ALAPPUZHA DISTRICT

Endline Evaluation of PMKSY-WDC Watershed Projects

REPORT: CHAMPAKKULAM BLOCK (Alappuzha District)

Champakulam (IWMP-1) project is located in Champakulam block of Alappuzha district. The project comprises of five micro-watersheds namely Kuttamangalam, Kainakary, Marthanda, Chittarimangalam and R.Block. The project, with an area of 5889 hectares has been selected for treatment under the Integrated Watershed Management Programme (IWMP). The project area covers the Gram Panchayaths of Kainakary, Champakulam, and Nedumudy (all in Champakulam block). The project area lies in coastal plains of Kuttanad Wetland Ecosystem.

Table 1 Details of micro watersheds in the project area

Sl. No.	Name	Code	Gram Panchayaths covered	Area (Ha)
1.	Kuttamangalam	10P1a	Kainakary	2809
			Nedumudi	
			Champakkulam	
2.	Kainakary	10P2a	Kainakary	1456
			Nedumudi	
3.	Marthanda	11M2a	Kainakary	306
4.	Chittarimangalam	11M3a	Kainakary	601
5.	R. Block	11M4a	Kainakary	717
Total				**5889**

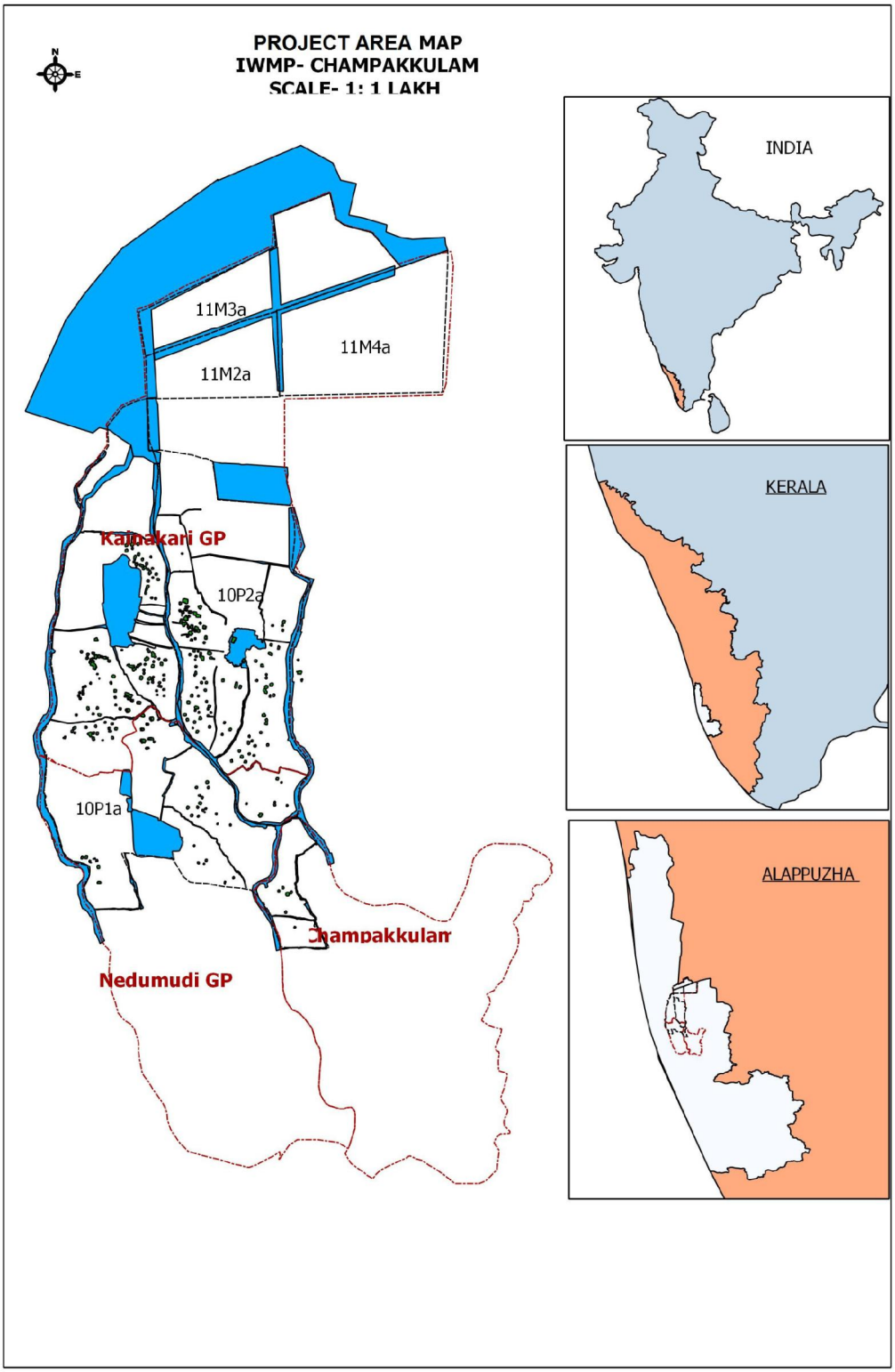

Figure 1 Watershed map of the project area

The evaluation team from CWRDM visited IWMP Champakkulam project on 16/03/2019. The team had a discussion with VEOs and the Engineer involved in the implementation of the project in Champakkulam Block Panchayath. Persistent water logging was the main problem faced by the residents of Champakkulam Block. It led to frequent epidemics and finding a good source of drinking water was also difficult. Also, Kainakary has the most number of cancer patients due to the overuse of pesticides. There was a conflict of interest between aquaculture and agriculture among the people in this Block. During the execution of certain works, transportation of materials was the main problem as it was possible only by boat, when the place was water logged. One of the VEOs pointed out that after the floods in August 2018, the productivity of fields increased substantially from 18 quintal/Ha to 40 quintal/Ha. In the tourism field, plastic waste management was the prime concern. Human waste management has been successful owing to the introduction of bio toilets in house boats.

The team made visits to different micro watersheds along with the BDO staff and investigated the various works done under IWMP.

The works visited by the team are:

1. Kandamkulam pipe culvert

   This work was done in the Kuttamangalam watershed of Kainakary Gram Panchayath. The structure is used to divert water from the main canal to irrigate the fields. Road access was also created by the structure. About fifty families are benefitted by the scheme. The total cost of construction was ₹ 2,87,000. Pipe culverts and slab culverts are done at few locations for proper drainage and water flow.

2. Rainwater harvesting tanks

   Ferro cement tanks of 5000L capacity were installed in selected households of Kuttamangalam watershed of Kainakary Gram Panchayath. During the floods some of the units were damaged as the whole structure slid off its foundation. The average cost of each unit was ₹ 41,150. Maximum number of Rain water harvesting and storage structures have been done (279) as part of the project in the Block.

Summary of the Evaluation of Outcomes of PMKSY- WDC Project

District	Alappuzha	Date of visit	16/03/2019

1. Project Details

Project No	IWMP - 1
Name of Block	**Champakulam**
Date of project initiation	02/05/2013
Date of project completion	31/03/2018
Sanctioned Area (ha)	5889
Sanctioned Cost (Rs in lakh)	706.68
Actual Expenditure (Rs in Lakh)	323.63 (45.79%)
Name of Villages included in the project	Champakulam, Nedumudy, Kainakary(N), Kainakary(S)

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	5	4	An increase of up to 1 m in many wells
2	Average depth of water table in tube wells	m	125	120	There is an increase of 5 m
3	Number of ground water structures (dug wells + tube wells + hand pumps) rejuvenated	nos.	--	267	Including one farm pond rejuvenated
4	Increase in Irrigation potential	ha	--	166	Area brought under protective irrigation
5	Area of Wasteland brought under productive use (like agriculture, plantation, fodder, etc)	ha	--	10.85	Area under pasture land
6	Change in cropping / land use pattern (i) Area under Agriculture Crop (ii) Area under plantation / forest cover (iii) Area Under Wastelands	ha	12106 - 164.6	12307 - 24	Nearly 200 ha of area more under agriculture after implementation of the project. 140 ha wasteland brought under productive use

7	Area Under Agriculture Crop (i) Area under Kharif crop (ii) Area under Rabi crop (iii) Area under double crop	ha	 0 0 7530	 -- -- 7690	An increase in 160 ha under double crops
8	Cropping intensity	%		5	Average 5 % increase
9	Increase in Yield /ha of crops (i) Rabi crop (ii) Kharif crop	qt/ha	 18	 21	Yield varies from year to year
10	Area of horticulture crop	ha	40	50	There is an increase of 10 ha. An increase of 4800 No. of coconut trees reported
11	Employment in agriculture related activities among beneficiaries	Man days	--	10561	The project created more than ten thousand man-days in the watershed area
12	Employment in non- agricultural sectors	Man days	--	426	Increase of 426 man-days
13	Fodder production	qt	NA	--	As much as 10.8 ha of land was brought under pasture production
14	Fuelwood production	qt	NA	--	
15	Number of milch cattle	nos	3500	3956	13 % increase. Increase of cow management units -32, Cattle shed 1No.
16	Milk production	Kl/yr	1399	1609	15% increase
17	Duration of flow of water in streams (upto November/December/January/February…. May)		--	--	No data available. Not applicable as most of the area lies below sea level
18	Improvement of drinking water facility		--	--	266 Rain water harvesting structures created
19	No. of persons engaged in ancillary activities like fishery, poultry, rural craftsmanship	nos	-	-	945 Poultry supplied.
20	Number of children enrolled in schools in the project area	nos	--	--	All the children are attending schools

21	Reduction in migration from rural to urban area in the project area	nos	--	--	More than 10,000 man-days generated by the project
22	Annual mean household income	Rs	55000	60000	Average Rs 5000 increase
23	Any other measureable indicator of impact assessment i) An improvement in production system and micro-enterprise especially in poultry, coconut plantation, animal husbandry management, grow bag cultivation, fallow land cultivation was practiced by some of the families in the watershed area. ii) The project also helps in creating and strengthening 630 SHGs in the area. iii) Decrease in water logging & pollution condition. iv) The interventions done in the project helps in increasing paddy cultivation, vegetable, milk & fish production. v) No. of total farmers benefitted : 4446				

Pipe Culvert constructed at Kandamkulam

Rainwater harvesting tank in one of the households in Kuttamangalam watershed

CONCLUDING REMARKS - ALAPPUZHA DISTRICT

- The watershed area in Champakulam Block comprises a part of Kuttanad in Vembanad wetland system, where below sea level farming is practiced. Accordingly, the water related issues are also different from the other watersheds. This area was severely affected in the unprecedented floods of August 2018. The area falls in Kainakary, Nedumudi and Champakulam Panchayaths.
- Water logging is the main problem. But accessibility for transportation of materials to certain places is only possible when it is water-logged.

- It was reported that after flooding, the productivity of farms have found to be increased, especially the yield from paddy fields. Yield increase from 20 quintals (Pre flood) to 40 quintals per hectare are reported.
- Certain works like pipe culvert and slab (box) culvert intended for irrigating the fields also helped to create road access to nearby areas.
- In the watershed area, it has been observed that there was improvement in the ground water table due to the implementation of recharge structures like ponds, rooftop rainwater recharge units etc. The demand was maximum for rainwater harvesting and storage structures in this cluster, as the people are facing acute drinking water scarcity in many tracts.
- The irrigation potential was also found to increase in certain watersheds due to the construction of canals and link channels.
- Drinking water shortage to certain extent was fixed by the installation of rainwater harvesting tanks and well-recharge units.
- Employment was generated both in agricultural and non-agricultural sectors during the implementation of the project. Also, the annual mean household income was improved.
- Activities like organic farming, backyard vegetable cultivation, animal husbandry and poultry etc. were promoted under the project.
- Delay in the availability of funds was a problem reported in this Block also. Some of the programmes planned originally, like channel widening and bank protection, rain water harvesting tanks etc. could not be taken up due to shortage of funds. Yet, some of the schemes were completed by convergence with MGNREGS funds.
- An improvement in production system and micro-enterprise especially in poultry, coconut plantation, animal husbandry management, grow bag cultivation, fallow land cultivation was practiced by some of the families in the watershed area.
- The project also helped in creating and strengthening 630 SHGs in the area and nearly 4500 farmers were benefitted from this project.

Success Story

Kandamkulam pipe culvert

This work was done in the Kuttamangalam watershed of Kainakary Gram Panchayath. The structure is used to divert water from the main canal to irrigate the paddy fields. Road access was also created as part of this structure. About fifty families are benefitted by the scheme. The total cost of construction was ₹ 2,87,000. Pipe culverts and slab culverts are done at few locations for proper drainage and water flow and this has indirectly helped the local residents in their transportation.