

**BALUSSERY BLOCK – IWMP -II (Kozhikode District)**

The Balussery(IWMP batch II) project is located at Balusseryblock panchayat in Kozhikode district of Kerala State. The project comprises seven micro-watersheds spread across five Gram panchayaths. The project area lies in between the longitudes of 75°49'21.2" to 75°55'1.398"E and latitudes of 11°22'37.124" to 11°33'3.52"N. The total sanctioned project area is 5120 ha.

**Table 1. Details of micro watersheds**

SI No	Name of Watershed	Watershed code	GPs covered	Area (in Ha)
1	Kinaloor-Poovambai	26k18c	Panangad and Unnikulam	464
2	Kanthapuramthodu	26k26g	Kizhakkoth and Unnikulam	1487
3	Arookkumthodu	26k26h	Panangad and Unnikulam	1626
4	Padikkalvayal	26k26i	Panangad	315
5	Kiliyadukkathodu	26k26j	Panangad	499
6	Sankaravayal	28k39g	Koorachund	184
7	Vayalada	28k39h	Koorachund and Kayanna	545
Total				5120

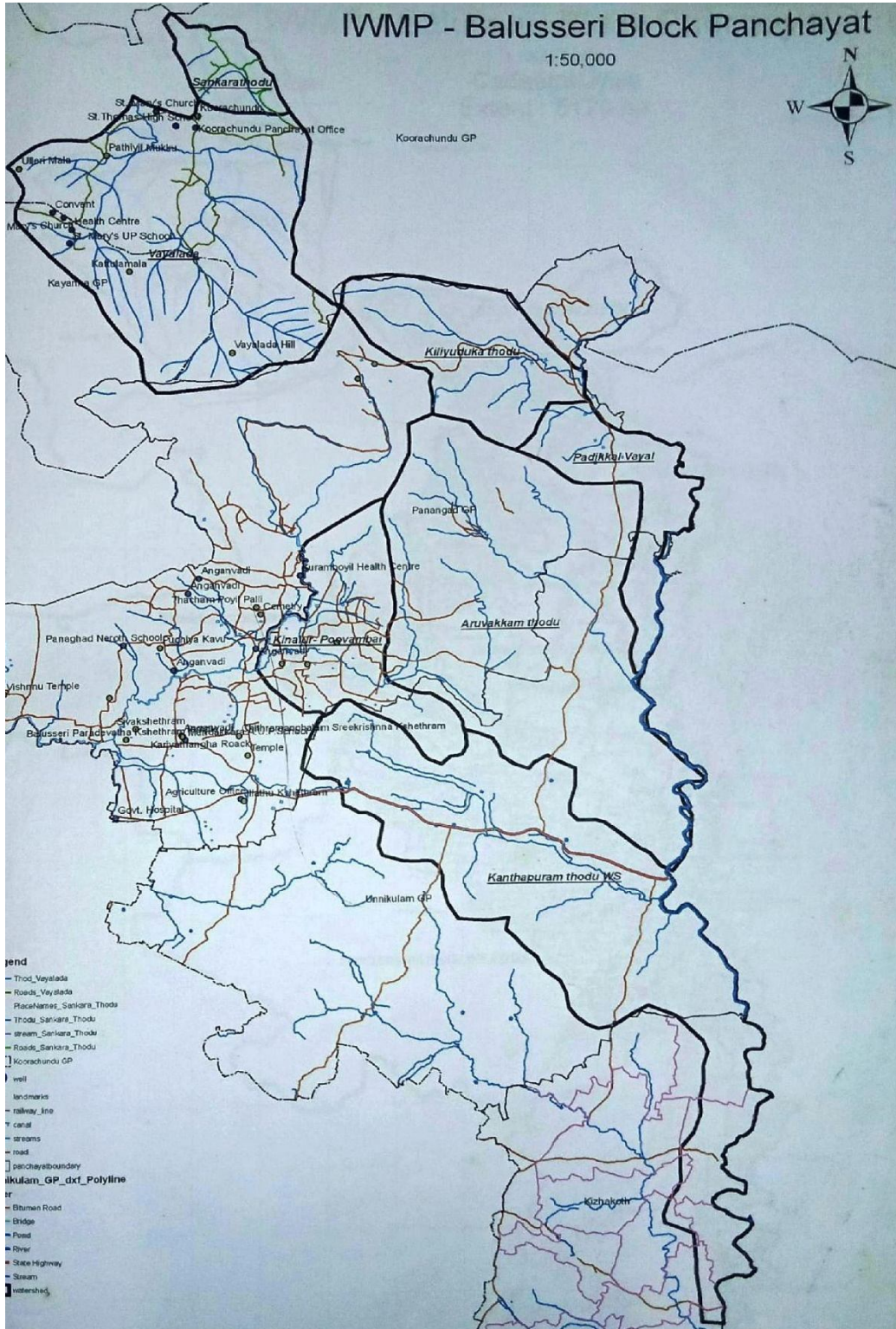
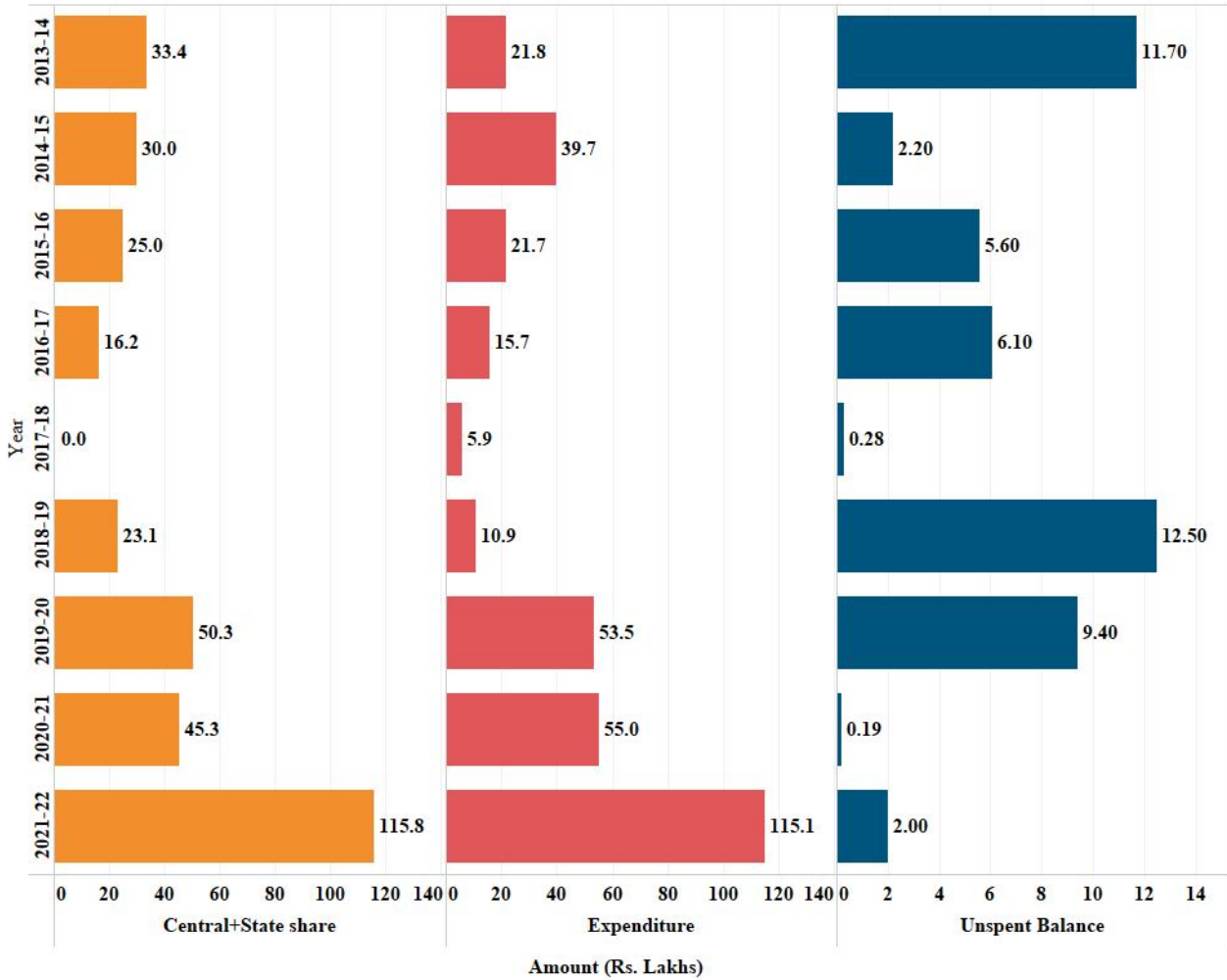


Fig 1: Map of the Watershed area



**Fig 2: Financial overview of the project**

From the financial records, it was found that there was no fund received in FY 2017-18. Nevertheless, the fund received was almost consistent in the other years, and in the last FY of the project more fund was received from the Centre as well as State. Similarly, the expenditure of the project was also more in the last FY of the project. This lumpsum distribution at the end of the project period results in the hasty completion of the proposed tasks which may lead to a compromise in the quality of structures. Hence, it is better to provide funds at the start of each FY rather than at the end and also allot money equally for all the years, so that the workflow will be smooth and the lifespan of the structures will be more.

The evaluation team from CWRDM first visited the IWMP 2 project on 25/06/2022 and later held discussions with the project implementation team. BDO, Technical experts, and VEOs

were present at the meeting. The team visited the project area with the assistance of technical experts and the appropriate VEOs. During the field visit, the investigative team met a few beneficiaries and stakeholders in the watershed area to know their perspectives on the project's impact.



**Fig 3: CWRDM team at BDO office in Balussery**

The works which the team visited are:

**1. Pond renovations:**

- a) Renovation of KandothThazheKulam, EzhukandiatKinaloor-Poovambai watershed of Panangad panchayath (specifications: 10X10X3.5m). The pond lies on a private property of Nasar and the work was completed at a cost of Rs.10.8 lakh. The water in this pond is used for the irrigation of agricultural crops for an area of more than 10 acres.
- b) Pond renovation in Nirappel Colony at Vayalada watershed. (specifications: 5X4X4m). Renovated at a cost of Rs. 2.8 lakhs, this water is used for drinking as well as agriculture. At the time of the visit, it was observed that nearly 10 pumps were installed to lift the water for irrigating farmlands.
- c) Pond renovation at Mandokandi. Originally the land belongs to AppuKuttanayar family, they donated land to the panchayath for constructing a pond. The pond lies in Kanthapuramthodu of Unnikulam panchayat with a dimension of 15X8 m.

Water from this pond is used mainly for irrigation purposes during the summer season. More than 5 acres of land is irrigated using this pond.

With these interventions, floodwater management and water supply are both improved in the nearby areas. The pond serves as a natural rainwater collection system for the neighbourhood, stores rainwater, and uses it to recharge the groundwater. The water it provides can be used for animal husbandry, agriculture, and other activities.

Ten farm ponds were built as part of this project, which resulted in visible changes in the locality. Water is now easily accessible for drinking and irrigation. When the storage capacity of the pond increased, the water level in the wells closer to it also increased. As a result scarcity of water has decreased. The impact was also apparent in the agricultural sector, wherein wasteland of 40 ha was brought under productive use.



Renovation of KandothThazheKulam



Nirappel Colony –Pond renovation



Pond renovation at Mandokandi

## 2. JLGs:

- a) Agriculture by 'Thanime' JLG: Seed money of Rs. 25,000/- was utilized by this JLG for cultivating different agricultural crops. The agriculture area is located in Kinaloor-Poovambai watershed of Panangad Panchayath. The group claims that the seed money is of benefit to them and reported the menace of wild Pigs, which destroys the crops in the area.
- b) Agriculture by 'Harithashree' JLG in Sankaravayal watershed of Koorachund panchayath. The seed money of Rs. 25,000/- provided to grow agriculture and horticulture crops like banana, yam, ginger, turmeric etc.
- c) Weed cutter of 'Asha' JLG - seed money was used to purchase a weed cutter, which helped in carrying out weeding activities in their field. The group also provides rental service of this equipment to other farmers in the area. This work is located in Kanthapuramthodu watershed of Unnikulam Panchayath.

Each JLG group received an amount of 25,000/- rupees to use for their livelihood activities. This money has no interest and must be returned by JLGs within 18 months. A Total of 99 JLGs received seed money under this project. It gave unemployed people a great chance to work for themselves. This increased their income and standard of living.





Thanime JLG

### 3. Side protection

- a) Side protection at Aruvakamthodu watershed of Unnikulampanchayath. The side protection work was undertaken only on one side for 350 m length and has 6 intermittent checks. The work was completed at a cost of Rs. 14 Lakhs.
- b) 2 Checks of 20m length with side protection of 350m with cross bunds. The work was completed in 2015 with a cost of Rs. 14 Lakhs. The work is located in Edanoor, Arookkumthodu watershed of Panangadpanchayath
- c) Side protection of only one side for 35 m long with a cost of Rs. 1.06 Lakhs, at Padikalvayal Thodu watershed of Panangadpanchayath.
- d) Side protection at Kanthapuram watershed, of Unmikulampanchayath. It has side protection of 400m on both sides with a depth of 1.2m. This supported cultivation on more than 5 acres of land and assisted in protecting against floods. The work was completed at a cost of Rs. 14.9 Lakhs.

The bank of the stream will eventually collapse in the absence of side protection, disrupting the water flow. Side protection is therefore a significant initiative in this area.

Six new streamside protections were created and eight old streamside protections were renovated under this project. The initiative has helped to solve the water difficulties of this region. Many families benefited from this either through an increase in water recharge of the wells or through inundation problems.

	
<p>Side protection at Aruvakamthodu watershed</p>	<p>Checks with side protection at Edanoor</p>

	
Side protection at Padikalvayal Thodu watershed	Side protection at Kanthapuram watershed

#### 4. Well recharge

- a) Well recharge at Balan Nagar in Aroorkumthodu watershed of Panangad panchayath. Around 7 families are using this water for drinking and domestic purposes. A 500 liter tank with filtration unit is installed to recharge rainwater at a unit cost of Rs, 10,000/- with 10% beneficiary contribution.

Well recharging is an effective way to resolve water scarcity problems in this locality. Recharging wells on a large scale also aid in increasing the water table in the region. The average depth of the water column in this area increased by 1.5 m after these operations.





## 5. Production system

- a) PSME of 'Balan Kappikunnumal' at Arookkumthodu watershed of Panangad panchayat. An amount of Rs. 24,000/- was provided with a beneficiary contribution of 10 % to practice agriculture in 1 acre of land. The crops cultivated include banana, pepper, ginger, turmeric etc.
- b) Mr. 'Venu O.K' at Padikkal Vayal watershed of Vayalada watershed of Panangad panchayat received an amount of Rs. 19,000/- as an incentive for agriculture.
- c) Production incentive cum Rain water harvesting structure of 'Licy Shiju' at Kiliyadukkathodu of Panangad panchayat. Ginger, banana, turmeric are mainly cultivated in 1.5 acre area. An amount of Rs. 16,000/- was provided for this and rain water harvesting has a unit cost of Rs. 10,000/-.

PSME based livelihood activities and enterprises is one of the key elements of the watershed development initiatives under IWMP/PMKSY. This component targets landowners with cascading advantages to landless agricultural labour, leased-in farmers, and share-croppers in order to diversify and increase the production and productivity of the agricultural sector as a whole. Under this project, incentives to 163 farmers and around 1500 Vegetable seeds & seedlings were distributed. Through this intervention, the average annual household income was increased to some extent.



PSME of Balan Kappikunnumal



PSME of O.K. Venu



## 6. Rainwater harvesting tank

- a) Rainwater harvesting tank at Govt. Homeo Dispensary, Mangayam, in Arookkumthodu watershed of Panangad panchayat. It was a Ferrocement tank with a cost of Rs.0.58 Lakhs. It is very useful for hospital staff and patients for cleaning purposes.
- b) Rainwater harvesting structure of 'Fathima Kilakayil' at Odakkundapoyil, in Padikalvayal Thodu watershed of Panangad panchayat.
- c) Rain water harvesting structure at 'Balakrishnan' house at Padikalvayal Thodu watershed of Panangad panchayat. It has a unit cost of Rs.10,000/- with a 10 % beneficiary contribution.
- d) Rain water harvesting structure at Anaganwadi in Kiliyadukkathodu watershed of Panangad panchayat. The work was completed in 2015 with an amount of Rs. 0.48 lakhs. The tank has a capacity of 10,000 litres. water is mainly used for cleaning purposes.

The scarcity of drinking water was a significant issue in this region during the summer months. A total of six rainwater harvesting tanks were built as part of this project, which helped in solving the summer water crisis to a certain extent. It was observed that some of the structures were not maintained properly and need continuous monitoring from the respective Panchayath's.



Rain water harvesting tank at Govt. Homeo Dispensary, Mangayam



Rain water harvesting structure of Fathima Kilakayil



Rain water harvesting structure at Balakrishnan house



Rain water harvesting structure at Anaganwadi



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

District	Kozhikode	Date of Visit	25/06/2022
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### ➤ Project Details:

Project No	IWMP/III/2012-13
Name of Block	Balussery
Sanctioned Area (ha)	5120
Sanctioned Cost (Rs in lakh)	614.4
Name of Villages included in the project	Kinaloor, Unnikulam, Sivapuram, Koorachundu, Kanthalad, Kayanna

### ➤ 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	7.29	6.23	Nearly 1 m increase in water column
2	Average depth of water table in tube wells	m	16	14.5	1.5 m increase in water column in tubewells
3	Number of groundwater structures (dug wells + tube wells + hand pumps) rejuvenated	nos.	0	196	196 more number of structures rejuvenated during the project period.

4	Increase in Irrigation potential	ha	2980	3240	260 ha of additional area is brought under protective irrigation
5	Area of Wasteland brought under productive use (like agriculture, plantation, fodder, etc.)	ha	0	40	40 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	1367 1542 210	1784 1840 170	417 ha of increase in agricultural area. Nearly 300 ha of plantation area also increased
7	Area Under Agriculture Crop (i) Area under Kharif crop (ii) Area under rabi crop (iii) Area under double crop	ha	213 -- 114	328 -- 216	Kharif area of 115 ha has increased
8	Cropping intensity	%	118	123	Increase of 5 %
9	Increase in Yield /ha of crops (i) rabi crop (ii) Kharif crop	qt/ha	-- 628	-- 1264	Increase in yield under Kharif crops
10	Area of horticulture crop	ha	667	1324	Double the area under horticulture
11	Employment in agriculture related activities among beneficiaries	Man days	0	28420	14400 mandays of employment generated
12	Employment in non- agricultural sectors	Man days	0	6250	



13	Fodder production	qt	142857	293400	
14	Fuelwood production	qt	384000	240000	Majority of the households use cooking gas
15	Number of milch cattle	nos	2600	3724	30 % increase
16	Milk production	Kl/yr	6880	8685	20 % increase in milk production
17	Duration of flow of water in streams (upto November/December/January/February....May)		Feb	March	Increase in flow of water in streams by one more month
18	Improvement of drinking water facility		March	April	Drinking water facility increased by one more month
19	No. of persons engaged in ancillary activities like fishery, poultry, rural craftsmanship	nos	2600	3500	
20	Number of children enrolled in schools in the project area	nos	5250	6520	Cent per cent enrollment was observed
21	Reduction in migration from rural to urban area in the project area	nos	200	100	Migration reduced during the project period
22	Annual mean household income	Rs	102500	168000	

23	<p>Any other measurable indicator of impact assessment</p> <ul style="list-style-type: none"><li>➤ 343 rainwater harvesting structures were created and 196 rejuvenated</li><li>➤ Seed money to JLGs: 99</li><li>➤ Nearly 4600 farmers were benefitted from this project</li></ul>
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### Conclusion and remarks:

Side protection work was constructed only for certain stretches, it is better to take up complete construction of the side protection all along the drainage channels and also perform periodic desiltation activities. As the intensity of rainfall in Kozhikode for the last few years is increasing, the construction of sidewall protection is essential to avoid the flooded situation. In addition, fallow land will be brought under productive use if side wall protections are ensured in the region.

Installation of Rain Water Harvesting (RWH) structures was carried out in the study area both in Government buildings and also for individual houses. It was observed that the structures were installed not for the entire building but only on two sides in some cases. It was also noted that proper cleaning of RWH structures was not carried out. Hence, regular monitoring from the PIA and ensuring cleaning of the structures especially the ones installed in public places like hospitals, and Anganwadis.

A data management system is lacking at the Block offices, for instance, we didn't get the jpg or pdf file of watershed maps. Hence, a proper data management system may be created at the Block level to store and retrieve information related to the project as and when required.

Irregular transfer of funds is another serious issue to be addressed in order to fully benefit the project area from the watershed interventions. Delay in receiving funds or receiving funds 2 or 3 months prior to Financial Year closure may affect the quality of work and also the overall health of the watershed. Hence, regular and frequent transfer of funds helps in achieving all the proposed works of DPR.



Under natural resource management, many pond renovation activities were carried out in the watershed areas. It was found that proper maintenance of these ponds was lacking as hyacinth weeds cover the entire pond. Manual cleaning of these weeds is the only good option available for future use of the pond water. Hence, manual weeding may be performed by deploying MGNREGS labours through convergence mode and ensure quarterly cleaning of ponds.