

Integrated Watershed Management Programme (IWMP)

CHOWWANNUR BLOCK PANCHAYATH, TRISSUR DIST.

DETAILED PROJECT REPORT **IWMP**

Prepared by

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Integrated Watershed Management Program

District	: Thrissur
Block Panchayath	: Chowannur Block
Grama Panchayaths	: Kadavallur GP, Kadangodu GP, Kattakambal GP
Project Code	: IWMP –III/2011-12
Total Watersheds	: 8
Total Area	: 5145 Ha
Treatable Area	: 4887 Ha
Total Project Fund	: Rs 5, 86, 44,000

Microwatersheds

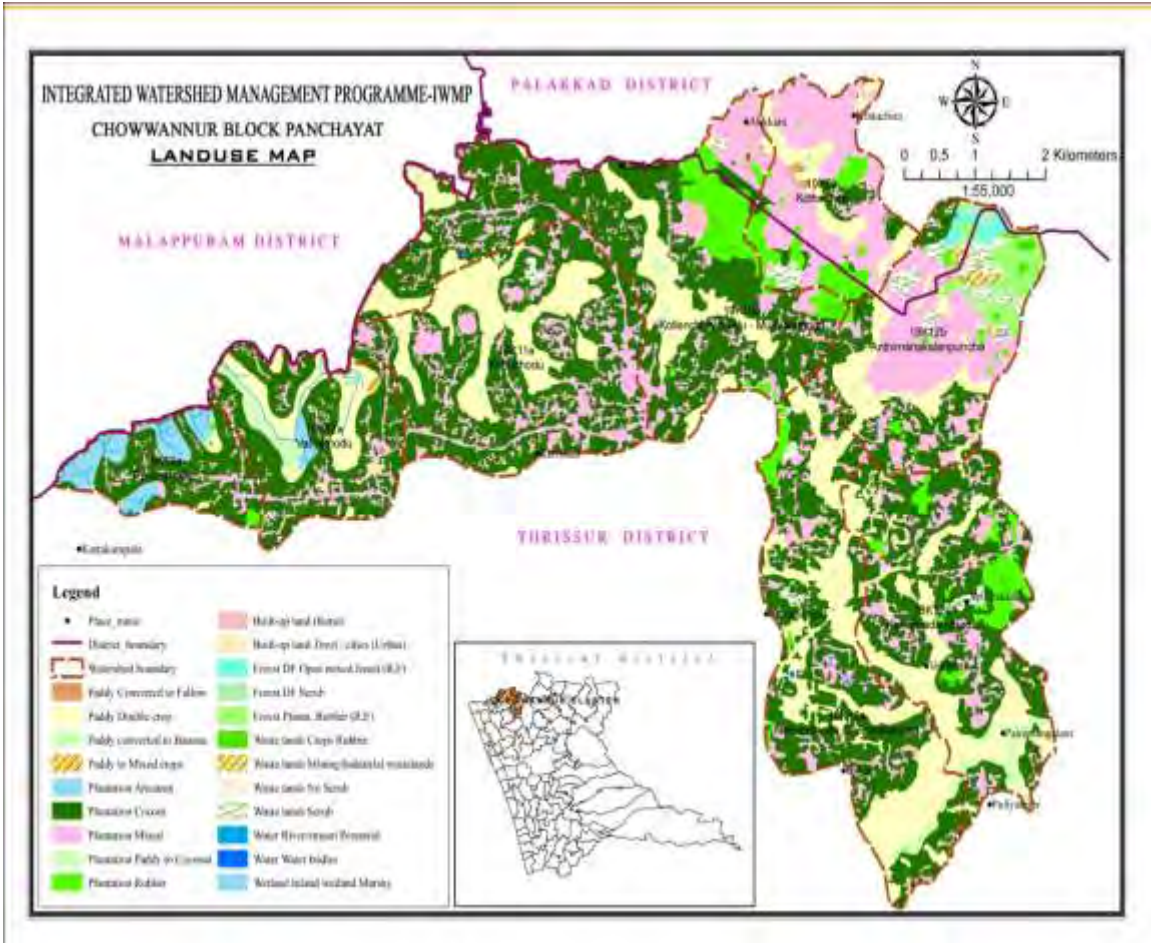
Sl. No.	Name of Watershed	Geographic Coordinates	Code No.	Grama Panchayats	Area (Ha)
1.	Nelmonthodu – CheemonKulam	10°39'0" and 10°42'0" N 76°6'0" and 76°8'0" E	18K12a	Kadangodu, Kadvallur	852
2.	Anthimahakalan Puncha	10°41'30" and 10°43'30" N 76°6'30" and 76°8'30" E	18K12b	Kadangodu, Kadvallur	551
3.	Kurinihippadam Thodu	10°39'30" and 10°42'0" N 76°7'0" and 76°8'30" E	18K12c	Kadangodu	813
4.	Kollancheri – Muriyalathodu	10°41'30" and 10°44'30" N 76°3'30" and 76°7'0" E	19K10a	Kadavllur	1005
5.	Kottolthodu	10°41'30" and 10°43'0" N 76°3'0" and 76°5'30" E	19K11a	Kadavallur Kattakambal	865
6.	Valiyathodu	10°41'0" and 10°42'30" N 76°2'0" and 76°3'30" E	19K12a	Kattakambal	450
7.	Perumthodu	10°41'0" and 10°42'0" N 76°1'0" and 76°2'30" E	19K13a	Kattakambal	264
8.	Kothachira	10°42'30" and 10°43'0" N 76°6'0" and 76°6'30" E	19K9a	Kadavallur	87

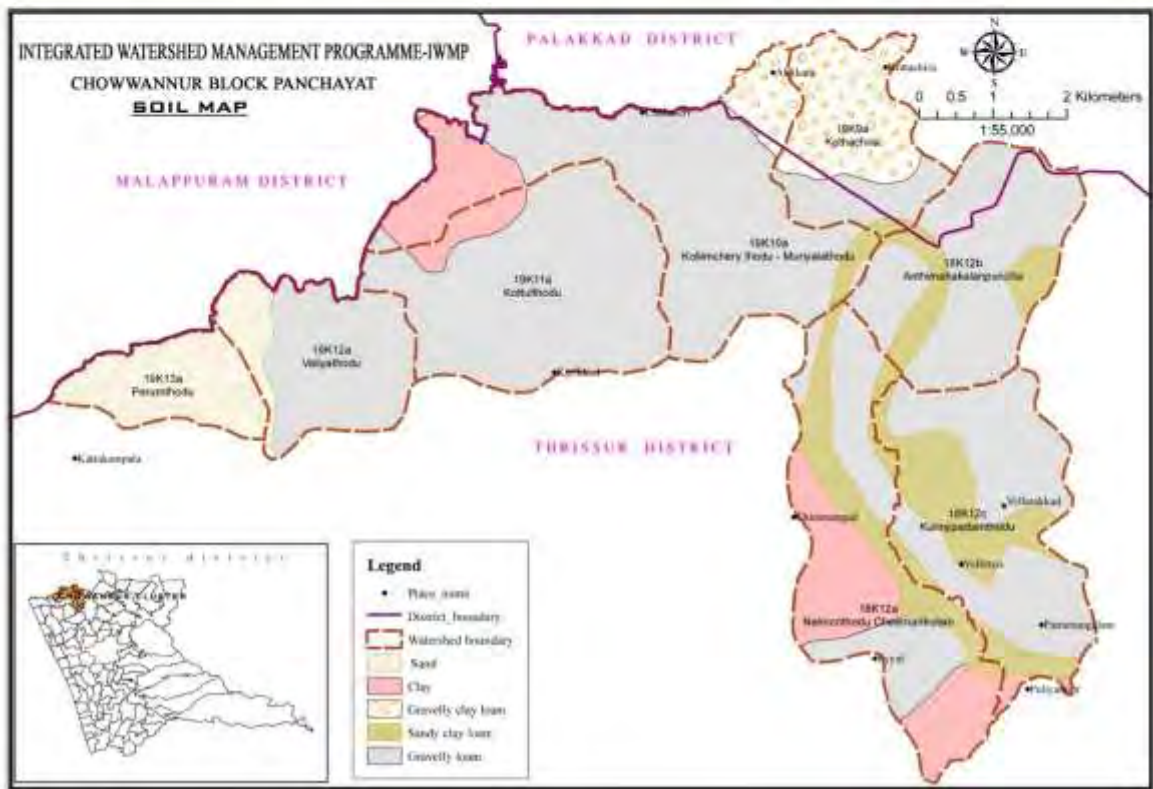
IWMP Chowannur Block Panchayath Master Plan

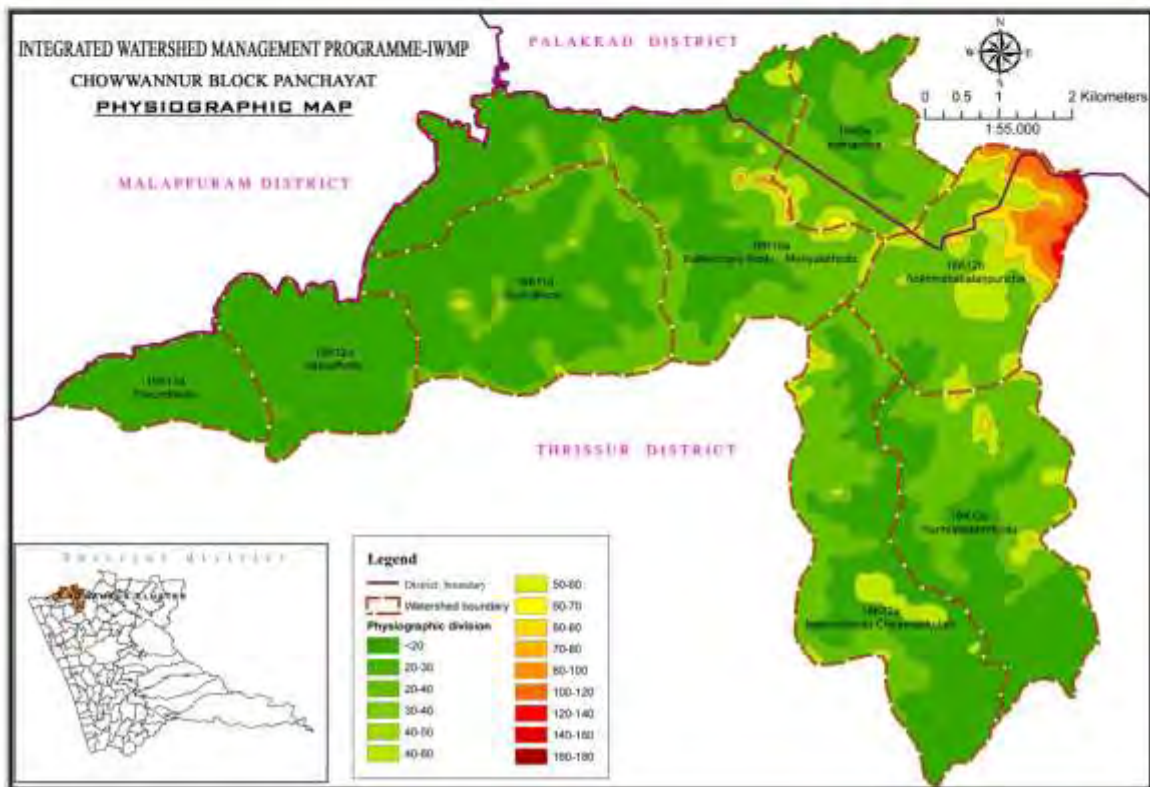
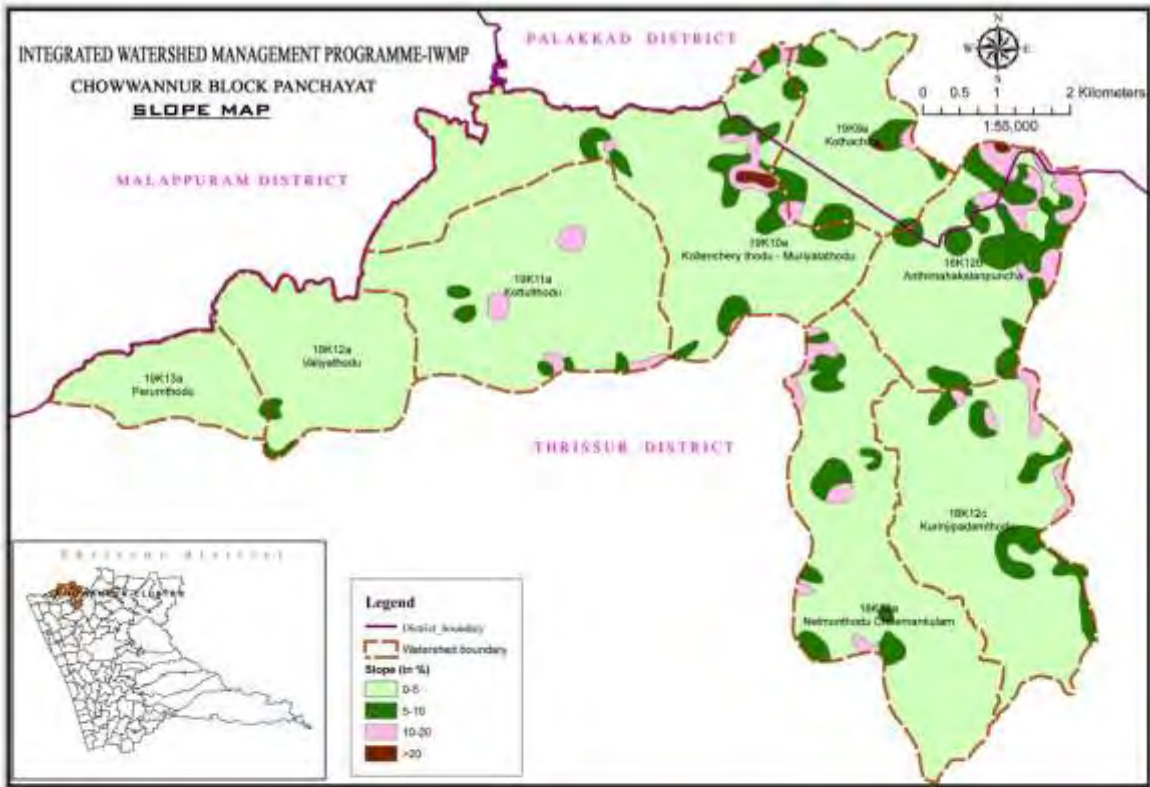
Total Area : 4887 Ha

Per Ha. Cost : 12000

Installment	Administration	Monitoring	Evaluation	Entry Point Activity	Institution & Capacity Building	DPR preparation	Watershed Development Activities	Livelihood Activities	Production system & Micro Enterprises	Consolidation Phase	Total IWMP project fund
1 st	1172880	117288	117288	2345760	1759320	586440	5629824	0	0	0	11728800
%	2	0.2	0.2	4	3	1	9.6	0	0	0	20
2 nd	1466100	117288	117288	0	586440	0	9734904	2638980	2932200	0	17593200
%	2.5	0.2	0.2	0	1	0	16.6	4.5	5	0	30
3 rd	1759320	175932	175932	0	586440	0	9324396	2638980	2932200	0	17593200
%	3	0.3	0.3	0	1	0	15.9	4.5	5	0	30
4 rd	1466100	175932	175932	0	0	0	8151516	0	0	1759320	11728800
%	2.5	0.3	0.3	0	0	0	13.9	0	0	3	20
Total	5864400	586440	586440	2345760	2932200	586440	32840640	5277960	5864400	1759320	58644000
%	10	1	1	4	5	1	56	9	10	3	100







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‘Reaching the Unreached To Improve Their Livelihood’
Integrated Watershed Management Programme – IWMP
CHOWANNUR BLOCK PANCHAYAT
THRISSUR DISTRICT

INTEGRATED WATERSHED MANAGEMENT PROGRAMME – IWMP

Integrated Watershed Management Programme (IWMP) is a modified programme of erstwhile Drought Prone Areas Programme (DPAP), Desert Development Programme (DDP) and Integrated Wastelands Development Programme (IWDP) of the Department of Land Resources. This consolidation is for optimum use of resources, sustainable outcomes and integrated planning. The scheme was launched during 2009-10. The programme is being implemented as per Common Guidelines for Watershed Development Projects 2008. The main objectives of the IWMP are to restore the ecological balance by harnessing, conserving and developing degraded natural resources such as soil, vegetative cover and water. The outcomes are prevention of soil erosion, regeneration of natural vegetation, rain water harvesting and recharging of the ground water table. This enables multi-cropping and the introduction of diverse agro-based activities, which help to provide sustainable livelihoods to the people residing in the watershed area.

The integrated watershed development approach finds value in strengthening livelihoods and ecological health, and is a means of ensuring holistic development by addressing the micro drivers of change in a comprehensive manner. These micro drivers of change (soil and nutrient properties, biomass availability, water availability, land use, social and institutional capability, technological adoption, patterns of demand and supply, natural resource usage, economic status and energy availability) influence and are in turn influenced by the varied livelihood strategies (agriculture, livestock, production of other materials, labour and migration, biomass, energy, landscape and environmental management and agro-ecosystem function) prevalent in the rural landscapes.

This project involves watershed planning over a few thousand hectares of land in the Kadangodu, Kadavallur and Kattakambal Panchayats in Chovvannur Block in Thrissur district, which include both off-farm and on-farm interventions to improve the productivity of farm lands as well as the commons. Enhanced biomass and water availability through

appropriate soil and moisture conservation measures, and re-vegetation of common lands would go a long way in boosting agricultural productivity and animal husbandry. Further, this project aims to assist communities in effectively integrating agriculture and natural resource management, and regulating the demand for biomass and water through rules, regulations and mechanisms evolved by community institutions at village and inter-village levels. PIA's efforts are directed towards building and strengthening the institutional processes at the habitation, village, Panchayat and federation levels to set in place processes of local self governance. Special focus is on enhancing the participation of community members, especially the poor and marginalized, in the planning and implementation of watershed development work in the region.

Need of the IWMP Project

Natural Resource Management is very crucial for the survival of any human society. The watershed area is prone to soil erosion and degradation. This area is required to be treated so that further degradation of the soil can be checked. As agriculture and horticulture is the major activity it will help to increase the income levels of the people at the watershed area. The livelihood promotion programmes 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. There are more than 50% of BPL families in the watershed area. Majority of the BPL households are meeting their livelihood needs from agriculture and horticulture production. Development of sustainable livelihoods for the BPL families in the watershed area is a major objective of the project. The livelihood options and income of all the BPL households will be enhanced once the project is properly implemented. The area under agriculture and horticulture and its productivity will be increased as a result of the increase in irrigation facilities and other activities aimed at expansion of the same. The lack of fodder availability will be addressed by the pasture development and nursery rising. Moreover the households practicing livestock activities will be benefited through the distribution of fodder seeds and fodder plants. The micro enterprises sector will be revived as a result of the implementation of the project. The number of working days will also be increased.

Watershed Development Programme is selected on the basis of thirteen parameter namely Poverty Index, Percentage of SC/ST. Actual wages, Percentage of small and marginal

farmer, Ground water status, Moisture Index, Area under rain fed agriculture, Drinking water situation in the area, Percentage of the degraded land, Productivity potential of the land, Continuity of another watershed that has already development/treated, Cluster approach for plain or for hilly terrain, Based on these thirteen parameters a composite ranking was been given to Chovvannur IWMP project as in the table given under.

Criteria and weight age for selection of watershed

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

			% (15)	20 % (10)	than 10 % of TGA (5)	
x.	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)	
xi.	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)	
xii.	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)	
xiii.	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

METHODOLOGY

1. Sustainable Development Framework (SDF)

The Integrated Watershed Management Plan for the watersheds is conceptualized based on the Sustainable Development Framework (SDF). Development consists of the capabilities, assets - both material and social resources - and activities required for a means of living. A development intervention is sustainable when it can cope with and recover from stresses and shocks, maintain or enhance its capabilities and assets, and provide net benefits to other livelihoods locally and more widely, both now and in the future, while not undermining the natural resource base. The extent to which a development plan is sustainable is determined by the interaction of several forces and elements.

2. Institution and Capacity Building

An institution is an organized and durable entity, whereby specific social activities are regulated and performed. An institution may or may not be legally formalized, but it may be as solid as other formal institution. The main reason for forming and capacity building of grass-roots level institutions is to find out the key mechanisms and organizations through which watershed development interventions are mediated and influenced both positively and negatively. This helps in determining the vulnerability of an area or type of person, as well as the types of response and assistance an area or type of person might be able to count on or may need in the aftermath. Institutions operate through decisions. Decisions may be isolated (dictated by individual cases) or organized in sets applicable to multiple cases. User groups (UGs) and Self Help Groups (SHGs) are formed in each watershed areas considering the number of households in each watershed. Besides UGs and SHGs, each watershed has a Watershed Committee (WC) to shoulder the responsibility of carrying out the planned interventions. These groups are given adequate capacity building training in managerial and technical skills to ensure that the programmes and projects are done in the stipulated time and manner.

3. Base line Survey

Baseline information and data on natural resources, human resources, agro-socio-economic details, infrastructure etc are collected at watershed levels through secondary as well as

primary sources of information. Primary information and data are collected from primary sources, that is, households. All the households in the villages are covered under the baseline survey. The information and data are comprehensive and encompassing all the relevant socio-economic aspects pertaining to the people of the watersheds. The data are collected from primary sources by adopting interview method with the help of specific format prepared specifically for the purpose. The information are collected by the well trained volunteers under the supervision and guidance of the TSO

4. Focus Group Discussions (FGD):

The Focus Groups for each watershed community are identified and formed based on the information obtained. In most cases, these groups are representative of the major livelihood systems identified in the particular watershed community. Each FG constitutes a sample of households which represent each livelihood system. Focus groups typically are formed on the basis of wealth ranking (WR) categories or livelihood groupings. They usually are desegregated by gender. The main objective of the FG is to be able to identify and describe the common and shared characteristics among the community members that have the same livelihood system. In other words, the FGs are targeted to identify and characterize similarities among households. FGD may also yield valuable information on trends on the livelihood systems and their security as perceived by the community members. Also important for FGDs is information on sources of conflict within and among groups and communities, rights and responsibilities analysis, the local impact of policies, as well as vulnerability and marginalization typologies. The discussions are flexible in time and structure, guided by a topical outline.

5. Participatory Rural Appraisal (PRA)

Watershed development program has now been accepted as a basic developmental tool. To impart these programmes the necessary impetus, Participatory Rural Appraisal (PRA) is being advocated and treated as an integral part of the program planning and implementation process. PRA is basically an exercise for ensuring participation and enabling of the stakeholders. This tool is very useful for the people to identify their common problems as well as find out solution. It acts like a bridge between People and other technical experts with the watershed villages. An exhaust PRA exercise has been conducted in the watersheds, by the TSO in association with the WC, UGs and SHGs to collect the required information and

data for developing the DPR. The PIA & WC members have visited the watersheds and made much informal discussion with the people before starting the PRA exercise. During PRA the TSO have adopted many key points of the PRA with the community.

The different technical tools used in PRA exercise helped to identify the problems faced by the watershed community and to analyze the situation which varies from one another. The priorities of problems of an area are different from each other and the methods to solve them are also different. Therefore, PRA exercise is made at watersheds to identify the situation in a scientific manner using different tools as given below to study and analyze the situation and to solve them in an indigenous manner.

- 5.1. Social Mapping:** The villagers prepared a social map of the village on the ground using different rangoli colour powder to reveal the social and physical structure like house structure, village infrastructure etc. to analyze the opportunity which can be derived after discussions with different groups of people.
- 5.2. Resource Map:** It has been prepared by the villagers themselves on the ground using rangoli colours, some naturally available materials, etc indicating different land types like: up, medium, low land, cultivable/cultivated land, water bodies, built up areas etc. Resource map is used to prepare treatment plan for soil and water management.
- 5.3. Seasonality:** Study of seasonal pattern of the rain fall, farming practice availability of opportunity and different types of seasonal problems like plant and human diseases and benefit discussed and marked in chart to solve the problems in due course of time.
- 5.4. Matrix Ranking:** Through group discussion with different groups of people prioritization of their problems was well examined and planning was made to solve the problems on priority basis.
- 5.5. Time Line:** Time Line of the watershed area was compiled with discussion with the people to know the pattern of occurrence of historical events and to know the evolution of specific incidents and social problems in the locality.
- 5.6 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. The feasibility of suggestion has well examined and reflected in watershed development plan.

It took 1 month to complete the process of the PRA and was conducted at regular intervals in different watersheds. Most of the villagers have attended the PRA and participated in the discussion. All the events have been recorded and also drawn in different PRA sheets separately. At the end, a participatory need assessment of the village communities have developed based on SWOT Analysis

6. SWOT Analysis

SWOT analysis identifies the internal strengths and Weaknesses, and external Opportunities and Threats, shared by the village level CBOs. By going beyond the listing of the most important factors or characteristics of each (SWOT) category, a SWOT analysis links each of the perceived “threats” to related organizational “weaknesses”, the “weaknesses” to related “opportunities”, and the “opportunities” to related “strengths”. The items at which the most lines (links) converge indicate the priority threats to be mitigated, weaknesses to be corrected, opportunities to be seized, and strengths to be reinforced.

NATURAL RESOURCE MANAGEMENT

The focus of the Natural Resource Management programme is on institutional, technological and policy innovations for community-based management to increase productivity of available resources to reduce poverty enhance food security and ensure biological conservation. Our survival on earth essentially depends on three basic resources-soil, water and Biomass (Nature’s three valuable gifts to mankind). Mother Nature gives protection to these resources through natural vegetation. This protective shield of land is disturbed by biotic interference, making the soil vulnerable to detachment and dislocation- a vicious process called soil erosion. A no-care attitude and gross negligence coupled with burgeoning population, conversion of forest land to agriculture land and their ever-increasing needs and demands over the years have taken the problem to a threatening dimension.

Sustained rural development requires a participatory approach in which project beneficiaries actively participate in planning process. Lessons learnt from the past failure and successes have facilitated and been instrumental in promoting a major change in thinking with regard to

sustainable development. As a result of which a participatory integrated watershed approach has evolved. This approach emphasizes integrated development of better land husbandry and natural resource management with people's participation.

In this approach, development is not only confined to the agricultural land, but covers a wide and diverse area of activities including soil and water conservation, development of degraded and waste lands, afforestation, water harvesting with special reference to rainfed agriculture and also employment and income generation activities. Unlike earlier top-down approach, the new decentralized bottom-up participatory approach aims to enhance farmers' inherent skills and capabilities to develop and disseminate their own technology. Strengthening local institutions for participatory decision making and building self reliance of the local communities are also emphasized.

NRM STEPS FOLLOWED FOR PLANNING

Various steps are followed for NRM component planning and resource mapping during boundary line delineation and geographical transect in watershed area. The summarized steps are given below:

- The boundary line of the watershed is delineated in the very first step with the help of village cadastral map, GIS 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 transect the major water bodies, 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 village land is divided into various components which are treated as individual mapping units.
- During 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 patches identified, the various treatments required are also finalized in consensus with the villagers.
- Finally a proposed land use map and treatment map is also prepared which is treated as the strategic action plan on Natural Resources Management perspective for the whole watershed during the entire project period

Major Problems

- Due to inefficient and insufficient conservation measures, severe scarcity of drinking water throughout the year
- Rapid decline in groundwater table and frequent drying up of wells during summer
- The livestock production in the watersheds is limited mainly to a few goats, indigenous cows, buffaloes and bullocks but there is no concentration on high yielding cross-breed and other ruminants
- The socio-economic status of the people is low as the education level especially of the female is low
- Inaccessibility of market and price fluctuations for farm produce
- Land degradation because of insufficient treatment measures and inefficient fertilizer application
- Removal of vegetative cover and felling trees and shrubs for mono crops, had intensified and added to the problems of excessive runoff and soil erosion
- Most part of the upper reaches of the watershed are desiccated due to lack of plants and vegetation and due to lack of conservation measures
- The seasonal migration from rural to urban areas also exists in watersheds during post-harvesting season.

CONVERGENCE WITH OTHER SCHEMES

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.

Convergence of IWMP with MGNREGS suggests very important objectives such as:

- Strengthening 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, de-silting of check dams and ponds and all other unskilled labour requirements of the works involved in IWMP. Other works that can be carried out through convergence are: construction of check dams, deepening and de-silting of ponds, extension and renovation of existing irrigation projects, flood protection works, lift

irrigation works, construction of new drains and renovation of existing drains and removal of vegetation growth.

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. MNREGS guidelines to be followed
2. If cost per ha Rs.12000/ or Rs.15,000/- not adequate additional cost to be met from MNREGA
3. Labour : Material cost i.e. 60:40 ratio to be maintained
4. Works be done by manual labour-machines to be avoided
5. Convergence activities to be identified by PIA
6. The cost of material component of projects including the wages of the skilled and semi skilled workers taken up under the scheme shall not exceed 40% of the total project cost.
7. As far as practicable, a task funded under the scheme shall be performed by using manual labour and not machines
8. Where convergence between NREGS and watershed programmes funded by DoLR is envisaged, the tasks/structures/activities to be undertaken by NREGS will be identified by the Programme Implementation Agency (PIA) preparing the DPR for the watershed Programme.
9. In IWMP, if convergence is to be effected, the works should be carried out by landless people and self help group members. Under MNREGA all activities required for watershed development are permitted.

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 carried out only through banks.

The Approach that is adopted with regard to MGNREGS is stated below:

There would be a multi tier ridge to valley sequenced approach, which should be adopted towards the implementation of the Watershed Development Projects. The higher reaches or the forests are actually where the water sources originate. The approach, therefore, will be to identify an area and first look at the forest and the hilly regions, in the upper water catchments wherever possible. When suitable treatment is undertaken, then the hardest part of the watershed is tackled. Thus, in the upper reaches, which are mostly hilly and forested, the onus of implementation would mainly lie with the Watershed Committees. The second tier is the intermediate tier or the slopes, which are just above the agricultural lands. In the intermediate slopes, the Watershed Management approach would address all the necessary issues by looking at all the best possible options including treatment, cropping pattern, horticulture, agro-forestry etc. As to the third level of the plains and the flat areas, where typically, the farmers are operating, there would be a large concentration of labour intensive works. The watershed development process would be synergized with the employment generating programmes such as the National Rural Employment Guarantee Scheme (NREGS), thus providing strong coordination.

PROJECT COMPONENTS AND ACTIVITIES

CAPACITY BUILDING AND IEC PROGRAMMES

IWMP seeks to strengthen capacities that support integrated, people-centered and community-driven development approaches. The NRM work puts people and communities at the center of the process. Increased population pressure, demand for energy, poverty, industrialization and globalization make people main stakeholders in affecting the sustainability of natural resources. Accordingly, whether the goal is improved biodiversity conservation or more diversified and profitable livelihoods, people are the key to achieving meaningful results. This CBP work to ensure stakeholders from communities, government,

civil society and disadvantaged groups gain the skills and abilities needed to better manage and sustainably utilize their natural resources.

CBP Implementation Strategies

IWMP leads efforts to help communities manage natural resources to improve their livelihoods and ensure sustainability and conservation. To achieve this IWMP utilize people-centered, holistic approaches that link livelihoods, institutional strengthening, democracy and governance, knowledge management, conflict resolution, equity, and planning with natural resources management and conservation. IWMP has identified three strategic niches and a set of cross-cutting approaches important in the implementation of its NRM programs. These are areas where PIA’s experience and technical abilities make them an attractive choice to lead or partner on NRM programs.

Thus the three types of stakeholders in the IWMP shall be strengthened to take up and implement the whole project in a most organized and result oriented manner and the success rate is expected to be high in the outcome of the project. Therefore, the **Vision of the CBP** shall be:

According to the work plan, the training strategy for IWMP is finalized at the PIA level with the assistance of the TSO right in the first month of planning itself.

Different Programmes and Year-wise fund distribution details are given below:

Sl. No.	Name of Training	Total Expenses	I Year	II Year	III Year	Total
1	Institution and Capacity Building	81475	81475	0	0	81475
2	Orientation Program on IWMP and awareness on Participatory Watershed Development	94000	94000	0	0	94000
4	Planning & Implementation of Projects related to creation of common assets	50500	50500	0	0	50500
5	Concept of Watershed Management – Roles and Responsibilities	35200	35200	0	0	35200
6	Empowering People’s Representatives for IWMP	186500	186500	0	0	186500

7	Exposure visit for Different Committees and Institutions	88000	0	88000	0	88000
8	Competitions for the HSS students in Elocution, Quiz and drawing & Painting	34500	0	0	34500	34500
9	Road Shows and Mobile Exhibitions	268155	268155	0	0	268155
Total in this category		838330	715830	88000	34500	838330
Skill Development Training						
1	Cow rearing Training	29500	9835	9835	9830	29500
2	Goat Rearing Training	65500	0	21800	43700	65500
3	Training in commercial poultry farming	65500	0	43700	21800	65500
4	Training in Vermin Composting	104000	0	34600	69400	104000
9	Training in Rabbit Rearing	54750	0	0	54750	54750
10	Training in Organic Farming	142500	0	71250	71250	142500
11	Masonry Training in Water Harvesting Systems	165920	0	82960	82960	165920
Total in this category		627670	9835	264145	353690	627670
IEC Materials		765484	765484	0	0	765484
Grand Total		2932200	1963245	580765	388190	2932200

SLNA Level - Capacity Building				
MIS Training				
Food Expenses	175	20	5	17500
Remuneration for Resource persons	1000	2	5	10000
Training Materials /Kits	75	10	1	750
Organizing Expenses like notice, banners, hall rent, mike rent, documentation, etc.	3000	1	1	3000
Total in this category				31250
Watershed, its concept and Planning & Implementation				
Food Expenses	175	20	2	7000
Remuneration for Resource persons	100	2	2	400
Training Materials /Kits	20	10	2	400
Organizing Expenses like notice, banners, hall rent, mike rent, documentation, etc.	3000	1	1	3000
Total in this category				10800
Residential Training in DPR Preparation, RS and GIS and its application in Watershed Management				
Food Expenses	175	20	2	7000

Remuneration for Resource persons	1500	2	2	6000
Training Materials /Kits	100	20	1	2000
Organizing Expenses like notice, banners, hall rent, mike rent, documentation, etc.	3000	1	1	3000
Total in this category				18000
IWMP – Interventions, A new approach				
Food Expenses	100	10	2	2000
Remuneration for Resource persons	750	1	2	1500
Training Materials /Kits	50	10	1	500
Organizing Expenses like notice, banners, hall rent, mike rent, documentation, etc.	2500	1	1	2500
Total in this category				6500
IWMP – Its concepts, strategy and convergence				
Food Expenses	100	10	2	2000
Remuneration for Resource persons	750	2	2	3000
Training Materials /Kits	50	10	1	500
Organizing Expenses like notice, banners, hall rent, mike rent, documentation, etc.	3000	1	1	3000
Total in this category				8500
Preparation of Process and Technical Manual				
Food expenses	100	20	3	6000
Remuneration for Resource persons	750	2	3	4500
Travelling allowance per trainee per day	150	20	3	9000
Organizing Expenses like notice, banners, hall rent, mike rent, documentation, etc.	3000	1	1	3000
Total in this category				22500
Action Plan Preparation for PS&M and LSS				
Food expenses	175	30	2	10500
Remuneration for Resource persons	1500	2	2	6000
Travelling allowance per trainee per day	50	30	1	1500
Organizing Expenses like notice, banners, hall rent, mike rent, documentation, etc.	3382	1	1	3382
Total in this category				21382
Training of Trainers (ToT) in IWMP				
Food expenses	250	30	3	22500
Remuneration for Resource persons	1500	2	3	9000
Travelling allowance per trainee per day	150	30	3	13500
Organizing Expenses like notice, banners, hall rent, mike rent, documentation, etc.	4000	1	3	12000
Total in this category				57000
Grand Total				175932

WCDC Level - Capacity Building					
MIS Training					
1	Food Expenses	175	50	5	43750
	Remuneration for Resource persons	1000	2	5	10000
	Travelling Expenses	150	50	5	37500
	Training Materials /Kits	75	50	5	18750
	Organizing Expenses like notice, banners, hall rent, mike rent, documentation, etc.	5000	1	5	25000
	Total in this category				135000
Watershed, its concept and Planning & Implementation					
2	Food Expenses	175	50	3	26250
	Remuneration for Resource persons	1000	2	3	6000
	Training Materials /Kits	20	50	3	3000
	Organizing Expenses like notice, banners, hall rent, mike rent, documentation, etc.	3996	1	1	3996
	Total in this category				39246
Residential Training in DPR Preparation, RS and GIS and its application in Watershed Management					
3	Food Expenses	175	50	2	17500
	Remuneration for Resource persons	1500	2	2	6000
	Training Materials /Kits	100	50	2	10000
	Organizing Expenses like notice, banners, hall rent, mike rent, documentation, etc.	4500	1	2	9000
	Total in this category				42500
IWMP – Interventions, A new approach					
4	Food Expenses	175	50	2	17500
	Remuneration for Resource persons	1000	1	2	2000
	Training Materials /Kits	50	50	2	5000
	Organizing Expenses like notice, banners, hall rent, mike rent, documentation, etc.	4000	1	2	8000
	Total in this category				32500
IWMP – Its concepts, strategy and convergence					
5	Food Expenses	175	50	2	17500
	Remuneration for Resource persons	1000	2	2	4000
	Training Materials /Kits	50	50	2	5000
	Organizing Expenses like notice, banners, hall rent, mike rent, documentation, etc.	3500	1	2	7000
	Total in this category				33500
Preparation of Process and Technical Manual					
6	Food expenses	175	50	3	26250
	Remuneration for Resource persons	1000	2	3	6000
	Travelling allowance per trainee per day	130	50	3	19500

	Organizing Expenses like notice, banners, hall rent, mike rent, documentation, etc.	3500	1	3	10500
	Total in this category				62250
	Action Plan Preparation for PS&M and LSS				
7	Food expenses	175	50	2	17500
	Remuneration for Resource persons	1500	2	2	6000
	Travelling allowance per trainee per day	75	50	2	7500
	Organizing Expenses like notice, banners, hall rent, mike rent, documentation, etc.	5000	1	2	10000
	Total in this category				41000
	Training of Trainers (ToT) in IWMP				
8	Food expenses	250	50	5	62500
	Remuneration for Resource persons	1500	2	5	15000
	Travelling allowance per trainee per day	150	50	5	37500
	Organizing Expenses like notice, banners, hall rent, mike rent, documentation, etc.	5360	1	5	26800
	Total in this category				141800
	Grand Total				527796

PIA Level Trainings					
Institution & Capacity Building					
No.	Item	Unit Cost	No. of Participants	No of Batches	Total Expenses
1	Food Expenses	65	75	8	39000
	Remuneration for Resource persons	750	1	8	6000
	Training Materials /Kits	20	75	8	12000
	Organizing Expenses like notice, banners, hall rent, mike rent, documentation, etc.	3000	1	8	24000
	Miscellaneous				475
	Total in this category				81475
General Awareness generation & UG formation with emphasise to participatory Watershed Management					
2	Food Expenses	60	100	8	48000
	Remuneration for Resource persons	750	1	8	6000
	Training Materials	20	100	8	16000
	Organizing Expenses like notice, banners, hall rent, mike rent, documentation, etc.	3000	1	8	24000

	Total in this category				94000
3	Planning & Implementation of Projects related activities to creation of common assets				
	Food Expenses @ Rs. 125/per day for 215 participants	65	40	5	13000
	Remuneration for Resource persons @ Rs. 1500/day for 5 batches	1500	2	5	15000
	Training Materials /Kits	25	40	5	5000
	Organizing Expenses like notice, banners, hall rent, mike rent, documentation, etc.	3500	1	5	17500
	Total in this category				50500
4	Concept of Watershed Management – Roles and Responsibilities				
	Food Expenses	65	40	2	5200
	Remuneration for Resource persons	750	2	2	3000
	Training Materials /Kits	50	40	2	4000
	Travelling allowance per trainee per day	100	40	2	8000
	Organizing Expenses like notice, banners, hall rent, mike rent, documentation, etc.	7500	1	2	15000
	Total in this category				35200
5	Empowering People's Representatives for IWMP				
	Food Expenses	175	80	5	70000
	Remuneration for Resource persons	1500	2	5	15000
	Training Materials /Kits	70	40	5	14000
	Travelling allowance per trainee per day @ Rs. 100- for 2days = Rs. 80000.00	125	80	5	50000
	Organizing Expenses like notice, banners, hall rent, mike rent, documentation, etc.	7500	1	5	37500
	Total in this category				186500
6	Exposure visit for Different Committees and Institutions				
	Food Expenses	250	55	2	27500
	Travelling Expenses (Bus Charge)	350	55	2	38500
	Miscellaneous Expenses (Entrance fee, tickets to the shows etc.)	200	55	2	22000
	Total in this category				88000
Competitions for the HSS students in Elocution, Quiz and drawing & Painting					
7	Expenses for snacks	20	100	1	2000
	Cost of Materials	50	100	1	5000
	Cost of Prizes	250	10	1	2500

	Organizing Expenses like banners, notices, posters etc.	2500	1	10	25000
	Total in this category				34500
Road Shows and Mobile Exhibitions					
8	Food Expense for the volunteers	100	30	2	6000
	Cost of Materials	5000	2	5	50000
	Rent of the Vehicles to be used in the show and exhibition	100000	1	2	200000
	Organizing Expenses like banners, notices, posters etc.	12155	1	1	12155
	Total in this category				268155
	Grand Total - A				838330
Training in Cow rearing					
	Item	Unit Cost	No. of Participants	No of Batches	Total Expenses
1	Food Expenses	65	30	5	9750
	Remuneration for Resource persons	1000	1	5	5000
	Training Materials /Kits	15	30	5	2250
	Organizing Expenses like notice, banners, hall rent, mike rent, documentation, etc.	2500	1	5	12500
	Total in this category				29500
Training in goat rearing					
2	Food Expenses	65	30	10	19500
	Remuneration for Resource persons	1000	1	10	10000
	Training Materials /Kits	20	30	10	6000
	Organizing Expenses like notice, banners, hall rent, mike rent, documentation, etc.	3000	1	10	30000
	Total in this category				65500
Training in Commercial Poultry Farming					
3	Food Expenses	65	30	10	19500
	Remuneration for Resource persons	1000	1	10	10000
	Training Materials /Kits	20	30	10	6000
	Organizing Expenses like notice, banners, hall rent, mike rent, documentation, etc.	3000	1	10	30000
	Total in this category				65500
Training in Vermi Composting					
4	Food Expenses	85	40	10	34000
	Remuneration for Resource persons	1500	1	10	15000

	Training Materials /Kits	25	40	10	10000
	Organizing Expenses like notice, banners, hall rent, mike rent, documentation, etc.	4500	1	10	45000
	Total in this category				104000
	Training in Rabbit Rearing				
	Food Expenses	70	30	5	10500
	Remuneration for Resource persons	1500	2	5	15000
5	Training Materials /Kits	75	30	5	11250
	Organizing Expenses like notice, banners, hall rent, mike rent, documentation, etc.	3600	1	5	18000
	Total in this category				54750
	Training in Organic Farming				
	Food Expenses	70	50	10	35000
	Remuneration for Resource persons	1500	2	10	30000
6	Training Materials /Kits	75	50	10	37500
	Organizing Expenses like notice, banners, hall rent, mike rent, documentation, etc.	4000	1	10	40000
	Total in this category				142500
	Masonry Training in Water Harvesting Systems				
	Stipend	100	100	4	40000
	Remuneration for Resource persons	750	5	4	15000
7	Training Materials /Kits	500	5	4	10000
	Organizing Expenses like notice, banners, hall rent, mike rent, documentation, etc.	25230	1	4	100920
	Total in this category				165920
	Grand Total - B				627670
	Total (A+B)				1466000

IEC - for CHOVVANNUR BLOCK PANCHAYATH

Sl no	Activity	Unit	Unit Cost	Target	IWMP Fund BC	Amount
1	Printing of leaf lets	Nos	10	8500	85000	85000
2	Distribution of stickers	Nos	7	6500	45500	45500
3	Printing of book lets	Nos	25	6000	150000	150000
4	Fixation of watershed Name boards	Nos	7500	15	112500	112500
5	Posters printing	Nos	10	5000	50000	50000
6	Fixation of message boards	Nos	1500	35	52500	52500

7	Preparation of project details boards in block panchayath Nos	Nos.	5500	8	44000	44000
8	Wall painting and writing	Nos	5500	10	55000	55000
9	Distribution of Name slips	Nos	2	10000	20000	20000
10	Nattarivumela	Nos	27972	1	27972	27972
11	Vilambara Jatha (Each watershed)	Nos	15000	8	120000	120000
	Total				762472	762472

GENERAL ABSTRACT

Sl. No.	Name of Training	Total Expenses	I Year	II Year	III Year	Total
SLNA LEVEL CAPACITY BUILDING TRAINING PROGRAMMES						
1	MIS Training	31250	0	31250	0	31250
2	Watershed, its concept and Planning & Implementation	10800	10800	0	0	10800
3	DPR Preparation, RS and GIS and its application in Watershed Management	18000	18000	0	0	18000
4	IWMP – Interventions, A new approach	6500	6500	0	0	6500
5	IWMP – Its concepts, strategy and convergence	8500	8500	0	0	8500
6	Preparation of Process and Technical Manual	22500	22500	0	0	22500
7	Action Plan Preparation for PS&M and LSS	21382	0	21382	0	21382
8	Training of Trainers (ToT) in IWMP	57000	57000	0	0	57000
	Total In this category	175920	123300	52620	0	175932
DWCDC LEVEL CAPACITY BUILDING TRAINING PROGRAMMES						
1	MIS Training	135000	0	135000	0	135000
2	Watershed, its concept and Planning & Implementation	39246	39246	0	0	39246
3	DPR Preparation, RS and GIS and its application in Watershed Management	42500	42500	0	0	42500
4	IWMP – Interventions, A new approach	32500	32500	0	0	32500
5	IWMP – Its concepts, strategy and convergence	33500	33500	0	0	33500

6	Preparation of Process and Technical Manual	62250	62250	0	0	62250
7	Action Plan Preparation for PS&M and LSS	41000	0	41000	0	41000
8	Training of Trainers (ToT) in IWMP	141800	141800	0	0	141800
Total In this category		524796	348796	176000	0	527796
PIA Level Trainings						
1	Institution and Capacity Building	81475	81475	0	0	81475
2	Orientation Program on IWMP and awareness on Participatory Watershed Development	94000	94000	0	0	94000
4	Planning & Implementation of Projects related to creation of common assets	50500	50500	0	0	50500
5	Concept of Watershed Management – Roles and Responsibilities	35200	35200	0	0	35200
6	Empowering People's Representatives for IWMP	186500	186500	0	0	186500
7	Exposure visit for Different Committees and Institutions	88000	0	88000	0	88000
8	Competitions for the HSS students in Elocution, Quiz and drawing & Painting	34500	0	0	34500	34500
9	Road Shows and Mobile Exhibitions	268155	268155	0	0	268155
Total in this category		838330	715830	88000	34500	838330
Skill Development Training						
1	Cowrearing Training	29500	9835	9835	9830	29500
2	Goat Rearing Training	65500	0	21800	43700	65500
3	Training in commercial poultry farming	65500	0	43700	21800	65500
4	Training in Vermin Composting	104000	0	34600	69400	104000
9	Training in Rabbit Rearing	54750	0	0	54750	54750
10	Training in Organic Farming	142500	0	71250	71250	142500
11	Masonry Training in Water Harvesting Systems	165920	0	82960	82960	165920
Total in this category		627670	9835	264145	353690	627670
12	IEC Materials	762472	762472	0	0	762472
Grand Total		2932200	1963245	580765	388190	2932200

ENTRY POINT ACTIVITIES

Entry-Point Activities are necessary part to orient the community members towards Integrated Watershed Management Project (IWMP). Direct dialogue about the intervention can create a negative attitude among the people and hence, some innovative method should be applied to bring about a positive air in the project area. Entry-Point Activities help us manage that. However, these activities cannot be implemented blindly. There was a need assessment carried out initially to identify the community needs. Need assessment is followed by community mobilization meetings where consultations from the community were also included again.

Introducing watershed development program to the community has always been recognized as an important activity. This is done through what are called ‘**Entry Point Activities**’ (EPA) in the parlance of watershed literature. It involves building the rapport with the community, strengthening and sustaining it throughout the program and beyond. Knowledge-based EPAs are found more effective to build rapport with the community by ensuring tangible economic benefits for the community.

SL No.	Name of the Watershed	Name of EPA	Amount
1	Nelmathodu-Cheemankulam	Rajiv Nagar Drinking Water Project	408960
2	Anthimahakalanpuncha	Shutter type check dam in Oduvan kunnu	264480
3	Kurinjipadam Watershed	Construction of Shutter type check dam at Manaykkathazhamthodu near the bridge of Chiramanangaduroad.	390240
4	Kollancheri - Muriyalthodu Watershed	Well Recharging & Sluice maintenance	482400
5	Kottol	Well Recharging	415200
6	Amblakadave	Bund protection	216000
7	Kondrakadave	Culvert extension and side protection	126720
8	Kothachira	Well Recharging	41760
Total			2345760

NATURAL RESOURCE MANAGEMENT (NRM) 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.

1. Soil And Water Conservation Works:

Conservation works for soil and water cannot be separated from one another, because these two 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:

Water Conservation Activities	Soil Conservation Activities
<ul style="list-style-type: none"> • Water percolation pit • Yard water collection pit • Source recharging • ‘H’ Type check dams • Other check dams (2m, 3m, 4m etc.) • Vented Cross Bar • Construction of pond • Construction of open wells • Spring Development • Drinking Water Scheme • Centri Petal Terracing • Deepening of open well • Renovation of pond • Roof Top rainwater harvesting • Irrigation programmes 	<ul style="list-style-type: none"> • Stone bunding • Bench Terracing • Stream Stabilization • Retaining wall construction for stream bank • Gully controlling check dams • Geo-textile • Bio fencing • River bank protection

Here two important activities need further explanation, because of its importance and practicability in implementation. These are Rain Water Harvesting Tanks and artificial recharge of ground water. Given below is a brief description of the same:

1. Rain Water Harvesting Tanks

The abundance of water received during the monsoon season can be harvested using different types of harvesting tanks with vivid technologies. Tanks or storage facilities of different shape, size and capacity can be constructed throughout the watershed, so that the water available will not be lost and kept in the watershed itself. Artificial storage systems can be constructed in public as well as private lands. The natural systems, such as dried up wells, ponds and even streams can be the storage facility to harvest rain water. A community based approach and community based management system need to be built up for promoting Rain Water Harvesting.

2. Artificial Recharge of Groundwater:

Besides conventional water conservation and harvesting measures, percolation tanks and subsurface dykes can be constructed for artificial recharging of the groundwater. These structures shall be constructed on sites identified through remote sensing maps and village transects. Artificial well re-charging systems are also part of this component. Recharge pits shall be constructed near the wells and water is collected from the roof top through pipes, filtered and sent to the wells. This will help the water table increase and sustain the water level even in severe summer. A major emphasis should be given in this regard throughout the Grama Panchayats for Water Table in the watershed villages had shown increased by 1 to 1.5 meters.

3. Plantation Activities:

Another important activity which is given top priority among the watershed development activities is bio-fencing or plantation on private and community lands. To supplement these activities, soil working and seed sowing in vast expanses will be taken up. *Jatropha* (Ratanjot), *Anona squamosa* (Sitaphal), *Moringa oleifera* (Moringa), etc. in vast number will be produced and distributed. A large number of fruit bearing species like *Mangifera indica* (mango), *Emblica officianalis* (Amla), *Psidium gujava* (Guava) etc. shall be given top priority on private lands in the downstream area. Multipurpose trees like Teak, Mahagony, Anjili, Jack, vendek Bamboo, etc. shall be the priority for Government Land as well as private lands in the upstream area. Saplings can be raised in Kitchen gardens of SHG members, Nurseries run by SHGs and Nursery directly run by PIA. The raising of saplings by the SHGs would certainly bring them an additional income.

IWMP - Chowannur block panchayath - Livelihood Master Plan

Watershed	Total Cost	WDS Fund	BLWDS Fund	Balance	1st Allocation	2nd Allocation	R F	Major LHS	R F 1st	RF 2nd	Major LHS
Nelmanthodu - Cheemankulam	920160	25000	5000	890160	460080	460080	625000	265160	430080	194920	265160
Anthimahakalanpuncha	595080	25000	5000	565080	297540	297540	400000	165080	267540	132460	165080
Kurinhipadamthodu	878040	25000	5000	848040	439020	439020	600000	248040	409020	190980	248040
Kollencherrythodu	1085400	25000	5000	1055400	542700	542700	750000	305400	512700	237300	305400
Kottolthodu	934200	25000	5000	904200	467100	467100	650000	254200	437100	212900	254200
Vallithodu	486000	25000	5000	456000	243000	243000	325000	131000	213000	112000	131000
Perumthodu	285120	25000	5000	255120	142560	142560	200000	55120	112560	87440	55120
Kothachira	93960	25000	5000	63960	46980	46980	50000	13960	16980	33020	13960
Total	5277960	200000	40000	5037960	2638980	2638980	3600000	1437960	2398980	1201020	1437960

LIVELIHOOD ACTION PLAN - FUND UTILIZATION PLAN (Other Components)

Name of watershed	Revolving Fund (Ist)	Revolving Fund (IInd)	Sub Total	Major Livelihood Activity	Total
	1	2	(1+2)	3	(1+2)+3
Nelmanthodu – Cheemankulam	430080	194920	625000	265160	890160
Anthimahakalanpuncha	267540	132460	400000	165080	565080
Kurinhipadamthodu	409020	190980	600000	248040	848040
Kollencherrythodu	512700	237300	750000	305400	1055400
Kottolthodu	437100	212900	650000	254200	904200
Vallithodu	213000	112000	325000	131000	456000
Perumthodu	112560	87440	200000	55120	255120
Kothachira	16980	33020	50000	13960	63960
Total	2398980	1201020	3600000	1437960	5037960

* Watershed based action plan attached herewith

LIVELIHOOD, PRODUCTION SYSTEM & MICRO-ENTERPRISES

Introduction

“A livelihood is a means of making a living”. It encompasses people’s capabilities, assets, income and activities required to secure the necessities of life. A livelihood is sustainable when it enables people to cope with and recover from shocks and stresses (such as economic or social upheavals) and enhance their well-being and that of future generations without undermining the natural environment or resource base.

The promotion of sustainable livelihoods is one of the ways of development agencies to achieve poverty reduction. 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 helps these households’ opportunities for income generation through employment, preferential access to common property recourses and non-land based access to recourses and decisions –making forums.

The watershed programme in the Choovvannur Block Panchayat has redefined the target group as marginal and oppressed sections of the village community (landless, small and marginal farmers, women). This watershed programmes enables multi-cropping and the introduction of diverse agro-based activities, which help to provide sustainable livelihoods to the people residing in the watershed area. The 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.

Mode of Fund Management in Livelihood activities under IWMP

The Watershed Development Programmes has made distinction between Livelihood Activities for asset-less and Production Systems & Micro-Enterprises. Accordingly, the project costs have been assigned. The Government of India has come up with guidelines for operation of livelihood activities; the same is re-produced here for convenience of the implementer.

One of the key features on livelihood activities for landless/assetless persons is “**Nine percent**” of the total project cost has been assigned to support the livelihood activities for landless/assetless households. This component aims to maximize the utilization of potential generated by watershed activities and creation of sustainable livelihoods and enhanced

incomes for households within the watershed area. This will facilitate inclusiveness through enhanced livelihood opportunities for the poor through investment into assets, improvements in productivity and income, and access of the poor to common resources and benefits and augment the livelihood strategy at household level

Budget and administration:

- 9% of the total project fund is earmarked as the livelihood component for the benefit of marginalized communities, including SC/ST, landless/assetless people, women, etc.
- This earmarked amount shall be taken out of the total project fund as a grant to WC in its bank account, which in turn will be used to provide financial assistance, (seed money for revolving fund to SHGs and a grant -in -aid for enterprising SHGs/ SHG federations to undertake major livelihood activities
- At least 70% of this livelihood fund will be used to support revolving fund for SHGs, including support to enterprising individuals, and a maximum of 30% for supporting grant-in-aid to enterprising SHGs/ SHG federations

MICRO-ENTERPRISES PROMOTION UNDEDR INTEGRATED WATERSHED MANAGEMENT PROGRAMME

Micro-enterprises are the keys to generate employment opportunities as well as income earning avenues to both landless, women and landholding people. Therefore, the poverty alleviation in semi-arid regions requires a greater understanding of the interactions of agriculture and allied enterprises and their implications for the household economy. This paper synthesizes the available evidence on agriculture and allied enterprises in watershed development areas and how policy should address the issue to balance between agriculture and micro- enterprises promoted by watershed development programs.

Small-scale entrepreneurship through watershed development plays a significant role in poor people's lives and is one of the keys to lifting people out of poverty. Some of the activities are the backbone on which the rural society survives in most arid and semi-arid regions. Watershed development primarily aiming sustainable management of natural resources contributing for overall agriculture development and livelihood promotion in rural areas. Initial poverty eradication efforts in India concentrated on supply of agricultural technologies, inputs and services that were often 'production' orientated. However, they were largely inappropriate to the needs of the poor and the benefits were mostly captured by the wealthy.

Later, the approach changed towards 'capacity-building' in sector organizations to equip people and organizations with the skills and resources to do a better job. The concept of livelihoods and livelihoods analysis emerged in the mid nineties – closely associated with poverty reduction strategies. This approach was useful to identify and prioritize the needs of the community in enhancing their livelihoods.

IWMP – Chowannur Block Panchayath

Production System and Micro Enterprises based livelihood activities

Project cost at a glance

Total Project cost	:	58644000
Allocation for Micro enterprises Plan (10%)	:	5864400

Production System and Microenterprises based Livelihood Activities under IWMP

One of the important components in the Watershed Development Projects –includes support to production/farming system based livelihood activities and enterprises. “**Ten percent**” of the total project cost has been assigned to support the production system and microenterprises for land owning households. This component aims to diversify and maximize the production and productivity of agriculture system as a whole and targets the land holders with cascading benefits to landless agriculture labour, leased -in farmers and share -croppers.

Budget and administration:

- It has to be ensured that at least 10% of the total project funds are utilized for the benefit of production system and microenterprise based livelihood activities.
- The fund amount shall be taken out of the total project fund as a grant to WC in their bank account which in turn will be used to provide financial assistance to identified farmers.
- Based on the application received for such activities, a team consisting of WC, PIA and nodal officer of the concerned line department and Technical Expert of WCDC will approve the proposal.
- Once the activity is approved, payments will be made through cheques in their individual accounts.

Cost details	Amount	
	Ist Phase Allocation (5%)	IInd Phase Allocation (5%)
Name of watershed		
Nelmanthodu - Cheemankulam	511200	511200
Anthimahakalanpuncha	330600	330600
Kurinihipadamthodu	487800	487800
Kollencherrythodu	603000	603000
Kottolthodu	519000	519000
Vallithodu	270000	270000
Perumthodu	158400	158400
Kothachira	52200	52200
Total	2932200	2932200

**“LIVELIHOOD AND INCOME-GENERATING MICRO-ENTERPRISES”
SCHEMES PROPOSED FOR THE LANDLESS/ASSETLESS COMMUNITIES**

The innovative farmer participatory approach for integrated watershed management implemented through a consortium of research organizations, development agencies and NGOs envisages a strategy of convergence of the activities in watersheds. Given below is a brief description of some livelihood and income generating micro enterprises that may improve the income of the watershed community

1. Soap /Detergent Making Units

The concept of family sustenance as it relate to women soap making enterprises involves to a large extent the efficient management of local resource to produce meaningful products and earn sustainable profit for the owners of enterprises. It also involves the marketing of the entrepreneurial activities that make production viable, without which the entrepreneur has not added value to production as well as contribute to family sustainability.

SOAPS AND DETERGENT MAKING includes the Laundry soaps, synthetics detergents and toilet soap included the bathing bars. Since these are consumer items, technology, quality, marketing and distribution determine the success of units in this sector. The industry has developed both in the small scale and organized sector Laundry soap is reserved for the manufacturing in the small scale and 90% of the production of laundry soap is in the small-scale sector. Toilet soap is however dominated by the multinational unit.

2. Distribution of tailoring machine :

The main objective of this component is to provide women with basic equipment to start a job and support them to become organized in community-based working units to effectively manage and run their businesses. The need for poverty alleviation from the rural areas had been a hot matter of discussion. One of the ways proposed to achieve this aim is to involve as many people as possible in income generating activities, which will augment family income. Many men and women also have expressed the need for augmenting family income at the time of planning the implementation programmes.

The study conducted in and feedback obtained from the watershed community explicitly showed that there are many women below the age group of 30 who have completed tailoring

course and are finding difficulty to find out source for purchasing a tailoring machine. The watershed committee proposed to distribute Tailoring machine to such women so that they can earn a livelihood.

3. Tailoring unit:

The rural non-farm economy plays a significant role in providing employment and income for the poor in rural areas. As population pressure grows in the land-scarce, the growth in agricultural production cannot absorb the increasing rural labour force in agricultural employment. At the same time, the urban industrial sector cannot grow fast enough to absorb the surplus labour released from agriculture. This leaves the rural non-farm sector to absorb those released from agriculture but not absorbed in the urban industries. The rural non-farm sector emerges as a very important source of income and employment and, consequently, as a critical factor in rural poverty reduction. Non-farm employment is differentiated into casual and regular wage employment, and self-employment.

Pervasive poverty affects hundreds of people in the watershed areas on many levels, and thus its alleviation requires diverse measures. The most important interventions are those which provide employment and income generation opportunities to the rural poor, enabling them to enhance their living standards.

Non-farm sources of income are important for the rural poor for two reasons. First, the direct agricultural income obtained by the poor is not enough to sustain their livelihoods, either because of landlessness or because the land they own or lease is insufficient. Second, wage employment in agriculture is highly seasonal, so that the poor value non-farm sources as employment supplementation. Rural non-farm activities are especially suitable for poor households because they require little capital and generate more employment per unit of capital than do farm activities. Promotion of tailoring units among the unemployed and those who are trained will be a suitable intervention to improve the non-farm income of the watershed community.

4. Poultry unit:

It is well known fact that a fairly significant proportion of the landless and marginal farmers eke out their living from poultry and other small ruminants. Backyard poultry requiring hardly any infrastructure set-up is a potent tool for uplift of the poorest of the poor.

Besides income generation, rural backyard poultry provides nutrition supplementation in the form of valuable animal protein and empowers women. It has also been noticed that the demand for rural backyard poultry is quite high in tribal areas.

5. Mushroom:

The programme on mushroom cultivation and production technology as an off-season occupation and income generator shall be organized to capitalize on the increasing consumer market for mushrooms.

The demand for the product has been increasing by the day providing new vistas for income generation for individuals, SHGs, and rural households. According to KVK sources, the market for mushrooms is dispersed covering both urban and rural markets.

6. Cow rearing:

The dependency of rural poor on livestock for their livelihood is quite substantial and this situation is likely to continue for the years to come. Among the livestock, dairy cattle play a pivotal role in the livelihoods of the poor people especially those who are poor not only in land assets but also in literacy, access to infrastructure facilities, information and basically unskilled. These rural poor had no option but to take up dairy farming as a main occupation as it is the only enterprise which could provide regular income.

Cow rearing can be adopted as a means of either main income or supplementary income by the village community and it is the most traditional way of building up a means of livelihood among the asset-less people. Cow rearing is proposed both as a means of income and as means of production system management in every watershed.

7. Rabbit rearing:

Rabbit farming is another livestock activity with great scope as it is relatively easy, rewarding and takes little space compared to other livestock activities. Rabbit farming can also provide a very valuable additional source of income in the hilly areas where opportunities of employment are very limited. Another important consideration is food production cycle, which shows that rabbit need not be in competition with man for its food

8. Apiculture:

Production of honey from farmlands can be a secondary activity for farmers as it requires less time as compared with other activities and can be carried out by women in a house. On an estimate, about 80 per cent of honey is used directly in medicines and 10 per cent is used in Ayurvedic and pharmaceutical production. Studies found that apiculture is an excellent, esthetic livelihood generating endangered hobby. It has a potential market with environmental responsibility and worldwide medicinal and nutritional recognition. Apiculture requires less investment and easy-to-learn. It also helps in pollination of crops and increase seed setting in many crops.

9. Mini Dairy Unit:

Dairying is an important source of subsidiary income to small/marginal farmers and agricultural labourers. The manure from animals provides a good source of organic matter for improving soil fertility and crop yields. The gober gas from the dung is used as fuel for domestic purposes as also for running engines for drawing water from well. The surplus fodder and agricultural by-products are gainfully utilized for feeding the animals. Since agriculture is mostly seasonal, there is a possibility of finding employment throughout the year for many persons through dairy farming. Thus, dairy also provides employment throughout the year. The main beneficiaries of dairy programmes are small/marginal farmers and landless labourers. The plan is to select 5 small holder farmers from each watershed within a period of three years and avail financial support to purchase either a heifer or a milk animal with adequate knowledge input.

10. Village Seed Bank:

Village seed bank system has been introduced as part of income generating activities in many watersheds. These seed banks are providing self-sufficiency and self reliance for farming communities since they experience the drudgery of seed companies in terms of spurious seeds supply. Therefore, seed banks shall be emerged as a worthy social capital in rural areas

11. Vermiculture:

Vermiculture can be promoted as a prominent micro-enterprise for rural landless and women groups, as it requires low investment. Vermiculture is environment friendly as it converts disposal of organic wastes generated in farms as well as in household front as

productive plant nutrient. These residues contain valuable plant nutrient and can be effectively used for increasing the agricultural productivity. Earthworms convert the residues into valuable source of plant nutrients by feeding on the organic material and excreting out valuable organic manure. Vermicompost increases water-holding capacity of the soil, promotes crop growth, helps produce more, and improves food and fodder quality.

12. Poultry-based Activities:

Agro wastes can be diverted for poultry feed along with other supplemental food. Rearing of improved breed like broilers and layers can increase the returns and improve the livelihood options.

13. Banana chips making unit:

Chips are the most commonly consumed first generation snack foods. They are used as snack food both in domestic as well as in fast food centers and restaurants as side dish and garnishes. Moreover, the product can be safely stored for up to six months without any change in quality. When watershed community takes up chips making as an enterprise, It brings additional income to support their subsistence level of living. The scheme is suitable for the assetless as an income generating activity and they earn a decent living out of the scheme.

14. Banana cultivation:

Bananas and plantains are among the world's major food crops and important staple and income generating fruits for millions of poor people in tropical and subtropical countries. Banana production provides suitable options for subsistence and income generation in the mid and high elevation area.

15. Distribution of Organic Fertilizer:

Many organic materials serve as both fertilizers and soil conditioners. Over time, soils treated only with synthetic chemical fertilizers lose organic matter and the all-important living organisms that help to build a quality soil. As soil structure declines and water-holding capacity diminishes, more and more of the chemical fertilizer applied will leach through the soil. In turn, it will take ever-increasing amounts of chemicals to stimulate

plant growth. When you use organic fertilizers, you avoid throwing your soil into this kind of crisis condition.

16. Organic Farming:

Organic farming works in harmony with nature rather than against it. This involves using techniques to achieve good crop yields without harming the natural environment or the people who live and work in it. During the PRA, many people have suggested that the food security and food safety of the community is a grieving concern for them. This is happened due to the shifting of the practices of traditional agriculture in the watersheds. At the same time they admit that Organic farming does not mean going 'back' to traditional methods. Many of the farming methods used in the past are still useful today.

17. Homestead Vegetable garden:

Increased diversity of vegetables and fruits at the household level both in terms of production and consumption is only a need to sustain the food security and health of the poor households. Homestead vegetable gardens which are developed organically are capable of improving food security and nutritional status.

Biogas Plants:

Sustainable waste management and energy conservation are the objectives, of promoting installation of biogas plants in every house, which has a landholding of more than seven cents in the watershed area. The households in which a bio-gas plant is installed, the byproducts like slurry which is a high organic nutrient concentrate from the plant can also be utilized for organic cultivation. Now a household bio-gas plants had made mandatory by the state government as per order GO (MS) No. 73/2011/LSGD, issues on 01.03.2011. Therefore, promotional work on biogas plants in the watershed area under the IWMP projects shall also be a promotional work of the State Government.

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 institutionalized. At the district level there are two bodies, one is District Level Core Committee (DLCC) and the other is Watershed 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 IWMP of Chovvannur 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 ingredients 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 verifiable project indicators to determine the gains made towards the stated objectives.

Evaluation is the process which seeks to analyze and make 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 stakeholder institutions that involve in the process of monitoring should have special monitoring tools and systems and adequate 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 and evaluation study and documentation.

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 (e.g. Measurement of water table, progress in construction work 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.

The multipurpose benefits of the planned interventions in this DPR are as follows:

Upstream		Downstream		Overall
Direct	Indirect	Direct	Indirect	
<ul style="list-style-type: none"> • Reduced soil erosion • Better water availability • Better quality of water 	<ul style="list-style-type: none"> • Reduced deforestation • Enhanced minor forest produce availability 	<ul style="list-style-type: none"> • Improved water availability • Better crop production • More biomass availability 	<ul style="list-style-type: none"> • Enhanced fuel (biomass) availability • Enhanced cattle milk production • Enhanced other economic activities like vermin composting, sericulture, orchard etc 	<ul style="list-style-type: none"> • Reduced migration • More employment • Improved Health condition • Improved adaptive capacity to climate change • Social Development

In addition, Watershed Management activities included in this DPR is an advanced idea of ordinary watershed management which primarily includes:

- Better water management,
- Minor irrigation,
- Drinking water supply,
- Sanitation facilities,
- Forestry
- Micro crediting to use Non Timber Forest products, Aquaculture, orchard maintenance and handicrafts for income generation and livelihood

In short the planned interventions proposed in this DPR shall:

- Consider the total environmental impact of the proposed system.
- Consider water quality as well as water quantity.
- Be consistent with the local Plan of Development and any existing watershed management plan.
- Coordinate with erosion control measures and aquifer protection.
- Minimize disturbance of natural grades and vegetation, and utilize existing topography for natural drainage systems.
- Preserve natural vegetated buffers along water resources and wetlands.
- Minimize impervious surfaces and maximize infiltration of cleansed runoff to appropriate soils.
- Reduce peak flow to minimize the likelihood of soil erosion, stream channel instability, and flooding and habitat destruction.
- Use wetlands and water bodies to receive or treat runoff only when it is assured that these natural systems will not be overloaded or degraded.
- Provide a maintenance schedule for management practices, including designation of maintenance responsibilities.

Two issues are central here: first, an improved natural resource base can contribute to enhanced livelihoods for a growing rural population but is not a panacea; second, even a moderate degree of equity requires high levels of social organization and an ability among women and the poor to articulate their requirements, together with continuing vigilance to ensure that their rights are not overridden. Provisions are left in this DPR to ensure strong and sustainable social organizations.

EXPECTED OUTCOMES OF THE PROJECT

The overall expected outcome of IWMP is the strengthening of **Environmental Governance** and **advancing the Environment and Natural Resources Agenda** in the watershed area. The proposed Project will tackle two key issues facing the sector: (i) the need to build strong, sustainable institutions with capacities to manage the sector and investments

therein, and (ii) the need to address the issues of agricultural productivity for food security in a sustainable manner.

The expected outcome of the project also include the overall increase in the standard of living of the people in the watershed by mitigating the various constraints in the development of the natural resources which will increase the productivity of various activities. The end result will be increase in the employment and income of the farm households and as well as landless households. Besides, watershed committee and other functionaries to implement and maintain the watershed after the withdrawal government support. One of the parameter to result in the impact was completion of the activities in the given period. Some of the quantifiable indicators are as follows:

Employment

One of the prominent features of watershed program is to create self sustenance to stakeholder in terms of livelihood and increase in employment opportunities. Watershed creates employment opportunities during the work phase for labour intensive activities like construction of gully plug, earthen dam, field bund, check dam, VCBs and through the assets created under watershed program have a direct impact on agriculture and natural resource development. Livelihood for self employed, wage labour and income generating activities where there is an ample scope for employment. As the net employment increases the per-capita income from agriculture, animal husbandry and other allied activities are also sure to increase.

Ground water structures

There are several water bodies existing in the villages which are for storing ground water. But some of these water bodies are in damaged condition which is in no use at present. These structures are proposed to be renovated through project funds and convergence with MGNREGA which will bring these water bodies for irrigating about a considerable quantum of agricultural land.

Ground Water Table

The ground water table of this cluster of villages is approximately 15mt and further goes down in summer and drought seasons. One of the reasons for groundwater depletion and lowering of the water table is over-pumping and unchecked ground water utilization. Due to growing population the demand for water for daily activities and agriculture has increased.

This poses a major pressure on the water table. The water travels slowly through layers of soil and rock before finally reaching the water table. Several water harvesting structures are created like percolation tanks, roof water harvesting structures and dug well recharge for recharge of ground water. Hence a strong effort is taken to maintain a balance between usage and recharging of the ground water. Due to erratic rainfall and uncovered ground the rain water infiltration to ground is decreasing day by day. It is understood from the villagers that the water table of the dug well in the village before 10 years was about 5.5 mt. during March which is 7.6 mt now. The proposed soil and moisture conservation measures will help in bringing more area under vegetative cover so that velocity of run-off can be reduced which will increase infiltration and thus ground water table.

Quality of drinking water

The report collected from KWA sub-division office shows that the drinking water quality is not safe at present in the village. The Iron content of the water is higher and Fluoride content is lower than the recommended quantity. Similarly due to damage of the platform and drains the water sources get contaminated by run-off water. Steps are proposed for repair of the well platforms with drains and soak pit for sanitary point of view. Awareness will be created among the villagers about safe drinking water and causes of water contaminated diseases. After project period it is expected that the each household will get safe drinking water.

Change in cropping and land use pattern

Presently cultivable land is under different type of crops and a very small area of land is under paddy cultivation only, which includes upland, midland and low land. Most of the up lands are kept fallow as they are poor in fertility status. As these up lands are suitable for Horticultural crop and the farmers can get a good return after 3-4 years it is proposed to take up planting of fruit bearing trees like Mango and jack in these land. They can take up inter crops. Similarly hybrid plant cultivation is proposed in up lands which will increase not only production but also productivity. This will increase the area under crop in each year. Farmers are not used to vegetable cultivation. Pump sets are proposed to be provided for cultivation of vegetable every year.

Fodder

Although there are a large number of cattle populations in the village, availability of fodder for them is scarce. The villagers are not aware of quality fodder crops and its benefits for the

animals. Fodder crops are to be taken up on community basis for the benefit of the cattle. Back yard fodder cultivation will also be promoted so that fodders will be available adequately.

Agriculture

Agriculture itself is constraint due to lack of irrigation facilities and total dependence of rain has limited the scope for agriculture. However structures created under watershed opens avenue to take up cropping in any season by utilizing the water stored through check dam, VCBs and, farm ponds. Field bunds are also created to check the run-off and to promote percolation of rain water.

Vegetative cover

A considerable quantum of area will be under vegetative cover preventing the rate of evaporation from the surface of the earth. The vegetative cover will also prevent sheath erosion and wind erosion along with water runoff especially from the slopes. The live fencing, cover crops promoted under the project will ensure the above mentioned functions.

Livestock

The project will help improve the livestock in almost all the watershed by way promoting cattle rearing and other animal husbandry interventions. This will enhance the income level of the assetless poor as well indigenous communities. Increase in milk and meat production will help the communities to become self reliant in food security.

Food Security & safety

The implementation of Transfers of Natural Resource Management to the local communities is expected to promote sustainable farming practices and subsequently increase revenues, create jobs and improve living conditions for local communities.

Self Help Group

Although there are several SHGs in the villages, they are poorly involved in any activities for generating income. These groups are identified and proposed to be assisted for taking group activities for their livelihoods. Similarly more groups can be formed as per the interest of the women community and trained for different activities so that more and more women will be involved in income generation.

Increase in nos. of Livelihoods

At present agriculture, wage earning, and to a little extent, animal husbandry are the livelihood options for most of the households. All most all the households are involved in combination of these livelihoods. But the income from these livelihoods is not at all sufficient for fulfilling all their needs. Skill up gradation through value addition and marketing in a profitable way are proposed for getting more income from these livelihoods. The poor and very poor households are identified to assist for different other options of livelihood with adequate training and exposure to them.

Increase in Income:

As estimated from the individual household survey it is estimated that the average annual income of the village is about Rs14000/- per family. It varies from Rs 6000/- to Rs 55000/- Introduction of livelihood options for individuals and SHG members and improving cropping pattern and crop production of households will facilitate for increase in annual income for all the households of the village.

Credit linkage

The present SHGs in the village have already being linked with Banks. It is understood that they have been exploited in getting credit and subsidy due to their ignorance. Steps will be taken for organizing them, building their capacity, up grading their skills and making them understanding the concept of SHG. After that all the existing SHGs and new SHGs are to be linked with banks for their activities.

Resource use agreement

Steps will be taken for developing the status of common property resources like forest, pasture and water bodies. Awareness will be created among the villagers for using the resources by every family in a systematic manner so that optimum utilization of these resources can be possible.

Watershed Development Fund

During planning process a general consensus has been brought among the households to contribute for the works executed in private land. The concept and use of WDF is understood by the villagers and agreed to contribute 5% to 10% in case of NRM works and 20%to 40 % for Production system works in their own land. Some of the outcomes are as follows:

Sectors	Expected Outcomes	Indicators
Agriculture	Improved irrigation in around 180 Ha of land	Increment in gross irrigated area
	Enhancement in agriculture production by 35%	Increment in quantity of agriculture produces
	Good Organic farming adopted by 30% farmers	Number of functional vermi compost units
Horticulture /Production System Management	Enhancement in crop production by 42%	Rise in quantity produced
Natural resources	Pasture land development by 3%	Increment in pasture land area
	Improvement in water resources and water table will be raised to 3meters	Physical existence of the water bodies
Animal husbandry	Dairy development increase income of 46% of families by 20%	Number of dairy farming units
	Improved Goat Rearing Practices brings increased income for 27% landless families	Number of farmers with Goat rearing units
Micro enterprises	Improvement in women's status	Increment in income of women and their institutions (SHGs)
	Farm Nursery Rising	Physical existence of Farm Nurseries
	Better market facility	Number of well-functioning vegetable and fruit collection centers, milk and meat preservation units
Development of BPL and landless families / Micro Enterprises	Improvement in economic status of BPL HHs	Increment in the income of BPL families,
	Improvement in social status	BPL families will have ownership over the generated resources

EXIT PROTOCOL

Introduction

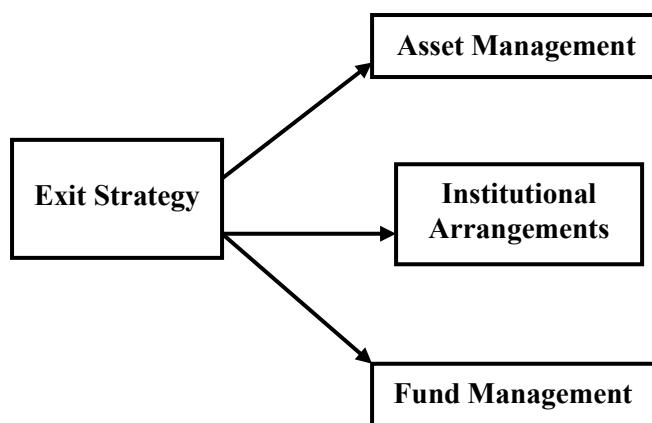
Sustainability of the interventions and benefits of developmental projects has been a major challenge in all cases. Natural Resource Management (NRM) related projects. **Integrated Watershed Management Project** is no exception. That is why post project management strategy to ensure sustainability during post-project period is considered as very important. Recognizing this, PIA along with the community feels it imperative to put a system in place in such a way that the efforts gone through the project interventions and the benefit of such interventions are sustained in the project areas with a revised and strengthened institutional arrangement with changed roles and responsibilities at various levels. The strategies provide a framework for systematically planned withdrawal of project support from a watershed programme and ensure sustainable post project management of watershed. This system should be in a position to address the following broad concerns:

- * Sustainability of the institutions established and their linkages.
- * Sustainability of the infrastructures created and their use with clear mechanisms of maintenance/protection etc.
- * Sustainability of the gross processes for continued impacts on the livelihoods of the target community.

The exit protocol will be dealing ten thematic areas

1. NRM - Land Development Measures
2. NRM - Water Resource Development
3. NRM - Biomass Development/Forestry Management
4. Productivity Enhancement – Agriculture, Livestock, Fisheries
5. Nutritional and Food Security
6. Institutional Mechanism
 - a) SHGs / UGs/ CLWs
 - b) Committees (Watershed Development Committees/VSSs etc.)
7. Management of leftover revolving fund and Watershed Development fund
8. Capacity Building Support
9. Convergence with other line departments
10. Exit protocol steps

EXIT PROTOCOL STEPS



1. Asset management

- ❖ Make inventory of all Water Harvesting Systems/Water bodies. Mobilize the community to prepare an inventory of unfinished/ unattended works for completion. This work can be taken up by using WDF.
- ❖ Prepare a convergence plan to complete the incomplete work by utilizing allocation under NREGS
- ❖ Organize the UGs and build up their capacity for maintenance of the water resources and efficient utilization for cropping
- ❖ Motivate the UGs to collect a part of water users' fees and keep it in WDF for future repair and maintenance.
- ❖ Utilize the irrigation sources efficiently for crop production and maintain equity among the water users
- ❖ Prepare a suitable cropping system keeping in view the land suitability and availability of water and encourage tree farming and vegetable cultivation
- ❖ Motivate the SHGs and UGs for adoption of better technology through Line Departments and KVKs for productivity enhancement of Agriculture and Horticulture
- ❖ Identify suitable water bodies within the micro-watershed for taking up fishery and encourage the SHGs/UGs to take up fishery in these water bodies.

2. Institutional arrangement

- ◆ Build the capacity of the UGs to maintain the community assets, individual assets and collection of water fees etc to maintain equity
- ◆ The Casual Labourers may be compensated with honorarium from the WDF (institutional service budget) against their services rendered to the community after verification by the WC. In case the service is rendered to an individual, the fees are to be paid by the individual beneficiary.
- ◆ Rotate the leadership of the WCs. Ensure that the WC maintains the records and manage the fund properly
- ◆ One member of WC may be given charge of one thematic area to oversee the day to day activities for improvement and apprise the WC in the monthly meetings.
- ◆ WC may appoint a secretary as a paid worker to maintain the account and records. The payment will be made from administrative budget.

3. Fund Management

- At present two accounts are being maintained, one for WDF and the other for Revolving Fund by the WC. After recovery of the loans from the members create a corpus fund by merging these two accounts. The corpus fund so created will be used under stringent financial procedures.
- The corpus fund will be maintained by joint account of WC Secretary and President.
- The principal should not be spent and interest accrued after loan recovery will be spent by the WC on maintenance of soil & water conservation measures , training and capacity building , grant for the poorest , and other items like social events, technical knowhow, institutional services, annual audit and administrative cost.
- The interest will be charged on loan given to the groups (UGs/SHGs) for taking up Income Generating activities. Maximum period of lending will not exceed six months.

Responsibilities of the WC

- Take over the physical and financial assets as identified in the Asset Inventory and ensure their proper maintenance, usage and augmentation when and wherever needed
- Ensure active participation of all social classes from the village
- Adopt rotational leadership as a norm as per the guidelines shared by the PIA
- Identify with PIA support the Exit Activities for the watersheds and include in the Take-Off Plan. The Take-Off Plan should also include post-implementation activities, such as forum for farmer – to - farmer interaction for exchange of knowledge and cohesiveness, introduction of new technologies for livelihood development activities, convergence of programs, etc.
- Liaise with the GP for various Government programs
- Implement the mutually agreed decisions pertaining to the use of WDF and operate the bank account as authorized signatories
- Ensure annual Financial Audit and Institutional Assessment and take up timely Compliance actions
- Preparation of Annual work plans for maintenance of structures, new structures, accessing other programs and schemes, and generating resources. Facilitate maintenance of structures by individuals on private lands and through community on common lands
- Annual water estimation / crop planning by estimating total water availability, estimate uses and then prescribe water use through the GP and these decisions are binding on everybody
- Scout for new technologies for livelihoods and establish linkages to implement these
- Assist the SHGs and UGs in planning and implementing their activities
- Establish linkage with the Govt. schemes to generate additional resources for the development of the watershed
- Assist the higher-tier CBOs (Federations / Cooperatives / Farmer Associations) for their operation

CONSOLIDATED ANNUAL ACTION

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	550	120000	0	0	0	0		120000
b	Horticulture	Ha	0	0	0	0	0	0	0	0	0	0
c	Agriculture	Ha	0	0	0	0	0	0	0	0	0	0
d	Pasture	Ha	0	0	0	0	0	0	0	0	0	0
II	Soil &Moisture Conservation (SMC)											
a	Staggered trench		0	0	0	0	0	0	0	0	0	0
b	Contour Bunding	RM	525.59	42252	0	0	0	0	0	0	525.59	42252
c	graded bunding		0	0	0	0	0	0	0	0	0	0
d	geo textile	RM	1500	150000	1176.53	105888	0	0	450	40500	3126.53	296388
e	Centri petal terracing	Nos.	3150	110250	500	17500	2000	70000	150	5250	5800	203000
f	Husk trench	Nos.	430	86000	700	140000	300	60000	900	200100	2330	486100
g	Retaining wall	RM	506.0518	1522184	1099.242	3687668	1133.0903	3213760	944.0866	2674948	3682.47	11098560
III	Vegetative & Engineering Structures											
a	Earthern checks		0	0							0	0
b	Brushwood Checks		0	0							0	0
c	Gully Plugs	Nos.	1	20000	25	62500	35	87500	0	0	61	170000
d	Loose Boulder Checks		0	0							0	0
e	Gabion Structures		0	0							0	0
f	bund construction	RM	0	0	0	0	400	20000	1000	70000	1400	90000
g	Others (Live fencing)	RM	18400	441600	9000	216000	8000	192000	7500	252000	42900	1101600
IV	Water Harvesting Systems (WHS)											
a	Farm Ponds	Nos.	2	1087574	8	2259544	7	1727540	4	1300000	21	6374658
b	Check Dam		0	0	3	1000000	2	400000	3	980000	8	2380000

c	VCB	Nos.	3	1176160	1	1600000	2	2100000	1	700000	7	5576160
d	Source recharging	Nos.	138	1528500	48	624000	32	871000	62	806000	280	3829500
e	Weir construction	RM	350	48600	0	67804	0	35996	0	2116	350	154516
f	yard water collection pit	Nos.	0	0	150	67500	0	0	330	148500	480	216000
g	shutter type check dam	Nos.	0	0	0	0	3	648600	2	697352	5	1345952
f	Rain water harvesting tank	Nos.	0	0	3	300000	0	0	0	0	0	300000
g	water soak pit construction	Nos.	0	9224	0	0	0	0	0	0	0	9224
h	Well construction	Nos.	0	0	0	0	1	80000	0	0	1	80000
i	Percolation Tanks	Nos.	0	0	0	0					0	0
j	Ground Water Recharge Structures	Nos.	0	0	0	0	0	0	0	0	0	0
k	Others	Nos.	1	93930	1400	353400	1	160000	1	950600	1403	1557930
V	Livelihood Activities for Land less/ Asset less											
a.	Seed money for enterprising individuals	0	0	0	0	527796	0	0				
b.	Seed money for SHG's	0	0	0		2111184	0	1055592				
c.	Mini dairy farm	Nos					4	708356				
d.	Consumer Stores	Nos					3	511156				
e.	Tailoring unit	Nos					2	243672				
f.	Soap making unit	Nos					1	28188				
VI	Production System & Micro Enterprises based livelihood activities											
a.	Organic manure distribution	Kg			245000	960000						
b.	Planting of fruit bearing trees	Nos			4864	38520						

c.	Japanese quail rearing	Nos			2	30000	2	30000				
d.	Mushroom cultivation	Nos			7	105000						
e.	Herbal Garden	Nos			3	240000						
f.	Pipe Composting	Nos			170	240000	77	154000				
g.	cultivation of Organic tissue plantain	Nos			2306	230600	1622	162200				
h.	Bee keeping	Nos			8	88000						
i.	Cow rearing	Nos			15	450000	17	510000				
j.	Organic farming	Ha			2	50000	20	500000				
k.	Distribution of tailoring machine	Nos					48	392000				
l.	Backyard poultry	Nos					325	682500				
m.	Banana chips making	Nos					6	142700				
n.	Lime distribution	Kg					1250	12500				
o.	Goat rearing	Nos					30	270000				
p.	Organic vegetable cultivation	nos					39	78000				

Description of the Project Area

Rainfall & Climate

The district has a tropical humid climate with an oppressive hot season and plentiful and seasonal rainfall. Annual rainfall is about 3000 mm. The hot season from March to May is followed by the South West Monsoon season from June to September. The period from December to February is the North East Monsoon season. However the rain stops by the end of December and the rest of the period is generally dry.

The rainfall occurs more during southwest monsoon season during June to September and followed by northeast monsoon season during October to December. The average annual rainfall ranges between 2180.0 and 3484.0 mm in the district and mean annual rainfall for the district is 2924.4 mm. In general, the rainfall increases from south to north and west to east. The highest rainfall of 3484.0 mm is recorded at Kunnankulam and the lowest rainfall of 2182.0 mm is recorded at Vazhani. Average monthly rainfall of Thrissur District is illustrated below:

Temperature

The maximum temperature ranges from 29.3 to 36.20C where as the minimum temperature ranges from 22.1 to 24.90C. The average annual maximum temperature is 32.300C and the average annual minimum temperature is 23.30C. Generally March and April months are the hottest and November, December, January and February months are the coldest.

Relative Humidity

The humidity is higher during monsoon months from June to October and is around 93% during morning hours and 76% during evening hours.

Soil Characteristics

The soils in Thrissur district have been classified in the following types, based on the morphological features and physiochemical properties.

The laterite Soil

The predominant soil type observed is the lateritic soil, which covers almost the entire midland areas of the district. These soils are, in general, well drained, low in essential plant

nutrients and organic matter. They exhibit very low cation exchange capacity and are generally acidic.

Brown hydromorphic soils

The second prominent soil type is the brown hydromorphic soil. These are confined to the valleys between undulating topography in the midlands and in the low lying areas of the coastal strip in the district. These have been formed as a result of transportation and sedimentations of materials from adjoining hill slopes and also by deposition from rivers. The soils are very deep and brownish in colour. The surface texture varies from sandy loam to clay.

Hydromorphic Saline Soils

Very small patches of hydromorphic saline soils are found in the coastal tracts of the district. They are brownish, deep and imperfectly drained, showing wide variation in texture. In the estuarine areas of the district, these soils are found with wide fluctuations in the intensity of salinity.

Coastal Alluvium

These soils are seen on the coastal tracts stretching from Kodungallur to Chettuvai. These have been developed from recent marine deposits with a texture dominated by partially sorted sand fraction. They are excessively drained with very rapid permeability. Water holding capacity of these soils is low.

Riverine Alluvium

These soils consist of moderately well drained and distributed mainly on the banks of rivers and their tributaries. They are light to medium textured with good physical properties and contain organic matter, nitrogen and potash moderately. They show wide variations in their physico chemical properties. They are very deep soils with surface texture ranging from sandy loam to clayey loam, predominated by the fine sand fractions.

Ground Water Quality

The chemical quality of groundwater is generally good in both phreatic as well as deeper fractured rock aquifers. In the deeper sedimentary area the formation of water is slightly brackish. Around 38 Nos. of Ground Water samples are showing EC less than the 300 $\mu\text{s}/\text{cm}$ at 25°C while the 15 Nos. of samples with less than 100 $\mu\text{s}/\text{cm}$. The EC ranges from 31 to

742 $\mu\text{s}/\text{cm}$ at 25°C and the total hardness ranges from 8 to 220 mg /litre. The chloride ranges from 4.30 to 132 mg/litre

Ground Water Resources

The ground water assessment was done block wise as per GEC-1997 methodology as on March 2004. The net annual groundwater availability is 702.80 MCM where as the draft for all uses is 326.44 MCM. The Kodungallur block falls under over exploited category and already notified by central ground water Authority and State Ground Water Authority. The Ollurkara, Thalikulam, Mathilakam and Mala blocks are fall under semi critical blocks and all other blocks are under safe category. The block wise categorization of ground water resource of Thrissur district is given in Table below:

Block wise categorization and stage of development

S.No.	Blocks	Net annual groundwater availability (MCM)	Net groundwater available for future development (MCM)	Stage of groundwater development (%)	Categorization for future groundwater development
1	Chavakkad	31.68	16.14	43.75	Safe
2	Chowannur	29.15	16.34	39.28	Safe
3	Vadakkancherry	55.22	15.75	67.10	Safe
4	Pazhayannur	42.56	27.25	31.65	Safe
5	Mullasserri	29.29	18.73	32.79	Safe
6	Puzhakkal	67.14	48.23	26.03	Safe
7	Ollurkara	62.51	35.60	39.90	Semi critical
8	Thalikulam	21.30	2.28	83.57	Semi critical
9	Anthikkad	38.16	22.09	39.12	Safe
10	Cherpu	37.89	27.88	23.82	Safe
11	Kodakara	71.44	51.50	24.71	Safe

12	Mathilakam	24.58	4.10	77.56	Semi critical
13	Irinjalakuda	39.46	15.03	58.84	Safe
14	Vellangallur	35.18	15.30	53.27	Safe
15	Kodungalloor	9.37	0.0	119.05	Over Exploited
16	Mala	40.52	2.23	91.08	Semi critical
17	Chalakydy	67.35	35.47	44.68	Safe
Total		702.80	353.88	46.45	

ABOUT CHOVVANNUR BLOCK PANCHAYAT

Chowwannur Block Panchayat is situated in Thalappilly Taluk of Thrissur District. There are six Gramapanchayats - Choondal, Chovvannur, Kadavallur, Kandanassery, Kattakambal and Porkulam - included in this block. The revenue villages included in the Block Panchayat is also named as the same as that of the Grama Panchayats. The geographic area of the block is 122.13 Sq. kms. and there are 14 divisions each of which is represented by an elected member in the Block Panchayat Committee.

The mail address of the block Panchayat is as follows:

Chowannur Block Panchayat

Kanippayyur - 680517

Phone: 04885 222670

Email: cwrbd@sancharnet.in

The boundaries of the block Panchayat is as follows:

North – Perumpadappu & Thrithala Blocks

East – Vadakkanchery, Puzhakkal Blocks

South – Puzhakkal & Mullassery Blocks

West – Guruvayur & Kunnankulam Municipalities

The physiography of the block Panchayat is undulating with hills, hillocks, slopes and paddy fields. The bypass connecting the two important National Highways - NH-47 and NH 17

passes through Chovvannur. The main crops are paddy, coconut, areca nut, pepper, plantain and ginger. However rubber is slowly invading the hillocks and slopes

Socio-economic situation

According to 2011 census, the total population of the block Panchayat is 158938 out of which 75714 are males and the rest – 83224 are female. This means that there are more women than men and the male female ratio is 1099. This is more or less similar to that of the state's statistics. The population density is 1301, which is very high compared to the state's situation. The average literacy - 90.88 is very high compared to the other blocks in the district. The male literacy is 94.23 and the female literacy is 87.91

ABOUT THE GRAMA PANCHAYATS

Kadangodu

Kadangodu GP is formed in 1949 and the head quarter of the GP is situated in Vellarakkadu. Kadangodu Grama Panchayat has a total geographic area of 32.05 Sq. Km. The Grama Panchayat embedded in Chiramnengadu, Kadangodu, Eyyaland Vellarakkadu Villages in the Thalappilly Thaluk. Kadangodu marks the boundary of Thrissur and Palakkadu Districts.

Erumapetty Grama Panchayat shares the eastern boundary, Chovvaanur and Porkulam GPs the western, Choondal and Velloor GPs in the southern and Thirumittakkodu and Nagalassery GPs of Palakkadu District in the northern boundaries. There are 18 wards in the Grama Panchayat.. Upper hills, valleys, plains and paddy fields form the physiography of the Grama Panchayat and paddy forms the main agriculture from time immemorial.

Socio-economic situation

According to 2011 census the total population of the GP is 27340 out of which 12980 are male and 14360 are female. There is a clear and remarkable difference between the men and female population of the GP. The male-female proportion is very high (1106) compared to the other GPs in the Block and this proportion do justice to the state level status of women population. The population density is 853 and the total literacy is 86.44. Here also the male literacy (90.15) is little higher than the female literacy with 83.15.

Basically most of the households are involving in agriculture and it is understood that the main source of income of the people is from agriculture. There are few working in the Middle East and their income also plays an important role in building up the economy.

Kattakambal

Kattakambal special grade Panchayat is situated in the western boundary of Thrissur District and includes two villages – Kattakambal and Pazhanhi. It has a total geographic area of 16.86 Sq. The boundaries are marked with Nannamukku and Aalamkodu Panchayats of Malappuram District in the north, Kadavallur and Porkulam Panchayat in the east, Kunnankulam Municipality and Porkulam GP in the south and Punnayoorkulam and Vadakkekadu GPs in the west. The GP is in Kanhramukku River basin.

The physiography presents a kind of plain nature in the major part of the geographic area. Ayarmalakkunnu, Parakkunnu and Karadimalakkunnu are the highest areas in the GP. The land is included in the midland category. The soil types are mainly two – red laterite in the upper reaches and sandy alluvial in the plains and paddy fields.

The main crops of the watershed are paddy, coconut and areca nut. Other crops like plantain and pepper are cultivated at a marginal scale. There are some areas where cashew, turmeric and tapioca are cultivated rarely. Physiologically it is divided into three – Small hillocks, plains and paddy fields. Paddy fields are in the lowest portion of the GP. Water scarcity is prevalent in the GP because almost all the water sources are drying up in summer

Socio-economic situation

According to 2011 census, the total population in the GP is 24981 amongst which 11861 are men and the rest (13120) are women. The male-female ratio is 1106. There are 3565 Scheduled Caste population and only 4 Scheduled tribe populations. Literacy of the GP is 83.63. Male literacy and female literacy is with slight difference. While male literacy is 84, female literacy is 83.

The occupational details of the community show that the main occupation is agricultural labour. There are more people in the other wage labour sector. Only very few are involved in agriculture as the main occupation. This is because the majority of the households are having

very small land holdings and there is seldom opportunity for the GP community to promote agriculture by the small land holders.

Land-use and cropping pattern

The important crops, as said earlier, are coconut, areca nut and paddy. Rubber, and mixed crops are also seen in the Grama Panchayat. There was a practice of alternate cultivation in the paddy fields which had been totally neglected or abandoned now. Earlier, people have given importance to food crops, but of late they have found to be shifted to cash crops.

Situation of the water sources

Though there are a number of water sources in the GP in the form of streams, canals and wells, people experience severe water scarcity in the summer. This is because; most of the natural water bodies are deteriorated and unprotected against depletion. No major measures for water and soil conservation did introduced and taken up either by the farmers or by the authorities.

Kadavallur

The present Kadavallur Panchayat is formed in the year 1961 and has total geographic area of 24.84 Sq. kms. There are 20 wards in the Grama Panchayat. This GP is one among the 87 Grama Panchayats according to Kochi Regulation Act. The borders and did not changed since its inception. The headquarters of the Grama Panchayat is situated in Karikkadu. This GP includes three villages, karikkadu, Kadavallur and Perumbilavu.

The boundaries marked by Kadangodu GP in east, Porkula GP in south, Kattakambal and Alamkodu GP (Malappuram District) in the west and Chalissery GP of Palakkadu District in the north. This Grama Panchayat is about 25 to 150 meter from MSL. Once the area Kodamarakkunnu and Kodolkunnu were with dense forest and occupied by wild animals. Majority of the population were farmers.

The general type of soil is red lateritic and clay loam. The physical nature is that of sloppy. General crops are Paddy, coconut, areca nut, plantain, cashew nut and big trees usually seen in tropical area.

Socio-economic situation

There are 8570 households with a total population of 30019 as per 2011 census in the Grama Panchayat. Male population is 14581 and the female population is 15348. Population density is 1434 which is comparatively very high compared to the state level statistics. The total literacy is 96.40 which is one of the highest in the state. The male female proportion is 1059. Literacy rate is 87.82. Male literacy is little bit higher than that of the female literacy (84.25). Perumpilavu and Kunnamkulam are the nearest townships of the GP. There are 39 SC colonies and one ST (Nayadi) colony. The number of Laksham Veedu Colonies is two.

It should be assumed that the educational level of the Grama Panchayat community is comparatively satisfactory as it indicated by the number of educational institutions. The details are tabled below:

Institution	Number	Institution	Number
College	1	Higher Secondary Schools	4
High School	4	Upper primary Schools	10
Lower Primary Schools	6	Nursery Schools	32

Water sources in the Grama Panchayat

Natural water sources are less in number. There are only 2 streams. The man-made water sources are 12 ponds, 32 drinking water projects, and two irrigation projects. Household wells are common in the GP. As in the case of other Grama Panchayats explained above, here also drinking water scarcity is at its worst situation in this Grama Panchayat.

Details of Padashekarasamathi, SHG's and other Community Based Organisations:

There are 224 SHGs in the project area and the total number of padashekarasamathi is around 25.

Kattakambal GP

Valiyathodu Watershed

- Name** : Valiyathodu Vattakayam Padashekarasamathi
Total area : 170 Acre
Total member : 160
Places : The area covers Cheruthurathi, Peruthurathi, Ayinur
Crop : One time crop, paddy

Problems : The main problem of the area is water scarcity. There is no irrigation facility for agriculture activities. So the peoples depends the rain water for agriculture Works.

2. Name : Chittathazham Padashekarasamathi

Total area : 211 Acre

Survey no : 3068

Total members : 220

Crop : One time crop, paddy.

Places : Pazhinji, Kattakambal, Cheruthurathi, Perumthurathi are the areas of Chittathazham Padashekarasamathi

Problem : Here also the same problem of lack of water availability. The peoples depends the rain water. Because of the water scarcity they have only one time crop.

3. Name : Kariyapadam Padashekarasamathi

Total area : 60 acre

Total members : 50

Places : Perumthurathi

Problem : Here also the peoples depend on rain water for agriculture works. Due to water shortage they have one time crop.

Ksheera karshaka Sangam

1. Ayinur Milk Society – 600 members
2. KAttakambal Milk Society – 300 members

SHG Details

Valiyathodu – 4

Perumthodu Watershed

1. Name : Pazhnji Koottu Krishi Sahakarana Sangham

Total area : 400 acre

Survey no : 73/2

Total members : 750

Problems : Here they are doing Single crop cultivation. They depend on rain water and there is no other irrigation facility

Areas : The areas of this watershed is Kattakambal, Pappuruthi, Srayail, Ramapuram,

SHG Details

Perumthodu – 27

Kadavallur GP

1. Kadavallur Padashekara Samathi
2. Perumpilavu Padashekara Samathi
3. Kottol Padashekara Samathi
4. Kollassery Padashekara Samathi
5. Thipilassery Padashekara Samathi
6. Korattikara Padashekara Samathi
7. Pattimuri Padashekara Samathi
8. Perumpilavu aalthara Padashekara Samathi
9. Ottapilavu Padashekara Samathi

1. Name	: Kadavallur Padashekara Samathi
Total area	: 400 acre
Total number of members	: 126.
The survey number	: 1072.
Crop	: Paddy and also they have intercrops.
Problem	: They depends stream for water and there is no other irrigation facility.
Areas	: Kadavallur, Kottol Tazham, ambalathazham, Tharavool Tazham, Kattolli Tazham.

➤ **Kollancheri Muriyalathodu Watershed**

1. Name	: Perumbilvau Padashekara Samathi
Total area	: 300 acre
Total members	: 50
Crops	: Paddy and inter crops.
Problem	: Water shortage is the main problem of Perumbilvau Padashekara Samathi. They depend on rain water facility for their agriculture works.
Areas	: Arakkal, Korattikara, Kattakkara and Perumbilavu.
2. Name	: Kollassery Padashekara Samathi
Total area	: 175 acre
Survey number	: 483/1; 488/1
Total members	: 46
Crop	: Paddy
Problem	: They have only one stream for irrigation facility. They depend the rain water for agriculture production. Here is also one time cop due to water shortage.
Places	: Kadavallour, Vadakkemuri
3. Name	: Korattikara Padashekara Samathi
Total area	: 60 acre

Survey number : 65, 66
Total members : 50
Main crop : paddy
Problem : This padashekarasamathi is also faces the problem of water shortage in their locality. So they use one time crop.

- 4. Name : Ottapilavu Padashekara Samathi**
Total area : 50 acre
Survey number : 18/1, 10, 9
Total members : 30
Crop : paddy
Problem : Here is also the people's face the water shortage problems. Due to this they are using one time crop and they are depending on rain water.
Places : The areas covering under Ottapilavu Padashekara Samathi is Aalikkara padam, Tazhapuram, Puttinkal.

SHG's

Kollanchery: 99

➤ **Kottolthodu watershed**

- 1. Name : Kottol Padashekara Samathi**
Total area : 150 acre
Total members : 40
Main crop : paddy
Problem : Kottol Padashekara Samathi is also faces the problem of water shortage. Due to water shortage the agriculture production is very less. The proper irrigation facility will help them to improve the agriculture production.
Areas : karikkalam is the area that covers the padashekaram.
- 2. Name : Pattimuri Padashekara Samathi**
Total area : 40 acre
Survey number : 645, 673, 669
Total members : 22
Crops : Paddy
Problem : The Pattimuri padashekara samathi is also having the problem of water shortage, so they having one time crop. When they get better irrigation facility, they can
Places : Karikkadu

➤ **Anthimahakalan Puncta watershed**

- 1. Name : Thippilasessry Padashekara Samathi**
Total area : 65 acre
Survey number : 1068
Total members : 50
Main crop : paddy.
Problem : Here also they are facing the problem of water shortage. Due to this they have one crop cultivation in their area.
Places : Thippilasessry, Pallikulam.

SHG's

Kottoothodu: 83

➤ **Kothachira Watershed**

- 1. Name : Perumbilavu aalthara Padashekara Samathi**
Total area : 50 acre
Survey number : 398, 397
Total members : 45
Crop : paddy
Problem : Perumbilavu aalthara Padashekara Samathi is also having the problem of water shortage.
Places : Perumbilavu, Manaykkal Padam, Naduvullam Padam, Pallikulam Padam

Ksheera Karshaka Samathi

1. Kadavallur Ksheera Karshaka Samathi
Total members: 20

SHG's

Kothachira: 11

Kadangodu GP

1. Kaladi Manakkathazham Padashekara Samathi
2. Puthiya Mathoor Padashekara Samathi
3. Vengathodu Padashekara Samathi
4. Thekkamury Padashekara Samathi
5. Akkikavu Nellulpathana Padashekara Samathi

➤ **Nelmanthodu Cheemonkulam Watershed**

- 1. Name : Kaladi Manakkathazham Padashekara Samathi**
Total area : 200 acre
Survey number : 90, 91, 179
Total members : 100
Crops : Paddy

Problem : Water shortage is the main problem of this area. They have single crop cultivation due to water shortage.

Places : The areas that covers Kaladi Manakkathazham Padashekara Samathi is Thiramangadu, Vellarakkadu

2. Name :Puthiya Mathoor Padashekara Samathi

Total area : 200 acre

Survey number : 669, 689

Total members : 110

Crops : Paddy

Problem : Water shortage is the main problem of this area. They have one time crop cultivation due to water shortage

Places : Neendoor, Puthiyamathoor is the areas of this padashekarasamathi.

3. Name :Vengathodu Padashekara Samathi

Total area : 40 acre

Total members : 30

Crop : Paddy

Problem : Water shortage is the main problem of this area. They have one time crop cultivation due to water shortage

Places : Chiramangadu Village.

4. Name :Akkikavu Nellulpathana Padashekara Samathi

Total area : 100 acre

Survey number : 274, 275, 276, 277, 278, 279, 260, 262,

Total members : 40

Crop : Paddy

Problem : Water shortage is the main problem of this area. They have one crop cultivation due to water shortage. They depend on rain water for agriculture production.

Places : Perumbilavu, Akkikavu, Chiravangadu.

Karshika Samathi

1. Kera Karshika Samathi
Kadangodu- Vellarakadu
Total members: 45

Ksheera Karshaka Samathi

1. Vellarakkadu Ksheera Karshaka Samathi
Total members: 20
2. Akkikavu Ksheera Karshaka Samathi
Total members: 35

ABOUT THE WATERSHEDS

Integrated Watershed Management Programme (IWMP) proposed for Chovvannur Block Panchayat covers 8 watersheds in different Grama Panchayats. The total area of the watersheds proposed for treatment is 5145 ha and the area taken for treatment is 4887 ha. Some of these watersheds lie in two Grama Panchayats and some others are in single Grama Panchayat. A list of the watershed is given below with available details.

Sl. No.	Name of Watershed	Geographic Coordinates	Code No.	Grama Panchayats	Area (Ha)
9.	Nelmonthodu – CheemonKulam	10°39'0" and 10°42'0" N 76°6'0" and 76°8'0" E	18K12a	Kadangodu, Kadvallur	852
10.	Anthimahakalan Puncha	10°41'30" and 10°43'30" N 76°6'30" and 76°8'30" E	18K12b	Kadangodu, Kadvallur	551
11.	Kurinhippadam Thodu	10°39'30" and 10°42'0" N 76°7'0" and 76°8'30" E	18K12c	Kadangodu	813
12.	Kollancheri – Muriyalathodu	10°41'30" and 10°44'30" N 76°3'30" and 76°7'0" E	19K10a	Kadavllur	1005
13.	Kottolthodu	10°41'30" and 10°43'0" N 76°3'0" and 76°5'30" E	19K11a	Kadavallur Kattakambal	865
14.	Valiyathodu	10°41'0" and 10°42'30" N 76°2'0" and 76°3'30" E	19K12a	Kattakambal	450
15.	Perumthodu	10°41'0" and 10°42'0" N 76°1'0" and 76°2'30" E	19K13a	Kattakambal	264
16.	Kothachira	10°42'30" and 10°43'0" N 76°6'0" and 76°6'30" E	19K9a	Kadavallur	87

All the watersheds mentioned in the table above are in Kochery River Basin. The code numbers are allocated by the Land Use board of the State of Kerala. A brief description of individual watershed is furnished below:

IWMP Chowannur Block Panchayath Master Plan

Total Area : 4887 Ha

Per Ha. Cost : 12000

Instalment	Administrati on	Monitoring	Evaluation	Entry Point Activivty	Institution & Capacity Building	DPR preparation	Watershed Developme nt Activivties	Livelihood Activivties	Productio n system & Micro Enterprise s	Consolida tion Phase	Total IWMP project fund
1 st	1172880	117288	117288	2345760	1759320	586440	5629824	0	0	0	11728800
%	2	0.2	0.2	4	3	1	9.6	0	0	0	20
2 nd	1466100	117288	117288	0	586440	0	9734904	2638980	2932200	0	17593200
%	2.5	0.2	0.2	0	1	0	16.6	4.5	5	0	30
3 rd	1759320	175932	175932	0	586440	0	9324396	2638980	2932200	0	17593200
%	3	0.3	0.3	0	1	0	15.9	4.5	5	0	30
4 rd	1466100	175932	175932	0	0	0	8151516	0	0	1759320	11728800
%	2.5	0.3	0.3	0	0	0	13.9	0	0	3	20
Total	5864400	586440	586440	2345760	2932200	586440	32840640	5277960	5864400	1759320	58644000
%	10	1	1	4	5	1	56	9	10	3	100

1. NELMONTHODU – CHEEMONKULAM (Code No. 18K12a)



Major part of the watershed is in Kadangodu Grama Panchayat and fully covers 1, 12, 13, 15 and 18 wards of the GP. A small portion is in Kadavallur Grama Panchayat. The watershed covers 12th ward of Kadavallur GP fully and 11th ward partially. Chiramanangadu and Iyyal in Thalappilly taluk are the two revenue villages in which the watershed area is included. The watershed is 6.5 Kms length and 2.95 Kms width. The watershed is in the Kocheri River Basin.

The boundaries of the watershed are shared in the north by Kollanchery- Muriyalathodu watersheds, in south by Choondal and Velur watersheds, in the east by Kurinhippadamthodu

watershed and in the west by Chovvannur Grama Panchayat. The important places in the watershed are: Chiramanengadu, Pannithadam, Mathoor, Marathankiodu, AKG Nagar, Nindoor, Puthiyamathur and Iyyal.

Topographically the watershed has sloppy nature from west to southern and eastern side of the watershed. The soil type in general is red soil in up and mid land and alluvium in paddy fields and low lands. Marathangodu, Nindoorand and Mathoor form the upper reach and Iyyachal form the lower reach of the watershed.

Water Bodies

Nedumanthodu is the mainstream around which the watershed is formed. There are four more sub-streams – Chakkadu Thodu, Vengathodu, Puthiyamathurchira thoduand Kuttichirathodu - which form the tributaries and enrich the mainstream. The hydrology of the watershed is mainly controlled by these streams. Besides there are around 1500 open wells in individual households, 20 community wells and 6 public ponds. Kadangongodu is one of the Jalanidhi Panchayat and there are many households in the watershed that has household connections from the scheme. The public taps are owned by Kerala Water Authority (KWA).

Land Use and Cropping Pattern

Paddy remains the single main crop of the watershed according to feed back from the people on conducting FGD. However, coconut occupies more area than paddy. This will come to 60% of the paddy fields available in the watershed. Double cropping is done here. The land use pattern along with cropping pattern is given below:

Crops	Ha
Rubber	78
Coconut	364
Paddy	202.96
Mixed Crops	162
Uncultivable waste	34
Built up	11.04
Total	852

The productivity of paddy is available from the secondary data. As per MGNREGS Master Plan the productivity of paddy is about 3997 Kgs per ha. Thus the total production of paddy from the watershed is 583.52 tonnes. Considering the population (6853) of the watershed the per capita production is only 85 Kgs. This means that

the rice production in the watershed is only sufficient for 213 days at the rate of 400gms per head. It is also observed that only 60% of the total available paddy field is used for cultivation now.

Socio-economic Situation

The total No. of households in the watershed is 1396 and the total population is 6853. Out of the total population 3249 is male and 3605 are female. The male female ratio is 1110 There 913 SC population where as the ST population is only one. Total literacy is 80%. Male and female literacy is 82 and 79 respectively. Only 12% represents the population of 0 – 6 age group.

The main source of income of the households in the watershed is agriculture. There are a few who are earning their livelihood from wage labour. This category is either land less or small holders. Some of them get their income from construction sectors. When they have no work in their dwelling place a very good number of people, especially the youth migrate to the urban areas where they get job mainly in construction sector.

The main religions in the watershed are Hindu, Muslim and Christian. Different religious believers live in harmony in the watershed and communal riots are seldom in the watershed boundary.

There are seven schools in the watershed which decides on the educational status of the watershed community. A list and type is furnished below in a tabular column

Sl. No.	Name of School	Type of Education offered
1.	Govt. Higher Secondary School, Marathangodu	Higher Secondary Education
2.	Konkodu Higher Secondary School	Higher Secondary Education
3.	Nirmal Madhav High School	High School Education (upto SSLC)
4.	MLUP School	Upper Primary Education
5.	MGM L.P. School	Lower Primary Education
6.	Chiramanathu L.P. School	Lower Primary Education
7.	Saraswathy School	Lower Primary Education
8.	Anganwadis (14 Numbers)	Play school & Pre-primary Education

Institutions other than the school are listed below:

1. Nindoor Veterinary Hospital
2. Nindoor Primary Health Centre
3. Iyyal Post Office
4. Chirammanengadu Post Office
5. Marathangodu Post Office

The number of colonies sometimes helps to assess the socio-economic situation of a community in a particular area. Thus there are 4 colonies in the watershed. They are Iyyal Lakshamvedu Colony, Scheduled Caste Colony at Kaithamattam, 50 house colony Iyyal and 10house SC colony Iyyal. This denotes that Iyyal area of the water shed is the central point of colonies and in our observation this area is most backward in whole of the watershed.

Specific Problems of the watershed

1. Stream Bank Erosion
2. Poor maintenance of existing structures like check dams and weirs
3. Poor functioning of the existing irrigation facilities
4. Sedimentation of irrigation canals
5. Sedimentation of the existing ponds
6. Inadequate irrigation facilities
7. Severe drinking water scarcity
8. Reducing ground water table
9. Poor yield due to lack of proper cultivation practices
10. Poor humus of the soil
11. Lack of mechanism for Rain Water Harvesting
12. Water logging of the paddy fields during heavy monsoon
13. Poor livestock
14. Potential women power is not utilized for productive purposes

Proposed Interventions

Natural Resource Management (NRM)	Production System & Micro Enterprises (PS&M)	Livelihood Support System (LSS)
<ul style="list-style-type: none"> • Pond Renovation • Stream bank Stabilization • Gully Controlling Structures • De-siltation of ponds and streams • Construction of Check dams • Agrostological Measures • Live fencing • Tree plantation • Husk Trenching • Strengthening of existing bunds • Centripetal Terracing • Paddy field protection • Pond Construction • Well recharging • RWH Tank Construction 	<ul style="list-style-type: none"> • Organic Manure Distribution • Mini Dairy Farm • Planting of Fruit Bearing Trees • Herbal garden 	<ul style="list-style-type: none"> • Quail Rearing • Seed Money for SHGs • Seed money for enterprising individuals • Backyard Poultry • Mushroom Cultivation

ACTIVITIES IN DETAIL

a. Natural Resource Management (NRM)

• *Pond Renovation*

There are few ponds in the watershed which require repair and renovation. Repair is the replacement of dilapidated side walls and setting the fallen down stones intact. It also require desiltation and de weeding. This will ensure adequate storage of water which will be useful later in the agriculture, especially vegetable cultivation.

• *Stream bank Stabilization*

Due to heavy runoff, the banks of the streams flowing through the watershed have eroded. This eroded stream bank has to be replaced and stabilized using either the boulder stones or with vegetative measures according to the availability and weightage of erosion.

- ***Gully Controlling Structures***

Gullies formed in the proposed watershed is checked by constructing stone structures across the gullies. This will help checking soil erosion and conservation of water in the farm land.

- ***De-siltation of ponds and streams***

Soil erosion has caused siltation of ponds and water bodies. This reduces the storage capacity of the water body. Removal of silt from the water bodies like streams and ponds will enhance the storage capacity and thus conserving more water for the dry season. The removed silt can be used to stabilize the banks in the watershed or reuse to cultivate vegetables.

- ***Construction of Check dams***

Check dams are to slowdown the running water and collect the water for the dry season. Check dams will also result in increasing the water table and ensure adequate water in the nearby wells and ponds. These structures are specifically proposed for streams in the upland and midland.

- ***Agrostological Measures***

Vegetation and vegetative cover of the earth is most crucial in preserving the watershed components. Desertification can be checked only if there is adequate vegetative cover in a watershed. The agrostological measures adopted for the watershed will help preserve the soil, water and biomass which will help sustain agricultural produce and ecological cycles.

- ***Live fencing***

Once the land boundary was marked with fencing with useful medicinal and manure giving plants, which is later replaced by stone and concrete walls. This reduced the availability of medicinal plants which were used in the treatment of minor and major ailments. Besides, the live fencing helps to control soil erosion and conservation of water in the farm land. Hence live fencing with medicinal plants and green leaf manure plants is proposed in the watershed. The planting materials are available locally either no cost or low cost.

- ***Tree plantation***

Fruit bearing trees, which are slowly disappearing from the farm lands of the watershed, need to be restored to ensure food security and easy availability of nutrient components of the

watershed community. Traditional trees like, mango, jackfruit, guava etc. and timber producing trees like teak and Mahagani, Anjily etc are suggested.

- ***Husk Trenching***

This is a traditional method to conserve moisture in the farm land and will serve the role of a water conservation pit. The flowing water is diverted to the husk trench thus arresting the run off of water keeping the whole water poured in the farm land is captured and stored.

- ***Strengthening of existing bunds***

Due to lack of care and proper maintenance, many old bunds constructed by the farmers have become useless and do not serve the purpose. During the FGD, people suggested that the existing dilapidated buds can be strengthened by replacing the construction materials and stabilizing it.

- ***Centripetal Terracing***

Trenching around the trees, especially that of coconut trees had been a traditional practice in Kerala to conserve water at the bottom of the trees during rainy season and during irrigation. This is widely proposed in the watershed as many farmers own many coconut trees in the dry land

- ***Paddy field protection***

As mentioned somewhere, paddy cultivation is still an important agricultural practice of the people. But unfortunately, the paddy fields are being destroyed every year by overflowing water, in the rainy season. In order to check this diversion canals and weirs are to be constructed throughout the watershed. It is expected that such canals and weirs will check erosion and destruction of paddy fields.

- ***Pond Construction***

Lack of irrigation is one of the major problems that the watershed community faces. This can be overcome by constructing new ponds and storage structures in the watershed. This, along with other water conservation and storage mechanisms mentioned above will help farmers improve their agriculture thereby increasing their income from agriculture sources.

- ***Well recharging***

Water is collected from the roof top during rain and sends to the well through a filter tank filled with filter media so that the water column in the well is increased. This will ensure adequate drinking water and sometimes even water for small scale irrigation. This is an

innovative practice which is widely applied in many watershed based development programmes.

RWH Tank Construction

Rainwater Harvesting is not new but is an innovative practice to collect and preserve water for the use of dry season. It is observed that most of the wells in the upland and midland are drying up during the summer season during which people are travelling long distances or depending upon private water vendors. RWH systems will help people ensure water for drinking and household purposes. Storage tanks of 10,000 litres will support a 5 member family for about three months to meet their drinking and cooking purposes.

b. Production System & Micro Enterprises (PS&M)

• *Organic Manure Distribution*

Application of organic manure in the farm land will help to retain moisture and soil fertility which is proved in many places. Besides this will also enhance the production and help soil to maintain the micro-nutrients required for fruitful cultivation. Organic manure will be purchased in buld and distributed among the farmers according to the need.

• *Mini Dairy Farm*

Dairy farm is a supplementing component of farm lands and it is generally believed that a true farmer will have one or two domestic animals in their farm land. The residual matter of the Mini dairy farm will help to improve the means of production providing micro-nutrients to the soil.

• *Planting of Fruit Bearing Trees*

Fruit bearing trees carry out a dual role in the watershed- conserving water and providing food along with sustaining the production system in a watershed. Trees are equipments that keep equilibrium of the watershed and provide regular supply of oxygen and to the soil and keep the soil rich in minerals.

• *Herbal garden*

Herbs are the means of improving the production system and planting of herbs will help the production system manage the equitable distribution minerals and micro nutrients. Besides it help conserve water and moisture in the watershed and supplement the income of the watershed community. Herbals gardens are, hence important to a watershed.

c. Livelihood Support System (LSS)

• Quail Rearing

Quail rearing require minimum space and is a good income generation activity that can be taken up and run by the landless farmers. Each beneficiary will be provided with resources to start a quail rearing unit with 250 birds and adequate breeding cages. Fodder for one batch will be given to the beneficiary. The beneficiaries will develop from a single unit to grow it to a full fledged income generation activity.

- ***Seed Money for SHGs***

The project proposes to provide seed money for the Self Help Groups formed and functionalized in the watershed to help its members to start economically feasible Income Generation Programmes (IGPs). This financial support will be in the form revolving fund, the beneficiaries will return the money they receive from the SHG and the SHG in turn will give the amount to another beneficiary to start a similar IGP.

- ***Seed money for enterprising individuals***

- Seed money from the project provision will also be available for enterprising individuals, especially from among the BPL and SC/ST communities. They will be able to start feasible and viable IGPs with this money, which has to be returned back to Watershed Development Committee.

- ***Backyard Poultry***

For farmers with limited land can involve in backyard poultry as a means of supplementary income. This is especially meant for the women as means of economic empowerment. An individual can avail 10 to 15 birds at a time depending upon their situation and rear them for eggs or meat. It is expected that the unit will bring a regular income, though minimal, to the family, which will be helpful to them to ensure the food security and satisfy their nutrition requirement.

- ***Mushroom Cultivation***

Mushroom cultivation requires minimum investment to start with but demand care and precautionary actions to achieve the expected result as a means of Income Generation. However, along with financial support the beneficiaries will be given a training in Mushroom cultivation with the assistance of the Agriculture Department (Krishi Vijnan Bhavans) and/or related institutions. Careful cultivation and maintenance will bring the beneficiaries regular income and thus improve their purchasing capacity. The mushroom will also support the nutrition requirements of the family.

Nelmanthodu - Cheemankulam Watershed

MASTER PLAN

Installment	Administration	Monitoring	Evaluation	Entry Point Activity	Institution & Capacity Building	DPR preparation	Watershed Development Activities	Livelihood Activities	Production system & Micro Enterprises	Consolidation Phase	Total IWMP project fund
1 St	204480	20448	20448	408960	306720	102240	981504	0	0	0	2044800
%	2	0.2	0.2	4	3	1	9.6	0	0	0	20
2 nd	255600	20448	20448	0	102240	0	1697184	460080	511200	0	3067200
%	2.5	0.2	0.2	0	1	0	16.6	4.5	5	0	30
3 rd	306720	30672	30672	0	102240	0	1625616	460080	511200	0	3067200
%	3	0.3	0.3	0	1	0	15.9	4.5	5	0	30
4 rd	255600	30672	30672	0	0	0	1421136	0	0	306720	2044800
%	2.5	0.3	0.3	0	0	0	13.9	0	0	3	20
Total	1022400	102240	102240	408960	511200	102240	5725440	920160	1022400	306720	10224000
%	10	1	1	4	5	1	56	9	10	3	100

Nelmanthodu Cheemankulam Watershed

Watershed - Action plan – Sector –I – Watershed development Activities Ist year

SL NO	Name of Activity	Unit	Unit cost	Target	IWMP Fund	MNREGS/ other source	Total	WDF
1	Mullinkalchira thodu protection	RM	3138	286 M	900000	0	900000	10% General & 5% SC/ST
2	Centrypetal terracing	Nos	32	100	0	3200	3200	
3	Husk trench	Nos	179	150	0	26850	26850	
4	Live fencing	Nos	24	1500	0	36000	36000	
5	Construction of retaining wall from the Appamkulam bridge	Rm	3138	127	400000	0	400000	
6	Open well construction at 102 Number aganvady	Nos	272200	1	272200	0	272200	
Total					1572200	66050	1638250	

Watershed - Action plan – Sector –I – Watershed development Activities IInd year

SL NO	Name of Activity	Unit	Unit cost	Target	IWMP Fund	MNREGS/ other source	Total	WDF
1	Well recharging	Nos	13000	10	130000	0	130000	10% General & 5% SC/ST
2	Chingikavu Pond renovation and Pump house	Nos	500000	1	500000	0	500000	
3	Moisture collection Pit	m3	53.32	1000	0	53320	53320	
4	Centrypetal terracing	Nos	58	200	0	11600	11600	
5	Live fencing	Nos	24	3000	0	72000	72000	
6	Construction of retaining wall along the sides of nelmanthodu	Rm	3138	200	627600	0	627600	
Total					1257600	136920	1394520	

Watershed - Action plan – Sector –I – Watershed development Activities IIIth year

SL NO	Name of Activity	Unit	Unit cost	Target	IWMP Fund	MNREGS/ other source	Total	WDF
1	Venkulam Renovation	Nos	1433400	1	1433400	0	1433400	10% General & 5% SC/ST
2	Yard water collection pit	Nos	438	150	0	65700	65700	
3	Live fencing	Nos	24	2000	0	48000	48000	
4	Moisture Conservation pit	Nos	5332	2000	0	106640	106640	
5	Centrypetal terracing	Nos	58	500	0	29000	29000	
Total					1433400	249340	1682740	

Watershed - Action plan – Sector –I – Watershed development Activities IVth year

SL NO	Name of Activity	Unit	Unit cost	Target	IWMP Fund	MNREGS/ other source	Total	WDF
1	Lift Irrigation Project in Nelmonthodu and side protection near the paddy field of Habeeb Thangal	Nos	1462240	1	1462240	0	1462240	10% General & 5% SC/ST
2	Moisture collection Pit	m3	53.32	2000	0	106640	106640	
3	Centrypetal terracing	Nos	58	500	0	29000	29000	
4	Yard water collection pit	Nos	438	250	0	109500	109500	
Total					1462240	245140	1707380	

Watershed Livelihood Action Plan
Nelmanthodu Cheemankulam Watershed
1st Pahse

SI No	Name of Activity / Category	Unit	Unit cost	Target	IWMP fund	Bank loan/ Other sources	Total
1	Grand for WDS	0	0	0	25000	0	25000
2	Grand for BLWDS	0	0	0	5000	0	5000
3	Seed money for JLG / SHG	0	0	0	430080	47787	477867
	Total				460080	47787	507867

Nelmanthodu Cheemankulam Watershed
2nd Pahse

SI No	Name of Activity / Category	Unit	Unit cost	Target	IWMP fund	Bank loan/ Other sources	Total
1	Seed money (Balance allocation)	0	0	0	194920	21658	216578
Major livelihood activity							
2	Mini diary unit	Nos	300000	2	265160	334840	600000
	Total				460080	356498	816578

Watershed Micro Enterprises Action Plan

Nelmanthodu Watershed - 1st Pahse

SI No	Name of Activity / Catgeory	Unit	Unit cost	Taget	IWMP fund	Bank loan/ Other sources	Total
1.	Organic manure distribution	Kg	20	15000	240000	60000	300000
2.	Planting of fruit bearing trees	Nos	100	1246	99680	24920	124600
3.	Japanese quail rearing	Nos	19200	2	30720	7680	38400
4.	Mushroom cultivation	Nos	24000	4	76800	19200	96000
5.	Herbal Garden	Nos	20000	4	64000	16000	80000
6.	Total				511200	127800	639000

Nelmanthodu Watershed - 2nd Pahse

SI No	Name of Activity / Catgeory	Unit	Unit cost	Taget	IWMP fund	Bank loan/ Other sources	Total
1	Organic farming	Ha	24000	4	76800	19200	96000
2	Distribution of tailoring machine	Nos	8000	50	320000	80000	400000
3	Layer distribution	Nos	100	1190	95200	23800	119000
4	Banana chips making unit	Nos	24000	1	19200	4800	24000
	Total				511200	127800	639000

* WDF 20% for General & 10% for SC/ST

2. ANTHIMAHAKALAN PUNCHA (Code No. 18K12b)



The watershed is in Kadangodu Grama Panchayat. It fully covers 10 ward of Kadavallur and 3rd ward of Kadangodu exclusively. It also partly covers the 11th ward of Kadavalluar and 2nd ward of Kadangodu. Chiramanangadu and Iyyal in Thalappilly taluk are the two revenue villages in which the watershed area is included. The watershed is 3.4 Kms in length and 3.15 Kms in width. This watershed is also in the Kocheri River Basin

The north boundary of the watershed is Nagalassery Panchayat of Palakkadu District, the south boundary is marked by Nelmonthodu-Cheemankulam Watershed, the east boundary is Mallumkuzhi Watershed and the west boundary is Kothachira watershed and Kollanchery – Muriyalathodu watersheds. The important places in the watershed are: Thippalassery Centre, Anthimahakalan and Ponnamkunnu.

Physiographically the watershed has an undulating nature with highlands, lowlands and Midlands. The soil type in general is shallow red soil with laterite rock underneath in low lands, alluvium is commonly seen. Ponnamkunnu, Karakkunnu and Karuvarapuram kunnu are examples of highlands and Thippalassery with its paddy fields forms the lowland in the

watershed. Out of the total treatable area of the watershed (551 Ha) 325 ha are in Kadangodu GP and the rest (190) Ha are in Kadavallur GP

Water Bodies

Anthimahakalan Punchathodu is one of the perennial streams in the watershed. There are two more sub-streams in the watershed namely Kizhakkecholathodu and Padinharecholathodu. The hydrology of the watershed is mainly controlled by these streams. Besides the individual household wells there are 18 community open wells and 40 ponds out of which 4 are public. Public taps are available almost in every look and corner of the watershed limits. Kadangodu is one of the Jalanidhi Panchayats and there are many households in the watershed that has individual household connections from the scheme. The public taps are owned by Kerala Water Authority (KWA).

Land Use and Cropping Pattern

Mainly 5 crops are dominating in the watershed –Paddy, coconut, arecanut plantain and pepper. About 60.73 ha are utilized for paddy cultivation. This will come nearly 11.2% of the total area available in the watershed. This paddy field is sown twice in a year. The land use pattern along with cropping pattern is given below:

Crops	Ha
Rubber	19
Coconut	172
Paddy	60.73
Mixed Crops	53.53
Uncultivable waste	52
Forest	133
Built up	24.74
Total	515

Socio-economic Situation

There are 949 households in the watershed in which a total population of 4651 is living in. Out of the total population 2186 are males and the rest 2465 are female. The male female ratio is 1110. Around 12% of the total population, i.e., 558 are under the age group of below 6 years. The SC population is nearly 13% of the total population, i.e., 605. The ST population is very rare and negligible in the watershed when compared to other categories. There are 3 SC colonies in the watershed – Therandi colony, Areekkattukunnu Colony and Kalyanikkunnu Colony. People in these colonies are traditionally farmers and they continue to be farmers even now.

The landless and marginal farmers earn their livelihood from wage labour. But the main source of income to the whole watershed community is from agriculture. Off season migration is a common phenomenon in the watershed especially among youth who obtain labour in the construction sector in the urban area.

The main religions in the watershed are Hindu, Muslim and Christian. Different religious believers live in harmony in the watershed and communal riots are seldom in the watershed boundary.

The watershed is not rich in educational institutions as in the case of other watersheds. The only school in the watershed limit is GLP School at Parappuram. There are 3 Anganwadis – one at Oravanpadi, one at Kalyanikkunnu and the third at Pallimepram. No other major institutions are there in the watershed.

Specific Problems of the watershed

1. Lack of organic practices in Agriculture reduced the fertility of the soil
2. Reducing humus of the soil
3. Heavy runoff and soil erosion from the watershed
4. Stream Bank Erosion
5. Drying up of Anthimahakaln Puncta Stream
6. Sedimentation of irrigation canals
7. Sedimentation of the existing ponds
8. Inadequate irrigation facilities
9. Severe drinking water scarcity
10. Reducing ground water table
11. Lack of mechanism for Rain Water Harvesting
12. Poor livestock
13. Women power is not utilized for productive purposes

Proposed Interventions

Natural Resource Management (NRM)	Production System & Micro Enterprises (PS&M)	Livelihood Support System (LSS)
<ul style="list-style-type: none"> • Stone Bunding • Stream bank Stabilization • Gully Controlling Structures • De-siltation of ponds • Construction of VCB • Live fencing • Husk Trenching • Centripetal Terracing • Pond renovation • Well recharging 	<ul style="list-style-type: none"> • Organic Manure Distribution • Organic cultivation of Tissue Plantain • Organic Vegetable Farming • Lime Distribution • Mini Dairy Farm 	<ul style="list-style-type: none"> • Seed money for enterprising individuals • Seed money for SHGs. • Backyard Poultry

Anthimahakalan Puncha Watershed

MASTER PLAN

Installment	Administration	Monitoring	Evaluation	Entry Point Activity	Institution & Capacity Building	DPR preparation	Watershed Development Activities	Livelihood Activities	Production system & Micro Enterprises	Consolidation Phase	Total IWMP project fund
1 St	132240	13224	13224	264480	198360	66120	634752	0	0	0	1322400
%	2	0.2	0.2	4	3	1	9.6	0	0	0	20
2 nd	165300	13224	13224	0	66120	0	1097592	297540	330600	0	1983600
%	2.5	0.2	0.2	0	1	0	16.6	4.5	5	0	30
3 rd	198360	19836	19836	0	66120	0	1051308	297540	330600	0	1983600
%	3	0.3	0.3	0	1	0	15.9	4.5	5	0	30
4 rd	165300	19836	19836	0	0	0	919068	0	0	198360	1322400
%	2.5	0.3	0.3	0	0	0	13.9	0	0	3	20
Total	661200	66120	66120	264480	330600	66120	3702720	595080	661200	198360	6612000
%	10	1	1	4	5	1	56	9	10	3	100

Anthimahakalan Puncha Watershed

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

SI No.	Name of Activity	Unit	Unit Cost	Target	IWMP Fund	MNREGS/Other Source	Total	WDF
1.	Well recharge	No	13000	3	39000	0	39000	10 % General & 5 % SC / ST
2.	Centripetal terracing	Nos	32	300	0	9600	9600	
3.	Live fencing	Rm	24	1000	0	24000	24000	
4.	Gully Controlled chekdam across thodu starting from Crusher	No	38000	1	38000	0	38000	
5.	Well recharging at Thippalaserry L.P.School	No	19500	1	19500	0	19500	
6.	Construction of a VCB at Thippalaserry padashekham near the plot of Rukhmini	No	377000	1	377000	0	377000	
7.	Retaining wall construction for the thodu upstream and downstream side of above VCB	Rm	2250	71.6674	161252	0	161252	
Total					634752	33600	668352	

Anthimahakalan Puncha 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.	Retaining wall construction for the stream near the side of Sree Mahavishnu temple	Rm	2250	40	90000	0	90000	10 % General & 5 % SC / ST
2.	Renovation works to the existing pond of deepening,side protection to the ikkuzhikulam	Nos	2,55,000	1	255000	0	255000	
3.	Deepening of Chembrankulam for irrigation purpose	Nos	567792	1	567792	0	567792	
4.	Retaining wall construction for the thodu from below junction of Kozhikulam to Keezhpadam	Rm	2250	82.1332	184800		184800	
5.	Moisture collection pits	M3	53.32	500		26660	26660	
6.	Husk trench	Nos	179	150	0	26850	26850	
Total					1097592	53510	1151102	

Anthimahakalan Puncha Watershed

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

SI No.	Name of Activity	Unit	Unit Cost	Target	IWMP Fund	MNREGS/Other Source	Total	WDF
1.	Live fencing	RM	24	1800	0	43200	43200	10 % General & 5 % SC / ST
2.	Centripetal terracing	Nos	32	200	0	6400	6400	
3.	Renovation works to the Chembrankulam for side protection for irrigation purpose	Nos	551500	1	551500	0	551500	
4.	Retaining wall construction for the thodu from the below junction of Kozhikulam to Keezhpadam	Rm	2250	193.248	434808	0	434808	
5.	Well recharging	Nos	13000	5	65000	0	65000	
Total					1051308	49600	1035908	

Anthimahakalan Puncha Watershed

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

SI No.	Name of Activity	Unit	Unit Cost	Target	IWMP Fund	MNREGS/Other Source	Total	WDF
1.	Well recharge	No	13000	5	65000	0	65000	10 % General & 5 % SC / ST
2.	Retaining wall construction along the sides of Anthimahakalan thodu	Rm	2250	200	450000	0	450000	
3.	Live fencing	RM	24	2000	0	48000	2000	
4.	Gully plugging	Rm	2347	20	46940	0	46940	
5.	Retaining wall construction for the thodu from the below junction of Kozhikulam to Keezhpadam	Rm	2250	140.007	315016	0	315016	
6.	Construction of a pump house at chembrankulam for irrigation purpose	No	42112	1	42112	0	42112	
7.	Husk trench	Nos	179	180	0	32220	32220	
Total					919068	80220	953288	

Watershed Livelihood Action Plan

Anthimahakalnpuncha Watershed - 1st Pahse

SI No	Name of Activity / Category	Unit	Unit cost	Target	IWMP fund	Bank loan/ Other sources	Total
1	Grand for WDS	0	0	0	25000	0	25000
2	Grand for BLWDS	0	0	0	5000	0	5000
3	Seed money for JLG / SHG	0	0	0	267540	29727	297267
	Total				297540	29727	327267

Anthimahakalnpuncha Watershed - 2nd Pahse

SI No	Name of Activity / Category	Unit	Unit cost	Target	IWMP fund	Bank loan/ Other sources	Total
1	Seed money (Balance allocation)	0	0	0	132460	14718	147178
Major livelihood activity							
2	Mini Diary unit	Nos	300000	1	150000	150000	300000
3	Cow rearing unit	Nos	30000		15080	15170	30250
	Total				297540	179888	477428

Watershed Micro Enterprises Action Plan
Anthimahakalanpuncha Watershed - 1st Pahse

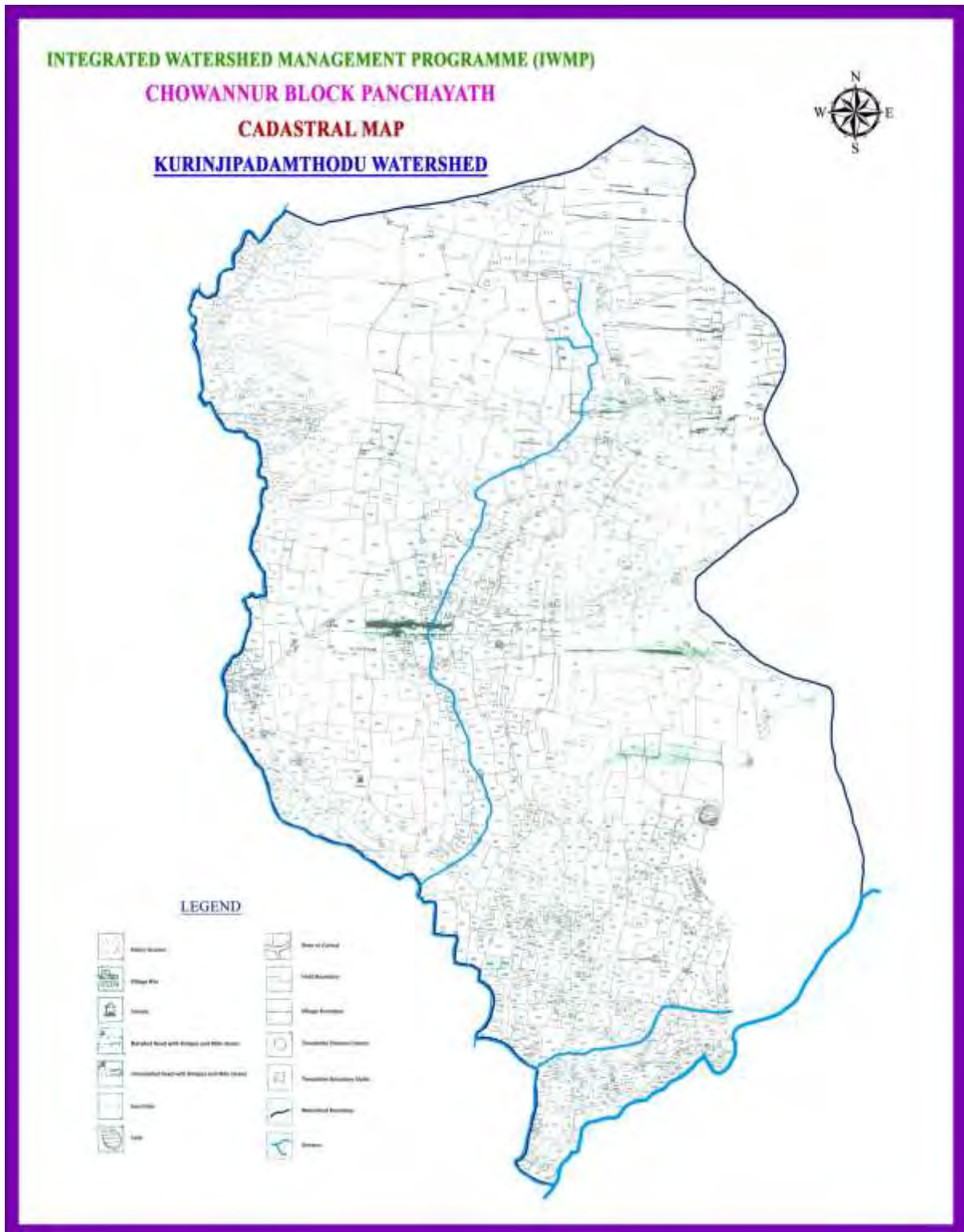
SI No	Name of Activity / Category	Unit	Unit cost	Target	IWMP fund	Bank loan/ Other sources	Total
1	Pipe composting	Per plant	1000	120	96000	24000	120000
2	cultivation of Organic tissue plantain	10 cent	20	2963	47400	11860	59260
3	Goat rearing (3 goat / unit)	Nos	18000	13	187200	46800	234000
	Total				330600	82660	413260

Anthimahakalanpuncha Watershed - 2nd Pahse

SI No	Name of Activity / Category	Unit	Unit cost	Target	IWMP fund	Bank loan/ Other sources	Total
1	Organic Vegetable cultivation	120 cent	24000	8	153600	38400	192000
2	Lime distribution	KG	10	5000	40000	10000	50000
3	Layer distribution	100/Bird	100	1713	137000	34300	171300
	Total				330600	82700	413300

* WDF 20% for General & 10% for SC/ST

3. KURINHIPPADAM THODU (Code No. 18K12c)



The watershed lies exclusively in Kadangodu Grama Panchayat and covers 8th, 9th, and 10th wards fully and 2nd, 4th, and 11th ward partly. This watershed is popularly known as

‘Vadukumpully Watershed’ by the local community. The watershed extends in Kadangodu and Vellarakkadu villages in Thalappilly Thaluk. The watershed lies in Kechari River Basin.

The boundaries of the watershed are as follows:

North: – Anthimahakalan Puncha Watershed

South: – Velur Grama Panchayat

East: – Kollanchery – Muriyalathodu Watershed

West: – Nelmonthodu-Cheenamkulam Watershed

Physiographically the watershed has an undulating nature with hillocks and slopes. However, this watershed is included in Midland portion. Iyyalakkadu area is highest in the watershed. Perumbarakkunnu is another hilly area with laterite rocks. The western part of Mullappallikkunnu, another hill in the watershed, is also with laterite stones. Red soil mixed with gravel is generally seen in the watershed. However, in the lower portions, especially in the paddy fields alluvium is prominent. The length of the watershed is 4.75 Kms. and the width is approximately 3 Kms.

Water sources

The watershed is formed around the main stream Kurinhippadam Thodu (Vadukumpully Thodu). People share two streams Vadukumpully and Manakkathazham are to be considered as main streams as the latter is also specifically contributes to the hydrology of the watershed along with the former. The Manakkathazham Stream originates from the plot near to the Crusher and the Vadukumpully Thodu originates from Iyyalakkadu. There are 4 sub-streams that contribute to the hydrology of the watershed – Iyyalkuthukallu Thodu, Elavathumkachira Thodu, Koombuzha kaithodu and Iyyalakkadu Madrassa Thodu. Besides the above natural sources, there are around 1250 household open wells in the watershed.

Land Use and Cropping Pattern

Cropping pattern represents the general features of the farm land in the watershed. The main crops are coconut, arecanut and Paddy. Rubber began to invade in the hill slopes of the watershed and the trend is spreading among small farmers also in the watershed. The land use pattern and crops are detailed below:

Crops	Ha
Rubber	49.47
Coconut	382.52

Paddy	180.67
Mixed Crops	147.57
Uncultivable waste	36.56
Built up	16.21
Total	813

Socio-economic Situation

There are 1369 households in the watershed in which a total population of 6853 is living in. Out of the total population 3249 (49%) are males and the rest 3605 (53%) are female. The male female ratio is 1110. 827 are under the age group of below 6 years. The SC population is 605. The literacy rate is around 80 and the male literacy is a little high (82%) when compared to the female literacy (79%). There are 3 SC colonies in the watershed – Perumbarakkunnu colony, Mannankunnu Colony and Adoor Colony. People in these colonies are traditionally farmers and they continue to be farmers even now.

Few farmers involved both in farming and are going for outside work also for earning. This is because the returns from the agriculture are only at subsistence level. The landless and marginal farmers earn their livelihood from wage labour. Off season migration is a common phenomenon in the watershed especially among youth who obtain labour in the construction sector in the urban area.

The main religions in the watershed are Hindu, Muslim and Christian. Different religious believers live in harmony in the watershed.

There is only one educational institution in the watershed, that too an Upper primary School (Vellarakkadu U.P. School). There are 12 Anganwadis in the watershed at different locations. These Anganwadis contribute to the pre-primary education to a limited extend. Other institutions in the watershed are:

1. Vellarakkadu Post Office
2. Village Office, Vellarakkadu
3. Kadangodu Panchayat Office
4. Agricultural Office
5. Office of the VEO

Specific Problems of the watershed

1. Heavy runoff through the natural streams
2. Lack of conservation Practices
3. Heavy sedimentation of ponds
4. Dilapidated situation of the existing water bodies, especially ponds
5. Reduced the fertility of the soil
6. Soil erosion
7. Stream Bank Erosion
8. Inadequate irrigation facilities
9. Reducing ground water table
10. Lack of mechanism for Rain Water Harvesting
11. Poor livestock
12. Women is not utilize

Proposed Interventions

Natural Resource Management (NRM)	Production System & Micro Enterprises (PS&M)	Livelihood Support System (LSS)
<ul style="list-style-type: none"> • Stream bank Stabilization • Gully Controlling Structures • Construction of Check dams • Live fencing • Husk Trenching • Centripetal Terracing • Yard Water Collection Pits • Pond renovation • RWH Tank Construction • Well recharging • Application of Geo Textiles 	<ul style="list-style-type: none"> • Cow rearing • Organic Vegetable Farming 	<ul style="list-style-type: none"> • Seed Money for enterprising individual • Seed money for SHGs • Consumer Store • Tailoring Unit • Banana Chips Making unit

Cow Rearing

As in the case of Mini Dairy farm explained above cow rearing is also for supplementing the soil fertility by applying the residues. Further it is a means of livelihood for the small holder farmers.

Organic Vegetable Farming

This is also proposed as means of supplementing the soil fertility and crop rotation. The practice will also enhance the soil nutrient and help to improve the activities of nitrogen fixing bacteria by growing legume

Kurunhippadam Watershed

MASTER PLAN

Installment	Administration	Monitoring	Evaluation	Entry Point Activity	Institution & Capacity Building	DPR preparation	Watershed Development Activities	Livelihood Activities	Production system & Micro Enterprises	Consolidation Phase	Total IWMP project fund
1 st	195120	19512	19512	390240	292680	97560	936576	0	0	0	1951200
%	2	0.2	0.2	4	3	1	9.6	0	0	0	20
2 nd	243900	19512	19512	0	97560	0	1619496	439020	487800	0	2926800
%	2.5	0.2	0.2	0	1	0	16.6	4.5	5	0	30
3 rd	292680	29268	29268	0	97560	0	1551204	439020	487800	0	2926800
%	3	0.3	0.3	0	1	0	15.9	4.5	5	0	30
4 rd	243900	29268	29268	0	0	0	1356084	0	0	292680	1951200
%	2.5	0.3	0.3	0	0	0	13.9	0	0	3	20
Total	975600	97560	97560	390240	487800	97560	5463360	878040	975600	292680	9756000
%	10	1	1	4	5	1	56	9	10	3	100

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

SI No.	Name of Activity	Unit	Unit Cost	Target	IWMP Fund	MNREGS/Other Source	Total	WDF
1.	Well recharge	Nos.	13000	25	325000	0	325000	10 % General & 5 % SC / ST
2.	Construction of retaining wall along the sides of Vadukumpulythodu	Rm.	2695	226.92	611576	0	611576	
3.	Centripetal terracing	Nos.	32	200	0	6400	6400	
4.	Husk trench	Nos.	179	50	0	8950	8950	
5.	Live fencing	Nos.	24	500	0	12000	12000	
Total					936576	27350	963926	

Kurunhippadam 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.	Construction of retaining wall along the sides of Vadukumpulythodu	Rm.	2695	244.8	659756	0	659756	10 % General & 5 % SC / ST
2.	construction for Pudavakadi pond	Nos.	652890	1	652890	0	652890	
3.	Construction of Rain water harvesting tank at Souhrda Anganwadi (25000 ltr.)	Nos.	125000	1	125000	0	125000	
4.	Construction of Rain water harvesting tank at vellarakadu sreeramaswami Anganwadi (25000 ltr)	Nos.	125000	1	125000	0	125000	
5.	Gully plugging across Vadumkumpulli thodu	Rm	1895	30	56850	0	56850	
6.	Husk trench	Nos.	179	50	0	8950	8950	
7.	Live fencing	Rm	24	500	0	12000	12000	
Total					1619496	20950	1640446	

Kurunhippadam Watershed

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

SI No.	Name of Activity	Unit	Unit Cost	Target	IWMP Fund	MNREGS/Other Source	Total	WDF
1.	Live fencing	RM.	24	500	0	12000	12000	10 % General & 5 % SC / ST
2.	Centripetal terracing	Nos.	32	100	0	3200	3200	
3.	Source recharge	Nos.	13000	10	130000	0	130000	
4.	Construction of a shutter type chekdam at downstream of Elavathunkal chira	Nos.	317147	1	317147	0	317147	
5.	Construction of retaining wall along Eduthakulam substream (S.N.53/P)	RM.	2695	150	404250	0	404250	
6.	Construction of a shutter type chekdam near eyilakkattu madrassa	No.	231297	1	231297	0	231297	
7.	Construction of retaining wall for Kuttichiraputhan thodu	RM.	2695	101.44	273390	0	273390	
Total					1356084	15200	1371284	

Kurunhippadam Watershed

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

SI No.	Name of Activity	Unit	Unit Cost	Target	IWMP Fund	MNREGS/Other Source	Total	WDF
1.	Construction of retaining wall for Kuttichiraputhan thodu	Rm.	2695	150	404250	0	404250	10 % General & 5 % SC / ST
2.	Construction of retaining wall for Neendoor paduvanpully thodu	Rm.	2695	180	485100	0	485100	
3.	Construction of retaining wall for manakkathazhum thodu	Rm.	2695	128.6	346584	0	346584	
4.	Laying geo textiles for thodu side	M ² .	267	450	120150	0	120150	
5.	Yard water collection pits	Nos.	438	50	0	21900	21900	
Total					1356084	21900	1377984	

Watershed Livelihood Action Plan

Kurinihipadamthodu Watershed - 1st Pahse

SI No	Name of Activity / Category	Unit	Unit cost	Target	IWMP fund	Bank loan/ Other sources	Total
1	Grand for WDS	0	0	0	25000	0	25000
2	Grand for BLWDS	0	0	0	5000	0	5000
3	Seed money for JLG / SHG	0	0	0	409020	45447	454467
	Total				439020	45447	484467

Kurinihipadamthodu Watershed - 2nd Pahse

SI No	Name of Activity / Category	Unit	Unit cost	Target	IWMP fund	Bank loan/ Other sources	Total
1	Seed money (Balance allocation)	0	0	0	190980	21220	212200
Major livelihood activity							
2	Cow rearing unit (5 Nos /Unit)	Nos	150000	2	150000	150000	300000
3	Goat Rearing (3 Goat / Unit)	Nos	18000	11	98040	99960	198000
	Total				439020	271180	710200

Watershed Micro Enterprises Action Plan
Kurinhpadamthodu Watershed - 1st Pahse

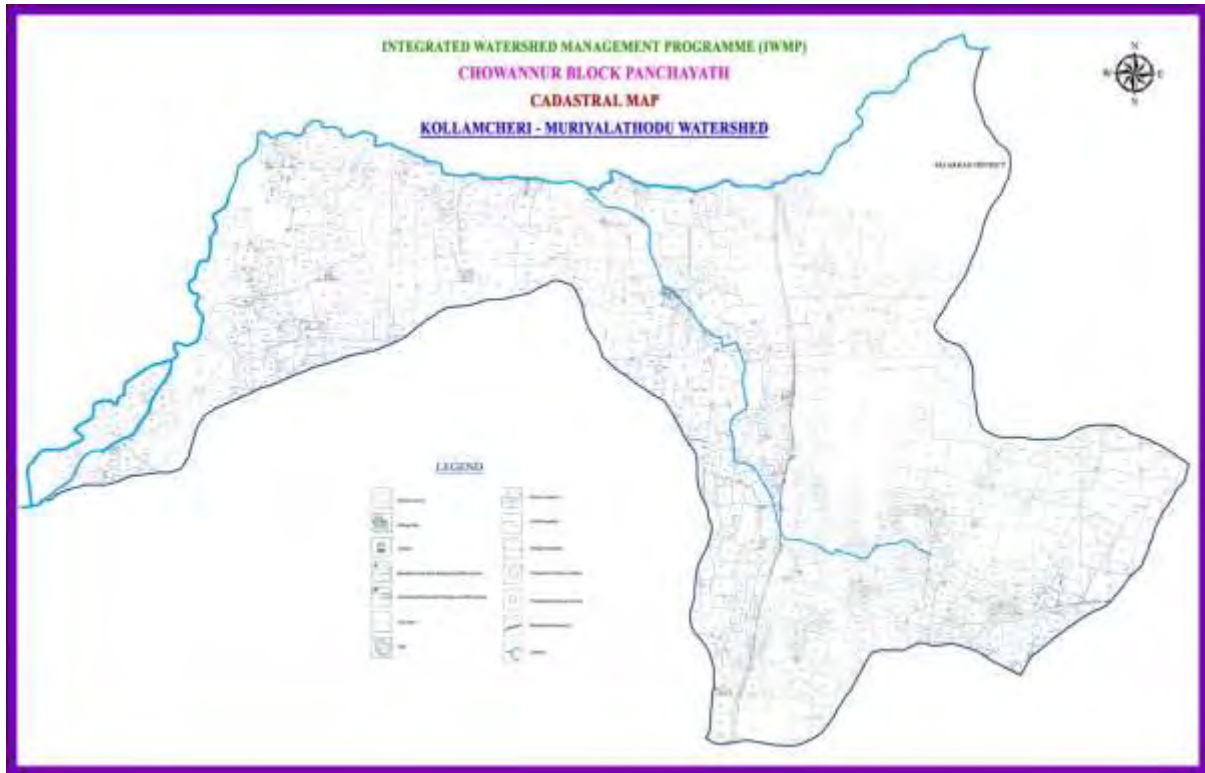
SI No	Name of Activity / Category	Unit	Unit cost	Target	IWMP fund	Bank loan/ Other sources	Total
1	Organic manure distribution	Kg.	20	20000	320000	80000	400000
2	Planting of fruit bearing trees	Nos.	100	400	32000	8000	40000
3	Pipe composting	Nos.	1000	98	78200	19800	98000
4	Mushroom cultivation	Nos.	24000	3	57600	14400	72000
	Total				487800	122200	610000

Kurinhpadamthodu Watershed - 2nd Pahse

SI No	Name of Activity / Category	Unit	Unit cost	Target	IWMP fund	Bank loan/ Other sources	Total
1	Cow rearing	Nos.	24000	12	230400	57600	288000
2	Organic vegetable cultivation	120 cent	24000	6	115200	28800	144000
3	Banana chips making unit	Nos.	24000	2	38400	9600	48000
4	Layer distribution	100/Bird	100	1298	103800	26000	129800
	Total				487800	122000	609800

* WDF 20% for General & 10% for SC/ST

4. KOLLANCHERI – MURIYALATHODU (Code No. 19K10a)



Kollancheri – Muriyalathodu Watershed is in Kadavallur Grama Panchayat. It covers 4 wards (2nd, 4th, 13th and 14th) fully and nine wards (1st, 3rd, 5th, 6th, 7th, 8th, 9th, 12th and 20th) partially. Ottaplavu, Korattikara, Vattamavu, Kallumpuram, Vadakkumuri, Kadavallur Ambalanada, Othalur Bund, etc are the main places in the watershed.

The boundaries of the watershed are as follows:

- North: – Nagalassery & Chalissery GPs
- South: – Kottol Watershed
- East: – Kothachira Watershed, Anthimakakalanpuncha Watershed
- West: – Alankodu GP, Malappuram District

The watershed has hillocks and slopes. Kollanchery watershed is included in the Midland agro-climatic zone. Vattammavu ward- Kudamarakkunnu, Ottaplavu Cattle Market, Orukkalkunnu etc., are the high elevation areas of the watershed. Here one can observe black granites and Red laterite rocks. The lower elevation area is Cheerankutty Nhal. In general two types of soil is observed – Red laterite with gravel and alluvium mixed with clay. There are around 143.67 Ha paddy fields which characterize the low land with alluvium mixed with clay. The watershed has a length of 4.4 Kms and a width of 6.5 Kms.

Water sources

The watershed is the catchment area of the main stream Kollancheri stream. This is originating from the southern part of Nagalasseri Grama Panchayat of Palakkad District and flows through the east side of Kollancheri watershed and enter into Kattakambal Grama Panchayat. The stream drains the watershed about 10km length with a width of 10m and depth of 2m and finally entering into Kanjiramukku River. The stream is with water till the end of March. There are two more streams that enrich the watershed:

1. Arakkal-Korattikara stream originating from Ayyappankavu and entering into Kollancheri stream. The stream has 1 Km length, 5m width and 1.5m depth.
2. Chalisseri-Kolathani-Pathankulam stream enriches the main stream and flow around 1 Km across the watershed with 2m width and 1m depth.

Besides the above mentioned natural water flows, the watershed consists of 9 Public and 3 Private (Total 12 ponds). The total geographic area covered by these ponds is 19.15 Ha. All these water bodies once were perennial, but unfortunately due to lack of protection measure, these had turned to be seasonal. The number of open wells in the watershed may count to be 1500 and the count of bore wells is 300.

Land Use and Cropping Pattern

Major crops in the watershed are coconut, arecanut and Paddy. Another important crop is plantain which is slowly spreading in the watershed area, especially in low lands and invades the paddy fields. Paddy forms the largest single crop in the watershed and onetime sowing is done. Rubber is still waiting to enter into the watershed which is a good sign of people's attitude towards the agriculture. However, it began to enter in small quantities and an around 10 acre of land has already been converted to rubber plantations and the loss is for mixed cultivation. The land use pattern and crops are detailed below:

Crops	Ha
Paddy	143.67
Mixed Crops	286.64
Water Bodies	67.04
Built up	507.65
Total	1005

Socio-economic Situation

There are 2733 households in the watershed in which a total population of 13392 is living in. Out of the total population 6294 (47%) are males and the rest 7098 (53%) are female. The male female ratio is 1127. The number of SC households in total 24 colonies is 657. People in these colonies are traditionally farmers and they still continue their occupation as farmers in their limited land holdings. There are around 1706 BPL families in the watershed. The literacy rate is around 82 and the male literacy is a little high (86%) when compared to the female literacy (70%).

Only small and big farmers involve in the agriculture. Some are doing farming along with outside work also for earnings. The reason for many farmers not involving in agriculture is the low returns from it. Marginal farmers earn their livelihood from wage labour. Off season migration is a common phenomenon in the watershed.

There are good number of public and private institutions in the watershed including health care centres, educational institutions, and public service providers. The table given below will illustrate the same:

Sl. No.	Institutions	Tot. No.	Sl. No.	Institutions	Tot. No.
1	Anganwadi	14	12	Scheduled Bank	4
2	Lower primary Schools	2	13	Cooperative banks	1
3	Upper Primary Schools	2	14	Co-Op. Service Society	1
4	High School	1	15	Post Office	1
5	Vocational Higher Secondary School	1	16	Ration Shop	3
6	Primary Health Centre	2	17	Ksheera Vyavsaya Kendram	2
7	Veterinary Hospital	1	18	Reading Room & Library	7
8	Ayurveda Hospital	2	19	Clubs	2
9	Allopathy Hospital	1	20	Cinema Theatre	1
10	Homeo Hospital	1	21	Petrol Bunk	2
11	College	2	22	Transformer	13

(Source- MGNREGS Master Plan and PRA document)

Specific Problems of the watershed

1. Soil erosion
2. Lack of conservation Practices
3. Reduced humus of the soil
4. Over exploitation of the ground water sources
5. Sedimentation of ponds
6. Stream Bank Erosion
7. Inadequate irrigation facilities
8. Lack of mechanism for Rain Water Harvesting
9. Poor livestock
10. Unemployment of women

Proposed Interventions

Natural Resource Management (NRM)	Production System & Micro Enterprises (PS&M)	Livelihood Support System (LSS)
<ul style="list-style-type: none"> • Stream bank Stabilization • De-siltation of ponds and streams • Construction of Check dams • Live fencing • Well recharging • Husk Trenching • Centripetal Terracing • Pond Construction • Pond renovation • Construction of VCB • Yard Water Collection Pit 	<ul style="list-style-type: none"> • Bee keeping • Organic Manure Distribution • Planting of fruit bearing Trees • Herbal Garden • Cow Rearing • Goat Rearing 	<ul style="list-style-type: none"> • Seed Money for Enterprising Individuals • Seed Money for SHGs • Consumer Store • Distribution of Tailoring Machines • Backyard Poultry

- ***Bee Keeping***

Bee keeping is a very practical production system management intervention and micro enterprises for farmers with adequate land and cultivation. Bees will help regularize and diversify the vegetative system and also bring an income. This will help th farmers improve their living standard.

- ***Goat rearing***

Goat is considered as the poor man’s cow and many small holder farmers thrive to live with income from goat farming. Two or three animals will be helpful for the farmers and the goat rearing will ring adequate income by selling the calves or selling the milk. It is generally believed that the goat milk has medicinal value and hence of high demand.

Kollancherythodu Watershed

MASTER PLAN

Installment	Administration	Monitoring	Evaluation	Entry Point Activity	Institution & Capacity Building	DPR preparation	Watershed Development Activities	Livelihood Activities	Production system & Micro Enterprises	Consolidation Phase	Total IWMP project fund
1 st	241200	24120	24120	482400	361800	120600	1157760	0	0	0	2412000
%	2	0.2	0.2	4	3	1	9.6	0	0	0	20
2 nd	301500	24120	24120	0	120600	0	2001960	542700	603000	0	3618000
%	2.5	0.2	0.2	0	1	0	16.6	4.5	5	0	30
3 rd	361800	36180	36180	0	120600	0	1917540	542700	603000	0	3618000
%	3	0.3	0.3	0	1	0	15.9	4.5	5	0	30
4 rd	301500	36180	36180	0	0	0	1676340	0	0	361800	2412000
%	2.5	0.3	0.3	0	0	0	13.9	0	0	3	20
Total	1206000	120600	120600	482400	603000	120600	6753600	1085400	1206000	361800	12060000
%	10	1	1	4	5	1	56	9	10	3	100

Kollancherythodu Watershed

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

SI No.	Name of Activity	Unit	Unit Cost	Target	IWMP Fund	MNREGS/Other Source	Total	WDF
1.	Source recharge	No	13000	10	130000	0	130000	10 % General & 5 % SC / ST
2.	Centripetal terracing	Nos.	32	500	0	16000	16000	
3.	Live fencing	Rm.	24	1000	0	24000	24000	
4.	Silt removing from the thodu and laying of Geo textiles from Highway road to Othalloor Bund	Rm.	496	1072	531760	0	531760	
5.	V.C.B renovation near the side of Malapuram District	No.	21000	1	21000	0	21000	
6.	Chelakulam Renovation	No.	475000	1	475000	0	475000	
Total					1157760	40000	1197760	

Kollancherythodu Watershed

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

SI No.	Name of Activity	Unit	Unit Cost	Target	IWMP Fund	MNREGS/Other Source	Total	WDF
1.	Construction of a Check dam Mullapally thazham bhagam	Nos.	252937	1	252937	0	1600000	10 % General & 5 % SC / ST
2.	Retaining wall construction along the thodu from Arakkal to Korattikara temple	RM.	2695	54.89	147923	0	147923	
3.	Kuruppathu thazham thodu protection from Othalloor	Nos.	401960	1	1603000	0	1603000	
4.	Husk trench	Nos.	179	50	0	8950	8950	
5.	Live fencing	RM.	24	500	0	12000	12000	
Total					2001960	20950	3369973	

Kollancherythodu Watershed

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

SI No.	Name of Activity	Unit	Unit Cost	Target	IWMP Fund	MNREGS/Other Source	Total	WDF
1.	Husk trench	Nos.	179	50	0	8950	8950	10 % General & 5 % SC / ST
2.	Centripetal terracing	Nos.	32	500	0	16000	16000	
3.	Adimanathazham thodu protection	Nos.	1500000	1	1767000	0	1767000	
4.	Retaining wall construction along the thodu from Arakkal to Korattikara temple	RM.	2695	55.85	150540	0	150540	
Total					1917540	24950	1942490	

Kollancherythodu Watershed

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

SI No.	Name of Activity	Unit	Unit Cost	Target	IWMP Fund	MNREGS/Other Source	Total	WDF
1.	Retaining wall construction along the thodu from Ayyappen kavu to Arakkal	RM.	2695	260	699241	0	699241	10 % General & 5 % SC / ST
2.	Gully controlling structure Ayyappen kavu thodu	Nos.	1895	30	56850	0	56850	
3.	Retaining wall construction along the thodu from Arakkal to Korattikara temple	Nos.	2695	80	215600	0	446340	
4.	Construction of a Check dam vattathodu	Nos.	252937	1	252937	0	550000	
5.	Construction of a Check dam vadakuttunthazham	RM.	225856	1	225856	0	400000	
6.	Construction of a Check dam Uttully thazham bhagam	Nos.	225856	1	225856	0	280000	
7.	Live fencing	Rm.	24	500	0	12000	60000	
8.	Husk trench	Nos.	179	80	0	14320	40000	
9.	Yard water collection pits	Nos.	450	70	0	31500	31500	
Total					1676340	56980	2563931	

Watershed Livelihood Action Plan
Kollencherithodu Watershed - 1st Pahse

SI No	Name of Activity / Category	Unit	Unit cost	Taget	IWMP fund	Bank loan/ Other sources	Total
1	Grand for WDS	0	0	0	25000	0	25000
2	Grand for BLWDS	0	0	0	5000	0	5000
3	Seed money for JLG / SHG	0	0	0	512700	56967	569667
	Total				542700	56967	599667

Kollencherithodu Watershed - 2nd Pahse

SI No	Name of Activity / Category	Unit	Unit cost	Taget	IWMP fund	Bank loan/ Other sources	Total
1	Seed money (Balance allocation)	0	0	0	237300	26367	263667
Major livelihood activity							
2	Cow rearing unit (5 Nos /Unit)	Nos	150000	2	150000	150000	300000
3	Goat Rearing (2 Goat / Unit)	Nos	12000	23	136400	139600	276000
	Mushroom cultivation	Nos	20000	2	19000	21000	40000
	Total				542700	336967	879667

Watershed Micro Enterprises Action Plan

Kollamcherithodu Watershed - 1st Pahse

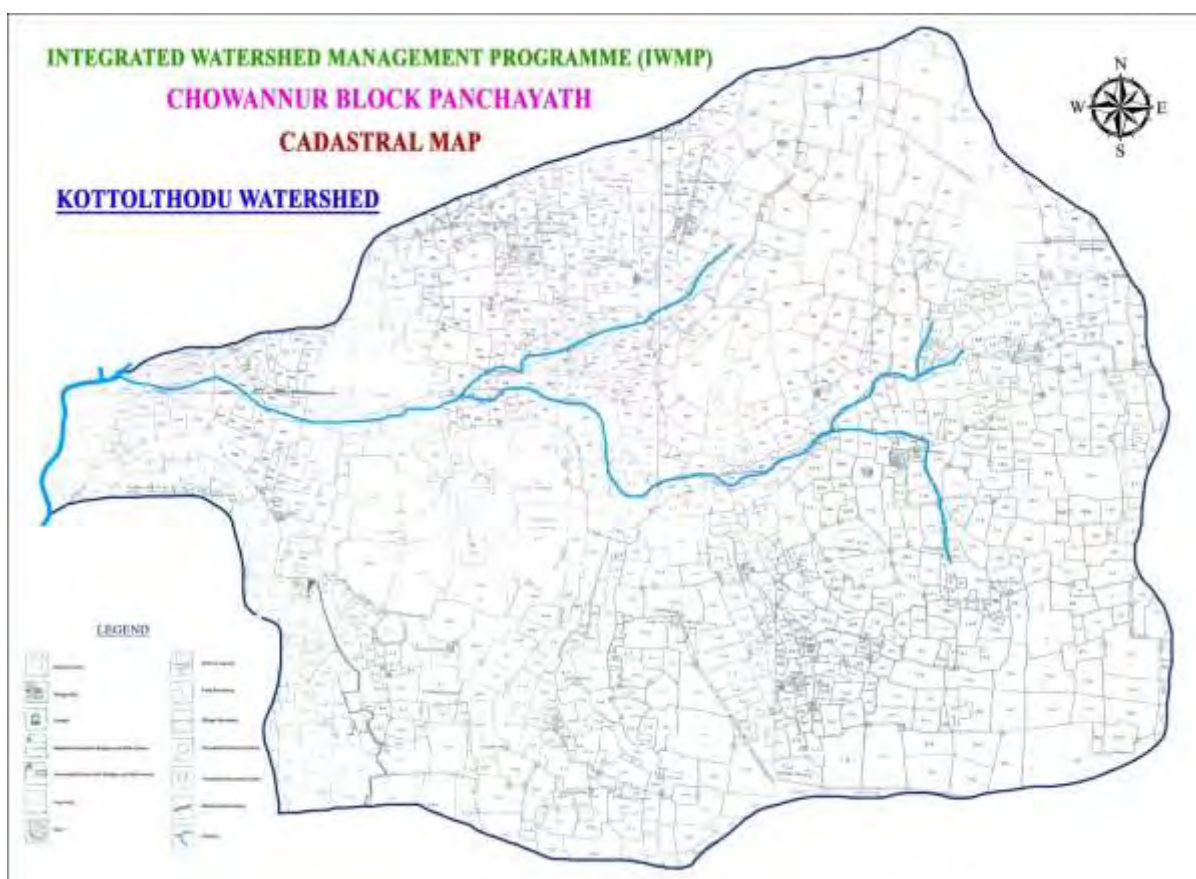
SI No	Name of Activity / Category	Unit	Unit cost	Target	IWMP fund	Bank loan/ Other sources	Total
1	Bee keeping	Nos.	24000	10	192000	48000	240000
2	Organic manure distribution	Kg.	20	8000	128000	32000	160000
3	Plantain fruit bearing trees	Nos.	100	418	33400	8400	41800
4	Herbal Garden	Nos.	24000	2	38400	9600	48000
5	Cow rearing	Nos.	24000	11	211200	52800	264000
	Total				603000	150800	753800

Kollamcherithodu Watershed - 2nd Pahse

SI No	Name of Activity / Category	Unit	Unit cost	Target	IWMP fund	Bank loan/ Other sources	Total
1	Organic farming	Ha.	24000	6	115200	28800	144000
2	Distribution of tailoring machine	Nos.	8000	11	70400	17600	88000
3	Layer distribution	Nos.	100	1798	143800	36000	179800
4	Goat rearing	Nos.	18000	19	273600	68400	342000
	Total				603000	150800	753800

* WDF 20% for General & 10% for SC/ST

5. KOTTOLTHODU (Code No. 19K11a)



Kottolthodu watershed is in Kadavallur and Katakambal Grama Panchayats. 90.4% of the watershed area (782 Ha) is in Kadavallur GP and 9.6% (83 Ha) is in Kattakambal GP. It belongs to Kadavallur and Karikkadu villages in Thalappilly Thaluk. The watershed has a total length of 3.25 Kms and a width of 4.75 Kms. Othalur, Ayinoor, Kadavallur, Kottol, Karikkadu, Kotholikkunnu, Puravoor, Pathakkara, Korattikkara and Kodamarakkunnu are the important places in the watershed limit.

The boundaries of the watershed are as follows:

- North: – Kallanchery – Muriyalthodu Watershed
- South: – Porakkulam Panchayat
- East: – Kollanchery- Kadangodu GP
- West: – Othalur bund in Kattakambal GP

The watershed is sloppy in nature especially in Kottol area and is included in the Midland agro-climatic zone. In general two types of soil are observed – Sandy clay and clay mixed with gravel. There are around 300 Ha of paddy fields which characterize the low land and

around 70% (210 Ha) have left barren due to lack of irrigation facilities and heavy financial loss.

Water sources

The watershed is the catchment area of the main stream Kottolthodu. The other streams are Vallankallu Stream, Alanchery stream, Poravoor Cheenithura Stream, Kundoor Temple Stream, Kurudithodu, and Karapadam Stream. Four ponds are also enriching the hydrology of the watershed. They are:

1. Cheenithura Pond (Owned by the GP)
2. Karakkulam (Private)
3. Kadavallur Parekkulam (Private)
4. Kundoor Temple Thurakkulam (owned by the Devaswom)

Besides the above mentioned natural water sources, the watershed consists of an approximate 20 community wells besides individual household wells. The 300 Ha paddy field is also a natural bowl of water storage, but unscientific land utilization prevented the water storage in the watershed. This has to be checked and the paddy fields should be rejuvenated.

Land Use and Cropping Pattern

Major crops in the watershed are coconut, arecanut and Paddy. Another important crop is plantain which is slowly spreading in the watershed area. Paddy forms the single largest crop in the watershed with 300 Ha and onetime sowing is done. Rubber is still waiting to enter into the watershed which is a good sign of people's attitude towards the agriculture. The land use pattern and crops are detailed below:

Crops	Ha
Paddy	300
Mixed Crops	186
Coconut	241
Built up	138
Total	865

Socio-economic Situation

There are 2462 households amongst which 1477 are BPL and the rest 985 are in the APL category. The total population in the watershed is 11325. Male population is 5436 and the female population is 5889. The male female ratio is 1083. The number of SC households is 906 in which a total population of 4530 is living. People are traditionally farmers and they are trying to continue to be so even now amidst the difficult conditions for withstanding. The

literacy rate is around 82 and the male literacy is a little high (86%) when compared to the female literacy (70%).

Only small and big farmers involve in the agriculture. Among them some are also exploring wage labour for their earnings. The reason for many not involving in agriculture is the low returns from it. Marginal farmers specifically earn their livelihood from wage labour. Off season migration is a common among the watershed community. They find out labour in the construction sector of the urban areas.

Specific Problems of the watershed

1. Un protected natural water sources
2. Soil erosion
3. Lack of conservation Practices
4. Poor utilization of Paddy fields
5. Sedimentation of ponds
6. Stream Bank Erosion
7. Inadequate irrigation facilities
8. Lack Rain Water Harvesting
9. Poor livestock
10. Unemployment of women

Proposed Interventions

Natural Resource Management (NRM)	Production System & Micro Enterprises (PS&M)	Livelihood Support System (LSS)
<ul style="list-style-type: none"> • Gully Plugging • Stream bank Stabilization • De-siltation of ponds and streams • Construction of Check dams • Live fencing • Centripetal Terracing • Husk Trenching • Yard Water Collection Pits • Pond renovation • Well recharging • Drainage Construction 	<ul style="list-style-type: none"> • Organic Manure Distribution • Planting of fruit bearing Trees • Herbal Garden • Cow Rearing • Tissue plantain cultivation • Japanese Quail Rearing • Mini Dairy Farm 	<ul style="list-style-type: none"> • Seed money for enterprising individuals • Seed money for SHGs • Tailoring Unit • Banana Chips Making • Distribution of Tailoring Machine

Kottol Watershed
MASTER PLAN

Installment	Administration	Monitoring	Evaluation	Entry Point Activity	Institution & Capacity Building	DPR preparation	Watershed Development Activities	Livelihood Activities	Production system & Micro Enterprises	Consolidation Phase	Total IWMP project fund
1 St	207600	20760	20760	415200	311400	103800	996480	0	0	0	2076000
%	2	0.2	0.2	4	3	1	9.6	0	0	0	20
2 nd	259500	20760	20760	0	103800	0	1723080	467100	519000	0	3114000
%	2.5	0.2	0.2	0	1	0	16.6	4.5	5	0	30
3 rd	311400	31140	31140	0	103800	0	1650420	467100	519000	0	3114000
%	3	0.3	0.3	0	1	0	15.9	4.5	5	0	30
4 rd	259500	31140	31140	0	0	0	1442820	0	0	311400	2076000
%	2.5	0.3	0.3	0	0	0	13.9	0	0	3	20
Total	1038000	103800	103800	415200	519000	103800	5812800	934200	1038000	311400	10380000
%	10	1	1	4	5	1	56	9	10	3	100

Kottol 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.	Well recharge	Nos.	13000	15	195000	0	195000	10 % General & 5 % SC / ST
2.	Construction of retaining wall and widening of two streams starting from Karapadam	Rm.	25550	314.31	801480	0	801480	
3.	Construction of Drainage canal from Thurakulam	M ³ .	98.55	100	0	98550	98550	
4.	Centripetal terracing	Nos.	32	500	0	16000	16000	
5.	Husk trench	Nos.	197	300	0	59100	59100	
6.	Live fencing	Nos.	24	2000	0	48000	48000	
Total					996480	221650	1218130	

Kottol Watershed

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

SI No.	Name of Activity	Unit	Unit Cost	Target	IWMP Fund	MNREGS/Other Source	Total	WDF
1.	Construction of a shutter type check dam across Kottolthodu at upstream side of Panikkathazham bridge	Nos.	172000	1	172000	0	172000	10 % General & 5 % SC / ST
2.	Renovation of Eriyankulam	Nos.	136000	1	136000	0	136000	
3.	Construction of a check dam at the junction of two streams starting from Karapadam	Nos.	198000	1	198000	0	198000	
4.	Deepening and construction of retaining wall for Kottol thodu at east side of Panikkathazham bridge	Rm.	1750	695.48	1217080	0	1217080	
5.	Yard water collection pits	Nos.	438	150	0	65700	65700	
6.	Centripetal terracing	Nos.	32	1000	0	32000	32000	
Total					1723080	97700	1820780	

Kottol Watershed

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

SI No.	Name of Activity	Unit	Unit Cost	Target	IWMP Fund	MNREGS/Other Source	Total	WDF
1.	Gully plugging in Thurakalam thodu	Nos.	1770	35	61950	0	61950	10 % General & 5 % SC / ST
2.	Deepeninig of Thurakulam	M ³	138000	-	138000	0	138000	
3.	Deepening of Kothullithazham Subramanyan pond	M ³	65000	-	65000	0	65000	
4.	Gully plugging in Paruvakunnu thodu at Velloorkundu	Rm.	1770	15	26650	0	26650	
5.	Well recharge	Nos.	13000	12	156000	0	156000	
6.	Construction of retaining wall for Paruvakunnu thodu at Velloorkundu	Rm.	2500	75.53	188820	0	188820	
7.	Alancherykulam renovation	Nos.	264000	1	264000	0	264000	
8.	Construction of retaining wall for Vadaserrythodu at east side of Nursery	Rm.	2500	300	750000	0	750000	
Total					1650420	0	1650420	

Kottol Watershed

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

SI No.	Name of Activity	Unit	Unit Cost	Target	IWMP Fund	MNREGS/Other Source	Total	WDF
1.	Karakulam pond renovation	No.	63000	1	63000	0	63000	10 % General & 5 % SC / ST
2.	Renovation of Cheenithurakulam	No.	210000	1	210000	0	210000	
3.	Well recharging	No.	13000	30	390000	0	390000	
4.	Renovation works to the existing check dam in Kottolthodu	No.	150000	1	150000	0	150000	
5.	Deepening and construction of retaining wall for thodu	RM.	2550	246.99	629820	0	629820	
6.	Husk trench	Nos.	179	1000	0	179000	179000	
7.	Yard water collection pits	RM.	438	100	0	438000	438000	
Total					1442820	617000	2059820	

Watershed Livelihood Action Plan
Kottolthodu Watershed - 1st Pahse

SI No	Name of Activity / Category	Unit	Unit cost	Target	IWMP fund	Bank loan/ Other sources	Total
1	Grand for WDS	0	0	0	25000	0	25000
2	Grand for BLWDS	0	0	0	5000	0	5000
3	Seed money for JLG / SHG	0	0	0	437100	48567	485667
	Total				467100	48567	515667

Kottolthodu Watershed - 2nd Pahse

SI No	Name of Activity / Category	Unit	Unit cost	Target	IWMP fund	Bank loan/ Other sources	Total
1	Seed money (Balance allocation)	0	0	0	212900	23656	236556
Major livelihood activity							
2	Cow rearing unit	Nos	30000	4	60000	60000	120000
3	Mini Diary farm	Nos	300000	1	150000	150000	300000
	Goat rearing (3 Nos. / Unit)	Nos	18000	5	44200	45800	90000
	Total				467100	279456	746556

Watershed Micro Enterprises Action Plan

Kottolthodu Watershed - 1st Pahse

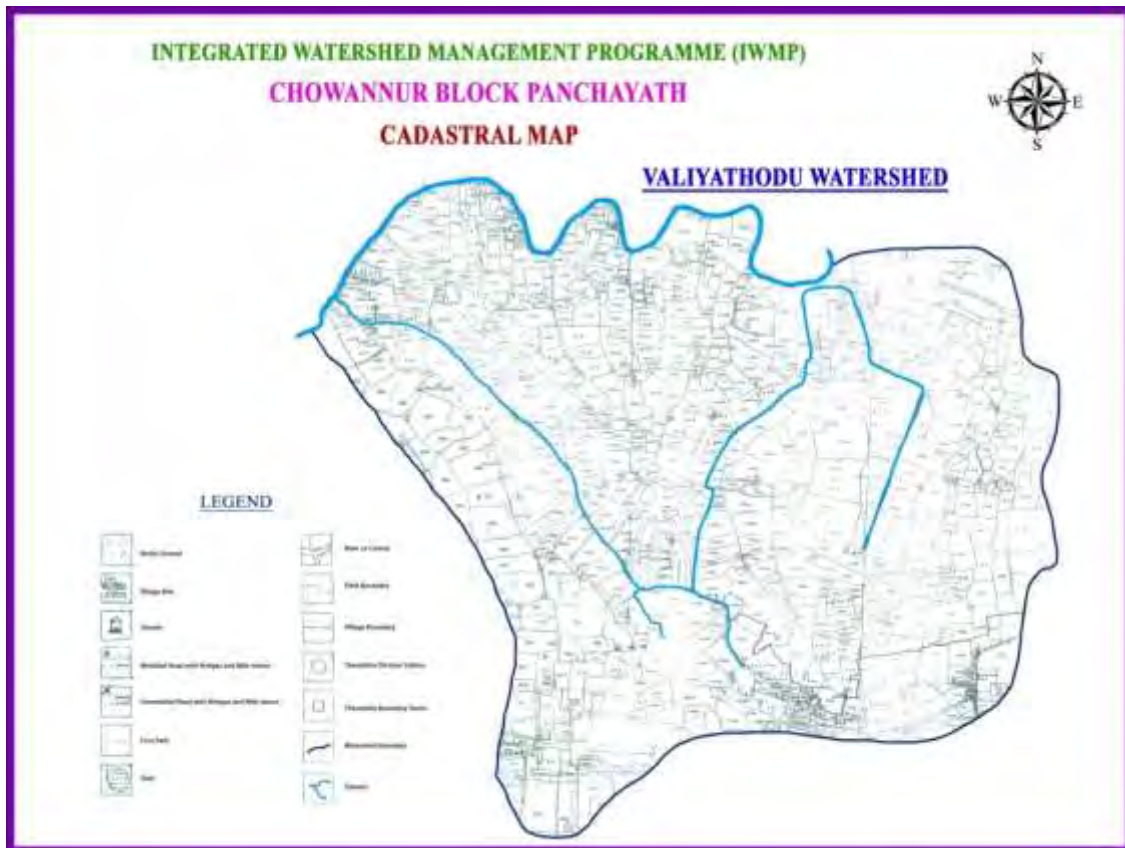
SI No	Name of Activity / Category	Unit	Unit cost	Target	IWMP fund	Bank loan/ Other sources	Total
1	Organic manure distribution	Kg.	20	11000	176000	44000	220000
2	Distribution of fruit bearing trees	Nos.	100	538	43000	10800	53800
3	Cow rearing	Nos.	24000	8	153600	38400	192000
4	Herbal garden	Nos.	24000	2	38400	9600	48000
5	Vermi composting	Nos.	9000	15	108000	27000	135000
	Total				519000	129800	648800

Kottolthodu Watershed - 2nd Pahse

SI No	Name of Activity / Category	Unit	Unit cost	Target	IWMP fund	Bank loan/ Other sources	Total
1	Layer distribution	Nos.	100	1728	138200	34600	172800
2	Pipe composting	Nos.	1000	120	96000	24000	120000
3	Banana chips making unit	Nos.	24000	1	19200	4800	24000
4	Organic tissue plantain cultivation	No.	20	3000	48000	12000	60000
5	Japanese quail rearing	Nos.	24000	3	57600	14400	72000
6	Distribution of tailoring machine	Nos.	8000	25	160000	40000	200000
	Total				519000	129800	648800

* WDF 20% for General & 10% for SC/ST

6. VALIYATHODU (Code No. 19K12a)



Valiyathodu Watershed in Katakambal Grama Panchayat covers 4th, 5th & 6th wards fully and 2nd & 7th wards partially. Kattakmbal is the village in which the watershed lies. The watershed has a total length of 2.65 Kms and a width of 2.75. Kms. Ambalakkavu, Perumthuruthi, Cheruthuruthy, Pzhanhi, etc. are the important places in the watershed. The highest area in the watershed is Ayyarmalakkunnu.

The northern boundary of the watershed is Alamkodu and Nannmukku GPs of Malappuram District and the southern boundary is Porkulam (Pppirithazham – Cheruvallikkadavu watersheds. Kottulthodu watershed forms the east boundary and Perumthodu watershed is the west boundary.

Physiographically the watershed is undulating in nature with hillocks and slopes. Descending valley and lowlands from the laterite stony Ayyarmalakkunnu forms the watershed. Major part of the watershed is wetland. In the upper reaches laterite stony soil and in the lower portions and sloppy valleys alluvium are the two main types of soil.

Water Sources

Valiyathodu is the main drainage around which the watershed is formed. Six more streams are also help to drain the watershed into the main stream. They are:

1. Chittathazham Stream
2. Koliyappadam Stream
3. Cheruthuruthy Stream
4. Perumthuruthy Stream
5. Ayinur – Karuthikkulam Stream
6. Pzhanhi- Puthankulam Stream

While the above mentioned streams drain the watershed, around 1000 wells provide drinking water to the households. Besides, there are 10 community wells, 20 private ponds, 7 public ponds, 6 bore wells and 50 public taps in the watershed that helps keeping the hydrology of the watershed live.

Land use & Cropping pattern

The important crops in the watershed are Paddy, Coconut and Arecanut. Plantain is another important crop in the watershed. Paddy is the single largest crop in the watershed and major part of the watershed is Paddy fields. Due to inadequate irrigation facilities, farmers are compelled to sow paddy only once in the year. They say that if adequate irrigation facility is available the paddy field can be cropped twice in a year. The land use pattern is illustrated below:

Crops	Ha
Rubber	5
Coconut	227.6
Mixed Crops	60
Paddy	129
Waste Land	4
Water Bodies	12
Built Up	12.4
Total	450

Socio-economic situation

The approximate number of households in the watershed is 450. The total population according to GP records is 4834. The male population is 2271 and the female population is 2563. There are a total of 677 SC populations and the ST population is negligible. Majority of the households depend upon agriculture for their livelihood. But, of late, due to lack of interest and loss in agriculture, especially in paddy, people are reluctant to take up agriculture and hence, seasonal and off seasonal migration is prominent in the watershed community.

The educational institutions in the watershed decide the educational standards of the watershed community. The total literacy of the watershed community is 83.63. The male literacy (84) is higher than the female literacy (83) which is not a huge difference. There are

seven Anganwadis, two LP Schools and one Vocational Higher Secondary School in the watershed.

Religion and religious institutions play an important role in moulding the culture of the watershed community. All the three religions – Hindu, Muslim and Christian – are keeping harmony among their disciples. There are four temples, two mosques and two Christian churches.

Major Problems

1. The watershed experiences heavy soil erosion, especially at valiyadam, Vattakkayal, Pazhanhi and Koyilappadam areas.
2. Severe drinking water scarcity, especially at Ayiroor, Pazhanhi, Karadimala, Cheruthuruthy etc.
3. Poor paddy cultivation and wasted paddy fields
4. Poor conservation measures
5. Poor fertility of the soil
6. Inadequate irrigation facilities
7. Sedimentation of streams and ponds
8. Deteriorating ground water

Proposed Interventions

Natural Resource Management (NRM)	Production System & Micro Enterprises (PS&M)	Livelihood Support System (LSS)
<ul style="list-style-type: none"> • Stream bank Stabilization • De-siltation of ponds and streams • Construction of Check dams • Live fencing • Pump House Construction • Husk Trenching • Centripetal Terracing • Pond renovation • Construction of VCB • Construction of Drainage 	<ul style="list-style-type: none"> • Organic Farming • Organic Manure Distribution • Planting of fruit bearing Trees • Backyard Poultry • Goat Rearing • Mini Dairy Farm 	<ul style="list-style-type: none"> • Seed Money for Enterprising Individuals • Seed Money for SHGs • Distribution of Tailoring Machines

Valiyathodu Watershed

MASTER PLAN

Installment	Administration	Monitoring	Evaluation	Entry Point Activity	Institution & Capacity Building	DPR preparation	Watershed Development Activities	Livelihood Activities	Production system & Micro Enterprises	Consolidation Phase	Total IWMP project fund
1 st	108000	10800	10800	216000	162000	54000	518400	0	0	0	1080000
%	2	0.2	0.2	4	3	1	9.6	0	0	0	20
2 nd	135000	10800	10800	0	54000	0	896400	243000	270000	0	1620000
%	2.5	0.2	0.2	0	1	0	16.6	4.5	5	0	30
3 rd	162000	16200	16200	0	54000	0	858600	243000	270000	0	1620000
%	3	0.3	0.3	0	1	0	15.9	4.5	5	0	30
4 rd	135000	16200	16200	0	0	0	750600	0	0	162000	1080000
%	2.5	0.3	0.3	0	0	0	13.9	0	0	3	20
Total	540000	54000	54000	216000	270000	54000	3024000	486000	540000	162000	5400000
%	10	1	1	4	5	1	56	9	10	3	100

Valiyathodu Watershed

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

SI No.	Name of Activity	Unit	Unit Cost	Target	IWMP Fund	MNREGS/Other Source	Total	WDF
1.	Renovation works to the puthankulam	Nos	142500	1	142500	0	142500	10 % General & 5 % SC / ST
2.	Well recharge	Nos	13000	10	130000	0	130000	
3.	Construction of a shutter type chekdam near puthankulam at the junction of thodu	nos	103700	1	103700	0	103700	
4.	Centripetal terracing	Nos	35	300	0	10500	10500	
5.	Stream widening strating from Kumarapuram Devaswakulam upto the junction	M3	12000	-	0	12000	12000	
6.	Construction of retaining wall , upstream and downstream side of shutter type chek dam as above item no:3	Rm	2250	44.4836	100088	0	100088	
7.	Construction of a Pump house at Mankadathazham	Nos	42112	1	42112	0	42112	
8.	Live fencing	Nos	24	2000	0	48000	48000	
Total					518400	116100	634500	

Valiyathodu 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.	Renovation of Kannankulam in ward VII	Nos	80000	1	80000	0	250000	10 % General & 5 % SC / ST
2.	Construction of a V.CB. At Valiyadam vattakayal Padashekham near existing pump house	Nos	405200	1	405200	0	405200	
3.	Construction of a V.C.B near the plot of Abdhullakutty Haji Noorudeen	Nos	377000	1	377000	0	377000	
4.	Moisture Collection Pit	M3	53.32	1500	0	79980	79980	
5.	Centripetal terracing	Nos	32	150	0	4800	4800	
6.	Retaining wall construction in Kariyapadam at D/S & U/S of above item no:3	Rm	2250	15.2	34200	0	34200	
Total					896400	84780	1151180	

Valiyathodu Watershed

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

SI No.	Name of Activity	Unit	Unit Cost	Target	IWMP Fund	MNREGS/Other Source	Total	WDF
1.	Renovation of Karathikulam	Nos	840500	1	840500	0	840500	10 % General & 5 % SC / ST
2.	Construction of Retaining wall balance work in II nd year item no:6	Rm	2250	8.0443	18100	0	18100	
3.	Moisture collection pit	M3	53.32	1500	0	79980	79980	
4.	Husk Trench	Nos	179	300	0	53700	53700	
Total					858600	133680	992280	

Valiyathodu Watershed

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

SI No.	Name of Activity	Unit	Unit Cost	Target	IWMP Fund	MNREGS/Other Source	Total	WDF
1.	Construction of a V.C.B AT Kariyapadam Union Kolpadavu	No	405200	1	405200	0	405200	10 % General & 5 % SC / ST
2.	Construction of shutter type chek dam near the plot of Palakkal Jose in Karayipadam	Nos	101500	1	101500	0	101500	
3.	Construction of retaining wall for above item no.1 in U/S & D/S	Rm	2250	20	45000	0	45000	
4.	Construction of retaining wall for above item no.2 in U/S & D/S	Rm	2250	11.9058	26788	0	26788	
5.	Construction of a Pump house near the plot of Abdhullakutty Haji Noorudeen	Nos	42112	1	42112	0	42112	
6.	Well recharging	Nos	13000	10	130000	0	130000	
7.	Husk trench	Nos	179	250	0	44750	44750	
8.	Moisture collection pit	m3	53.32	1000	0	53320	53320	
Total					750600	98070	848670	

Watershed Livelihood Action Plan

Valiyathodu Watershed - 1st Pahse

SI No	Name of Activity / Category	Unit	Unit cost	Target	IWMP fund	Bank loan/ Other sources	Total
1	Grand for WDS	0	0	0	25000	0	25000
2	Grand for BLWDS	0	0	0	5000	0	5000
3	Seed money for JLG / SHG	0	0	0	213000	23667	236667
	Total				243000	23667	266667

Valiyathodu Watershed - 2nd Pahse

SI No	Name of Activity / Category	Unit	Unit cost	Target	IWMP fund	Bank loan/ Other sources	Total
1	Seed money (Balance allocation)	0	0	0	112000	12445	124445
Major livelihood activity							
2	Mini diary unit	Nos	300000	1	131000	169000	300000
	Total				243000	181445	424445

Watershed Micro Enterprises Action Plan

Valiyathodu Watershed - 1st Pahse

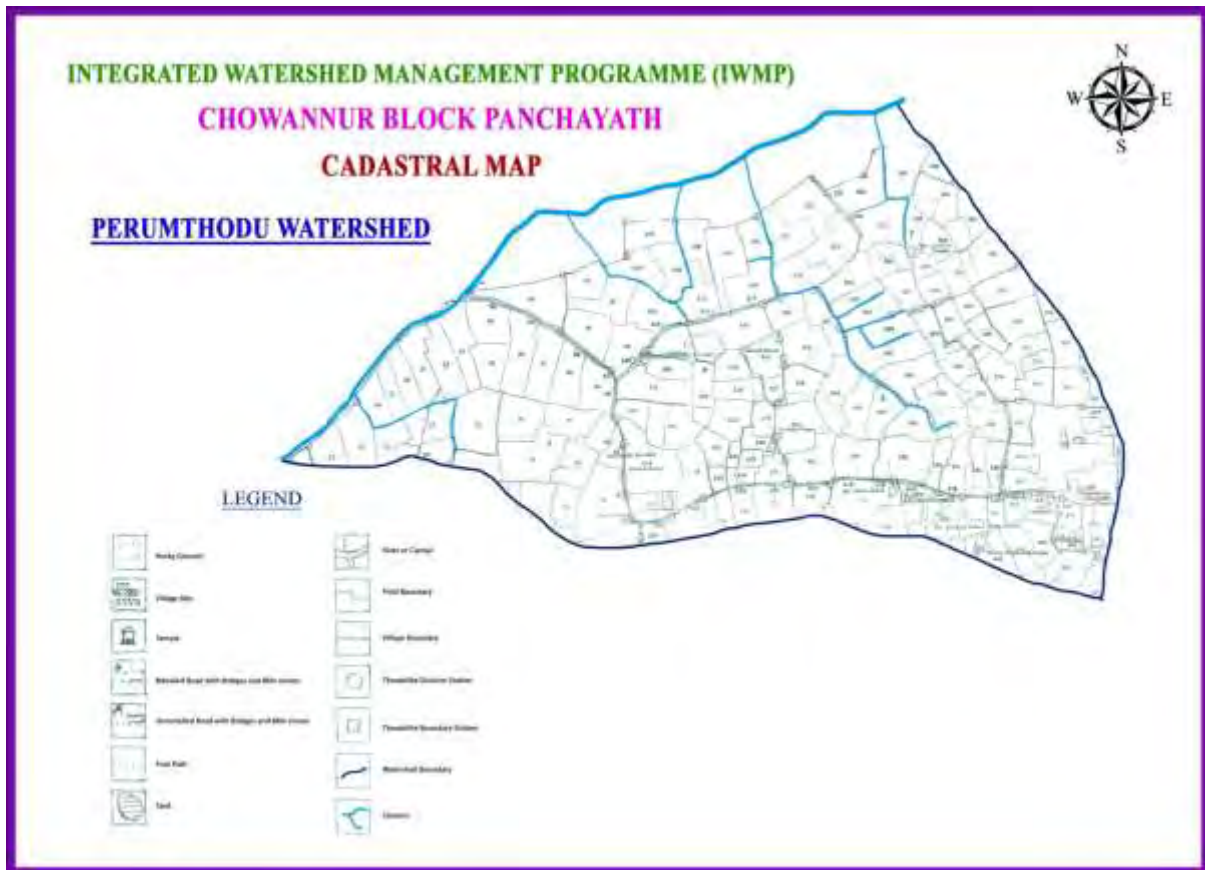
SI No	Name of Activity / Category	Unit	Unit cost	Target	IWMP fund	Bank loan/ Other sources	Total
1	Organic farming	Ha.	24000	3	57600	14400	72000
2	Distribution of fruit bearing trees	Nos.	100	1025	82000	20500	102500
3	Organic manure distribution	Kg.	20	8150	130400	32600	163000
	Total				270000	67500	337500

Valiyathodu Watershed - 2nd Pahse

SI No	Name of Activity / Category	Unit	Unit cost	Target	IWMP fund	Bank loan/ Other sources	Total
1	Layer distribution	Nos.	100	1000	80000	20000	100000
2	Lime distribution (Improving the PH Value of soil)	Kg.	10	2000	17200	4300	21500
3	Banana cultivation	plant	120	1000	96000	24000	120000
4	Organic Vegetable cultivation	120 cent	24000	4	76800	19200	96000
	Total				270000	67500	337500

* WDF 20% for General & 10% for SC/ST

7. PERUMTHODU (Code No. 19K13a)



This is another watershed in the Kanhiramukku river basin and included in the Katakamabal Grama Panchayat of Chovvanur block of Thalappilly thaluk in Thrissur District. It covers the first ward exclusively and part of the 2nd ward of the GP. The highest region of the watershed is Veliyathu Road. The watershed has a total length of 1.75 Kms. and a width of 2.95 Kms. Srayil, Kunnathukadavu, Chirayilkadu, Kondakkadavu, Pappirithi, Ramapuram and Perumpully Nagar are the important places of the watershed.

The boundaries of the watershed are as follows:

North – Alamkodu and Nannamukku GPs of Malappuram District

South – Pappirithazham – Cheruvallikkadavu Watershed

East – Valiyathodu Watershed

West - Pappirithazham – Cheruvallikkadavu Watershed

The watershed is undulating in nature. But major portion of the watershed is myrrh and paddy fields. Only moderate slopes are found in the watershed. The upper reaches have laterite stones and the downstream is little salty. Two types of soil are found in the watershed - Clay soil mixed with gravel and Sandy clay soil. The second type is seen at Chengini, Kondakkadavu areas.

Water Sources

Perumthodu is the main stream that drains the watershed. It is flowing around 3 Kms through the watershed with 8 feet width in the upper part and 10 feet in the lower portion. Six more sub-streams contribute water to the main stream. These sub-streams are:

- | | |
|--------------------------------------|-----------------------|
| 1. Malorkadavu Thodu | 4. Konthantekol thodu |
| 2. Kariyappadam – Thachinpuram Thodu | 5. Chattykkol Thodu |
| 3. Srayikkuzhi Thodu | 6. Pappiri Thodu |

Besides the above water sources, the watershed contain around 550 open wells, One community well, 40 pond and 40 public tap. One of the special feature of this watershed is there are no bore-wells.

Land Use & Cropping Pattern

It is observed that 38.63% of the available land is paddy fields and only one cropping is the practice. The other crops are rubber, coconut and arecanut. Land other than paddy filed is used for mixed crops. Rubber has not been invaded fully the watershed. However, it is slowly spreading over the upper reaches and slopes of the watershed. However, the single main cultivation in the watershed is Paddy. Present land use pattern is illustrated below:

Description	Ha
Rubber	1
Coconut	89
Mixed crops	35
Paddy	6
Water bodies	133
Total	264

Socio-Economic Situation

The watershed has a total 611 households. The total population in the watershed is 2869 amongst which 1348 are men and 1521 women. The male-female ratio is 1106. The total literacy is 83.63. Male literacy (84%) is slightly higher than female literacy (83). This is not a big difference considering the other watersheds taken for treatment under this scheme. The SC population is 499 almost 99% of which are in the BPL category. There are three Anganwadis in different locations of the watershed.

Almost all the watershed community members have undergone primary education and some have completed secondary education. Only a very few had under graduation. Technically educated are very rare among the watershed members.

The main source of income of the watershed community is from agriculture, but due to lesser works in the watershed, off season as well as on season migration is a usual phenomenon. Because of paddy cultivation brought loss alone for the last few years and lack of irrigation facilities, many farmers have abandoned their paddy cultivation. This has enhanced the transition of farmers to farm labourers. The situation of the SC community is very pathetic. Their main source of income was farm labour, which is now very rare. So their men had to migrate to the nearby townships and even to the neighbouring states for work.

There are no major cultural centres or institutions in the watershed, except some religious worship places. Even then the younger generation finds time to get together and discuss many issues that come across in the daily life. No formal institutions provide them a space to occupy.

Major Issues in the Watershed

1. Soil Erosion
2. Drinking Water scarcity
3. Abandoning of Agriculture
4. Wasted Paddy fields (paddy cultivation abandoned and the land left barren)
5. Lack of adequate irrigation facilities
6. Intrusion of salt water especially into the lower portions of the watershed
7. Dilapidated water canals
8. Deteriorating ground water table.
9. Lack of soil and water conservation activities
10. Unemployment/under employment, especially among women

11. Lack of crop rotation
12. Poor agricultural practices
13. Lack of organic crop rotation

Proposed Interventions

Natural Resource Management (NRM)	Production System & Micro Enterprises (PS&M)	Livelihood Support System (LSS)
<ul style="list-style-type: none"> • Stream bank Stabilization/Retaining wall construction • Well Recharging • De-siltation of ponds and streams • Construction of Check dams • Live fencing • Bund Heightening • Yard water collection pits • Centripetal Terracing • Geo Textiles 	<ul style="list-style-type: none"> • Organic Manure Distribution • Planting of fruit bearing Trees • Backyard Poultry • Cow Rearing 	<ul style="list-style-type: none"> • Seed Money for Enterprising Individuals • Seed Money for SHGs • Consumer Store

Perumthodu Watershed

MASTER PLAN

Installment	Administration	Monitoring	Evaluation	Entry Point Activity	Institution & Capacity Building	DPR preparation	Watershed Development Activities	Livelihood Activities	Production system & Micro Enterprises	Consolidation Phase	Total IWMP project fund
1 st	63360	6336	6336	126720	95040	31680	304128	0	0	0	633600
%	2	0.2	0.2	4	3	1	9.6	0	0	0	20
2 nd	79200	6336	6336	0	31680	0	525888	142560	158400	0	950400
%	2.5	0.2	0.2	0	1	0	16.6	4.5	5	0	30
3 rd	95040	9504	9504	0	31680	0	503712	142560	158400	0	950400
%	3	0.3	0.3	0	1	0	15.9	4.5	5	0	30
4 rd	79200	9504	9504	0	0	0	440352	0	0	95040	633600
%	2.5	0.3	0.3	0	0	0	13.9	0	0	3	20
Total	316800	31680	31680	126720	158400	31680	1774080	285120	316800	95040	3168000
%	10	1	1	4	5	1	56	9	10	3	100

Perumthodu 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.	Well recharging	Nos	13000	15	195000	0	195000	10 % General & 5 % SC / ST
2.	Construction of retaining wall for Kondarakadavil thodu	Rm.	2695	40.49	109128	0	109128	
3.	Centripetal terracing	Nos.	32	1000	0	32000	32000	
4.	Live fencing	Nos.	24	2000	0	48000	48000	
Total					304128	80000	384128	

Perumthodu Watershed

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

SI No.	Name of Activity	Unit	Unit Cost	Target	IWMP Fund	MNREGS/Other Source	Total	WDF
1.	Construction of retaining wall for thodu near Kondarakadavu slab	Rm.	7398	30	221940	0	221940	10 % General & 5 % SC / ST
2.	Deepening of Chundante ida sub-stream	M ³	222	200	0	44400	44400	
3.	Deepening and side strengthening of sub-stream of Perumthodu at Pappirithi	M3	3192	95.22	303948	0	303948	
Total					525888	44400	570288	

Perumthodu Watershed

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

SI No.	Name of Activity	Unit	Unit Cost	Target	IWMP Fund	MNREGS/Other Source	Total	WDF
1.	Heightening of bund and retaining wall construction for thodu from Srayil bridge to Ambalakadavu	Rm.	6403	20	128060	0	128060	10 % General & 5 % SC / ST
2.	Heightening of bund starting from Kariyapadam thodu	M3	1832	102.53	187826	0	187826	
3.	Heightening of bund in north side Srayikuzhi	M3	1832	102.53	187826	0	187826	
Total					503712	0	523712	

Perumthodu 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.	Construction of bund in west side of Chundanthara	RM	2695	139.28	375352	0	375352	10 % General & 5 % SC / ST
2.	Well recharging	No.	13000	5	65000	0	65000	
3.	Yard water collection pits	No.	438	50	0	21900	21900	
Total					440352	21900	462252	

Watershed Livelihood Action Plan

Perumthodu Watershed - 1st Pahse

SI No	Name of Activity / Category	Unit	Unit cost	Target	IWMP fund	Bank loan/ Other sources	Total
1	Grand for WDS	0	0	0	25000	0	25000
2	Grand for BLWDS	0	0	0	5000	0	5000
3	Seed money for JLG / SHG	0	0	0	112560	12507	125067
	Total				142560	12507	155067

Perumthodu Watershed - 2nd Pahse

SI No	Name of Activity / Category	Unit	Unit cost	Target	IWMP fund	Bank loan/ Other sources	Total
1	Seed money (Balance allocation)	0	0	0	87440	9716	97156
Major livelihood activity							
2	Cow rearing unit	Nos	30000	4	55120	64880	120000
	Total				142560	74596	217156

Watershed Micro Enterprises Action Plan

Perumthodu Watershed - 1st Pahse

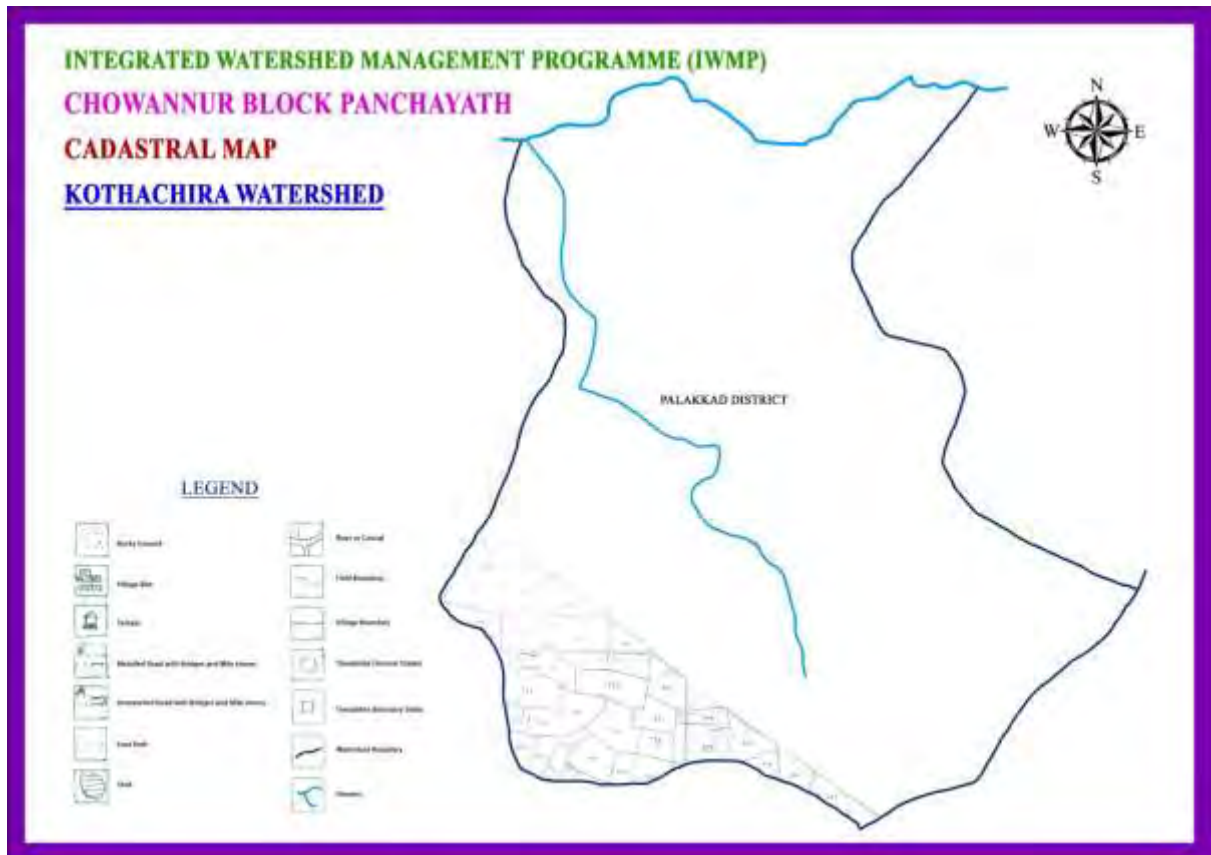
SI No	Name of Activity / Category	Unit	Unit cost	Target	IWMP fund	Bank loan/ Other sources	Total
1	Organic manure distribution	Kg.	20	4350	69600	17400	87000
2	Organic vegetable cultivation	120 cent	24000	3	57600	14400	72000
3	Pipe composting	Nos.	1000	39	31200	7800	39000
	Total				158400	39600	198000

Perumthodu Watershed - 2nd Pahse

SI No	Name of Activity / Category	Unit	Unit cost	Target	IWMP fund	Bank loan/ Other sources	Total
1	Layer distribution	Nos	100	500	40000	10000	50000
2	Fish cultivation	Nos	10000	7	56000	14000	70000
3	Organic Fertilizer distribution	kg	20	3900	62400	15600	78000
	Total				158400	39600	198000

* WDF 20% for General & 10% for SC/ST

8. KOTHACHIRA (Code No. 19K9a)



9.

Kothachira watershed is one of the biggest watersheds in the Kanhiramukku River Basin. It is spread over two Grama Panchayats – Kadavallur in Thrissur District and Nagalassery in Palakkadu District. The area (87 Ha.) taken for treatment is exclusively in Kadavallur GP and is in Perumpilavu Village. The watershed has a total length of 2.9 Kms and a width of 2.5 Kms. Orukkalkunnu, Kodathippadi, Sehad Nagar and Konkippara Estate are the important locations of the watershed.

The boundaries of the watershed are as follows:

- North: – Palakkadu District
- South: – Kaollancherythodu watershed
- East: – Palakkadu District
- West: – Kollancherythodu watershed

The watershed is undulating in nature and Orukkalkunnu is the highest spot. 40% sloppy nature is observed in some of the locations. The watershed is included in the Midland agro-climatic zone. In general two types of soil are observed – Black reddish soil in the upper reaches and thick laterite like red soil in the lower reach. 8th and 9th wards of Kadavallur GP are covered by the watershed.

Water sources

There are no streams in the watershed. This is because; the area taken for treatment is a small portion of a big watershed which is spread over two districts – Thrissur and Palakkadu. The portion in the Palakkadu district owns the main stream and the portion covered by the Thrissur district has no stream at all. However, a small water canal named Kottachal according to the native farmers, which takes its life and shape only during the monsoon is found in the watershed. There are 70 open wells and 2 public taps and 8 Bore wells in the watershed.

Land Use and Cropping Pattern

Major crop in the watershed is Rubber which occupies around 50%of the total area taken for treatment. Coconut trees occupy 30%of the total area and the remaining part is occupied by banana cultivation (5%) and Arecanut (10%). There is no trace of paddy cultivation in the watershed. Rubber plantations are mainly seen in the slopes of upper reach and coconut in the midland. The lower portions are covered by plantains and arecanut. The built area is approximately 5% of the total area.

Crops	Ha
Rubber	43.5
Plantain	4.35
Coconut	26.1
Arecanut	8.7
Built up	4.35
Total	87

Socio-economic Situation

The number of families in the in the watershed is 82 in 56 operational households. Among the families 55 belong to SC community – 30 in Ottapilavu and 25 in Orukkalkunnu. The total population in the treatment area is 353 out of which 166 are men and 187 are women. People are traditionally farmers and they continue to be farmers even now. (*Source: PRA*)

Almost all the land holders are small and marginal farmer’s category and seasonal agriculture is very rare since major part of the treatable area is occupied by perennial crops like,coconut,

arecanut and rubber. Therefore, majority of the population, especially the SC community is wage labourers and most of the men are migrating in search of work.

Specific Problems of the watershed

- | | |
|-------------------------------------|-------------------------------|
| 1. Clinching of Hills | 4. Lack Rain Water Harvesting |
| 2. Lack of conservation Practices | 5. Poor livestock |
| 3. Inadequate irrigation facilities | 6. Unemployment of women |

Proposed Interventions

Natural Resource Management (NRM)	Production System & Micro Enterprises (PS&M)	Livelihood Support System (LSS)
<ul style="list-style-type: none"> • Live fencing • Bamboo Planting • Yard Water Collection Pits • Well recharging • Drainage Construction 	<ul style="list-style-type: none"> • Cultivation of Tissue plantain • Vermi Composting 	<ul style="list-style-type: none"> • Seed money for individuals • Seed money for SHGs • Soap Making Unit

Kothachira Watershed

MASTER PLAN

Installment	Administration	Monitoring	Evaluation	Entry Point Activity	Institution & Capacity Building	DPR preparation	Watershed Development Activities	Livelihood Activities	Production system & Micro Enterprises	Consolidation Phase	Total IWMP project fund
1 St	20880	2088	2088	41760	31320	10440	100224	0	0	0	208800
%	2	0.2	0.2	4	3	1	9.6	0	0	0	20
2 nd	26100	2088	2088	0	10440	0	173304	46980	52200	0	313200
%	2.5	0.2	0.2	0	1	0	16.6	4.5	5	0	30
3 rd	31320	3132	3132	0	10440	0	165996	46980	52200	0	313200
%	3	0.3	0.3	0	1	0	15.9	4.5	5	0	30
4 rd	26100	3132	3132	0	0	0	145116	0	0	31320	208800
%	2.5	0.3	0.3	0	0	0	13.9	0	0	3	20
Total	104400	10440	10440	41760	52200	10440	584640	93960	104400	31320	1044000
%	10	1	1	4	5	1	56	9	10	3	100

Kothachira Watershed

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

SI No.	Name of Activity	Unit	Unit Cost	Target	IWMP Fund	MNREGS/Other Source	Total	WDF
1.	Well recharge	Nos.	13000	7	91000	0	91000	10 % General & 5 % SC / ST
2.	Distribution of fruit bearing trees	Nos	100	93	9224	76	9300	
3.	Live fencing	Nos.	24	1000	0	24000	24000	
Total					100224	21600	121824	

Kothachira Watershed

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

SI No.	Name of Activity	Unit	Unit Cost	Target	IWMP Fund	MNREGS/Other Source	Total	WDF
1.	Well recharge	No	13000	13	169000	0	169000	10 % General & 5 % SC / ST
2.	Distribution of fruit bearing trees	Nos	100	44	4304	96	4400	
3.	Live fencing	NO	24	500	0	12000	12000	
Total					173304	12096	185400	

Kothachira Watershed

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

SI No.	Name of Activity	Unit	Unit Cost	Target	IWMP Fund	MNREGS/Other Source	Total	WDF
1.	Well recharging	Nos	13000	12	156000	0	156000	10 % General & 5 % SC / ST
2.	Moisture collection pits	M3	98.55	1000	0	98500	98500	
3.	Distribution of fruit bearing trees	Nos	100	100	9996	4	10000	
Total					165996	98504	264500	

Kothachira Watershed

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

SI No.	Name of Activity	Unit	Unit Cost	Target	IWMP Fund	MNREGS/Other Source	Total	WDF
1.	Well recharging	No	13000	11	143000	0	143000	10 % General & 5 % SC / ST
2.	Distribution of fruit bearing trees	Nos	100	22	2116	84	2200	
3.	Yard water collection pits	No	438	30	0	13140	13140	
Total					145116	13224	158340	

Watershed Livelihood Action Plan

Kothachira Watershed - 1st Pahse

SI No	Name of Activity / Category	Unit	Unit cost	Target	IWMP fund	Bank loan/ Other sources	Total
1	Grand for WDS	0	0	0	25000	0	25000
2	Grand for BLWDS	0	0	0	5000	0	5000
3	Seed money for JLG / SHG	0	0	0	16980	1887	18867
	Total				46980	1887	48867

Kothachira Watershed - 2nd Pahse

SI No	Name of Activity / Category	Unit	Unit cost	Target	IWMP fund	Bank loan/ Other sources	Total
1	Seed money (Balance allocation)	0	0	0	33020	3669	36689
Major livelihood activity							
2	Soap making unit	Nos	28000	1	13960	14040	28000
	Total				46980	17709	64689

Watershed Micro Enterprises Action Plan

Kothachirau Watershed - 1st Pahse

SI No	Name of Activity / Catgeory	Unit	Unit cost	Taget	IWMP fund	Bank loan/ Other sources	Total
1	Distribution of Tissue banana plant	Per plant	20	500	8000	2000	10000
2	Organic fertilizer distribution	20/KG	20	1563	25000	6260	31260
3	Mushroom cultivation	Nos	24000	1	19200	4800	24000
	Total				52200	13060	65260

Kothachira Watershed - 2nd Pahse

SI No	Name of Activity / Catgeory	Unit	Unit cost	Taget	IWMP fund	Bank loan/ Other sources	Total
1	Pipe composting	Nos	1000	20	16000	4000	20000
2	Organic Vegitable Cultivation	120 cent	24000	1	19200	4800	24000
3	Layer distribution	100/Bird	100	213	17000	4300	21300
	Total				52200	13100	65300

Conclusion

Society, environment and economy are the three components of sustainable development. Sustainable development has thoroughly changed planning. Natural resources, and local knowledge previously ignored in economic development are now a focal point of economic planning. While contemporary first world countries polluted very much during their development, the same developed countries persuade third world countries to reduce pollution, which every so often slows down growth. Sustainable development includes examining the environment, natural resources, social development, poverty and inequality, education and training, and development.

A great starting point in adapting a green way of life is to preserve fresh water. We have lots of water but we are starting to run out as progressively more people are living here on earth. News sites regularly report on the seriousness of the state of affairs. Many major cities, including massive urban areas are running short of water and the water sources are fast depleting.

At a time when the world confronts progressive global warming, as more and more harmful greenhouse gases pour into the atmosphere, more and more souls are wondering how to go green and make it cost efficient likewise.

A 40% increase is expected in water demand over the period of next two decades. The increase in water demand is a contribution of various factors including growing population, increased agricultural needs, industrial use of water and water needed for electricity production. Demands are increasing every year for water while resources are becoming more and more limited. Since many individuals are unaware (or, sadly, just don't care) that this issue needs attention, it is up to more informed and proactive individuals and communities to take up the slack. The increased demand in water combined with the pollution of water has had many adverse effects on the environment, growth and economy of the country.

The soil that we use is integral to our livelihood. More and more people are beginning to use eco-friendly products and live an environmentally conscious life, however only a few realize that the protection and conservation of soil is equally important. While many people invest valuable time and effort in keeping the air and water clean, widespread awareness of soil conservation is still lacking.

Soil conservation comprises of all the procedures and methods that involve protecting the soil from natural as well as manmade destructions. There are many natural ways in which soil could get eroded or blown away. In the same way, soil could also get contaminated or chemically altered owing to acidification or salinization, or destruction from machinery.

Changes in the quality of the soil owing to pollution could lead to disastrous results. It is vital for us to conserve the soil that we live in as this is where most of the food products are grown. The quality of food ingredients largely affects our well being and health. Therefore, soil conservation is as important as any other form of conservation that attempts to safeguard the environment and improve the quality of life of all living beings.

We hope that this project, the Integrated Watershed Management Programme, designed for Chovvannur Block Panchayat will definitely help to shape the soil fertility, water availability and increased agriculture production in the watersheds which are included in this project.

