

PULIKEEZH BLOCK – IWMP -II (Batch 4)

The project area is located in Pulikeezhu Block Panchayat in Pathanamthitta District and lies between longitudes 76°28' 22.98"to 76°34'37.884" °Eand latitudes 9° 25' 7.896" to 9° 24'1.7274"N. It consists of 5 micro watersheds namelyChathankery, KeecheriValkadavu, PodiyadiPuthenthodu, Parumala and Ayyankonari spread across fourgram panchayaths namely Kadapra, Niranam, Peringara and Kuttoor.The project has a total area of 4838 Ha.

Table 1. Details of micro watersheds

Sl No	Name of Watershed	Watershed code	GPs covered	Area (in Ha)
1	Ayyankonari	10P8a	Kadapra and Niranam	2366
2	Parumala	10P9a	Kadapra	418
3	Keecherivalkadav	10P10a	Kadapra	84
4	Chathenkerikadav	11M 19a	Peringara and Nedumbram	839
5	PodiyadiPuthenthodu	11M 20a	Kuttoor,Pering ara and Nedumbram	1131
Total				4838

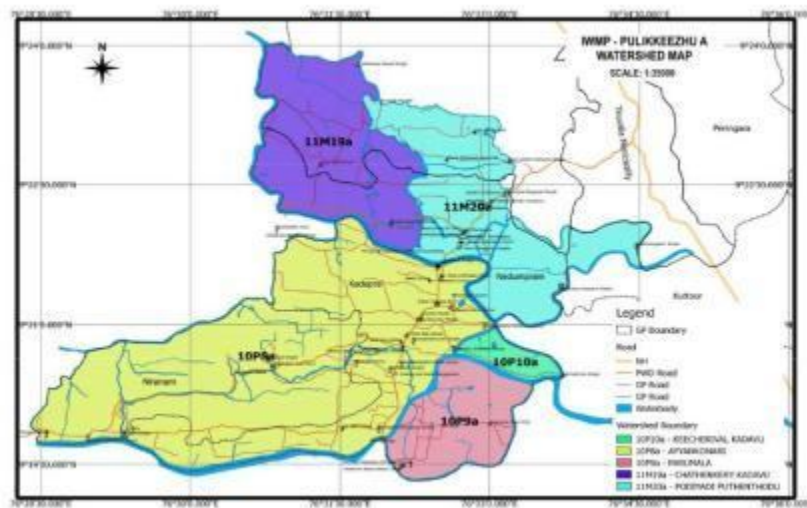


Fig 1: Map of the Watershed area

The evaluation team from CWRDM visited the project area on 08/07/2022. At the outset held discussions with the BDO, Technical Expert, and the VEOs who have associated with the implementation of the scheme, at Pulikeezh Block Office. It was reported that the project was well conceived and totally beneficial for the stakeholders in conserving the natural resources and for the overall socio-economic improvement of the area.



Fig 2: CWRDM team at BDO office, Pulikeezh

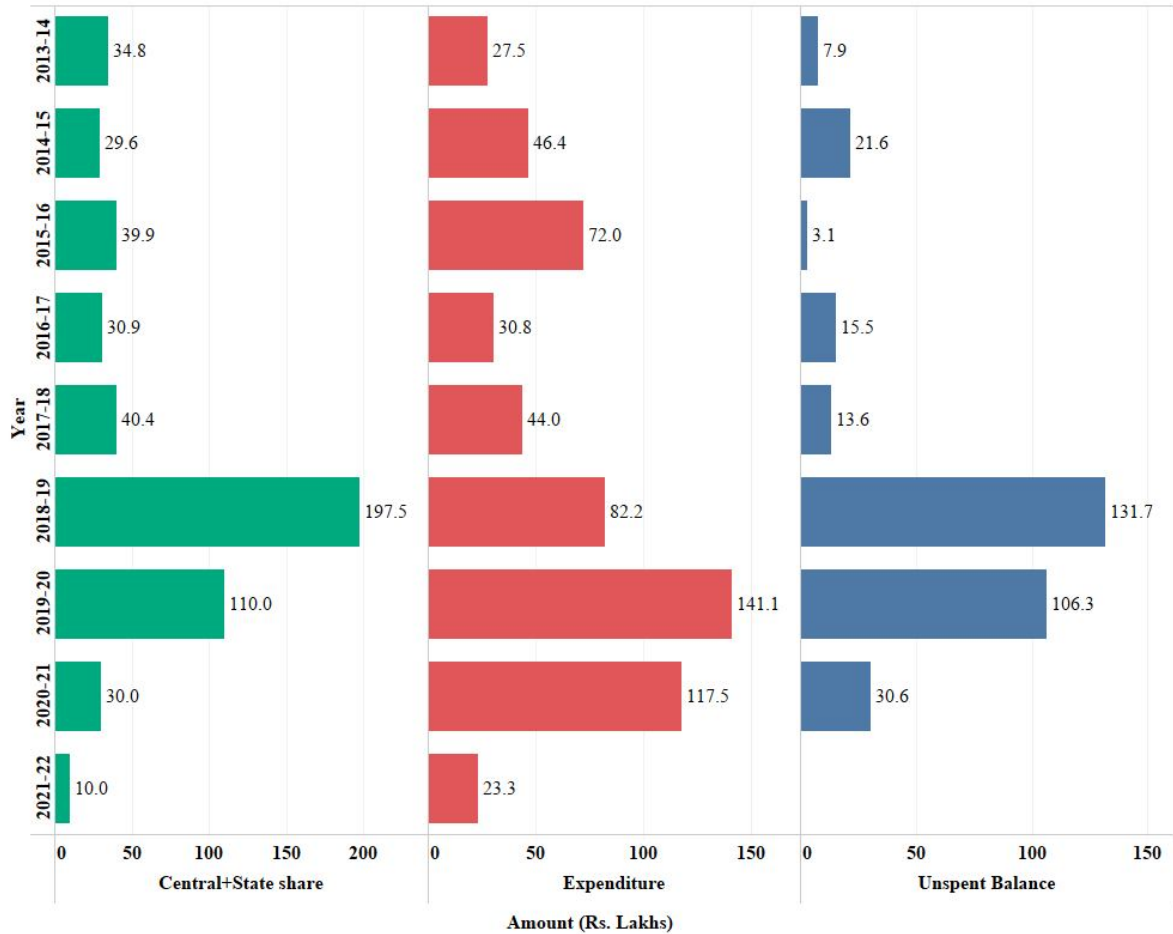


Fig 2: Financial overview of the project

In the FY 2018-19 more amount had received followed by 2019-20. Similarly, the expenditure was also increased from 2018-19 onwards. In the remaining years, the amount received was more or less the same. The unspent balance at the end of the project has been refunded to SLNA.

Sites visited by the team:

1. RO Plants

- a) RO Plant and Rainwater harvest syringe at Pulikeezh located at the back of the BDO office, Pulikeezh in Ayyankonari watershed of Kadapra panchayath. It filters approximately 120 litres of water per hour and it provides drinking water to all the staff working there. The cost of setting up of the unit was Rs. 4.9

lakhs. The rainwater harvest syringe helps in recharging the groundwater and thereby increasing the groundwater table.

- b) Well construction and RO Plant construction, located at Ayyankonari primary health centre in Ayyankonari watershed of Niranam panchayath

The purpose of a RO plant is to clean contaminated water using the Reverse Osmosis procedure, in which a semi-permeable membrane is utilised to filter out undesirable minerals, ions, and other impurities from water by applying the right pressure. Under this project, the installation of four RO plants in total was carried out. One is at PIA and the other three are at PHCs that fall under the watershed committee. This system has a purification capacity of approximately 1100 litres per hour. This project resolved the drinking water issues of the region to a great extent.

2. Construction of Box Culverts, ramp and shutters

- a) Construction of Box Culvert at Manappurathuppadyin the Chathankery watershed of Peringara panchayath. This facilitated the entry of farmers into the 480-acre paddy field and also helps in flood control in the surrounding areas.
- b) Sidewall protection with Culvert renovation of Varappadam in the PodiyadiPuthenthodu watershed of Peringara panchayath. 18m long side protection is done
- c) Box Culvert at Chennankeri is located in the Ayyankonari watershed of Niranam panchayath. This helped the farmers with a smooth entry to the 250-acre paddy field.
- d) Construction of Ramp of Vachal Thodu, KodankeriPadashekaram, located in the Chathankery watershed of Peringara panchayath. The ramp is nearly 7m long and helps in the entry of tractors and other related machinery to the paddy field. This is a part of the KodankeriPadashekaram.
- e) Shutter at Kariverichira, situated at Ayyankonari watershed of Kadapra panchayath. During the October-March season, this helps to control the water flow to the 2000-acre Kariverichirapadam.

The paddy cultivation and production of this area were improved by these interventions. The box culverts made it easier for farmers to enter their fields and helped with field drainage. Additionally, it aids in preventing flooding in the neighbourhood. The shutters aided farmers in challenging situations by limiting the flow of water.

It was quite difficult to get new agricultural equipment into the field before ramps were built. However, this initiative made it simple to use modern equipment in the field, and the rice that was harvested was then simply transported to the road. This has reduced the cost of cultivation and increased the income of the farmers.

3. Construction and renovations of ponds and streams

- a) Deepening, Desiltation, Sidewall stabilisation of Manipuzha Thodu situated in the Chathankery watershed of Peringara panchayath. Side protection of one side was carried out for a length of 90 m with 1 m of desiltation work.
- b) Construction of Pond at SNDP Temple lies in the Chathankery watershed of Peringara panchayath. It is 15 m long, 14 broad and 6m deep. Mainly used for agricultural purposes. In summer this pond is used by more than 20 families.
- c) Pond renovation at GHSS school Peringara, lies in the PodiyadiPuthenthodu watershed of Peringara panchayath. This pond is mainly used for agricultural purposes, covering about 2.5 acres of land.
- d) Side wall Stabilisation of Thiruvarmangalam, situated in Parumala watershed of Niranam panchayath.

Flooding is a major concern in this region. The residents of this area are unable to replenish rainfall for use in agriculture and home requirements. Consequently, these developments have a significant impact on the neighbourhood. The water level in the neighbouring wells was increased by this. Additionally, this was quite advantageous for the growth of agriculture as well. As a result, the farmers' standard of living improved marginally.

The IWMP project involves renovating 12 farm ponds. This project significantly affected this region. Water flows more freely across streams. Additionally, the area's infrastructure for providing drinking water was enhanced. Horticulture land under cultivation increased by 80.11

hectares (Convergence with NREGS). The amount of afforestation increased by 5.89 hectares (Convergence with NREGS).

4. Terra fill Water filter

This kind of filter was provided in almost all watersheds. Terra fill water filter project was executed as an immediate solution to the existing drinking water problem of the people of Pulikeezhu area. As this is a highly flooded area and the water is not fit for drinking during flooded conditions, hence, the distribution of these filters helps in removing impurities from the water and makes water safer for drinking.

Under this project, a total of 1360 filters of 30L capacity with a unit cost of Rs. 750/- were distributed. This ensures clean and clear drinking water for the residents.

5. Rainwater harvesting systems

- a) RWS at GUPS Kadapra located in the Ayyankonari watershed of Niranam panchayath. It has a capacity of 12000 litres and costs Rs. 89956/- per unit. 52 students and 10 staff members were using this water for cleaning and washing purposes.
- b) Rainwater harvest syringe at Pulikeezh located at the back of the BDO office, Pulikeezh in Ayyankonari watershed of Kadapra panchayath. This helps in recharging the groundwater and thereby increasing the groundwater table.

A major problem they faced in this region was the shortage of drinking water or the availability of good quality water during flooding. Due to this construction, the project was able to alleviate the drinking water shortage. People who depend on the school as a place of refuge during floods found the construction to be helpful as well. Under this project, 21 rainwater harvesting structures were created and 31 rainwater harvesting structures were rejuvenated.

**Summary of the Evaluation of Outcomes of PMSKY-WDC Projects**

District	Pathanamthitta	Date of Visit	08/07/2022
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1. Project Details:

Project No	IWMP - II
Name of Block	Pulikeezhu Block Development Office
Sanctioned Area (ha)	4838
Sanctioned Cost (Rs in lakh)	580.56
Name of Villages included in the project	Kadapra, Niranam, Peringara, Nedumbram and Kuttoor

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	4.2	3.15	An increase of up to 1 m in many wells
2	Average depth of water table in tube wells	m	11.8	10.6	There is an increase of 1 m
3	Number of groundwater tabled water structures (dug wells + tube wells + hand pumps) rejuvenated	nos.	12779	12810	Including 31 rejuvenated structures
4	Increase in Irrigation potential	ha	0	67.8	Area brought under protective irrigation
5	Area of Wasteland brought under productive use (like agriculture, plantation, fodder, etc.)	ha	50.6	180.11	More than 100 ha of wasteland was 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	-- -- --	80.11 5.89 178	Addition of 80 ha of agricultural area
7	Area Under Agriculture Crop i. Area under Kharif crop ii. Area under rabi crop iii. Area under double crop	ha	2157	2560	More than 400 ha increase under Kharif crop
8	Cropping intensity	%	113.31	122	9 % increase in cropping intensity
9	Increase in Yield /ha of crops i. rabi crop ii. Kharif crop	qt/ha	-- --	-- 1.9	An increase of 1.9 qt/ha of Kharif crop
10	Area of horticulture crop	Ha	102.42	124.31	Marginal increase in horticulture area
11	Employment in agriculture related activities among beneficiaries	Man days	2956	4982	60904 mandays of employment created under the project
12	Employment in non- agricultural sectors	Man days	48963	60904	
13	Fodder production	qt	152581	158254	
14	Fuelwood production	qt	NIL	NIL	
15	Number of milch cattle	nos	3635	4263	17 % increase of cow management units
16	Milk production	Kl/yr	1072	1382	28 % increase
17	Duration of flow of water in streams (upto November/December/January/February....May)		January	March	Prolonged flow of two months in summer
18	Improvement of drinking water facility	nos	--	14690	Water availability increased for



					two months
19	No. of persons engaged in ancillary activities like fishery, poultry, rural craftsmanship	nos	1198	1256	
20	Number of children enrolled in schools in the project area	nos	3941	5836	All children enrolled
21	Reduction in migration from rural to urban areas in the project area	nos	452	256	Reduction in migration was observed during the project period.
22	Annual mean household income	Rs	67000	75000	Increase of Rs. 8000/-
23	Any other measurable indicator of impact assessment i) 30000 Grow bags were distributed under the project ii) 6 mushroom units were taken up under PSME. iii) 60904 mandays of employment generated out of the project. iv) SHGs assisted: 129 v) 1384 households were distributed with Terrafill filters for filtering water.				

Some of the works visited in the project area



RO Plant at Pulikeezhu Block Panchayath



Construction of Box Culvert at Manappurathuppady



Construction of Ramp at Chathankery watershed



Pond at SNDP Temple at Chathankery watershed



Deepening, Desiltation, Sidewall stabilisation of



Side wall protection with Culvert renovation at

Manipuzha Thodu at Chathankery watershed



Terra fill Water filter

PodiyadiPuthenthodu watershed



Shutter at Kariverichira at Ayyankonari watershed



Pond renovation at GHSS school Peringara in PodiyadiPuthenthodu watershed



Box Culvert at Chennankeri in Ayyankonari watershed



RWH at GUPS Kadapra at Ayyankonari watershed

Success stories:

Reverse Osmosis Plant

The aim of RO plant is to purify contaminated water using the process of Reverse Osmosis, in which a semi permeable membrane is used to filter out unwanted minerals, ions and other contaminants from water by applying a suitable pressure. The purity of water obtained from RO plant was scientifically verified, which showed a purity of upto 99.9%. A total number of four RO plants, one at PIA and remaining three at PHC's coming under the WC were installed as a part of the scheme. About 1100 L of water can be purified per hour using this system.

Terrafile water filter

Terrafile water filter project was executed as an immediate solution to the existing drinking water problem of the people of Pulikeezhu area. By using a terrafile water filter, the yellowish colour of well water due to the presence of excess iron can be treated to a great extent. A single filter can store upto 30L of water. A total number of 1360 terra filters were installed at Pulikeezhu area.