

VETTIKAVALA BLOCK (KOLLAM DISTRICT)

Project No: IWMP-IV/2012-13

The study area covers two micro watersheds coded as 7K46a & 7K45c of Kallada River Basin. It is located between 8° 54' & 9° 5' N Latitudes and between 76° 40' & 76° 54' E longitudes. The watersheds belong to the Vettikavalablock of Kollam district. The Project area is bordered in the north by the Kallada River, in the south by Neduvathur grama panchayat, in the west by Pavithreswaram grama panchayat and in the east by Pulamon Thodu. The block consists of Mylom, kalayapuram, kulakada and Puthoor villages. The total study area comprises 1866 hectares and the balance area of these watersheds has already been treated under other schemes. The effective area of the watershed covered under the project is 1829 hectares. The terrain has an undulating topography. The major land use of the area is agriculture with rubber as the major crop followed by mixed crops. The area under paddy cultivation has become quite nominal as a major portion of the paddy fields has been converted for other uses.

The types of interventions implemented under IWMP are soil and water conservation, water harvesting structures (new and renovation), production system management and livelihood activities.

The project evaluation team from the Centre for Water Resources Development and Management (CWRDM), Kozhikode visited the IWMP watershed areas of the Vettikavala block of Kollam district on 06.07.2022. Initially, the team discussed with the Project leader (PMKSY-Kollam), block development officer, Block panchayat president, and Village extension officer to know about the perception of the project and difficulties in implementation. After discussion, the team visited the various IWMP sites in the Block.

Table 1. Details of micro watersheds

Sl No	Name of Watershed	Watershed code	GPs covered	Area (in Ha)
1	Attuvassery	7K46a	Kulakkada	717
2	Madathilkadavu	7K45c	Kulakkada, Mylom	1112
Total				1829

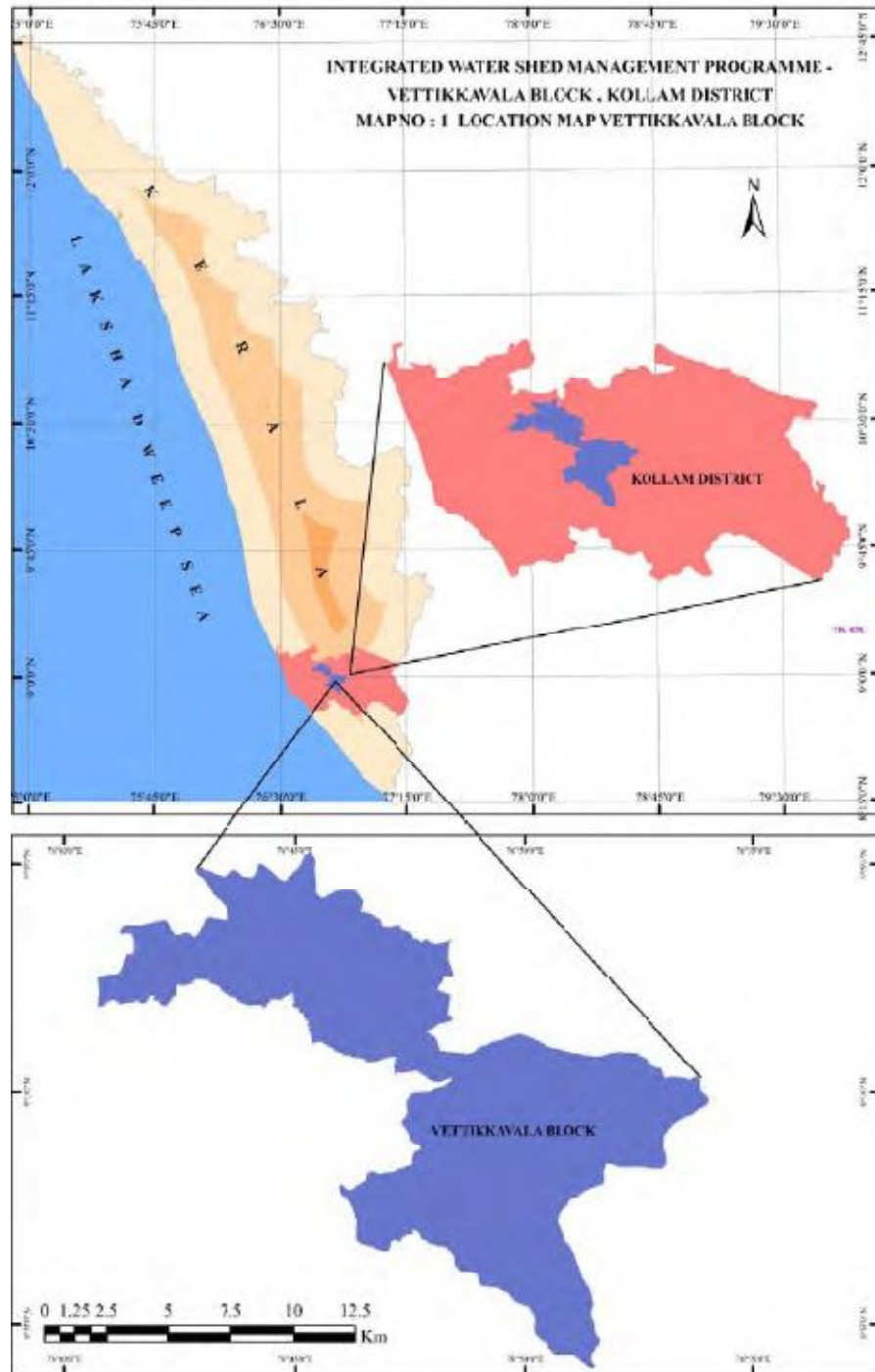


Fig1:Map of the watershed area

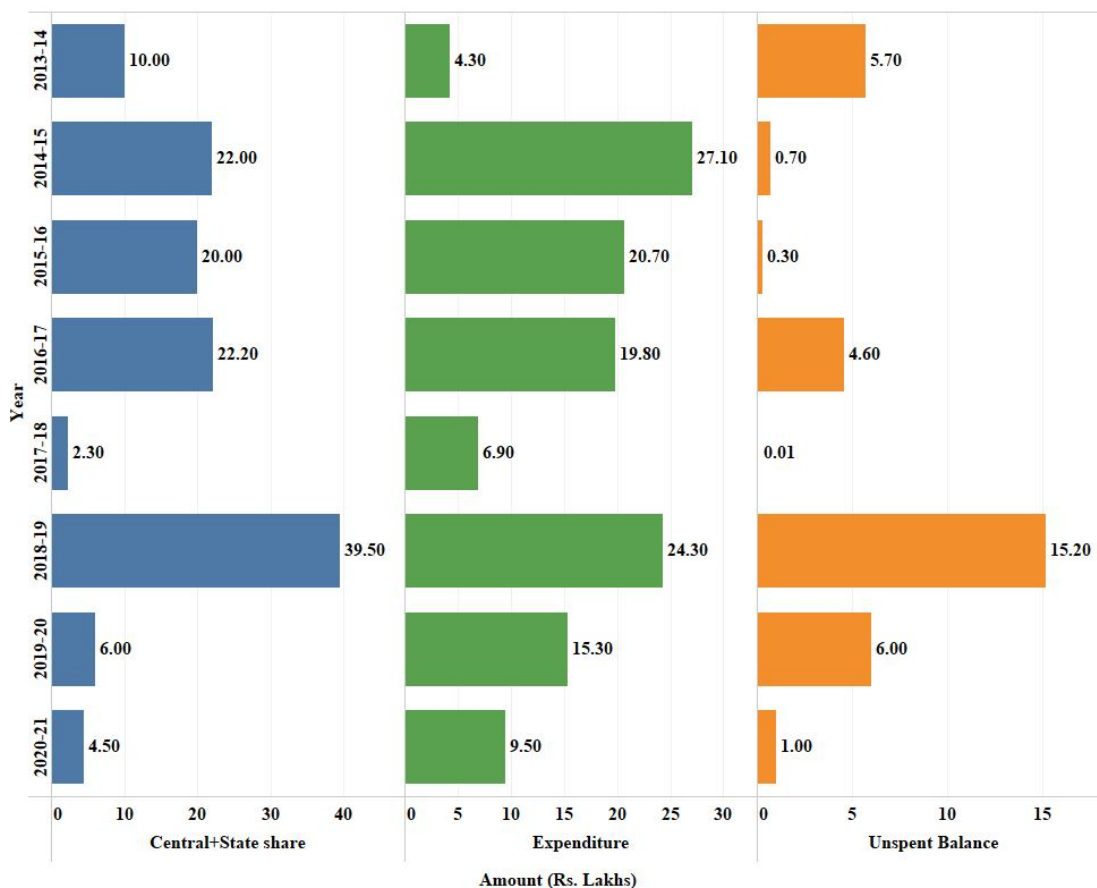


Fig 2: Financial overview of the Project

The financial records were received from the block development office during the discussion. The project was started in 2013-14, however, the regular funds were received from 2014 to 2016. During the FYs 2017-18, 2020-21 and 2019-20 a very less amount of funds was received which leads to a lack of implementation of the project activities.

1. Joint liability groups

‘Devi’ JLG located in Attuvassery watershed received seed money of Rs 25,000/- for farming in 2014. The group consists of five members and they practiced the group farming approach over an area of 5.5 acres. They cultivated paddy, banana, Tapioca, Ginger, Turmeric and Coconut. They also followed organic farming and received more income through it.

In order to provide sustainable lifestyles and higher revenues for communities within the watershed area, JLGs under livelihood activities are essential. This will make it easier for

people to make a living through asset investment, increased productivity and income, access to common resources and benefits, and enhancing the household-level livelihood plan. This program significantly increased economic opportunities for people living in watershed areas and contributed to the empowerment of women. The household income in this region was increased by Rs 27,000/-

2. Well recharge

Recharging of rainwater will help in increasing the ground water table which is an essential component for mitigation of drought in the watershed area. Hence, several well recharge structures were installed in the project area. The team visited a well recharge installed by Mr. Balakrishan Nair in 2019 at Kulakada panchayat. The total capacity of the filtration tank was around 1000 liters. This recharge structure increased the water table level in wells which are the main source of water for domestic as well as agriculture. The cost of this structure was Rs. 8000/- with 10 % beneficiary contribution. A total of 135 well recharge structures were constructed under this project. Due to this, the scarcity of water during the summer season is reduced.

Well recharge has significantly helped to meet people's needs when there is a severe drought and groundwater supplies are under stress. Wells that have been refilled provide water for the people. Additionally, when naturally filtered precipitation is held in groundwater tables, the number of contaminants in the water is decreased.

3. Pond Renovation Thalakkulam

Thalakkulam pond renovation in Kalayapuram village of Attuvassery watershed was done in order to provide a water source for domestic as well as agricultural purposes. Around 10 families around the area are getting benefitted from this pond. The pond acts as a flood protection structure so that, flooding of water in agricultural land is prevented. The total cost of construction of this Thalakkulam was Rs 3.23 lakhs.

Agricultural operations have also been improved by this move. The project helped convert unused land into arable land, which was advantageous to the farmers. The pond rehabilitation also helped the agricultural operations in the nearby areas. Seven farm ponds are rehabilitated as part of the IWMP project. There is now 365 hectares more irrigation potential. With this intervention, floodwater management and water supply are both improved in the nearby areas.

Specifications:

Dimension	13 x 13x 0.750
Capacity	1144.95 m ³

4. Stream bank protection activities

Stream bankside wall protection structure at Mylom village was constructed during 2019-20 for both soil and water conservation. The problem identified was excessive water overflowing the side boundaries resulting in submergence of land under water. This problem has been taken care of with the implementation of stream bank side protection walls, the cost of the work was Rs 2.6 lakhs. The total length of the work is 95 m.

Due to this project, water could be able to flow smoothly and thereby preventing waterlogged conditions in the neighbourhood. This initiative has helped to some extent to resolve the flooding problem. The irrigation facilities for farming in the surrounding areas were also made possible by this project. After this effort, streams were found to have a two-month improvement in water flow. A 2% increase in cropping intensity was observed.



Devi Joint liability groups

Well recharge



Concluding Remarks

- The interventions carried out through the IWMP were land development, soil and moisture conservation, new water harvesting structures, renovation of existing water harvesting structures, production system management and livelihood improvement. Due to these interventions, it was observed that a 2 m increase in the water column in the wells was observed after the implementation of the project.
- While initiating the project most of the ponds and streams were observed with silt deposition and unstable bunds. Hence, during project implementation, ponds located in the Vettikavala watersheds are desilted and bunds were stabilized. 7 farm ponds were rejuvenated and 117 percolation tanks were established.
- Soil erosion in the block was reduced to the tune of 20 % by IWMP interventions viz., check dams, stone pitched contour bunding, and percolation ponds.
- Proper conservation of rainwater ensured in the project area through constructing stream bank protection, pond renovation and check dams. Eventually, the drinking water problem in the watershed area was reduced.
- Land development activities includes stream bank bund/ side protection structures and desilting of existing ponds leading to 365 ha area increase in irrigation. Wastelands were treated and an area of 45 ha is additionally brought under agriculture.
- Under production system management, about 4000 number coconut palms were planted additionally. Training and capacity building programs were conducted for the stakeholders in the production system and livelihood. Totally, 19 trainings were conducted during the implementation period and 2197 persons benefitted.



- Seed money was given to goat rearing, mushroom cultivation etc. for SHGs and micro enterprises (67 JLG/SHGs). Through this individual household income increased in the project area.
- Though the watershed area is less, the fund was not available during certain periods and the user groups found it difficult to complete the works without committed funds.
- It was observed that many of the interventions/structures implemented under the scheme were under poor conditions like the ponds were filled with weeds and slight damage to side protection structures, etc. This may be due to a lack of maintenance by the end users and a lack of ownership of the resources by the community. It is recommended to create a sense of ownership among the community in order to maintain the sustainability of the interventions.
- Creation of a database for maintaining the data related to watershed interventions, maps, shapefiles etc., and connect it to a cloud-based system for easy accessibility of information.

Summary of the Evaluation of Outcomes of PMSKY-WDC Projects

District: Kollam

Date of Visit: 06.07.2022

1. Project Details:

Project No. Kollam: IWMP-4/2012-13

Name of Block - Vettikavala

Sanctioned Area (ha): 1829 ha

Sanctioned Cost (Rs in lakh): 274.35

Name of Villages included in the project: Mylom, Kalayapuram, Kulakkada, Puthoor

**2. Impact Details**

Sl. No.	Items	Unit	Pre-project status	Status at the end of project	Remarks
1	Average depth of water table in dug wells	m	11.2	9.2	2 m increase in the water column
2	Average depth of water table in tube wells	M	20	18	2 m increase in water column in the wells
3	Number of groundwater structures (dug wells + tube wells + hand pumps) rejuvenated	nos.	42	135	Increase in groundwater structures
4	Increase in Irrigation potential	ha	1382	1747	365 ha area increase in irrigation
5	Area of Wasteland brought under productive use (like agriculture, plantation, fodder, etc.)	ha	125	80	45 ha area of wasteland brought under productive use
6	Change in cropping / land use pattern (i) Area under Agriculture Crop (ii) Area under plantation / forest cover (iii) Area Under Wastelands	ha	884 820 125	934 890 80	50 ha increase in agricultural crop area
7	Area Under Agriculture Crop (i) Area under Kharif crop (ii) Area under rabi crop (iii) Area under double crop	ha	310 -- --	415 -- ---	An increase of 100 ha area under Kharif
8	Cropping intensity	%	106	108	2 % increase
9	Increase in Yield /ha of crops (i) rabi crop (ii) Kharif crop	qt/ha	-- 136	-- 200	Increase in yield of Kharif crop was noticed
10	Area of horticulture crop	ha	465	615	Significant increase in horticulture area
11	Employment in agriculture related activities among beneficiaries	Man days	1520	2708	12875 mandays generated under the



					project
12	Employment in non- agricultural sectors	Man days	2450	6465	
13	Fodder production	qt	55	97	Increase in fodder production
14	Fuelwood production	qt	---	---	No data available
15	Number of milch cattle	nos	1265	3357	Increase in milch cattle
16	Milk production	Kl/yr	35.5	174.56	
17	Duration of flow of water in streams (upto November/December/January/February....May)		January	March	Two months enhanced flow of water in streams
18	Improvement of drinking water facility		February	April	Drinking water availability for extra two months
19	No. of persons engaged in ancillary activities like fishery, poultry, rural craftsmanship	nos	4200	7800	
20	Number of children enrolled in schools in the project area	nos	2265	2975	All are enrolled in schools despite COVID-19 pandemic.
21	Reduction in migration from rural to urban area in the project area	nos	-	-	During the project period migration reduced.
22	Annual mean household income	Rs	78000	85000	An increase of Rs. 7000/-
23	Any other measurable indicator of impact assessment i) 12875 mandays of employment generated under the project ii) 135 rainwater harvesting structures created and 7 rejuvenated				

Success story

Production system

Under the production system, Mrs. Sheela Shankar, a farmer from Attuvassery watershed (Kulakkadai village) received Rs. 24500/- with 50% subsidy for mushroom cultivation during 2020-21. The yield of mushrooms comes to 250-350 gm once in two days. After adopting this practice, the income of the household has increased considerably. She received free saplings of coconut and adopted integrated farming system. Her agricultural land cultivated with Tissue culture banana, Peanut butter, Vegetables, Ginger coconut, flower cultivation along with goat rearing.

