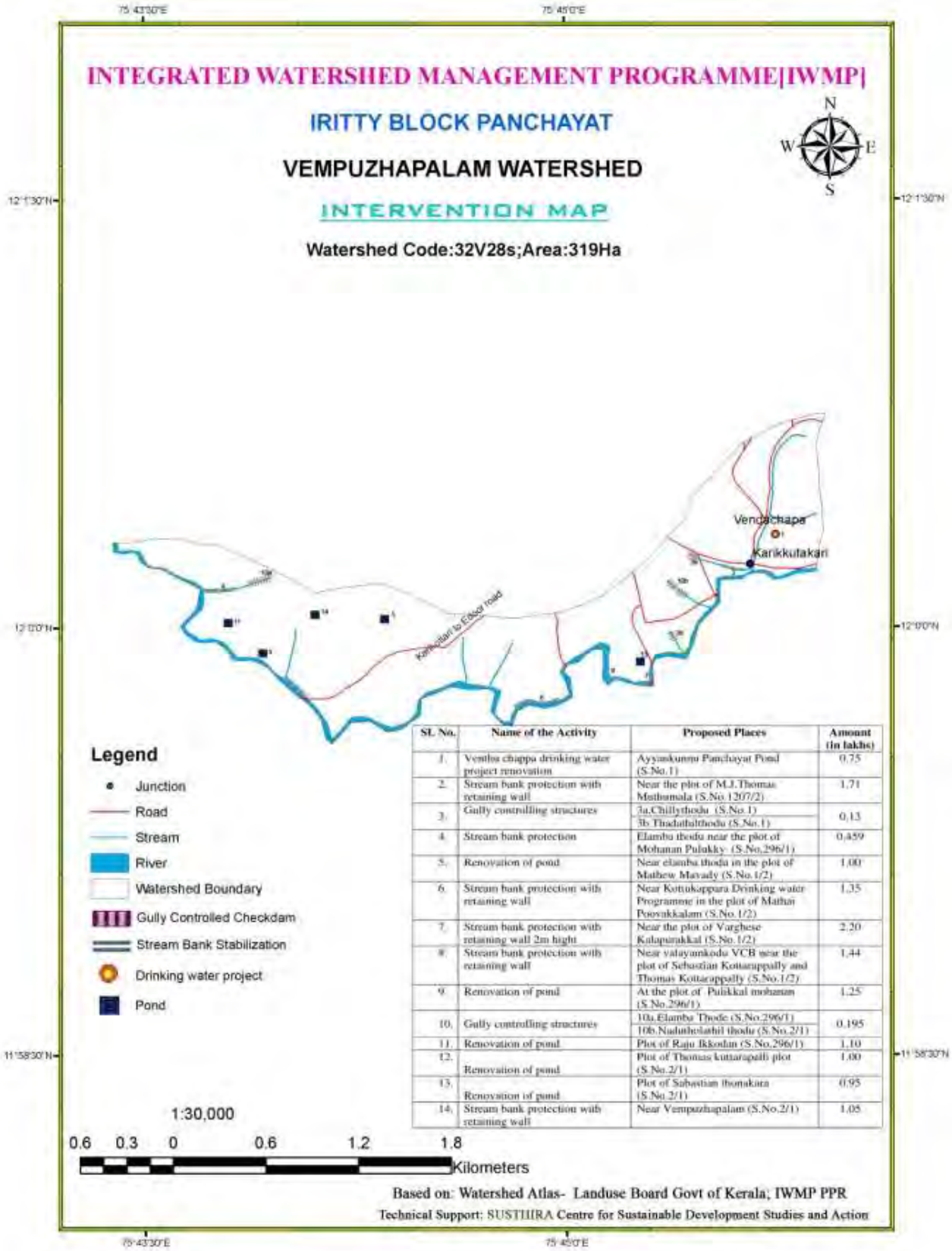
Sl No	Name of Activity	unit	Unit cost	Target	IWMP fund	Total	WDF
1	Organic vegetable cultivation	Nos	2200	54	118800	118800	20 % for General & 10 % for SC / ST
2	Tuber crops	Nos	1500	46	69000	69000	
TOTAL					**187800**	**187800**	

Enthumkari Watershed

- Action Plan - Sector – III – Production System & Micro Enterprises based livelihood activities - III year

Sl No	Name of Activity	unit	Unit cost	Target	IWMP fund	Total	WDF
1	Banana cultivation	Nos	2500	69	172500	172500	20 % for General & 10 % for SC / ST
2	Layer distribution	Nos	90	170	15300	15300	
TOTAL					**187800**	**187800**	

Total allotment	**375600**



Sl. No.	Name of the Activity	Proposed Places	Amount (in lakhs)
1.	Vendachappa drinking water project renovation	Ayyankunnu Panchayat Pond (S.No.1)	0.75
2.	Stream bank protection with retaining wall	Near the plot of M.J.Thomas Muthumala (S.No.1207/2)	1.71
3.	Gully controlling structures	3a.Chillythodu (S.No.1)	0.13
		3b.Thadathilthodu (S.No.1)	
4.	Stream bank protection	Elambu thodu near the plot of Mohanan Pulukky (S.No.296/1)	0.459
5.	Renovation of pond	Near elambu thodu in the plot of Mathew Mavady (S.No.1/2)	1.00
6.	Stream bank protection with retaining wall	Near Kottukappara Drinking water Programme in the plot of Mathai Poovakkalam (S.No.1/2)	1.35
7.	Stream bank protection with retaining wall 2m hight	Near the plot of Varghese Kulapurakkal (S.No.1/2)	2.20
8.	Stream bank protection with retaining wall	Near valayamkodu VCB near the plot of Sebastian Kottaruppally and Thomas Kottaruppally (S.No.1/2)	1.44
9.	Renovation of pond	At the plot of Pulikkal mohanan (S.No.296/1)	1.25
10.	Gully controlling structures	10a.Elamba Thode (S.No.296/1)	0.195
		10b.Nadutholathil thodu (S.No.2/1)	
11.	Renovation of pond	Plot of Raju Ikkodan (S.No.296/1)	1.10
12.	Renovation of pond	Plot of Thomas kuttarapalli plot (S.No.2/1)	1.00
13.	Renovation of pond	Plot of Subastian thonakara (S.No.2/1)	0.95
14.	Stream bank protection with retaining wall	Near Vempuzhapalam (S.No.2/1)	1.05

VEMPUZHAPPALAM WATERSHED

Introduction

The 9th, 10th and 12th wards of Ayyankunnu Grama Panchayat of Iritty block forms the Vempuzhappalam watershed with a total geographic area of 319 Ha. The watershed has a total length of 2.15 kms and a width of 4.4 Kms. The drainage density of the watershed is 9.40 m/ha. The important places are Kezhukappara, Appukuttan Kavala, Karikkottakkari, Chembothinazhi Junction, Marottichuvadu and Ittiyappara Junction. The nearest railway station is Thalassery & Kannur which is accessible through Road.

Location

Geographically the watershed area lies between the east longitude 75^0 43'30" and 75^0 46'0" and North latitude 11^0 59' 30" and 12^0 1'0" with an average elevation of 777 meters.

Boundaries of the watershed

North	Kakkanthodu Watershed
South	Vempuzhathodu
East	Parakkappara Watershed
West	Nattel Watershed

Topography & Soil Type

Nearly 60% of the watershed is with moderate slopes and the rest 40% is plains. This watershed is situated at the south-eastern part of the Ayyankunnu Grama Panchayat. The top portion of the watershed is Marottichuvadu, Karikkottakkari and Kottugappara, and red soil is found in these areas. Sandy and black soil is observed in the midland portion. In the plains also black soil is common.

Water Bodies

The main drainage of the watershed is Vempuzha Stream which is originating from the southern part of the Ayyankunnu Kurisumala Hills. It enters in to the watershed after flowing through two other watersheds Parakkappara and Edapuzha. Through the watershed the stream is flowing about 6 Kms with a width varies from 5 to 15 meters. The average depth of the stream is 5 meters. Vempuzha Stream is one of the tributaries of Anjarakkandy River. There are 6 sub-streams also flowing through the watershed enriching the main stream Vempuzha.

The details of the water bodies are given below:

Type of water bodies	Ponds		Open Wells		Streams
	Public	Private	Public	Private	
Seasonal	1	7	0	163	3
Perennial	3	12	3	233	4
Total	**4**	**19**	**3**	**396**	**7**

Land use and Cropping Pattern

85% of the total area of the watershed is under crop coverage. Rubber is the main cultivation of the watershed. Coconut, areca nut, Banana, vegetables, tubers and cashew are also cultivated. The water bodies occupy nearly 8% of the total geographic area and remaining part is built up. Details of cropping and land use pattern are tabled below: The table is also accompanied by a graphic representation:

Crops	Area in Ha	% of the Area	Productivity
Coconut	44.66	14	43046 Nos.
Areca nut	15.95	5	110.28
Rubber	146.74	46	474.09
Cashew nut	28.71	9	19.0
Banana	19.14	6	49.70
Vegetables	9.57	3	18.49
Tuber Crops	6.38	2	-
Water Bodies	25.52	8	-
Built Up Area	22.33	7	-
Total	**319**	**100**	**-**

Socio-economic situation

Most of the people are depending on agriculture and allied activities for their livelihood. Agriculture contributes the major share of the employment also. Construction sector also plays an important role in employment generation. Migration is at its peak immediately after the rainy season. The living standard of the people is comparatively good mainly because the increase in the income from wage employment and selling of commercial produce in the market. Rubber collects very good returns from the market. The demographic details of the watershed are given below:

The total no. of households	263	APL/BPL Status	
Total Population	**1602**	**Total Families**	**263**
Male	811	APL	192
Female	791	BPL	171

There are 19 SC families and 30 ST families in the watershed. The people are educated as they give importance to education. The new generation is very much interested in getting educated in colleges and professional institutes. IT sector plays an important role. The new generation is less interested in continuing their traditional occupation - Agriculture - as they think that the sector will not provide them better prospect in the future.

They are living in good houses. Most of the houses are with RCC roof and some are with Tiled roof. Health and Hygiene conditions are also satisfactory with all families have adequate sanitation facilities also.

The main occupation of the people is agriculture or agriculture labour. One man gets Rs. 500/- per day and the woman draws Rs. 300/-per day which means the average income for a working family is Rs. 800/- This economic gain reflects in the living standards of the families in the watershed.

Problems identified in the watershed

Soil related Issues:

- Reduced productivity of the soil
- Soil erosion
- Inadequate soil conservation measures
- Change in land use
- Leveling of paddy fields.
- Indiscriminate application of chemical fertilizers and pesticides
- Acidic nature of the soil

Water related issues:

- Fast drying water sources
- Poor water conservation measures
- Leveling of water sources
- Poor water literacy

- Ground water deterioration/lowering of water table
- Sedimentation of sources like streams and ponds
- Land mining
- Drinking water scarcity

Agro-biodiversity related issues

- Fast Spreading mono crops
- Absence of crop rotation
- Disinterest in food cultivation
- Alienation of women from agriculture
- Extinct medicinal plants
- Eco-destruction
- Un expected plant diseases and pest attacks

Animal Husbandry related issues

- Poor interest in indigenous varieties
- Lack of grazing land and pastures
- Compartmentalization of land
- Mono crops do no supplement livestock
- Unavailability of good varieties of animals
- Lack of interest in animal husbandry
- Poor returns and inadequate marketing facilities.

ACTIVITIES PLANNED FOR WATERSHED DEVELOPMENT

Natural Resource Management

- **Source recharge**

  Rain water harvesting and improve the ground water table is the major objective of the proposed activity.
- **Stone bunding**

  Soil and water conservation is the main objective of the proposed activity.
- **Moisture conservation pits**
- The purpose of the proposed activity is to conserve the rain water in the soil and to improve the ground water table. Also for soil conservation.
- **Centripetal terracing**

  The purpose of the proposed activity is to conserve soil and water.

- **Husk trench**

  The purpose of the proposed activity is water conservation
- **Live fencing**

  The purpose of the proposed activity is soil conservation through reducing soil erosion.
- **Venthu chappa drinking water project renovation**

  To ensure the easy availability of drinking water in Venthuchappa area.
- **River bank protection (EPA)**
- **Stream bank protection with retaining wall**
- **Stream bank protection of Elamba thodu**
- **Stream bank protection with retaining wall near Valayamkodu VCB**

  To protect the edisting streams and also to conserve the soil,water and surrounding biomass is the purpose of the proposed activity.
- **Gully controlling structures**

  Soil and water conservation is the main purpose of the activity.
- **Yard water collection pit**

  Water conservation and to improve the level of ground water table is the purpose of the activity.
- **Renovation of pond at Pulikkal Mohanan's plot (public use)**
- **Renovation of pond near Elamba thodu**
- **Renovation of pond at Raju Ikodan's plot**
- **Renovation of pond at Thomas Kuttarapalli plot**
- **Renovation of pond at Sebastian Thonakara's plot**

  To protect th existing ponds and also to improve the irrigation and drinking water facilities in the watershed area.

Production System & Micro Enterprises

- Organic Farming
- Vermin Composting
- Vegetable Gardening
- Bio-gas Plants
- Supply of Organic manure and lime

Livelihood Promotion Programmes

- Farm Nursery
- Backyard Poultry
- Small holder Dairy Farm
- Stall-fed Goat rearing
- Rabbit Rearing

Vempuzhapalam Watershed

Development Project (Area – 319 Ha) - Master plan for Four Years - Funding pattern

Instal lment	Administ ration	Monito-ring	Evalua-tion	Entry Point Activity	Institutio n & Capacity Building	DPR prepar-ation	Watershed Develop-ment Activities	Liveli-hood Activi-ties	Productio n system & Micro Enterprise s	Consoli dation Phase	Total IWMP project fund
1St	76560	7656	7656	153120	114840	38280	367488	0	0	0	765600
%	2	0.2	0.2	4	3	1	9.6	0	0	0	20
2nd	95700	7656	7656	0	38280	0	635448	172260	191400	0	1148400
%	2.5	0.2	0.2	0	1	0	16.6	4.5	5	0	30
3rd	114840	11484	11484	0	38280	0	608652	172260	191400	0	1148400
%	3	0.3	0.3	0	1	0	15.9	4.5	5	0	30
4rd	95700	11484	11484	0	0	0	532092	0	0	114840	765600
%	2.5	0.3	0.3	0	0	0	13.9	0	0	3	20
Total	**382800**	**38280**	**38280**	**153120**	**191400**	**38280**	**2143680**	**344520**	**382800**	**114840**	**3828000**
%	10	1	1	4	5	1	56	9	10	3	100

Vembuzhapalam Watershed

Action Plan Sector – I – Watershed Development Activities - I year

Sl No.	Activity	Unit	Unit Cost	Target	IWMP Fund	MNREGS/Other Source	Total	WDF
1.	Source recharge	Nos	12960	5	64800	0	64800	10 % General & 5 % SC / ST
2.	Stone bunding	m^2	80.39	535.61	43058	0	43058	
3.	Moisture conservation pits	M3	26.23	1000	0	26230	26230	
4.	Centry petal terracing	Nos	29	1000	0	29000	29000	
5.	Husk trench	Nos	167	500	0	83500	83500	
6.	Live fencing	RM	24	1200	0	28800	28800	
7.	Venthu chappa drinking water project renovation	Nos	75000	1	75000	0	75000	
8.	River bank protection (EPA)	RM	630	1	630	0	630	
9.	Stream bank protection with retaining wall	RM	1800	95	171000	0	171000	
10.	Gully controlling structures	RM	1300	10	13000	0	13000	
Total					**367488**	**167530**	**535018**	

Vembuzhapalam Watershed

Watershed - Action Plan - Sector – I – Watershed Development Activities II year

No.	Name of Activity	Unit	Unit Cost	Target	IWMP Fund	MNREGS/Other Source	Total	WDF
1.	Stream bank protection along elamba thodu	RM	918	50	45900	0	45900	10 % General & 5 % SC / ST
2.	renovation of pond near elamba thodu	RM	100000	1	100000	0	100000	
3.	Stone bunding	m2	80.39	867.62	69748	0	69748	
4.	Source recharging	Nos	12960	5	64800	0	64800	
5.	Stream bank protection with retaining wall	m2	1500	90	135000	0	135000	
6.	Stream bank protection with retaining wall 2m hight	RM	2200	100	220000	0	220000	
7.	Husk trench	RM	167	400	0	66800	66800	
8.	yard water collection pit	M^3	400	150	0	60000	60000	
9.	Live fencing	Nos	24	500	0	12000	12000	
10.	Centry petal terracing	Nos	29	1000	0	29000	29000	
Total					**635448**	**167800**	**803248**	

Vembuzhapalam Watershed

Watershed - Action Plan - Sector – I – Watershed Development Activities III year

Sl No.	Name of Activity	Unit	Unit Cost	Target	IWMP Fund	MNREGS/Other Source	Total	WDF
1.	Husk trench	RM	167	500	0	83500	83500	10 % General & 5 % SC / ST
2.	Moisture conservation pit	No	26.23	800	0	20984	20984	
3.	Live fencing	No	24	1000	0	24000	24000	
4.	Centry petal terracing	No	29	1000	0	29000	29000	
5.	Stream bank protection with retaining wall near valayam kodu VCB	RM	1800	80	144000	0	144000	
6.	renovation of pond at pulikkal mohanan plot,(public use)	m2	125000	1	125000	0	125000	
7.	Gully controlling structures	No	1300	15	19500	0	19500	
8.	Source recharge	m2	12960	10	129600	0	129600	
9.	Stream bank protection with retaining wall 2m hight	RM	2200	55	121000	0	121000	
10.	Stone bunding	RM	80.39	865.18	69552	0	69552	
Total					**608652**	**157484**	**766136**	

Vembuzhapalam Watershed

Watershed - Action Plan - Sector – I – Watershed Development Activities IV year

Sl No.	Name of Activity	Unit	Unit Cost	Target	IWMP Fund	MNREGS/Other Source	Total	WDF
1.	renovation of pond at raju ikodan plot	No	110000	1	110000	0	110000	10 % General & 5 % SC / ST
2.	renovation of pond at thomas kuttarapalli plot	No	100000	1	100000	0	100000	
3.	stone bunding	m2	80.39	470.11	37792	0	37792	
4.	Renovation of pond at sabastian thonakara plot	No	95000	1	95000	0	95000	
5.	Gully controlling structures	RM	1300	15	19500	0	19500	
6.	Stream bank protection with retaining wall	RM	1500	70	105000	0	105000	
7.	Source recharging	No	12960	5	64800	0	64800	
8.	Moisture conservation pits	m2	26.23	1000	0	26230	26230	
9.	Live fencing	RM	24	800	0	19200	19200	
10.	Husk trench	No	167	300	0	50100	50100	
11.	Yard water collection pits	No	400	50	0	20000	20000	
Total					**532092**	**115530**	**647622**	

Vembuzhapalam Watershed

Action Plan - Sector – II – Livelihood Activities for Land less/Asset less - II year

Sl No	Name of Activity	unit	Unit cost	Target	IWMP fund	MNREGS / other source / Bank loan	Total
1	seed money for enterprising individuals	0	0	0	34452	0	34452
1	Seed money for SHGs	0	0	0	137808	0	137808
TOTAL					**172260**	**0**	**172260**

Vembuzhapalam Watershed

Action Plan - Sector – II – Livelihood Activities for Land less/Asset less - III year

Sl No	Name of Activity	unit	Unit cost	Target	IWMP fund	MNREGS / other source / Bank loan	Total
1	Seed money for SHGs	0	0	0	68904	0	68904
Funding for Major Lively hood activities							
1	Consumer store	Nos	130000	1	103356	26644	130000
TOTAL					**172260**	**26644**	**198904**

Funding pattern	
Seed money for enterprising individuals (10% of the allocation)	34452
Seed money for SHGs (60 % of the allocation)	206712
Funding for major livelihood activities (30% of the allocation)	103356
Total allocation	**344520**

Vembuzhapalam Watershed

- Action Plan - Sector – III – Production System & Micro Enterprises based livelihood activities - II year

Sl No	Name of Activity	unit	Unit cost	Target	IWMP fund	Total	WDF
1	Mushroom cultivation	Nos	30000	3	90000	90000	20 % for General & 10 % for SC / ST
2	Goat rearing	Nos	5200	2	10400	10400	
3	Tailoring machine	Nos	7000	13	91000	91000	
TOTAL					**191400**	**191400**	

Vembuzhapalam Watershed

- Action Plan - Sector – III – Production System & Micro Enterprises based livelihood activities - III year Action plan

Sl No	Name of Activity	unit	Unit cost	Target	IWMP fund	Total	WDF
1	Floor cleaner making unit	Nos	24300	1	24300	24300	20 % for General & 10 % for SC / ST
2	Layer distribution	Nos	90	190	17100	17100	
3	Banana cultivatiuon	Nos	2500	60	150000	150000	
TOTAL					**191400**	**191400**	

Total allotment	**382800**

INTEGRATED WATERSHED MANAGEMENT PROGRAMME[IWMP]

IRITTY BLOCK PANCHAYAT

PARAKKEPARA WATERSHED

INTERVENTION MAP

Watershed Code:32V28t;Area:480Ha

75°46'30"E 75°48'0"E

12°1'30"N 12°0'0"N 11°58'30"N

Legend

- Junction
- Road
- Stream
- River
- Watershed Boundary
- Gully Controlled Checkdam
- Stream Bank Stabilization
- Well
- VCB
- H Type Checkdam
- Drinking water project
- Spring

SL No.	Name of the Activity	Proposed Places	Amount (in lakhs)
1.	Renovation works of Palliparamb drinking water project (EPA)	Palliparamb near the plot of Jose (S.No.1235)	1.59
2.	Stream bank stabilization	Themana thodu near the plot of Themana Appachan (S.No.1232,1157)	0.41
3.	Construction of a V.C.B	Themana thodu at Kizhanganam Near the plot of Vattanthotty Thomas (S.No.1293)	6.50
4.	Spring protection	Karikkal junction (S.No.1242)	0.50
5.	Renovation works of public well	Kizhanganam S.T.Colony (S.No.1250)	0.40
6.	H type gully controlled check dam	Kizhanganam (S.No.1250)	0.35
7.	Gully controlling structures	Paliekakunnel Cheriyan (S.No.1239), Pazhayakalayil Devasia (S.No.1235)	0.39

1:30,000

0.6 0.3 0 0.6 1.2 1.8 Kilometers

Based on: Watershed Atlas- Landuse Board Govt of Kerala; IWMP PPR

Technical Support: SUSTHIRA Centre for Sustainable Development Studies and Action

PARAKKAPPARA WATERSHED

Introduction

The 8th and 9th wards of Ayyankunnu Grama Panchayat form the Parakkappara watershed with a total geographic area of 480 Ha. The watershed has a total length of 2 kms and a width of 3.45 Kms. The drainage density of the watershed is 27.08m/ha. The important places are Kizhanganam, Palakkaparamba, Kannankira, Parakkappara and Edapuzha. The nearest railway station is Thalassery & Kannur which is accessible through Road.

Location

Geographically the watershed area lies between the east longitude 75^0 45'30" and 75^0 47'30" and North latitude 12^0 1' 30" and 12^0 0'0" with an average elevation of 469 meters.

Boundaries of the watershed

North	Parakka Hills and Nattel Watershed
South	Aralam Grama Panchayat
East	VenchuvanParathodu Watershed
West	Kakkathodu Watershed

Topography & Soil Type

The watershed is with undulating nature with hills and hillocks. Nearly 62 % of the watershed is with heavy slopes, 28% with moderate slopes and the rest 10% is comparatively plains. In the top portion of the watershed granites and black soil is found. Red and black soil is observed in the midland and in the plains black soil is common. Black and red laterite soils are commonly seen in the watershed. Red soil mixed with pebbles is observed in the midland portion of the watershed.

Water Bodies

The main drainage of the watershed is Kizhanganam Stream which is originating from Venchuvan Para and flows about 5 Kms along the watershed with an average width of 5 meters. The average depth is 3 meters. Draining the watershed, the stream enters into Vempuzha.

The details of the water bodies are given below:

Type of water bodies	Ponds		Open Wells		Streams
	Public	Private	Public	Private	
Seasonal		1	0	62	3
Perennial	1	2	2	176	7
Total	**1**	**3**	**2**	**238**	**10**

Land use and Cropping Pattern

70% of the total area of the watershed is under crop coverage. Rubber is the main cultivation of the watershed. Coconut, areca nut, Banana, vegetables, tubers and cashew are also cultivated. 20 Acres of cultivable land is left barren. The water bodies occupy nearly 5% of the total geographic area and remaining part is built up. Details of cropping and land use pattern are tabled below: The table is also accompanied by a graphic representation:

Crops	Area in Ha	% of the Area	Productivity
Coconut	124.8	26	43046 Nos.
Areca nut	33.6	7	110.28
Rubber	196.8	41	474.09
Cashew nut	38.4	8	19.0
Banana	9.6	2	49.70
Vegetables	14.4	3	18.49
Tuber Crops	4.8	1	-
Water Bodies	38.4	8	-
Built Up Area	19.2	4	-
Total	**480**	**100**	**-**

Socio-economic situation

Most of the people are depending on agriculture for their livelihood. Agriculture contributes the major share of the employment. Construction sector also contributes to a great extent. The living standard of the people is comparatively good mainly because the increase in the market price of the rubber which is the major crop in the watershed. The demographic details of the watershed are given below:

The total no. of households	207	**Total ST Households**	10	**Total SC Households**	7
Total Population	**1065**	**Total Population**	**52**	**Total Population**	**36**
Male	542	Male	22	Male	17
Female	523	Female	30	Female	19

Education is their major concern and most of the people are educated. The new generation is less interested in continuing their traditional occupation - Agriculture - as they think that the sector will not provide them better prospect in the future. They understand that even now the sector is sinking because of adverse climatic condition and other related issues like low market price for the produce due to the present policy of the government in which globalization and liberalization are promoted and facilitated.

They are living in good houses most with RCC roof or with Tiled roof. Earlier, most of the watershed families were living in poor conditions. Health and Hygiene conditions are also satisfactory with all families have adequate sanitation facilities also. The condition of the indigenous communities remains the same. This is because that they have little land and the agriculture in their land is at subsistence level.

Problems identified in the watershed

Soil Related Issues

- Soil Erosion
- Changing Chemical Structure of the soil
- Increasing plastic waste disposal in the soil
- Poor conservation measures
- Stream Bank Erosion

Water Related Issues

- Water scarcity especially in upper reaches of the watershed
- Source pollution due to waste disposal
- Lack of proper water conservation measures including RWH
- Poor protection of the natural water bodies
- Decreasing water table
- Heavy sedimentation of the water bodies, especially streams
- Depleting aquifer

Agriculture Related Issues

- Lack of irrigation facilities
- Lack of appropriate trainings and awareness generations programmes
- Unavailability of disease resistant and high yielding variety of seeds and seedlings
- Indiscriminate use of Chemical fertilizers and pesticides
- High production cost and low income in agriculture
- Unavailability of labourers
- Unavailability of quality bio-fertilizers
- Lesser interest among younger generation in Agriculture
- Spreading of mono crops in the area

- Unexpected crop diseases
- Wild attack

Animal Husbandry Related Issues

- Poor animal husbandry practices among the farmers
- Non-availability of dry and green fodder
- Higher cost of factory feeds
- Unexpected animal diseases
- Unavailability of good variety of animals at affordable price.

ACTIVITIES PLANNED FOR WATERSHED DEVELOPMENT

Natural Resource Management

- **Moisture collection pits**

  The purpose of the proposed activity is to conserve the rain water in the soil and to improve the ground water table. Also for soil conservation.

- **Centripetal terracing**

  The purpose of the proposed activity is to conserve soil and water.

- **Yard water collection pits**

  Water conservation and to improve the level of ground water table is the purpose of the activity.

- **Source recharging**

  Rain water harvesting and improve the ground water table is the major objective of the proposed activity.

- **Renovation works of Palliparamb drinking water project (EPA)**

  To ensure the easy availability of drinking water in Palliparamb area is the purpose of the activity.

- **Stone bunding**

  Soil and water conservation is the main objective of the proposed activity.

- **Stream bank stabilization of themanam thodu**

  To protect the existing stream from soil and wter erosion is the main objective of the activity.

- **Construction of a V.C.B across themana thodu at Kizhanganam**

  To improve the irrigation facilities in Kizhanganam area is the main objective of the proposed axctivity.

- **Source recharge**

  Rain water harvesting and improve the ground water table is the major objective of the proposed activity.
- **Live fencing**

  The purpose of the proposed activity is soil conservation through reducing soil erosion.
- **Husk trench**

  The purpose of the proposed activity is water conservation
- **Spring protection at Karikkal junction**

  To protect the Karikkal spring from extinction.
- **Renovation works of public well at Kizhanganam S.T.Colony**

  To facilitate the drinking water availability in Kizhanganam S.T.Colony.
- **H type gully controlled check dam at Kizhanganam**

  Soil and water conservation inaddition to improved irrigation facilities is the aim of the proposed activity.
- **Gully controlling structures**

  Soil and water conservation is the main purpose of the activity.
- **Heightening of existing of stone bunding**

  Soil and water conservation is the main objective of the proposed activity.
- **Mngalathil kunj river bank protection**

  To protect the river Vempuzha from side bank erosion

Production System & Micro Enterprises

- Organic Farming
- Vermin Composting
- Vegetable Gardening
- Bio-gas Plants
- Supply of Organic manure and lime

Livelihood Promotion Programmes

- Farm Nursery
- Backyard Poultry
- Small holder Dairy Farm
- Stall-fed Goat rearing
- Rabbit Rearing

Parakkapara Watershed

Development Project (Area – 480 Ha) - Master plan for Four Years - Funding pattern

Instal lment	Administ ration	Monito-ring	Evalua-tion	Entry Point Activity	Institutio n & Capacity Building	DPR prepar-ation	Watershed Develop-ment Activities	Liveli-hood Activi-ties	Productio n system & Micro Enterprise s	Consoli dation Phase	Total IWMP project fund
1St	115200	11520	11520	230400	172800	57600	552960	0	0	0	1152000
%	2	0.2	0.2	4	3	1	9.6	0	0	0	20
2nd	144000	11520	11520	0	57600	0	956160	259200	288000	0	1728000
%	2.5	0.2	0.2	0	1	0	16.6	4.5	5	0	30
3rd	172800	17280	17280	0	57600	0	915840	259200	288000	0	1728000
%	3	0.3	0.3	0	1	0	15.9	4.5	5	0	30
4rd	144000	17280	17280	0	0	0	800640	0	0	172800	1152000
%	2.5	0.3	0.3	0	0	0	13.9	0	0	3	20
Total	**576000**	**57600**	**57600**	**230400**	**288000**	**57600**	**3225600**	**518400**	**576000**	**172800**	**5760000**
%	10	1	1	4	5	1	56	9	10	3	100

Parakkapara Watershed

Action Plan Sector – I – Watershed Development Activities - I year

Sl No.	Name of Activity	Unit	Unit Cost	Target	IWMP Fund	MNREGS/Other Source	Total	WDF
1.	Moisture collection pits	M3	26.23	2100	0	55083	55083	10 % General & 5 % SC / ST
2.	Centry petal terracing	Nos	29	1000	0	29000	29000	
3.	Yard water collection pits	Nos	400	40	0	16000	16000	
4.	Source recharging	Nos	12960	18	233280	0	233280	
5.	Renovation works of Palliparamb drinking water project (EPA)	Nos	158800	1	158800	0	158800	
6.	Stone bunding	m^2	80.39	2001.25	160880	0	160880	
Total					**552960**	**100083**	**653043**	

Parakkapara Watershed

Watershed - Action Plan - Sector – I – Watershed Development Activities II year

Sl No.	Name of Activity	Unit	Unit Cost	Target	IWMP Fund	MNREGS/Other Source	Total	WDF
1.	Stream bank stabilization of themanam thodu	RM	2050	20	41000	0	41000	10 % General & 5 % SC / ST
2.	Construction of a V.C.B across themana thodu at Kizhanganam	Nos	650000	1	650000	0	650000	
3.	Stone bunding	m2	80.39	2008.71	161480	0	161480	
4.	Source recharge	Nos	12960	8	103680	0	103680	
5.	Live fencing	RM	24	3500	0	84000	84000	
6.	Moisture collection pits	m3	26.23	2800	0	73444	73444	
7.	Centry petal terracing	Nos	29	1000	0	29000	29000	
8.	Husk trench	Nos	167	500	0	83500	83500	
Total					**956160**	**269944**	**1226104**	

Parakkapara Watershed

Watershed - Action Plan - Sector – I – Watershed Development Activities III year

Sl No.	Name of Activity	Unit	Unit Cost	Target	IWMP Fund	MNREGS/Other Source	Total	WDF
1.	Spring protection at Karikkal junction	No	50000	1	50000	0	50000	10 % General & 5 % SC / ST
2.	Renovation works of public well at Kizhanganam S.T.Colony	No	40000	1	40000	0	40000	
3.	H type gully controlled check dam at Kizhanganam	No	35000	1	35000	0	35000	
4.	Gully controlling structures	RM	1300	30	39000	0	39000	
5.	Source recharge	No	12960	21	272160	0	272160	
6.	Heightening of existing of stone bunding	M^2	80.39	2200	176858	0	176858	
7.	Yard water collection pits	No	400	100	0	40000	40000	
8.	Husk trench	No	167	400	0	66800	66800	
9.	Live fencing	RM	24	4500	0	108000	108000	
10.	Moisture collection pits	M^3	26.23	3000	0	78690	78690	
11.	Stone bunding	m2	80.39	3766.92	302822	0	302822	
Total					**915840**	**293490**	**1209330**	

Parakkapara Watershed

Watershed - Action Plan - Sector – I – Watershed Development Activities IV year

Sl No.	Name of Activity	Unit	Unit Cost	Target	IWMP Fund	MNREGS/Other Source	Total	WDF
1.	Mngalathil kunj river bank protection	RM	2050	351.3415	720250	0	720250	10 % General & 5 % SC / ST
2.	Stone bunding	m2	80.39	1000	80390	0	80390	
3.	Live fencing	RM	24	5000	0	120000	120000	
4.	Moisture collection pits	m3	26.23	3100	0	81313	81313	
5.	Centry petal terracing	No	29	1200	0	34800	34800	
6.	Husk trench	No	167	500	0	83500	83500	
Total					**800640**	**319613**	**1120253**	

Parakkappara Watershed

Action Plan - Sector – II – Livelihood Activities for Land less/Asset less - II year

Sl No	Name of Activity	unit	Unit cost	Target	IWMP fund	MNREGS / other source / Bank loan	Total
1	seed money for enterprising individuals	Nos	0	0	51840	0	51840
2	Seed money for SHGs	Nos	0	0	207360	0	207360
TOTAL					**259200**	**72600**	**331800**

Parakkappara Watershed

Action Plan - Sector – II – Livelihood Activities for Land less/Asset less - III year

Sl No	Name of Activity	unit	Unit cost	Target	IWMP fund	MNREGS / other source / Bank loan	Total
1	Paultry form	Nos	85000	1	68000	17000	85000
Funding for Major Lively hood activities							
1	Consumer store	Nos	200000	1	155520	44480	200000
TOTAL					**259200**	**44480**	**268000**

Funding pattern	
Seed money for enterprising individuals (10% of the allocation)	51840
Seed money for SHGs (60 % of the allocation)	311040
Funding for major livelihood activities (30% of the allocation)	155520
Total allocation	**518400**

Parakkappara Watershed

- Action Plan - Sector – III – Production System & Micro Enterprises based livelihood activities - II year

Sl No	Name of Activity	unit	Unit cost	Target	IWMP fund	Total	WDF
1	Bee keeping	Nos	11000	9	99000	99000	20 % for General & 10 % for SC / ST
2	Tuber crops	Nos	2000	2	4000	4000	
3	Banana cultivation	Nos	2500	74	185000	185000	
TOTAL					**288000**	**288000**	

Parakkappara Watershed

- Action Plan - Sector – III – Production System & Micro Enterprises based livelihood activities - III year

Sl No	Name of Activity	unit	Unit cost	Target	IWMP fund	Total
1	Goat rearing	Nos	8000	15	120000	120000
2	Cow rearing	Nos	24000	7	168000	168000
TOTAL					**288000**	**288000**

Total allotment	**576000**

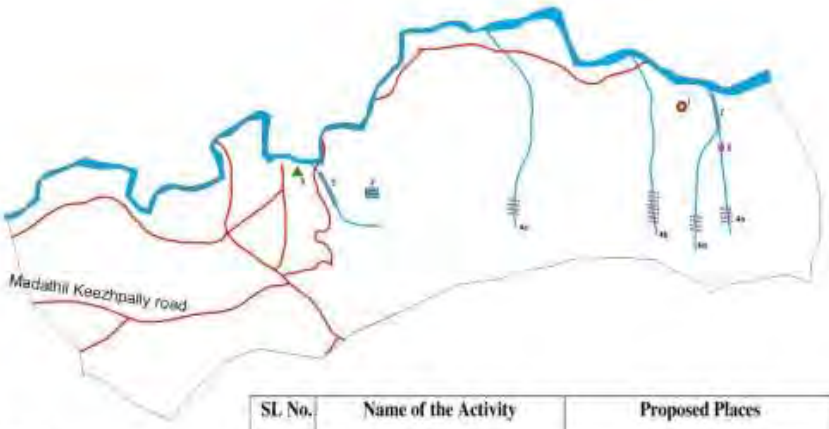
INTEGRATED WATERSHED MANAGEMENT PROGRAMME[IWMP]

IRITTY BLOCK PANCHAYAT

VALAYAMKODE WATERSHED

INTERVENTION MAP

Watershed Code:32V28v;Area:410Ha



SL No.	Name of the Activity	Proposed Places	Amount (in lakhs)
1.	Manjod drinking water project	Palangattu Temple Plot (S No.279)	3.49
2.	Rain water harvesting tank	Nedumunda colony (S No.2/1)	1.00
3.	Stream bank stabilization	Nedumundathodu near the plot of Pulikanath jose (S No.2/1)	3.57
4.	Gully controlling structures	(S No.2/1)	0.26
5.	Paddy field protection	Plot of Joseph Valiyaparambil (S No.3/2)	1.84
6.	2m H - type gully controlled check dam	Tholani thodu (S No.279)	0.080
7.	Stream bank stabilization	Tholani thodu (S No.279)	9.03

Legend

- Junction
- Road
- Stream
- River
- Watershed Boundary
- Gully Controlled Checkdam
- Stream Bank Stabilization
- Paddy Field Protection
- Drinking water project
- H Type Checkdam
- RWH Tank

1:30,000

0.6 0.3 0 0.6 1.2 1.8 Kilometers

Based on: Watershed Atlas- Landuse Board Govt of Kerala; IWMP PPR

Technical Support: SUSTHIRA Centre for Sustainable Development Studies and Action

VALAYAMKODU WATERSHED

Introduction

Valayamkodu watershed is in Aralam Grama Panchayat in Aralam Village. Wards 1, 2 and 11 are included in this watershed. This watershed has a total geographic area of 410 ha. Manchodu, Ambalakkadu, Marottichodu, Pathayappura, Valayamkodu, nedumunda and Kizhakkepadathu are the main places of the watershed. The watershed has a total length of 2 Kms and a width of 4.15 Kms, with a drainage density of 11.61Meter/ha. The nearest railway station is Thalassery & Kannur which is accessible through Road.

Location

Geographically the watershed area lies between the east longitude 75^0 4'0" and 75^0 46'30" and North latitude 11^0 59' 0" and 12^0 0'30" with an average elevation of 500 meters.

Boundaries of the watershed

North	Vempuzha
South	Karadimala
East	Manjodu Watershed
West	Edoor Watershed

Topography & Soil Type

The watershed has a slanting nature from south to north direction. The topography is 80% hilly area and 20% plain lands which are generally undulating. Black and red laterite soils are commonly seen in the watershed. Red soil mixed with pebbles is observed in the midland portion of the watershed and either black or alluvial soils are observed.

Water Bodies

The watershed is formed on the main drainage Tholani Stream, which is originating from the land of Tholani Elikutty. This has a total length of 1.6 Kms and an average width of 3 meters. The depth of the stream is 3 meters. This stream joins with Vempuzha. The other streams in the watershed are Pannippallithodu (1½ Kms Length and 2 meters width), Njantholil Stream (1½ Kms Length and 1½ meters width) Nedumunda Stream (1½ Kms Length and 1½ meters width) and Palayattu Temple Stream (1½ Kms Length and 1 meter width). All these streams are enriching the main stream and keeps the water table stable.

The details of the water bodies are given below:

Type of water bodies	Ponds		Open Wells		Bore Wells		Streams
	Public	Private	Public	Private	Public	Private	
Seasonal		2	0	46	0	0	4
Perennial	1	4	1	254	1	0	1
Total	**1**	**6**	**1**	**300**	**1**	0	**5**

Land use and Cropping Pattern

70% of the total area of the watershed is under crop coverage. Rubber is the main cultivation of the watershed. Coconut, areca nut, Pepper, Banana, vegetables, tubers and cashew are also cultivated. 20 Acres of cultivable land is left barren. The water bodies occupy nearly 5% of the total geographic area and remaining part is built up. Details of cropping and land use pattern are tabled below: The table is also accompanied by a graphic representation:

Crops	Area in Ha	% of the Area	Productivity
Coconut	46.64	11.16	43046 Nos.
Areca nut	36.81	9.00	110.28
Rubber	191.74	46.88	474.09
Cashew nut	24.09	5.89	19.0
Pepper	16.85	4.12	81.78
Banana	34.03	8.32	49.70
Vegetables	5.44	1.33	18.49
Tuber Crops	3.56	0.87	-
Paddy	1	0.24	-
Water Bodies	20.86	5.1	-
Cultivable Waste	8	1.96	
Built Up Area	20.98	5.13	-
Total	**410**	**100**	**-**

Socio-economic situation

The total families in the watershed are 207 with a total population of 1065. Among them 542 are females and 523 are males. Out of the 207 families 132 are APL and 75 are BPL. Most of the people are depending on agriculture for their livelihood. Agriculture contributes the major share of the employment. Construction sector also contributes to a great extent. The living standard of the people is comparatively good mainly because the increase in the market price of the rubber which is the major crop in the watershed.

Families give great importance to education and most of the people are educated. They know that the agricultural sector is going to be reduced drastically due to adverse climatic condition and other related issues like change in market price due to the present policy of the government in which globalization and liberalization are promoted and facilitated.

Most of them are living in good houses either with RCC roof or with Tiled roof. Earlier, most of the watershed families were living in thatched huts which had been constructed in poor conditions. Hygiene conditions with adequate sanitation facilities also have improved. The SC/ST communities have not much developed from their earlier situations. This is because that the benefit of the increased price of the agricultural goods have not much helped or influenced them. They have little land and the agriculture in their land is at subsistence level.

Problems identified in the watershed

Soil Related Issues

- Poor water storage capacity of the soil and heavy runoff
- Lack of soil conservation measures
- Increasing plastic waste disposal in the soil
- Decreasing Fertility of the Soil
- Leveling of hills and hillocks.
- Stream Bank Erosion
- Soil Erosion

Water Related Issues

- Water scarcity especially in upper reaches of the watershed
- Stream pollution due to waste disposal
- Lack of proper water conservation measures
- Poor protection of the natural water bodies
- Decreasing water table

Agriculture Related Issues

- Lack of appropriate trainings and awareness generations programmes
- Indiscriminate use of Chemical fertilizers and pesticides
- High production cost and low income in agriculture
- Unavailability of labourers
- Lesser interest among younger generation in Agriculture
- Spreading of mono crops in the area
- Unexpected crop diseases
- Wild attack

Animal Husbandry Related Issues

- Poor animal husbandry practices among the farmers
- Non-availability of dry and green fodder
- Higher cost of factory feeds
- Unexpected animal diseases
- Unavailability of good variety of animals at affordable price.

ACTIVITIES PLANNED FOR WATERSHED DEVELOPMENT

Natural Resource Management

- **Moisture collection point**

  The purpose of the proposed activity is to conserve the rain water in the soil and to improve the ground water table. Also for soil conservation.

- **Centripetal terracing**

  The purpose of the proposed activity is to conserve soil and water.

- **Husk trench**

  The purpose of the proposed activity is water conservation.

- **Live fencing**

  he purpose of the proposed activity is soil conservation through reducing soil erosion.

- **Yard water collection pit**

  Water conservation and to improve the level of ground water table is the purpose of the activity.

- **Stone bunding**

  Soil and water conservation is the main objective of the proposed activity.

- **Manjod drinking water project (EPA)**

  To improve the drinking water facilities in Manjod area.

- **Source recharging**

  Rain water harvesting and improve the ground water table is the major objective of the proposed activity.

- **Rain water harvesting tank in Nedumunda colony**

  To reduce the water scarcity in Nedumba colony by harvesting the rain water is the purpose of the activity.

- **Stream bank stabilization along Nedumundathodu near the plot of Pulikanath Jose**

  To protect Nedumbathodu from streambank erosion is the purpose of the activity.

- **Gully controlling structures**

  Soil and water conservation is the main purpose of the activity

- **Paddy field protection near the plot of Joseph Valiyaparambil**

  To protect the agricultural field from floos and also the stream from streambank erosion is the objective of the proposed activity.

- **Nedumundathodu side protection near the plot of Kallanmariyil Jose**

  To protect the banks of Nedumbathodu from stream bank sliding.

- **Stream bank stabilization along Tholani thodu**

  To protect the Tholani thodu from stream bank erosion.
- **2m H - type gully controlled check dam across Tholani thod**

  Soil and water conservation along with improved irrigation facilities is the main aim of the activity.

Production System & Micro Enterprises

- Organic Farming
- Vermin Composting
- Vegetable Gardening
- Bio-gas Plants
- Supply of Organic manure and lime

Livelihood Promotion Programmes

- Farm Nursery
- Backyard Poultry
- Small holder Dairy Farm
- Stall-fed Goat rearing
- Rabbit Rearing

Valayamkodu Watershed

Development Project (Area – 410 Ha) - Master plan for Four Years - Funding pattern

Instal lment	Administ ration	Monito-ring	Evalua-tion	Entry Point Activity	Institutio n & Capacity Building	DPR prepar-ation	Watershed Develop-ment Activities	Liveli-hood Activi-ties	Productio n system & Micro Enterprise s	Consoli dation Phase	Total IWMP project fund
1St	98400	9840	9840	196800	147600	49200	472320	0	0	0	984000
%	2	0.2	0.2	4	3	1	9.6	0	0	0	20
2nd	123000	9840	9840	0	49200	0	816720	221400	246000	0	1476000
%	2.5	0.2	0.2	0	1	0	16.6	4.5	5	0	30
3rd	147600	14760	14760	0	49200	0	782280	221400	246000	0	1476000
%	3	0.3	0.3	0	1	0	15.9	4.5	5	0	30
4rd	123000	14760	14760	0	0	0	683880	0	0	147600	984000
%	2.5	0.3	0.3	0	0	0	13.9	0	0	3	20
Total	**492000**	**49200**	**49200**	**196800**	**246000**	**49200**	**2755200**	**442800**	**492000**	**147600**	**4920000**
%	10	1	1	4	5	1	56	9	10	3	100

Valayangod Watershed

Action Plan Sector – I – Watershed Development Activities - I year

Sl No.	Name of Activity	Unit	Unit Cost	Target	IWMP Fund	MNREGS/Other Source	Total	WDF
1.	Moisture collection point	M3	26.23	2000	0	52460	52460	10 % General & 5 % SC / ST
2.	Centry petal terracing	Nos	29	1000	0	29000	29000	
3.	Husk trench	Nos	167	500	0	83500	83500	
4.	Live fencing	RM	24	3000	0	72000	72000	
5.	Yard water collection pit	Nos	400	100	0	40000	40000	
6.	Stone bunding	m^2	80.39	1537.75	123620	0	123620	
7.	Manjod drinking water project (EPA)	Nos	348700	1	348700	0	348700	
Total					**472320**	**276960**	**749280**	

Valayangod Watershed

Watershed - Action Plan - Sector – I – Watershed Development Activities II year

Sl No.	Name of Activity	Unit	Unit Cost	Target	IWMP Fund	MNREGS/Other Source	Total	WDF
1.	Source recharging	Nos	12960	15	194400	0	194400	10 % General & 5 % SC / ST
2.	Stone bunding	m2	80.39	1733.05	139320	0	139320	
3.	Rain water harvesting tank in Nedumunda colony	No	100000	1	100000	0	100000	
4.	Stream bank stabilization along nedumundathodu near the plot of Pulikanath jose	RM	1785	200	357000	0	357000	
5.	Gully controlling structures	RM	1300	20	26000	0	26000	
6.	Live fencing	RM	24	3000	0	72000	72000	
7.	Centry petal terracing	Nos	29	1000	0	29000	29000	
8.	Husk trench	Nos	167	500	0	83500	83500	
9.	Moisture collection pits	M^3	26.23	3000	0	78690	78690	
Total					**816720**	**263190**	**1079910**	

Valayangod Watershed

Watershed - Action Plan - Sector – I – Watershed Development Activities III year

Sl No.	Name of Activity	Unit	Unit Cost	Target	IWMP Fund	MNREGS/Other Source	Total	WDF
1.	Moisture collection pits	M^3	26.23	2000	0	52460	52460	10 % General & 5 % SC / ST
2.	Husk trench	No	167	500	0	83500	83500	
3.	Yard water collection pits	No	400	50	0	20000	20000	
4.	Live fencing	RM	24	3000	0	72000	72000	
5.	Source recharging	No	12960	10	129600	0	129600	
6.	Stone bunding	m2	80.38	900	72342	0	72342	
7.	Paddy field protection near the plot of Joseph Valiyaparambil	RM	920	200	184000	0	184000	
8.	Nedumundathodu side protection near the plot of Kallanmariyil Jose	RM	920	139.77	128588	0	128588	
9.	Stream bank stabilization along tholani thodu		1785	150	267750	0	267750	
Total					**782280**	**227960**	**1010240**	

Valayangod Watershed

Watershed - Action Plan - Sector – I – Watershed Development Activities IV year

Sl No.	Name of Activity	Unit	Unit Cost	Target	IWMP Fund	MNREGS/Other Source	Total	WDF
1.	Stone bunding	m2	80.39	500.00	40195	0	40195	10 % General & 5 % SC / ST
2.	2m H - type gully controlled check dam across tholani thodu	No	8000	1	8000	0	8000	
3.	Stream bank stabilization along tholani thodu	RM	1785	356.13	635685	0	635685	
4.	Husk trench	No	167	500	0	83500	83500	
5.	Yard water collection pits	No	400	40	0	16000	16000	
6.	Live fencing	RM	24	2500	0	60000	60000	
7.	Moisture collection pits	m3	26.23	2800	0	73444	73444	
Total					**683880**	**232944**	**916824**	

Valayangod Watershed

Action Plan - Sector – II – Livelihood Activities for Land less/Asset less - II year

Sl No	Name of Activity	unit	Unit cost	Target	IWMP fund	MNREGS / other source / Bank loan	Total
1	seed money for enterprising individuals	0	0	0	44280	0	44280
2	Seed money for SHGs	0	0	0	177120	0	177120
TOTAL					**221400**	**88600**	**310000**

Valayangod Watershed

Action Plan - Sector – II – Livelihood Activities for Land less/Asset less - III year

Sl No	Name of Activity	unit	Unit cost	Target	IWMP fund	MNREGS / other source / Bank loan	Total
1	Seed money for SHGs	0	0	0	88560	0	88560
Funding for Major Lively hood activities							
1	Mushroom cultivation	Nos	36000	1	36000	0	36000
2	Tailoring unit	Nos	50000	2	96840	3160	100000
TOTAL					**221400**	**3160**	**224560**

Funding pattern	
Seed money for enterprising individuals (10% of the allocation)	44280
Seed money for SHGs (60 % of the allocation)	265680
Funding for major livelihood activities (30% of the allocation)	132840
Total allocation	**442800**

Valayangod Watershed

- Action Plan - Sector – III – Production System & Micro Enterprises based livelihood activities - II year

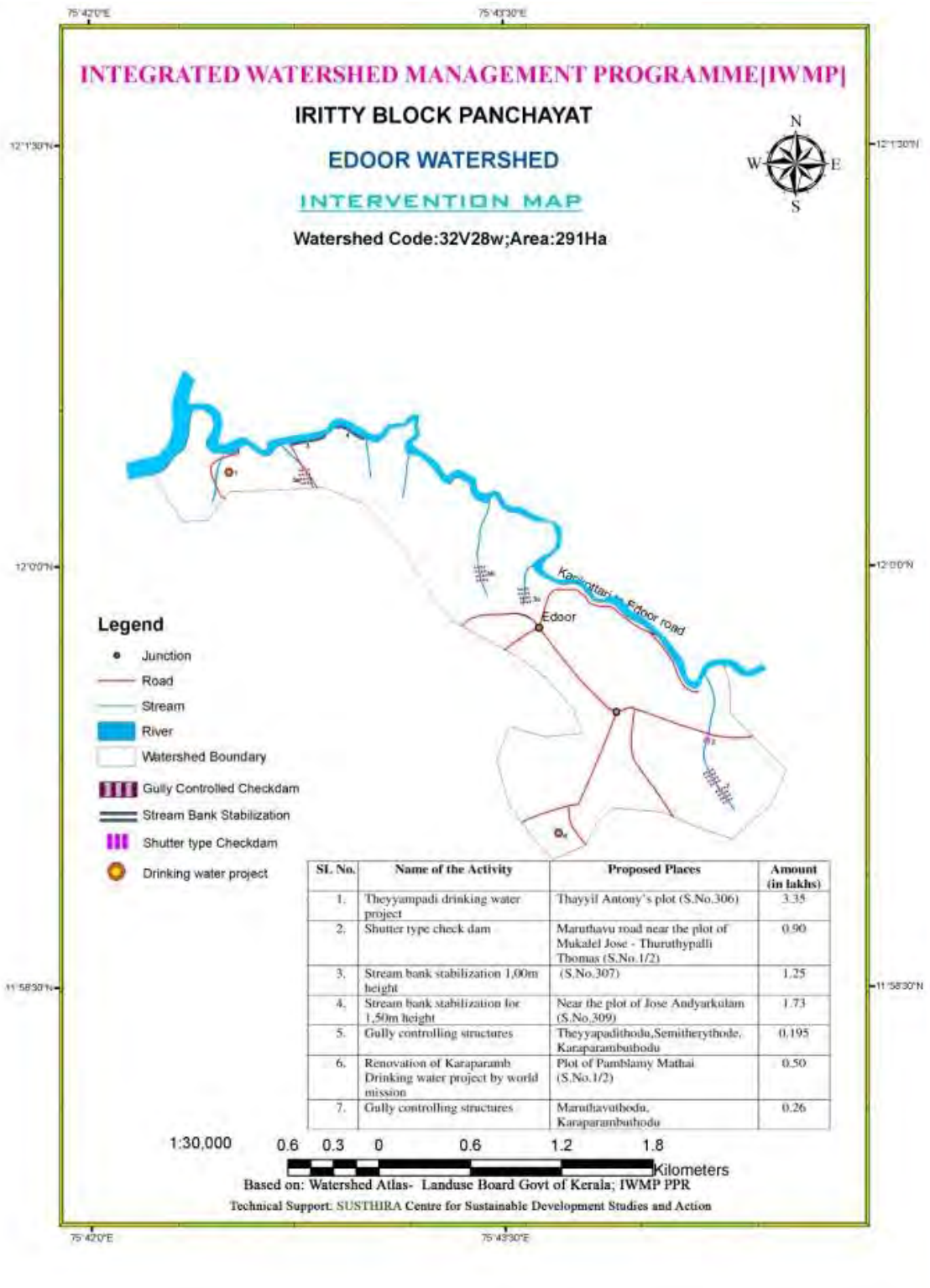
Sl No	**Name of Activity**	**unit**	**Unit cost**	**Target**	**IWMP fund**	**Total**	WDF
1.	Cow rearing	Nos	24000	8	192000	192000	20 % for General & 10 % for SC / ST
2.	Organic vegeatble cultivation	Nos	2000	2	4000	4000	
3.	Banana cultivation	Nos	2500	20	50000	50000	
TOTAL					**246000**	**246000**	

Valayangod Watershed

- Action Plan - Sector – III – Production System & Micro Enterprises based livelihood activities - III year

Sl No	Name of Activity	unit	Unit cost	Target	IWMP fund	Total	WDF
1	Tuber crops	Nos	3000	40	120000	120000	20 % for General & 10 % for SC / ST
2	Organic vegetable cultivation	Nos	2000	63	126000	126000	
TOTAL					**246000**	**246000**	

Total allotment	**492000**



Sl. No.	Name of the Activity	Proposed Places	Amount (in lakhs)
1.	Theyyampadi drinking water project	Thayyil Antony's plot (S.No.306)	3.35
2.	Shutter type check dam	Maruthavu road near the plot of Mukalel Jose - Thuruthypalli Thomas (S.No.1/2)	0.90
3.	Stream bank stabilization 1,00m height	(S.No.307)	1.25
4.	Stream bank stabilization for 1,50m height	Near the plot of Jose Andyarkulam (S.No.309)	1.73
5.	Gully controlling structures	Theyyapadithodu,Semitherythode, Karaparambuthodu	0.195
6.	Renovation of Karaparamb Drinking water project by world mission	Plot of Pamblamy Mathai (S.No.1/2)	0.50
7.	Gully controlling structures	Maruthavuthodu, Karaparambuthodu	0.26

EDOOR WATERSHED

Introduction

Edoor watershed covers a portion of 8th ward of Payam Grama Panchayat and 1st, 11th 17th wards of Aralam Grama Panchayat. Total Area of Edoor watershed is 291 Ha. It encompasses the catchment area of Vempuzha. The watershed has a total length of 2.85 kms and a width of 4.15 Kms. The drainage density of the watershed is 11.147 m/ha. Edoor, Karaparamba, Valyamkode, Maruthav, Theyampadi, Thegola, Muriyankari, Karaparamb Thattu, Nedumunda, Koramukku , Ezhoor and Ayamukku are important locations of the watershed. Edoor watershed is 57 Km away from the District Head Quarters which is accessible by road. Iritty is the nearest bus station of the watershed which is situated around 7 Km away in the west. Kannur railway Station is the nearest railway station of the watershed which is 57 Km away. The Edoor watershed is situated along the Thalassery – Coorg Road. The only township in the watershed is also named Edoor.

Location

Geographically the watershed area lies between the east longitude 75^0 42'30" and 75^0 44'30" and North latitude 12^0 0' 30" and 11^0 59'0".

Boundaries of the watershed

In the north the watershed is bounded by Vempuzha, in the south by Vellorvayal Watershed, in the east by Valayamkodu Watershed and in the west by Valiyapuzha (Aralam River)

Topography & Soil Type

The watershed by its nature is undulating with big and small hillocks. Many locations in the watershed have a slanting nature. The general nature of the watershed is slightly slanting towards west from east, which allows the water flow towards the west to finally join with the main drain Vempuzha. Edoor watershed is a hilly area with slopes and valleys. Geographically 25% of land in the watershed area is of deep slopes, 40% consists of medium slope and remaining is plain. Direction of the slope is west to east. The major portion of the upland filled with gravel mixed with black soil. The depth of the soil is 7.5cm and above. In the mid land of watershed is found with black soil with a depth of 22.5cm and above and in the low land black soil which is suitable for agriculture purpose with a depth of 45cm and above is found.

Water Bodies

Vempuzha forms the main stream of the watershed. This is originating from the Karnataka forest and entering into the watershed at Maruthavu. Through the watershed the stream is flowing about 8.5 Kms with an average width of 9 meters. The average depth of the stream is

5 meters. Vempuzha joins the Valiyapuzha (Aralam River) at Thengola a place in the watershed.

There are 7 sub-streams also flowing through the watershed enriching the main stream. They are Maruthavu Thodu, Theyyampadi thodu, Karaparambathodu, Chimitherithodu, Kuzhiveli thodu, Murigari thodu and Kuppakkunnuthodu. The drainage density of the watershed is 12.02 m/ha. All the streams are perennial in nature.

There are as many as 39 ponds in the watershed. It is astonishing that such a good number of ponds are dug in such a comparatively small watershed with only 291 Ha of land. Out of the 39 Ponds only three are public and all the rest are private. These ponds are also perennial. Besides there are 7 community wells, 7 springs and one community bore wells. The number of private open wells is 256 and that of the bore wells is 23. The wells are said to be perennial.

Land use and Cropping Pattern

94.08% of the total area of the watershed is under crop coverage. Rubber is the main cultivation of the watershed. Coconut, areca nut, Banana, vegetables, tubers and cashew are also cultivated. The water bodies and public places occupy nearly 3.77% of the total geographic area and remaining part is built up. Details of cropping and land use pattern are tabled below: The table is also accompanied by a graphic representation:

Type of land use	Area in Ha	%
Build up Area	9.4	3.23
Water bodies& Public Place	11.0	3.78
Coconut, Areca nut	73.0	25.09
Mixed Crop	65.8	22.61
Cashew	42.2	14.50
Rubber	89.6	30.79
Total	**291**	**100**

Socio-economic situation

There are 339 households in watershed area with a total population of 1627. Out of this 813 are female and 814 are male. There are 8 Scheduled Caste families with 38 members amongst which 21are females and 17 are males. There is only one Scheduled Tribe family with 6 members (3 male and 3 female)

The general socio- economic situation of the watershed community is that of middle class. Most of the people have some sort of agriculture as their main source of income. Average per capita income is Rs. 6000 per month. Rubber tapping is the main occupation of the people.

There are construction workers and land mining workers as well. Less than 10% of the population is employed in government services. Educational condition of the watershed community is satisfactory. However, majority did not opt for higher education.

Christians, Hindus and Muslims are the main religions in the watershed. They live in harmony. It is appreciable that top communal harmony is maintained in the watershed. Majority (around 80%) of the people are belonging to Christian community.

The economic status of almost 85% of the families is satisfactory and they lead a comparatively higher standard of living. 15% of the total families in the watershed are said to be below poverty line (BPL).

Health status of the community is satisfactory. Edoor town is considered to be unhygienic leaving a chance for spreading diseases. Drinking water scarcity in summer is the major problem in this watershed. Transportations facilities in this area are good. Very few houses are not electrified. Sanitation facilities are also good.

Problem Identification

1. **SOIL RELATED ISSUES**

- Soil erosion
- Leveling of land
- Soil pollution

2. **WATER RELATED ISSUES**

- Water scarcity
- Sliding of stream banks
- Water pollution
- Lack of water conservation measures
- Leveling of water sources

3. **AGRO – BIODIVERSITY RELATED ISSUES**

- Shift to mono crop cultivation
- Increased crop diseases
- Compartmentalization of land
- Conversion of paddy field

4. **ANIMAL HUSBANDRY RELATED PROBLEMS**

- Unavailability of good variety of animals
- Lack of interest in animal husbandry
- Poor returns
- Increase cost of fodder and unavailability of fodder grass

5. INCOME GENERATION RELATED PROBLEMS

- Lack of awareness about the alternate / supplementary income generating schemes
- Lack of income generating micro – enterprises in the watershed

ACTIVITIES PLANNED FOR WATERSHED DEVELOPMENT

Natural Resource Management

- **Live fencing**

  The purpose of the proposed activity is soil conservation through reducing soil erosion.

- **Yard water collection pits**

  Water conservation and to improve the level of ground water table is the purpose of the activity.

- **Moisture conservation pits**

  The purpose of the proposed activity is to conserve the rain water in the soil and to improve the ground water table. Also for soil conservation.

- **Husk trench**

  The purpose of the proposed activity is water conservation

- **Theyyampadi drinking water project (EPA)**

  To reduce the drinking water scarcity in Theyyampadi area by improving the drinking water facilities in the area.

- **Source recharge**

  Rain water harvesting and improve the ground water table is the major objective of the proposed activity.

- **Stone bunding**

  Soil and water conservation is the main objective of the proposed activity.

- **Heightening of existing stone bunding**

  Soil and water conservation is the main objective of the proposed activity.

- **Shutter type check dam across Maruthavu road near the plot of Mukalel Jose - Thuruthypalli Thomas**

  To improve the irrigation facilities in Waruthavu area

- **Stream bank stabilization 1,00m height**
- **Stream bank stabilization for 1,50m height**

  To protect the exsting stream from side bank erosion.

- **Centripetal terracing**

The purpose of the proposed activity is to conserve soil and water.

- **2m Width shutter type check dam across Karaparambu thodu near the plot of Kudilil Augastine and Kuzhivelil Antony**

  To improve the irrigation facilities in Karaparambu area .

- **Heightening of existing stone bunding**

  Soil and water conservation is the main objective of the proposed activity.

- **Gully controlling structures**

  Soil and water conservation is the main purpose of the activity.

- **Renovation of Karaparamb Drinking water project by world mission**

  To improve the drinkin water facilities in Karaparambu area.

Production System & Micro Enterprises	**Livelihood Promotion Programmes**
• Organic Farming	• Farm Nursery
• Vermin Composting	• Backyard Poultry
• Vegetable Gardening	• Small holder Dairy Farm
• Bio-gas Plants	• Stall-fed Goat rearing
• Supply of Organic manure and lime	• Rabbit Rearing

Edoor Watershed

Development Project (Area – 291 Ha) - Master plan for Four Years - Funding pattern

Instal lment	Administ ration	Monito-ring	Evalua-tion	Entry Point Activity	Institutio n & Capacity Building	DPR prepar-ation	Watershed Develop-ment Activities	Liveli-hood Activi-ties	Productio n system & Micro Enterprise s	Consoli dation Phase	Total IWMP project fund
1St	69840	6984	6984	139680	104760	34920	335232	0	0	0	698400
%	2	0.2	0.2	4	3	1	9.6	0	0	0	20
2nd	87300	6984	6984	0	34920	0	579672	157140	174600	0	1047600
%	2.5	0.2	0.2	0	1	0	16.6	4.5	5	0	30
3rd	104760	10476	10476	0	34920	0	555228	157140	174600	0	1047600
%	3	0.3	0.3	0	1	0	15.9	4.5	5	0	30
4rd	87300	10476	10476	0	0	0	485388	0	0	104760	698400
%	2.5	0.3	0.3	0	0	0	13.9	0	0	3	20
Total	**349200**	**34920**	**34920**	**139680**	**174600**	**34920**	**1955520**	**314280**	**349200**	**104760**	**3492000**
%	10	1	1	4	5	1	56	9	10	3	100

Edoor Watershed

Action Plan Sector – I – Watershed Development Activities - I year

Sl No.	Name of Activity	Unit	Unit Cost	Target	IWMP Fund	MNREGS/Other Source	Total	WDF
1.	Live fencing	Rm	24	4000	0	96000	96000	10 % General & 5 % SC / ST
2.	yard water collection pits	Nos	400	60	0	24000	24000	
3.	Moisture conservation pits	M^3	26.23	3000	0	78690	78690	
4.	Husk trench	Nos	167	500	0	83500	83500	
5.	Theyyampadi drinking water project (EPA)	Nos	335232	1	335232	0	335232	
Total					**335232**	**282190**	**617422**	

Edoor Watershed

Watershed - Action Plan - Sector – I – Watershed Development Activities II year

Sl No.	Name of Activity	Unit	Unit Cost	Target	IWMP Fund	MNREGS/Other Source	Total	WDF
1.	Source recharge	Nos	12960	10	129600	0	129600	10 % General & 5 % SC / ST
2.	Stone bunding	M^2	80.39	1200	96468	0	96468	
3.	Heightening of existing stone bunding	Nos	80.39	1213.04	97516	0	97516	
4.	Theyyampadi drinking water project (EPA)	Nos	41088	1	41088	0	41088	
5.	Shutter type check dam across Maruthavu road near the plot of Mukalel Jose - Thuruthypalli Thomas	Nos	90000	1	90000	0	90000	
6.	Stream bank stabilization 1,00m height	RM	1250	100	125000	0	125000	
7.	Moisture collection pits	M^3	26.23	3000	0	78690	78690	
8.	Live fencing	RM	24	3000	0	72000	72000	
9.	Centry petal terracing	Nos	29	1000	0	29000	29000	
10.	Yard water collection pits	Nos	400	50	0	20000	20000	
Total					**579672**	**199690**	**779362**	

Edoor Watershed

Watershed - Action Plan - Sector – I – Watershed Development Activities III year

Sl No.	Name of Activity	Unit	Unit Cost	Target	IWMP Fund	MNREGS/Other Source	Total	WDF
1.	2m Width shutter type check dam across Karaparambu thodu near the plot of Kudilil Augastine and Kuzhivelil Antony	Nos	85000	1	85000	0	85000	10 % General & 5 % SC / ST
2.	Stream bank stabilization for 1,50m height	RM	1920	90	172800	0	172800	
3.	Heightening of existing stone bunding	M^2	80.39	900	72351	0	72351	
4.	Source recharging	Nos	12960	10	129600	0	129600	
5.	Stone bunding	M^2	80.39	945.1	75977	0	75977	
6.	Moisture collection pits	M^3	26.23	2000	0	52460	52460	
7.	Centry petal terracing	Nos	29	1000	0	29000	29000	
8.	Live fencing	RM	24	3000	0	72000	72000	
9.	Gully controlling structures	RM	1300	15	19500	0	19500	
Total					**555228**	**153460**	**708688**	

Edoor Watershed

Watershed - Action Plan - Sector – I – Watershed Development Activities IV year

Sl No.	Name of Activity	Unit	Unit Cost	Target	IWMP Fund	MNREGS/Other Source	Total	WDF
1.	Husk trench	No	167	500	0	83500	83500	10 % General & 5 % SC / ST
2.	Live fencing	RM	24	3000	0	72000	72000	
3.	Moisture collection pits	M^3	26.23	2000	0	52460	52460	
4.	Yard water collection pits	No	400	50	0	20000	20000	
5.	Source rechrging	No	12960	20	259200	0	259200	
6.	Renovation of Karaparamb Drinking water project by world mission	Nos	50000	1	50000	0	50000	
7.	Gully controlling structures	RM	1300	20	26000	0	26000	
8.	Stone bunding	m^2	80.39	1868.24	150188	0	150188	
Total					**485388**	**227960**	**713348**	

Edoor Watershed

Action Plan - Sector – II – Livelihood Activities for Land less/Asset less - II year

Sl No	Name of Activity	unit	Unit cost	Target	IWMP fund	MNREGS / other source / Bank loan	Total
1	seed money for enterprising individuals	0	0	0	31428	0	31428
2	Seed money for SHGs	0	0	0	125712	0	125712
TOTAL					**157140**	**0**	**157140**

Edoor Watershed

Action Plan - Sector – II – Livelihood Activities for Land less/Asset less - III year

Sl No	Name of Activity	unit	Unit cost	Target	IWMP fund	MNREGS / other source / Bank loan	Total
1	Seed money for SHGs	0	0	0	62856	0	62856
Funding for Major Lively hood activities							
1	Rabbit rearing	Nos	30000	4	94284	25716	120000
TOTAL					**157140**	**25716**	**182856**

Funding pattern	
Seed money for enterprising individuals (10% of the allocation)	31428
Seed money for SHGs (60 % of the allocation)	188568
Funding for major livelihood activities (30% of the allocation)	94284
Total allocation	**314280**

Edoor Watershed

- Action Plan - Sector – III – Production System & Micro Enterprises based livelihood activities - II year

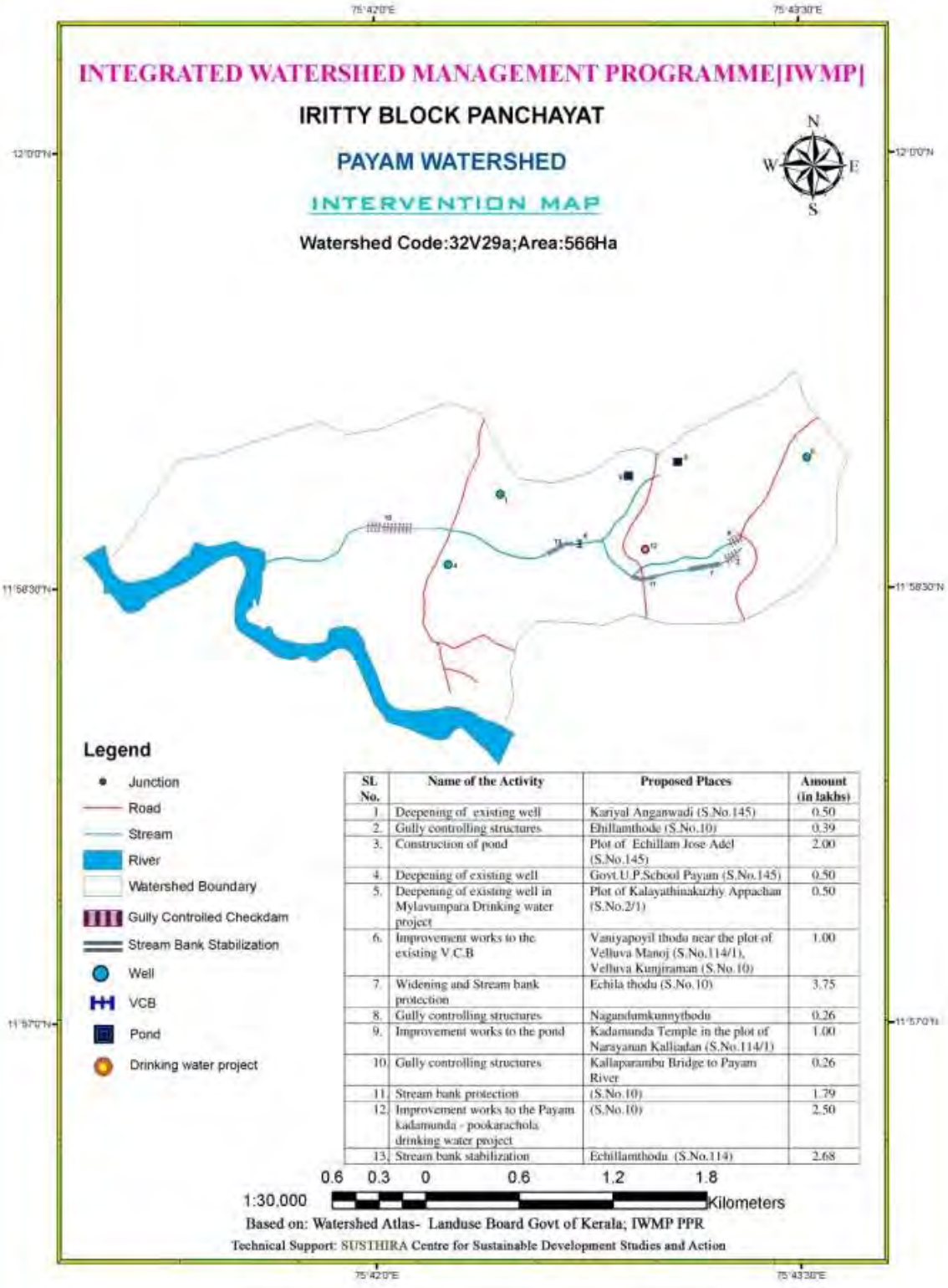
Sl No	Name of Activity	unit	Unit cost	Target	IWMP fund	Total	WDF
1	Biogas plant	Nos	16000	10	160000	160000	20 % for General & 10 % for SC / ST
2	Organic vegetable cultivation	Nos	1825	8	14600	14600	
TOTAL					**174600**	**174600**	

Edoor Watershed

- Action Plan - Sector – III – Production System & Micro Enterprises based livelihood activities - III year

Sl No	Name of Activity	unit	Unit cost	Target	IWMP fund	Total	WDF
1	Cow rearing	Nos	24000	7	168000	168000	20 % for General & 10 % for SC / ST
2	Organic vegetable cultivation	Nos	2200	3	6600	6600	
TOTAL					**174600**	**174600**	

Total allotment	**349200**



SL No.	Name of the Activity	Proposed Places	Amount (in lakhs)
1.	Deepening of existing well	Kariyal Anganwadi (S.No.145)	0.50
2.	Gully controlling structures	Ehillamthode (S.No.10)	0.39
3.	Construction of pond	Plot of Echillam Jose Adel (S.No.145)	2.00
4.	Deepening of existing well	Govt.U.P.School Payam (S.No.145)	0.50
5.	Deepening of existing well in Mylavumpara Drinking water project	Plot of Kalayathinakuzhy Appachan (S.No.2/1)	0.50
6.	Improvement works to the existing V.C.B	Vaniyapoyil thodu near the plot of Velluva Manoj (S.No.114/1), Velluva Kunjiraman (S.No.10)	1.00
7.	Widening and Stream bank protection	Echila thodu (S.No.10)	3.75
8.	Gully controlling structures	Nagandumkunnythodu	0.26
9.	Improvement works to the pond	Kadamunda Temple in the plot of Narayanan Kalliadan (S.No.114/1)	1.00
10.	Gully controlling structures	Kallaparambu Bridge to Payam River	0.26
11.	Stream bank protection	(S.No.10)	1.29
12.	Improvement works to the Payam kadamunda - pookarachola drinking water project	(S.No.10)	2.50
13.	Stream bank stabilization	Echillamthodu (S.No.114)	2.68

PAYAM WATERSHED

Introduction

Payam Watershed covers the portion of IX, X ward of Payam Grama Panchayat and portion of I, XVII ward of Aralam Grama Panchayat and has a total geographic area of 566 Ha. Payam, Kadamunda, Kariyal, Erumathadam, Kalliparambu, Kondambra, etc are the main places coming under the watershed. Payam watershed has a length of 2.15 Kms and a width of 4.55Kms. The drainage density of the watershed is 7.77 m/ha. The watershed is 66 Km away from the District Head Quarters which is accessible by road. Iritty is the nearest bus station of the watershed which is situated around 12 Km away in the west. Kannur railway Station is the nearest railway station of the watershed which is 68 Km away.

Location

Geographically the watershed area lies between the east longitude 75^0 41'0" and 75^0 43'30" and North latitude 11^0 58' 0" and 11^0 59'30".

Boundaries of the watershed: The boundaries of the watershed are tabled below:

North	Aralam GP, Kanhirakkunnu
South	Payam River
East	Aralam Puzha
West	Vattiyara Watershed

Topography & Soil Type

The topography of the watershed comprises of undulating steep slopes and plain lands. Sandy loam, red soil, red soil mixed with pebbles etc. are the commonly seen soil types in the watershed.

Water Bodies

The watershed is formed based on the main stream Eachillam-Payam stream which is originates from Karaparambu and flows around 5 Km through the watershed with a width varies from 1 to 4m and with an average depth of 2.5m before entering into Payam River.

The details of the water bodies are given below:

Type of water bodies	Ponds		Open Wells		Streams
	Public	Private	Public	Private	
Seasonal	0	1	2	90	2
Perennial	1	2	4	253	6
Total	**1**	**3**	**6**	**343**	**8**

Land use and Cropping Pattern

The agriculture is mainly rainfed. Some farmers are making use of the water bodies for irrigation and thus a considerable part have irrigated agriculture also. Rubber, coconut, areca nut; pepper, etc are largely cultivated in the area.

Rubber is the main cultivation of the watershed. Coconut, areca nut, Banana, vegetables, tubers and cashew are also cultivated. 6% of the total geographic area is built up and 12% of the land is occupied by the water bodies. Details of cropping and land use pattern are tabled below: The table is also accompanied by a graphic representation:

Type of land use	Area in Ha	%
Build up Area	46.4	8.20
Water bodies& Public Place	48.4	8.55
Cropped area	471.20	83.25
Total	**566**	**100**

Socio-economic situation

There are 576 households in watershed area out of which 343 are APL and the rest (233) are BPL. The total population is 2199. Out of this 1170 are female and 1029 are male. The total SC Families in the watershed is 8 and of ST families is 32. Majority of the watershed working class community members depends on agriculture and allied activities for their livelihood. Nearly 8% depend on construction sector. There are a few involved in the traditional job market like carpentry and basket weaving. The remaining are among the wage labourers. Generally the watershed community is backward in their socio-economic situation as most of them are daily wagers, tribal and casual labourers. Some are involved in rubber tapping and some in masonry. Most of the families earn a meager income and hence the general living condition of the people is poor.

Christians, Hindus and Muslims are the main religions in the watershed. They live in harmony. It is appreciable that top communal harmony is maintained in the watershed. Majority of the people are belonging to Christian community. The economic status of a few families is satisfactory and they lead a comparatively higher standard of living.

Health status of the community is not so good. The townships in the watershed are slowly getting unhygienic by depositing organic and inorganic waste materials leaving a chance for spreading diseases. Transportations facilities in this area are also need attention. A few houses are yet to be electrified. Sanitation facilities are also need special attention.

Problem Identification

Soil Related Issues

- Poor water storage capacity of the soil and heavy runoff
- Lack of soil conservation measures
- Decreasing Fertility of the Soil
- Reducing soil humus
- Stream Bank Erosion
- Soil Erosion

Water Related Issues

- Severe water scarcity especially in Karadimala, Odakkari, Manuvayal and Athikkalthattu areas
- Stream pollution due to waste disposal

Agriculture Related Issues

- Indiscriminate use of Chemical fertilizers and pesticides
- High production cost and low income in agriculture
- Lesser interest among younger generation in Agriculture
- Spreading of mono crops in the area

Animal Husbandry Related Issues

- Poor animal husbandry practices among the farmers
- Non-availability of dry and green fodder
- Higher cost of factory feeds
- Unexpected animal diseases

ACTIVITIES PLANNED FOR WATERSHED DEVELOPMENT

Natural Resource Management

- **Moisture collection pits**

  The purpose of the proposed activity is to conserve the rain water in the soil and to improve the ground water table. Also for soil conservation.

- **Husk trench**

  The purpose of the proposed activity is water conservation.

- **Stone bunding**

  Soil and water conservation is the main objective of the proposed activity.

- **Yard water collection pits**

  Water conservation and to improve the level of ground water table is the purpose of the activity.
- **Renovation of Kariyal drinking water project (EPA)**

  To ensure adequate drinking water facilities for the people in Kariyal area.
- **Source recharging**

  Rain water harvesting and improve the ground water table is the major objective of the proposed activity.
- **Live fencing**

  The purpose of the proposed activity is soil conservation through reducing soil erosion.
- **Deepening of existing well in Kariyal Anganwadi**

  To improve the drinking water facilities in Kariyal Anganwadi
- **Gully controlling structures**

  Soil and water conservation is the main purpose of the activity.
- **Construction of pond in the plot of Echillam Jose Adel**

  To improve the irrigation facilities is the purpose of the activity.
- **Deepening of existing well in Payam Govt.U.P.School**

  To improve the driking water facilities in Payam Govt. U.P.School.
- **Deepening of existing well in Mylavumpara Drinking water project**

  To improve the driking water facilities in Mylavumpara area.
- **Improvement works to the existing V.C.B across Vaniyapoyil thodu**

  Improved irrigation facilities is the main aim of the proposed activity.
- **Widening and Stream bank protection along Echila thodu**

  To protect the Echilathodu from stream bank protection.
- **Construction of Retaining wall**

  To protect the existing stream from sream bank erosion.
- **Centripetal Terracing**

  The purpose of the proposed activity is to conserve soil and water.
- **Improvement works to the pond near Kadamunda Temple in the plot of Narayanan Kalliadan**

  To improve the irrigation facilities in the area.
- **Improvement works to the Payam Kadamunda - Pookarachola drinking water project**

To improve the present condition of the drinking ater supply system and ensure adequate drinking water for the people in Kadamunda- Pookarachola area.

Production System & Micro Enterprises

- Organic Farming
- Vermin Composting
- Vegetable Gardening
- Bio-gas Plants
- Supply of Organic manure and lime

Livelihood Promotion Programmes

- Farm Nursery
- Backyard Poultry
- Small holder Dairy Farm
- Stall-fed Goat rearing
- Rabbit Rearing

Payam Watershed

Development Project (Area – 566 Ha) - Master plan for Four Years - Funding pattern

Instal lment	Administ ration	Monito-ring	Evalua-tion	Entry Point Activity	Institutio n & Capacity Building	DPR prepar-ation	Watershed Develop-ment Activities	Liveli-hood Activi-ties	Productio n system & Micro Enterprise s	Consoli dation Phase	Total IWMP project fund
1St	135840	13584	13584	271680	203760	67920	652032	0	0	0	1358400
%	2	0.2	0.2	4	3	1	9.6	0	0	0	20
2nd	169800	13584	13584	0	67920	0	1127472	305640	339600	0	2037600
%	2.5	0.2	0.2	0	1	0	16.6	4.5	5	0	30
3rd	203760	20376	20376	0	67920	0	1079928	305640	339600	0	2037600
%	3	0.3	0.3	0	1	0	15.9	4.5	5	0	30
4rd	169800	20376	20376	0	0	0	944088	0	0	203760	1358400
%	2.5	0.3	0.3	0	0	0	13.9	0	0	3	20
Total	**679200**	**67920**	**67920**	**271680**	**339600**	**67920**	**3803520**	**611280**	**679200**	**203760**	**6792000**
%	10	1	1	4	5	1	56	9	10	3	100

Payam Watershed

Action Plan Sector – I – Watershed Development Activities - I year

Sl No.	Name of Activity	Unit	Unit Cost	Target	IWMP Fund	MNREGS/Other Source	Total	WDF
1.	Moisture collection pits	M^3	26.23	3000	0	78690	78690	10 % General & 5 % SC / ST
2.	Husk trench	Nos	167	300	0	50100	50100	
3.	Stone bunding	m^2	80.39	1288.12	103552	0	103552	
4.	Yard water collection pits	Nos	400	100	0	40000	40000	
5.	Renovation of Kariyal drinking water project (EPA)	Nos	280	1	280	0	280	
6.	Source recharging	Nos	12960	20	259200	0	259200	
7.	Live fencing	Rm	24	4000	0	96000	96000	
8.	Deepening of existing well in Kariyal Anganwadi	RM	50000	1	50000	0	50000	
9.	Gully controlling structures	Nos	1300	30	39000	0	39000	
10.	Construction of pond in the plot of Echillam Jose Adel	Nos	200000	1	200000	0	200000	
Total					**652032**	**264790**	**916822**	

Payam Watershed

Watershed - Action Plan - Sector – I – Watershed Development Activities II year

Sl No.	Name of Activity	Unit	Unit Cost	Target	IWMP Fund	MNREGS/Other Source	Total	WDF
1.	Deepening of existing well in Payam Govt.U.P.School	Nos	50000	1	50000	0	50000	10 % General & 5 % SC / ST
2.	Deepening of existing well in Mylavumpara Drinking water project	Nos	50000	1	50000	0	50000	
3.	Source recharge	Nos	12960	15	194400	0	194400	
4.	Improvement works to the existing V.C.B across Vaniyapoyil thodu	No	100000	1	100000	0	100000	
5.	Widening and Stream bank protection along Echila thodu	RM	1250	300	375000	0	375000	
6.	Stone bunding	m2	80.39	1910.34	153572	0	153572	
7.	Gully controlling structures	RM	1300	20	26000	0	26000	
8.	Construction of Retaining wall	RM	1785	100	178500	0	178500	
9.	Centry Petal Terracing	Nos	29	2000	0	58000	58000	
10.	Moisture conservation pit	M3	26.23	5000	0	131150	131150	
11.	Yard water collection pit	Nos	400	100	0	40000	40000	
12.	Live fencing	RM	24	5000	0	120000	120000	
13.	Husk trenching	Nos	167	800	0	133600	133600	
Total					**1127472**	**482750**	**1610222**	

Payam Watershed

Watershed - Action Plan - Sector – I – Watershed Development Activities III year

Sl No.	Name of Activity	Unit	Unit Cost	Target	IWMP Fund	MNREGS/Other Source	Total	WDF
1.	Improvement works to the pond near Kadamunda Temple in the plot of Narayanan Kalliadan	No	100000	1	100000	0	100000	10 % General & 5 % SC / ST
2.	Stone bunding	m2	80.39	1860.78	149588	0	149588	
3.	Source recharging	No	12960	29	375840	0	375840	
4.	Gully controlling structures	RM	1300	20	26000	0	26000	
5.	Stream bank protection with retaining wall	RM	1785	100	178500	0	178500	
6.	Improvement works to the Payam kadamunda - pookarachola drinking water project	No	250000	1	250000	0	250000	
7.	Husk trenching	No	167	1000	0	167000	167000	
8.	Live fencing	RM	24	6000	0	144000	144000	
9.	Moisture conservation pit	M^3	26.23	4000	0	104920	104920	
10.	Yard water collection pit	No	400	100	0	40000	40000	
Total					**1079928**	**455920**	**1535848**	

Payam Watershed

Watershed - Action Plan - Sector – I – Watershed Development Activities IV year

Sl No.	Name of Activity	Unit	Unit Cost	Target	IWMP Fund	MNREGS/Other Source	Total	WDF
1.	Stone bunding	m2	80.39	2770.72	222738	0	222738	10 % General & 5 % SC / ST
2.	Source recharging	No	12960	35	453600	0	453600	
3.	Moisture conservation pit	M3	26.23	3000	0	78690	78690	
4.	Yard water collection pit	No	400	50	0	20000	20000	
5.	Stream bank stabilization	RM	1785	150	267750	0	267750	
6.	Husk trenching	Nos	167	800	0	133600	133600	
7.	Live fencing	RM	24	5500	0	132000	132000	
8.	Centry Petal Terracing	No	29	2000	0	58000	58000	
Total					**944088**	**422290**	**1366378**	

Payam Watershed

Action Plan - Sector – II – Livelihood Activities for Land less/Asset less - II year

Sl No	Name of Activity	unit	Unit cost	Target	IWMP fund	MNREGS / other source / Bank loan	Total
1	seed money for enterprising individuals	0	0	0	61128	0	61128
2	Seed money for SHGs	0	0	0	244512	0	244512
TOTAL					**305640**	**0**	**305640**

Payam Watershed

Action Plan - Sector – II – Livelihood Activities for Land less/Asset less - III year

Sl No	Name of Activity	unit	Unit cost	Target	IWMP fund	MNREGS / other source / Bank loan	Total
1	Seed money for SHGs	0	0	0	122256	0	122256
Funding for Major Lively hood activities							
1	Mini diary farm	Nos	200000	1	183384	16616	200000
TOTAL					**305640**	**16616**	**322256**

Funding pattern	
Seed money for enterprising individuals (10% of the allocation)	61128
Seed money for SHGs (60 % of the allocation)	366768
Funding for major livelihood activities (30% of the allocation)	183384
Total allocation	**611280**

Payam Watershed

Action Plan - Sector – III – Production System & Micro Enterprises based livelihood activities - II year

Sl No	Name of Activity	unit	Unit cost	Target	IWMP fund	Total	WDF
1	Vermi composting	Nos	9000	20	180000	180000	20 % for General & 10 % for SC / ST
2	Goat rearing	Nos	4900	4	19600	19600	
3	Organic vegetable cultivation (10 cents)	Nos	2000	70	140000	140000	
TOTAL					**339600**	**339600**	

Payam Watershed

Action Plan - Sector – III – Production System & Micro Enterprises based livelihood activities - III year

Sl No	Name of Activity	unit	Unit cost	Target	IWMP fund	Total	WDF
1	Biogas plant	Nos	16000	6	96000	96000	20 % for General & 10 % for SC / ST
2	Mushroom cultivation	Nos	30000	2	60000	60000	
3	Organic vegetable cultivation (10 cents)	Nos	2100	16	33600	33600	
4	Banana cultivation	Nos	2500	60	150000	150000	
TOTAL					**339600**	**339600**	

Total allotment	**679200**

Sl. No.	Name of the Activity	Proposed Places	Amount (in lakhs)
1.	Gully controlling structures	Chedikkulam appsithode (S.No.192-218)	0.195
2.	Renovation works for Perumbazhoot purayidakrishi(laying pipe line,motor fittings) irrgation project	Perumbazhoot (185)	0.70
3.	Pond construction	Kalarikkad colony (S.No.165)	1.70
4.	Rain water harvesting tank50000 ltr capacity	Ayisha L.P.School (S.No.210)	1.90
5.	Gully controlling structures	(S.No.185)	0.195
6.	Rain water harvesting tank 50,000 ltr capacity	M.I.M.L.P.School (S.No.94/6)	1.90
7.	Paddy field protection	Mundayadi padashekharam (S.No.224)	2.30
8.	Construction of Rain water harvesting tank 1,000,000ltr capacity	G.H.S.S.Aralam (S.No. 94/6)	2.50
9.	Construction of a Irrigation pond for common purpose	In the plot of C.Kahalid in 15 th ward (S.No.224)	1.85
10.	Construction of well	Parambathakandy anganwadi (S.No.185)	1.15
11.	Stream Bank Protection along keecheri pulayathodu to parambathekandipuzha	(S.No.185)	0.316
12.	Improvement works to the Madayammvayal drinking water project	Madayammvayal (S.No.224)	4.00
13.	Paddy field protection	Koovayil Padashekharam (S.No.191)	3.49

ARALAM WATERSHED

Introduction

Aralam Watershed covers the portions of IX, XII, XIII, XIV, XV & XVI Wards of Aralam Grama Panchayat and has a total geographic area of 615 Ha. The elevation of the watershed is 80 meters. The watershed has a length of 2.55 Kms and a width of 4.7 Kms. The drainage density of the watershed is 2.03 M/ha. Kokkodu, Chedikkulam, Ambalakkandi, Madavayal Kottaram, Koovayal, Parambathekkandi, Memparakunnu, Thodiyam vayal, Vazhakunnu, Perumbhazhassi, Kunnummal, Oppilangadu, Chelavayal, Kannivayal,etc are the main places in the watershed. The watershed is 66 Km away from the District Head Quarters which is accessible by road. Iritty is the nearest bus station of the watershed which is situated around 12 Km away in the west. Kannur railway Station is the nearest railway station of the watershed which is 68 Km away.

Location

Geographically the watershed area lies between the east longitude 75^0 43'0" and 75^0 45'30" and North latitude 11^0 59' 0" and 11^0 57'0".

Boundaries of the watershed: The boundaries of the watershed are tabled below:

North	Vellarvayal watershed
South	Aralam River
East	Edaveli watershed
West	Aralam River

30% of the total geographic area is with large hills, 50% with small slopes and the remaining 20% is plains. The upper reach likes Membakkunnu has red soil and red soil mixed with gravels is seen. In the middle portion like Keechery and Perumpazhassi red soil are the commonly found soil types in the area of watershed.

Water Bodies

The main stream that gives shape to the watershed is Parambathkandi thodu. The stream is originating from Vembarakkunnu and flowing through the watershed for about 2.4. Kms with a width ranging from 1 to 2.5 meters. The average depth of the stream is 1.5 meters. Other streams are Aafis thodu, Keecherithodu, Madamvayal thodu, Mankunnathu Ooralivathukkal

Thodu, Edakkunnu Neerchal, Perumpazhassithodu, Ochoila Neerchal, Dhanakkal Stream and Chelavayal Thodu. The main stream joins Aralam River.

The other water bodies are as follows:

Ponds: 31, Bore-wells: 3 (Public), Open Wells Private: 1118

Land use and Cropping Pattern

The agriculture is mainly rainfed. Some farmers are making use of the water bodies for irrigation and thus a considerable part have irrigated agriculture also. Rubber, coconut, areca nut; pepper, etc are largely cultivated in the area.

Rubber is the main cultivation of the watershed. Coconut, areca nut, Banana, vegetables, tubers and cashew are also cultivated. 6% of the total geographic area is built up and 12% of the land is occupied by the water bodies. Details of cropping and land use pattern are tabled below: The table is also accompanied by a graphic representation:

Type of land use	Area in Ha	%
Build up Area	36.90	6
Water bodies& Public Place	73.80	12
Cropped area	504.30	82

Total	**615**	**100**

Socio-economic situation

There are 1199 households in watershed area. The total population is 5330. Out of this 2729 are female and 2601 are male. There are 61 ST households and 13 SC households. The total No. of ST population is 440 out of which 176 males and 264 females. Among the SC the total population is 78. There are 37 males and 41 females. The number of APL families and BPL families are 668 and 531 respectively. Majority of the watershed working class community members (75%) depends on agriculture and allied activities for their livelihood. Nearly 10% depend on construction sector. There are a few involved in the traditional job market like carpentry and tree climbers. The remaining are among the wage labourers.

Generally the watershed community is backward in their socio-economic situation as most of them are daily wagers, tribal and casual labourers. Some are involved in laterite stone cutting. Whatever may be the sectors they are working, most of the families earn a meager income and hence the general living condition of the people is pathetic. There are even people without house, sanitation facilities and drinking water facilities. The main reason is that the area is remote and the people are poorly educated.

Christians, Hindus and Muslims are the main religions in the watershed. They live in harmony. It is appreciable that top communal harmony is maintained in the watershed. Majority (around 80%) of the people are belonging to Christian community.

The economic status of a few families is satisfactory and they lead a comparatively higher standard of living. Out of the 1130 families in the watershed around 460 (40.71%) are below poverty line.

Health status of the community is not good. The township is slowly getting unhygienic leaving a chance for spreading diseases. Drinking water scarcity in summer is another important problem in this watershed. Transportations facilities in this area are also need attention. Few houses are yet to be electrified. Sanitation facilities are also need special attention.

Problem Identification

- Heavy soil erosion
- Stream bank erosion
- Sand Mining
- Leveling of paddy fields
- Overflowing of the streams
- Water scarcity
- Lack of conservation measures
- Crop Diseases
- Poor marketing facilities within the watershed
- Poor animal husbandry practices
- Unavailability of green and dry fodder

ACTIVITIES PLANNED FOR WATERSHED DEVELOPMENT

Natural Resource Management

- Stone bunding

  Soil and water conservation is the main objective of the proposed activity.
- Centripetal Terracing

  The purpose of the proposed activity is to conserve soil and water.
- **Moisture conservation pit**

  The purpose of the proposed activity is to conserve the rain water in the soil and to improve the ground water table. Also for soil conservation.

- **Yard water collection pit**

  Water conservation and to improve the level of ground water table is the purpose of the activity.
- **Live fencing**

  The purpose of the proposed activity is soil conservation through reducing soil erosion.
- **Source recharging**

  Rain water harvesting and improve the ground water table is the major objective of the proposed activity.
- **Husk trench**

  The purpose of the proposed activity is water conservation.
- **Gully controlling structures**

  Soil and water conservation is the main purpose of the activity.
- **Renovation works for Perumbazhassi Purayidakrishi(laying pipe line, motor fittings) irrigation project**

  To improve the irrigation facilities of Perumbazhasi Purayidakrishi
- **Pond construction in Kalarikkad colony**

  To improve the irrigation facilities in Kalarikkad colony.
- **Rain water harvesting tank in Ayisha L.P.School,50000 ltr capacity**

  To reduce the water scarcity in Ayish L.P.School by constructing RWH tank.
- **Rain water harvesting tank in M. I. M. L. P. School 50,000 ltr capacity**

  To reduce the water scarcity in M. I. M. L. P. School by constructing RWH tank.
- **Paddy field protection of Mundayadi padashekharam**

  To protect the agricultural field form flood.
- **Construction of Rain water harvesting tank in G.H.S.S.Aralam,1,000,000ltr capacity**

  To reduce the water scarcity in G.H.S.S.Aralam by constructing RWH tank.
- **Construction of an Irrigation pond for common purpose in the plot of C. Kahalid in 15th ward**

  To improve the irrigation facilities in 15th ward.
- **Construction of well in Parambathakandy anganwadi**

  To reduce the intencity of water scarcity in Parambathkandy anganwadi.
- **Stream bank protection below Chedikalam - Veerpadu culvert**

To protect the existing stream.

- **Stream bank protection along keecheri palayad thodu to parambathekandi puzha**

  To protect keecheri palayad thodu from stream bank erosion.

- **Improvement works to the Madayamvayal drinking water project**

  To improve the drinking water facilities in Madayamvayal area.

- **Paddy field protection for Koovayil Padashekharam**

  To protect Koovayil padasekharam from flood.

Production System & Micro Enterprises	**Livelihood Promotion Programmes**
• Organic Farming	• Farm Nursery
• Vermin Composting	• Backyard Poultry
• Vegetable Gardening	• Small holder Dairy Farm
• Bio-gas Plants	• Stall-fed Goat rearing
• Supply of Organic manure and lime	• Rabbit Rearing

Aralam Watershed

Development Project (Area – 615 Ha) - Master plan for Four Years - Funding pattern

Instal lment	Administ ration	Monito-ring	Evalua-tion	Entry Point Activity	Institutio n & Capacity Building	DPR prepar-ation	Watershed Develop-ment Activities	Liveli-hood Activi-ties	Productio n system & Micro Enterprise s	Consoli dation Phase	Total IWMP project fund
1St	147600	14760	14760	295200	221400	73800	708480	0	0	0	1476000
%	2	0.2	0.2	4	3	1	9.6	0	0	0	20
2nd	184500	14760	14760	0	73800	0	1225080	332100	369000	0	2214000
%	2.5	0.2	0.2	0	1	0	16.6	4.5	5	0	30
3rd	221400	22140	22140	0	73800	0	1173420	332100	369000	0	2214000
%	3	0.3	0.3	0	1	0	15.9	4.5	5	0	30
4rd	184500	22140	22140	0	0	0	1025820	0	0	221400	1476000
%	2.5	0.3	0.3	0	0	0	13.9	0	0	3	20
Total	**738000**	**73800**	**73800**	**295200**	**369000**	**73800**	**4132800**	**664200**	**738000**	**221400**	**7380000**
%	10	1	1	4	5	1	56	9	10	3	100

Aralam Watershed

Action Plan Sector – I – Watershed Development Activities - I year

Sl No.	Name of Activity	Unit	Unit Cost	Target	IWMP Fund	MNREGS/Other Source	Total	WDF
1.	Stone bunding	m^2	80.39	1573.58	126500	0	126500	10 % General & 5 % SC / ST
2.	Centripetal Terracing	Nos	29	2000	0	58000	58000	
3.	Moisture conservation pit	M3	26.23	3000	0	78690	78690	
4.	Yard water collection pit	Nos	400	50	0	20000	20000	
5.	Live fencing	RM	24	4000	0	96000	96000	
6.	Source recharging (EPA)	Nos	2880	1	2880	0	2880	
7.	Source recharging	Nos	12960	10	129600	0	129600	
8.	Gully controlling structures	RM	1300	15	19500	0	19500	
9.	Renovation works for Perumbazhassi purayidakrishi(laying pipe line,motor fittings) irigation project	Nos	70000	1	70000	0	70000	
10.	Pond construction in Kalarikkad colony	Nos	170000	1	170000	0	170000	
11.	Rain water harvesting tank in Ayisha L.P.School,50000 ltr capacity	Nos	190000	1	190000	0	190000	
Total					**708480**	**252690**	**961170**	

Aralam Watershed

Watershed - Action Plan - Sector – I – Watershed Development Activities II year

Sl No.	Name of Activity	Unit	Unit Cost	Target	IWMP Fund	MNREGS/Other Source	Total	WDF
1.	Centripetal Terracing	Nos	29	2000	0	58000	58000	10 % General & 5 % SC / ST
2.	Moisture conservation pit	M3	26.23	4000	0	104920	104920	
3.	stone bunding	m2	80.39	1318.32	105980	0	105980	
4.	Yard water collection pit	No	400	100	0	40000	40000	
5.	Husk trench	No	167	1000	0	167000	167000	
6.	Live fencing	RM	24	3000	0	72000	72000	
7.	Source recharging	Nos	12960	10	129600	0	129600	
8.	Gully controlling structures	Nos	1300	15	19500	0	19500	
9.	Rain water harvesting tank in M.I.M.L.P.School 50,000 ltr capacity	Nos	190000	1	190000	0	190000	
10.	Paddy field protection of Mundayadi padashekharam	RM	920	250	230000	0	230000	
11.	Construction of Rain water harvesting tank in G.H.S.S.Aralam,1,000,000ltr capacity	Nos	250000	1	250000	0	250000	
12.	Construction of a Irrigation pond for common purpose in the plot of C.Kahalid in 15 th ward	Nos	185000	1	185000	0	185000	
13.	Construction of well in Parambathakandy anganwadi	Nos	115000	1	115000	0	115000	
Total					**1225080**	**441920**	**1667000**	

Aralam Watershed

Watershed - Action Plan - Sector – I – Watershed Development Activities III year

Sl No.	Name of Activity	Unit	Unit Cost	Target	IWMP Fund	MNREGS/Other Source	Total	WDF
1.	Stream bank protection below Chedikalam - Veerpadu culvert	RM	1250	50	62500	0	62500	10 % General & 5 % SC / ST
2.	stream bank protection along keecheri palayad thodu to parambathekandi puzha	RM	1785	521.9578	931695	0	931695	
3.	Stone bunding	m2	80.39	2229.45	179225	0	179225	
4.	Centry Petal Terracing	No	29	2000	0	58000	58000	
5.	Moisture conservation pit	M^3	26.23	4000	0	104920	104920	
6.	Live fencing	RM	24	3000	0	72000	72000	
7.	Husk trench	No	167	1000	0	167000	167000	
Total					**1173420**	**401920**	**1575340**	

Aralam Watershed

Watershed - Action Plan - Sector – I – Watershed Development Activities IV year

Sl No.	Name of Activity	Unit	Unit Cost	Target	IWMP Fund	MNREGS/Other Source	Total	WDF
1.	Improvement works to the Madayamvayal drinking water project	Nos	400000	1	400000	0	400000	10 % General & 5 % SC / ST
2.	Paddy field protection for Koovayil Padashekharam	m2	2050	170	348500	0	348500	
3.	Source recharging	No	12960	10	129600	0	129600	
4.	Stone bunding	No	80.39	1837.54	147720	0	147720	
5.	Live fencing	No	24	7000	0	168000	168000	
6.	Moisture conservation pits	Nos	26.23	4000	0	104920	104920	
7.	Centry Petal Terracing	Nos	29	3000	0	87000	87000	
8.	Husk trench	Nos	167	1000	0	167000	167000	
Total					**1025820**	**526920**	**1552740**	

Aralam Watershed

Action Plan - Sector – II – Livelihood Activities for Land less/Asset less - II year

Sl No	Name of Activity	unit	Unit cost	Target	IWMP fund	MNREGS / other source / Bank loan	Total
1	seed money for enterprising individuals	0	0	0	66420	0	66420
1	Seed money for SHGs	0	0	0	265680	0	265680
TOTAL					**332100**	**0**	**332100**

Aralam Watershed

Action Plan - Sector – II – Livelihood Activities for Land less/Asset less - III year

Sl No	Name of Activity	unit	Unit cost	Target	IWMP fund	MNREGS / other source / Bank loan	Total
1	Seed money for SHGs	0	0	0	132840	0	132840
Funding for Major Lively hood activities							
1	Tailoring unit	Nos	125000	2	199260	50740	250000
TOTAL					**332100**	**50740**	**382840**

Funding pattern	
Seed money for enterprising individuals (10% of the allocation)	66420
Seed money for SHGs (60 % of the allocation)	398520
Funding for major livelihood activities (30% of the allocation)	199260
Total allocation	**664200**

Aralam Watershed

Action Plan - Sector – III – Production System & Micro Enterprises based livelihood activities - II year

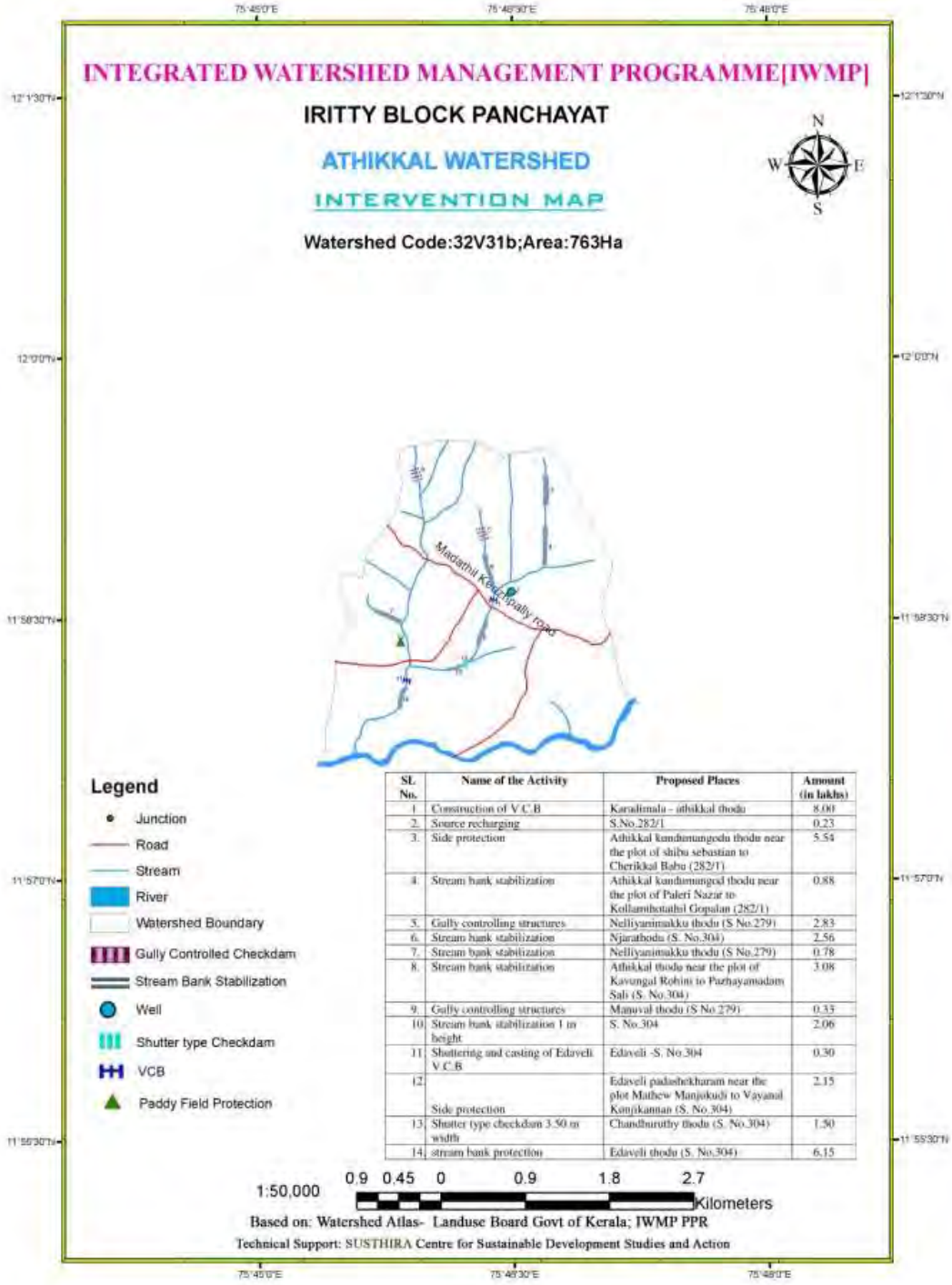
Sl No	Name of Activity	unit	Unit cost	Target	IWMP fund	Total	WDF
1	Organic fertilizer distribution	1800/100kg	1800	100	180000	180000	20 % for General & 10 % for SC / ST
2	Banana cultivation	Nos	3000	63	189000	189000	
TOTAL					**369000**	**369000**	

Aralam Watershed

Action Plan - Sector – III – Production System & Micro Enterprises based livelihood activities - III year

Sl No	Name of Activity	unit	Unit cost	Target	IWMP fund	Total	WDF
1	Banana cultivation	Nos	3000	1	**3000**	**3000**	20 % for General & 10 % for SC / ST
2	Vermi composting	Nos	9000	13	117000	117000	
3	Bee keeping	Nos	11000	9	99000	99000	
4	Rabbit rearing	Nos	30000	5	150000	150000	
TOTAL					**369000**	**369000**	

Total allotment	**738000**



SL No.	Name of the Activity	Proposed Places	Amount (in lakhs)
1.	Construction of V.C.B	Karadimalu - athikkal thodu	8.00
2.	Source recharging	S.No.282/1	0.23
3.	Side protection	Athikkal kandumangodu thodu near the plot of shibu sebastian to Cherikkal Babu (282/1)	5.54
4.	Stream bank stabilization	Athikkal kandumangod thodu near the plot of Paleri Nazar to Kollamthottathil Gopalan (282/1)	0.88
5.	Gully controlling structures	Nelliyanimakku thodu (S No.279)	2.83
6.	Stream bank stabilization	Njarathodu (S. No.304)	2.56
7.	Stream bank stabilization	Nelliyanimakku thodu (S No.279)	0.78
8.	Stream bank stabilization	Athikkal thodu near the plot of Kavungal Rohini to Puzhayamadam Sali (S. No.304)	3.08
9.	Gully controlling structures	Manuval thodu (S No.279)	0.35
10.	Stream bank stabilization 1 m height	S. No.304	2.06
11.	Shuttering and casting of Edaveli V.C.B	Edaveli -S. No.304	0.30
12.	Side protection	Edaveli padashekharam near the plot Mathew Manjakudi to Vayanal Konjikannan (S. No.304)	2.15
13.	Shutter type checkdam 3.50 m width	Chandhuruthy thodu (S. No.304)	1.50
14.	stream bank protection	Edaveli thodu (S. No.304)	6.15

ATHIKKAL WATERSHED

Introduction

In fact Athikkal watershed is a combination of two micro watersheds namely Edavely and Keezhppalli. The watershed consists of the parts of 3rd, 7th and 8th wards of Aralam Grama Panchayat and has a total geographic area of 763 Ha. This forms the largest watershed among all the other watersheds taken for treatment under IWMP. Edaveli, Velimanam, Kulanjangadu, Vattapparambu, Mundakan, Mangodu, etc. are the important places in the watershed. The watershed has a length of 3.35 Kms and a width of 3.2 Kms. The drainage density of the watershed is 18.55 m/ha. The nearest railway station is Thalassery & Kannur which is accessible through Road.

Location

Geographically the watershed area lies between the east longitude 75^0 45'0" and 75^0 47'30" and North latitude 11^0 59' 30" and 11^0 57'30" with an average elevation of 200 meters.

Boundaries of the watershed

The watershed is bounded in its north by Karadimala and in the south by Kakkuva River. Manjodu Watershed forms the eastern boundary of the watershed while the west is bounded by Aralam Watershed.

Topography & Soil Type

The topography of the watershed approximately shows 25% slopes and 75% plains. Karadimala and Veerpadu is the highest portion of the watershed. Karadimala is slanting from north towards south and Veerpadu is slanting from west to east. Black soil is observed in the top portion of the watershed and in the midland portion red soil mixed with pebbles. Red soil is observed in the lower portions of the watershed.

Water Bodies

The main stream that gives shape to the watershed is Athithodu which is originating from Karadimala.The stream flows about 8 kms through the watershed with average width varying from 1.5 meters 7 meters and then entering into Aralam River. The average depth of the watershed is 2.8 meters.

There are 11 more sub-streams in the watershed flowing through different locations and at different length, width and depth. All these streams are enriching the main stream and keeping the watershed wet and with humus.

The details of the water bodies are given below:

Type of water bodies	Ponds		Open Wells		Streams
	Public	Private	Public	Private	
Seasonal	2	0	2	0	2
Perennial	2	4	0	0	6
Total	**4**	**4**	**1**	**0**	**8**

Land use and Cropping Pattern

About 70% of the total geographic area of the watershed is under crops. 9 Ha of land is left barren which is cultivable. The water bodies occupy 5% of the total area and remaining part is built up area. Details of cropping and land use pattern are tabled below: The table is also accompanied by a graphic representation:

Crops	Area in Ha	% of the Area	Productivity
Coconut	77.52	10.16	43046 Nos.
Areca nut	69.66	9.13	110.28
Rubber	380.89	49.92	474.09
Cashew nut	51.58	6.76	19.0
Pepper	23.81	3.12	81.78
Banana	63.48	8.32	49.70
Vegetables	10.15	1.33	18.49
Tuber Crops	6.64	0.87	-
Water Bodies	38.91	5.1	-
Cultivable Waste	9	1.18	
Built Up Area	31.36	4.11	-
Total	**763**	**100**	**-**

Socio-economic situation

There are 1036 households in watershed area. The total population is 4432. Out of this 2163 are female and 2269 are male. SC families are 58 and ST is 78. The number of APL and BPL families is 601 and 435 respectively. Majority of the watershed working class community members (75%) depends on agriculture and allied activities for their livelihood. Nearly 10% depend on construction sector. There are a few involved in the traditional job market like carpentry and tree climbers. The remaining are among the wage labourers.

Generally the watershed community is backward in their socio-economic situation. There may be several reasons for the situation. The main reason is that the area is remote and the

people are poorly educated. They are interested in their world of agriculture and employment that demand higher physical interventions. Most of the people have some sort of agriculture as their main source of income. Average per capita income is Rs. 6000 per month.

Christians, Hindus and Muslims are the main religions in the watershed. They live in harmony. It is appreciable that top communal harmony is maintained in the watershed. Majority (around 80%) of the people are belonging to Christian community.

The economic status of a few families is satisfactory and they lead a comparatively higher standard of living. Out of the 102 families in the watershed around 49 (48.04%) are below poverty line.

Health status of the community is satisfactory. Endomkari Township and other townships are slowly contributes to its unhygienic condition leaving a chance for spreading diseases. Drinking water scarcity in summer is one of the problems in this watershed. Transportations facilities in this area are good. Very few houses at Ayamkuzhi and Pallikkunnu are not electrified. Sanitation facilities are also need special attention.

Problems identified in the watershed

Soil Related Issues

- Poor water storage capacity of the soil and heavy runoff
- Lack of soil conservation measures
- Decreasing Fertility of the Soil
- Reducing soil humus
- Stream Bank Erosion
- Soil Erosion

Water Related Issues

- Severe water scarcity
- Stream pollution due to waste disposal

Agriculture Related Issues

- Indiscriminate use of Chemical fertilizers and pesticides
- High production cost and low income in agriculture
- Lesser interest among younger generation in Agriculture
- Spreading of mono crops in the area

Animal Husbandry Related Issues

- Poor animal husbandry practices among the farmers
- Non-availability of dry and green fodder
- Higher cost of factory feeds
- Unexpected animal diseases

Activities Planned for Watershed Development

Natural Resource Management

- **Live fencing**

  The purpose of the proposed activity is soil conservation through reducing soil erosion.
- **Moisture conservation pits**

  The purpose of the proposed activity is to conserve the rain water in the soil and to improve the ground water table. Also for soil conservation.
- **Centripetal Terracing**

  The purpose of the proposed activity is to conserve soil and water.
- **Husk trench**

  The purpose of the proposed activity is water conservation.
- **Stone bunding**

  Soil and water conservation is the main objective of the proposed activity.
- **Yard water collection pits**

  Water conservation and to improve the level of ground water table is the purpose of the activity.
- Source recharging

  Rain water harvesting and improve the ground water table is the major objective of the proposed activity.
- **Construction of V.C.B across Karadimala - athikkal thodu**

  To improve the irrigation facilities in Karadimala, Athikkal area.
- **Athikkal kundumangodu thodu side protection near the plot of shibu sebastian to Cherikkal Babu, near the plot of Paleri Nazar to Kollamthotathil Gopalan**

  To protect Kundumangoduthodu from stream bank erosion.
- **Heightening of existing stone bunding**

  Soil and water conservation is the main objective of the proposed activity.

- **Gully controlling structures across Nelliyanimukku thodu**

  Soil and water conservation is the main purpose of the activity.
- **Stream bank stabilization along Nellanimukku thodu**
- **Stream bank stabilization along Njarathodu**
- **Stream bank stabilization along Athikkal thodu near the plot of Kavungal Rohini to Pazhayamadam Sali**

  To protect the above said streams from stream bank erosion.
- **Gully controlling structures in Manuval thodu**

  Soil and water conservation is the main purpose of the activity.
- **Shuttering and casting of Edaveli V.C.B**

  To improve the irrigation facilities in edaveli area.
- **Side protection of Edaveli padashekharam near the plot Mathew Manjukudi to Vayanal Kunjikannan**

  To protect Edaveli padasekharam from flood

Production System & Micro Enterprises

- Organic Farming
- Vermin Composting
- Vegetable Gardening
- Bio-gas Plants
- Supply of Organic manure and lime

Livelihood Promotion Programmes

- Farm Nursery
- Backyard Poultry
- Small holder Dairy Farm
- Stall-fed Goat rearing
- Rabbit Rearing

Athikkal Watershed

Development Project (Area – 763 Ha) - Master plan for Four Years - Funding pattern

Instal lment	Administ ration	Monito-ring	Evalua-tion	Entry Point Activity	Institutio n & Capacity Building	DPR prepar-ation	Watershed Develop-ment Activities	Liveli-hood Activi-ties	Productio n system & Micro Enterprise s	Consoli dation Phase	Total IWMP project fund
1St	183120	18312	18312	366240	274680	91560	878976	0	0	0	1831200
%	2	0.2	0.2	4	3	1	9.6	0	0	0	20
2nd	228900	18312	18312	0	91560	0	1519896	412020	457800	0	2746800
%	2.5	0.2	0.2	0	1	0	16.6	4.5	5	0	30
3rd	274680	27468	27468	0	91560	0	1455804	412020	457800	0	2746800
%	3	0.3	0.3	0	1	0	15.9	4.5	5	0	30
4rd	228900	27468	27468	0	0	0	1272684	0	0	274680	1831200
%	2.5	0.3	0.3	0	0	0	13.9	0	0	3	20
Total	**915600**	**91560**	**91560**	**366240**	**457800**	**91560**	**5127360**	**824040**	**915600**	**274680**	**9156000**
%	10	1	1	4	5	1	56	9	10	3	100

Athikkal Watershed

Action Plan Sector – I – Watershed Development Activities - I year

Sl No.	Name of Activity	Unit	Unit Cost	Target	IWMP Fund	MNREGS/Other Source	Total	WDF
1.	Live fencing	M3	24	3000	0	72000	72000	10 % General & 5 % SC / ST
2.	Moisture conservation pits	Nos	26.23	3000	0	78690	78690	
3.	Centry Petal Terracing	Nos	29	700	0	20300	20300	
4.	Husk trench	RM	167	500	0	83500	83500	
5.	Stone bunding	Nos	80.39	701.78	56416	0	56416	
6.	Construction of V.C.B across Karadimala - athikkal thodu	m^2	800000	1	800000	0	800000	
7.	Source recharging (EPA)	Nos	22560	1	22560	0	22560	
Total					**878976**	**254490**	**1133466**	

Athikkal Watershed

Watershed - Action Plan - Sector – I – Watershed Development Activities II year

Sl No.	Name of Activity	Unit	Unit Cost	Target	IWMP Fund	MNREGS/Other Source	Total	WDF
1.	Athikkal kundumangodu thodu side protection near the plot of shibu sebastian to Cherikkal Babu	RM	2050	270	553500	0	553500	10 % General & 5 % SC / ST
2.	Stream bank stabilization of Athikkal kundumangod thodu near the plot of Paleri Nazar to Kollamthotathil Gopalan	RM	1250	70	87500	0	87500	
3.	Stone bunding	m2	80.39	2500	200975	0	200975	
4.	Source recharging	Nos	12960	15	194400	0	194400	
5.	Heightening of existing stone bunding	m2	80.39	2500.57	201021	0	201021	
6.	Gully controlling structures across Nelliyanimukku thodu	RM	1300	25	32500	0	32500	
7.	Stream bank stabilization along Nellanimukku thodu	RM	1250	200	250000	0	250000	
8.	Moisture conservation pits	M^3	26.23	3000	0	78690	78690	
9.	Centry Petal Terracing	Nos	29	1000	0	29000	29000	
10.	Husk trench	Nos	167	600	0	100200	100200	
11.	Yard water collection pits	Nos	400	50	0	20000	20000	
12.	Live fencing	RM	24	3000	0	72000	72000	
Total					**1519896**	**299890**	**1819786**	

Athikkal Watershed

Watershed - Action Plan - Sector – I – Watershed Development Activities III year

Sl No.	Name of Activity	Unit	Unit Cost	Target	IWMP Fund	MNREGS/Other Source	Total	WDF
1.	Live fencing	RM	24	4000	0	96000	96000	10 % General & 5 % SC / ST
2.	Centry Petal Terracing	No	29	500	0	14500	14500	
3.	Husk trench	No	167	700	0	116900	116900	
4.	Yard water collection pits	No	400	50	0	20000	20000	
5.	Stream bank stabilization along Njarathodu	RM	2050	125	256250	0	256250	
6.	Stone bunding	m2	80.39	3079.97	247599	0	247599	
7.	Source recharging	No	12960	22	285120	0	285120	
8.	Heightening of existing stone bunding	m2	80.39	1500	120585	0	120585	
9.	Stream bank stabilization along Athikkal thodu near the plot of Kavungal Rohini to Pazhayamadam Sali	RM	2050	150	307500	0	307500	
10.	Gully controlling structures in Manuval thodu	RM	1300	25	32500	0	32500	
11.	Stream bank stabilization 1 m height	RM	1250	165	206250	0	206250	
Total					**1455804**	**247400**	**1703204**	

Athikkal Watershed

Watershed - Action Plan - Sector – I – Watershed Development Activities IV year

Sl No.	Name of Activity	Unit	Unit Cost	Target	IWMP Fund	MNREGS/Other Source	Total	WDF
1.	Moisture conservation pits	m3	26.33	3000	0	78990	78990	10 % General & 5 % SC / ST
2.	Centry Petal Terracing	No	29	500	0	14500	14500	
3.	Live fencing	RM	24	4000	0	96000	96000	
4.	Husk trench	No	167	600	0	100200	100200	
5.	Shuttering and casting of Edaveli V.C.B	No	30000	1	30000	0	30000	
6.	Side protection of Edaveli padashekharam near the plot Mathew Manjukudi to Vayanal Kunjikannan	RM	2050	105	215250	0	215250	
7.	Shutter type checkdam across Chandhuruthy thodu 3.50 m width	No	150000	1	150000	0	150000	
8.	stream bank protectlon along Edaveli thodu	Rm	2050	300	615000	0	615000	
9.	Stone bunding	m2	80.39	1329.94	106914	0	106914	
10.	Source recharging	No	12960	12	155520	0	155520	
Total					**1272684**	**289690**	**1562374**	

Athikkal Watershed

Action Plan - Sector – II – Livelihood Activities for Land less/Asset less - II year

Sl No	Name of Activity	unit	Unit cost	Target	IWMP fund	MNREGS / other source / Bank loan	Total
1	seed money for enterprising individuals	0	0	0	82404	0	82404
2	Seed money for SHGs	0	0	0	329616	0	329616
TOTAL					**412020**	**0**	**412020**

Athikkal Watershed

Action Plan - Sector – II – Livelihood Activities for Land less/Asset less - III year

Sl No	Name of Activity	unit	Unit cost	Target	IWMP fund	MNREGS / other source / Bank loan	Total
1	Seed money for SHGs	0	0	0	164808	0	164808
Funding for Major Lively hood activities							
1	Tailoring unit	Nos	85000	2	170000	0	170000
2	Goat village	Nos	12000	7	77212	6788	84000
TOTAL					**412020**	**6788**	**418808**

Funding pattern	
Seed money for enterprising individuals (10% of the allocation)	82404
Seed money for SHGs (60 % of the allocation)	494424
Funding for major livelihood activities (30% of the allocation)	247212
Total allocation	**824040**

Athikkal Watershed

Action Plan - Sector – III – Production System & Micro Enterprises based livelihood activities - II year

Sl No	Name of Activity	unit	Unit cost	Target	IWMP fund	Total	WDF
1	Banana cultivation	Nos	2500	75	187500	187500	20 % for General & 10 % for SC / ST
2	Pappata making unit	Nos	49000	1	49000	49000	
3	Rabbit rearing	Nos	30000	5	150000	150000	
4	Vegetable cultivation	Nos	2300	31	71300	71300	
TOTAL					**457800**	**457800**	

Athikkal Watershed

Action Plan - Sector – III – Production System & Micro Enterprises based livelihood activities - III year

Sl No	Name of Activity	unit	Unit cost	Target	IWMP fund	Total	WDF
1	Tuber crops	Nos	2000	75	150000	150000	20 % for General & 10 % for SC / ST
2	Japanese quail rearing	Nos	22800	1	22800	22800	
3	Cow rearing	Nos	24000	10	240000	240000	
4	Fodder grass cultivation	Nos	1000	45	45000	45000	
TOTAL					**457800**	**457800**	

Total allotment	**915600**

Annexure – 1

LOG FRAME WORK ANALYSIS - LFA

Narrative Summary	Expected Results	Objectively Verifiable indicators (OVI)	Means of Verifications (MOV)	Risk/Assumptions
Goal: (Overall Objective) The degraded Natural TRIO restored and the production improved in the watersheds of Payyanur Block Panchayat under the coverage of IWMP by more efficient utilization of natural resources through the proper and effective implementation of Integrated Watershed Management Programme plan.	• The income of families will increased • Living standard will improve • Increase of ground water table • Irrigation during off-season	• Purchase power of villagers will increase • Annual expenditure and saving of households • Household assets • Number of people migrating for employment opportunity • Cropping pattern	• Impact assessment study • Evaluation report • Compare between baseline survey and evaluation report • Physical observation • Physical Verification and FGD with farmers	Political Intervention will not affect the smooth implementation of the programmes
Watershed communities mobilized, organized and capacitated along with other institutional arrangements to take up the effective implementation of the project	• SHGs and UGs capacitated for taking up the responsibilit y • Participation of the watershed community ensured • DPR satisfying all sections of the community prepared	• Active involvement of the UGs in the planning process • No. of groups formed and capacitated • No. of trainings organized and conducted • No. of watershed committees formed and strengthened	• DPR prepared and submitted • Document on the processes of UG formation • Training registers • Photographs	Favourable climatic conditions and the readiness of the UGs and WCs in attending the trainings

LFA …. Contnd…..

Activities to realize the Objective	Outputs	Objectively Verifiable indicators (OVI)	Means of Verifications (MOV)	Risk/Assumptions
Meetings of watershed communities and concerned ward members	Groups formed and office bearers elected	• Increased participation of the community • Interest shown by the community in the process of planning • PRA conducted in the watershed	• Discussion with Villagers/Farmers • List of families • Minutes of the meetings • Photographs	Favourable climatic conditions, cooperation of the ward members and positive approach of the watershed community
Participatory Rural Appraisal (PRA)	Primary data regarding the socio-economic situation of the watershed community collected	Reliable data used in the process of DPR preparation	PRA Report of each watershed Photographs and videos Draft copy of Maps prepared by the watershed committee	Favourable climatic conditions, People understand the importance of PRA and they actively participate in the exercise
Total agriculture production increased	• Modern agriculture techniques for enhancing of agriculture productivity • Increased Agriculture income • Soil moisture content increased	• Net area under agriculture increased • vegetation cover in the project area present • Percentage of farmers cultivating the crops increased	• Impact assessment study • Evaluation report • Discussion with Villagers/Farmers • Trend analysis of crop cultivation	Maintenance of the Structure after the project completion
Soil and moisture conservation works	Completion of soil moisture works.	Number of watershed physical structure presents in the project area Diversified farming	Physical verification Discussion with Villagers/Farmers	
Use of advance water conservation techniques.	Optimum utilization of available water	Number of households having drip irrigation system of their houses	Physical verification	
Modern agriculture techniques for enhancing of agriculture productivity through crop demonstration plot.	Change in the cultivation pattern and adoption of new techniques in agriculture to realize the maximum potential of the land	Number of people migrating for employment	Observations	

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Specific Objective – 3	Outcome	Objectively Verifiable indicators (OVI)	Means of Verifications (MOV)	Risk/Assumptions
Per capita income of BPL and marginal farmers increased through Various livelihood activities	• No. of migrating families from the project area reduced • Employment available within the project area. • Unemployment decreased	• Number of people migrating for employment opportunity • Number of people engaged in livelihood activities. • Number of people involved in self employment activities	• Impact assessment study • Physical verification / Photographs • FGDs and PRA	Adequate financial support availed by the banks and other financial institutions
Promotion of livelihood activities	People set-up their micro-enterprise on demand based activities.	Number of people showing their interest to set-up micro industry	Observations	People show interest in taking up risk
Capacity building activities for improvement entrepreneurial skill.	Improved knowledge and enhancement of skills for self development	Number of small enterprise set-up	Impact assessment study	Appropriate faculties available for imparting training and the line departments cooperates
	Women entrepreneurs provided with an opportunity to interact with service providers	Number of Women entrepreneurs started self employment programmes	Physical verification Direct interaction with the trained	
Local institutions strengthened	• Presence of strong and dynamic local governance • People's participation and representation increased	• Number of meetings initiated by the local leaders. • Number of peoples' organization present in the grass root level	• Impact assessment study • Evaluation report, FGD, Observations	Interest of the People.

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Activities to realize the Objective	Output	Objectively Verifiable indicators (OVI)	Means of Verifications (MOV)	Risk/Assumptions
Organized training and awareness programme for Village institutions	Quality of local leaders improved and more democratic method of decision making used	Number of case resolved within the locality.	Observations	Participants take part in the training programme understanding the importance
Capacity building workshops and exposure visits User Group and Watershed Committee	Local leaders taken interest to understand the programmes and schemes utilized for the common benefit of the village.	Number of schemes utilize for the benefit of the villages.	FGDs and PRA	Favourable Climatic Condition and Participants take part in the training programme understanding the importance