PALLAM BLOCK – IWMP -IIIBatch IV Projects (KOTTAYAMDistrict)

The project area is located in the Pallam Block of the Kottayam District. It consists of eight micro-watersheds, namely Thiruvanchoor-Nagambadam, Mannar thodu Maalam-Areeparambu,Maalam, Nedumtharakavu, Mundakapadam,Kalathil Kadavu,ParakkalKadavuand EreyilKadav. These micro watersheds are distributed among seven grama panchayaths, namely Kooroppada, Pampady, Ayarkunnam, Manarkkad,Panachikkad,Puthuppally and Vijayapuram.The project has an area of 5100 Ha.The project area is located between $9^0$31'20.6" - $9^0$37'50.8" N latitude and $76^0$31'17" -$76^0$38'9"E longitude.

Table 1. Details of micro watersheds

Sl No	Name of Watershed	Watershed code	GPs covered	Area (in Ha)
1	Thiruvanchoor-Nagambadam	12M38a	Ayarkunnam, Manarkkad and Vijayapuram	960.03
2	ManarthoduMaalam-Areeparambu	12M38b	Manarkkad,Kooroppada, Pampady and Ayarkunnam	1114.7
3	Maalam	12 M38d	Pampady and Manarkkad,	638.13
4	Nedumtharakavu	12M38f	Vijayapuram	347.23
5	Mundakapadam	12M39a	Vijayapuram	432.40
6	Kalathil Kadav	12M39n	Panachikkad	1124.40
7	ParakkalKadavu	12M39o	Puthuppally	288.40
8	EreyilKadav	12M39p	Panachikkad	444.22
Total				5349.51

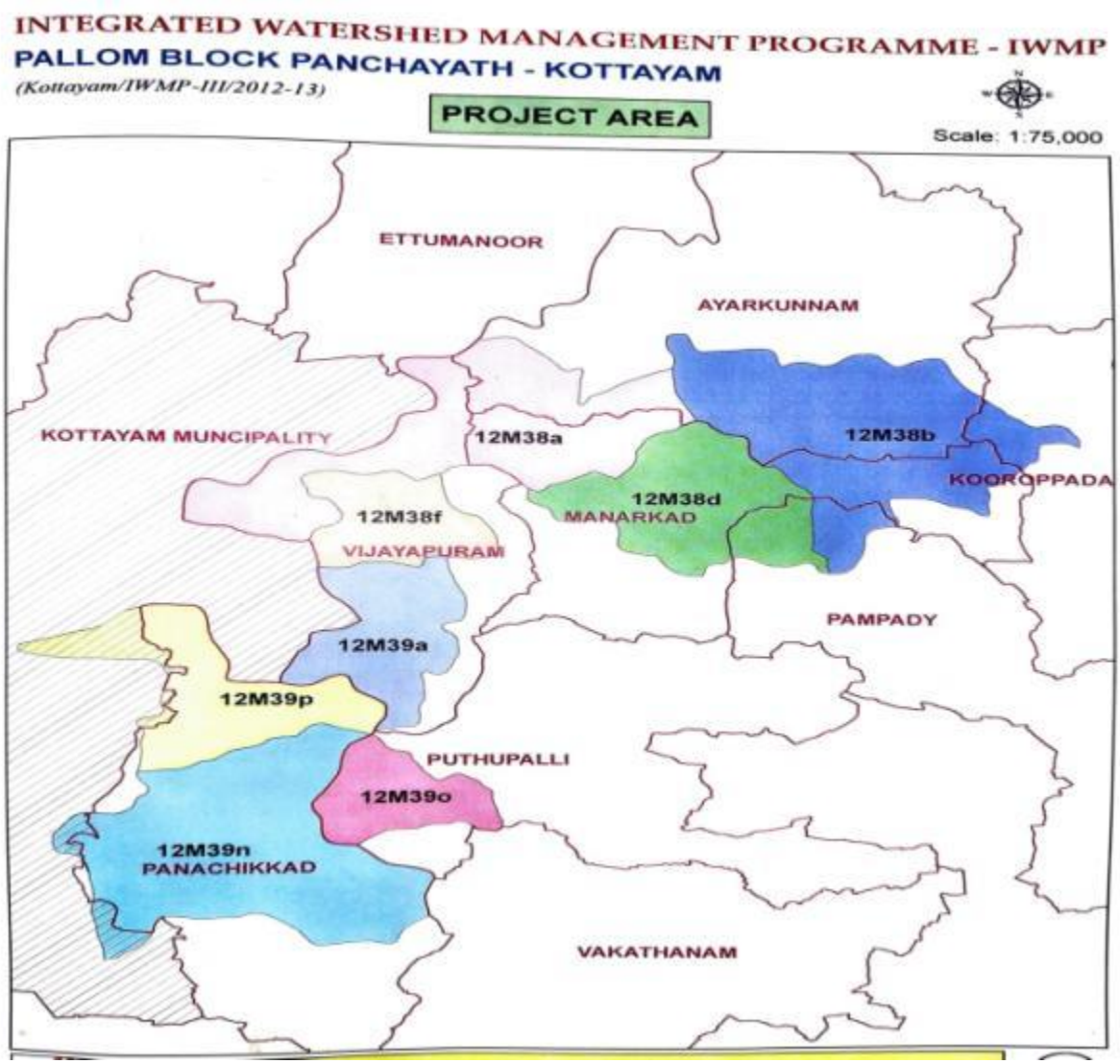

Fig 1: Map of the Watershed area

The evaluation team from CWRDM visited the IWMP project -3in Pallom Block on 04/07/2022. The team conducted an initial discussion with the Block Development Officer, and Village Extension Officers of the Block and collected additional information about the IWMP project implemented in the Block.The team also evaluated the impact and developments taken place through the interventions executed under the project by going through various records and reports.

Fig 2: CWRDM team at BDO office, Pallom.

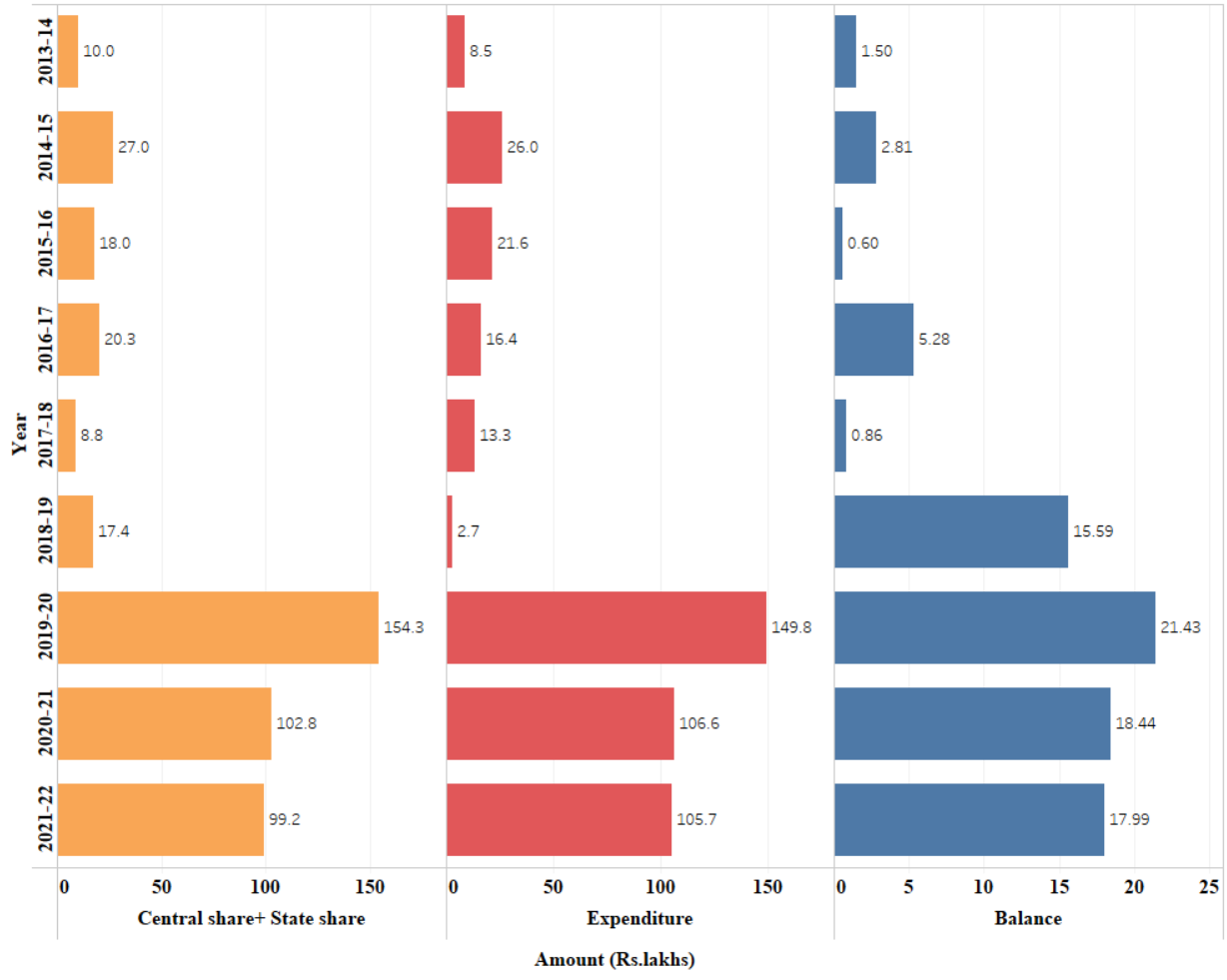

Fig 3: Financial overview of the Project

From the financial records, it was observed that, though the project started in 2013-14, anincrease in amount was received from 2019-20 onwards and this irregular transfer of amount had an impact on the planned interventions that were proposed during DPR. Moreover, the amount received in a financial year is not regular, for instance, during 2021-22 the amount was received during the month of December 2021, 3 months before the completion of the project. This led to improper decisions at the flag end of the project regarding the allocation of money to the different activities, as the sanctioned amount is lessthan the actual.It was also noticed that inflation is not taken into consideration while allotting money during the initial stage of the project. Hence, 'Inflation' must be taken into account while formulating the costs, as the prices during 2013-14 may not be the same as that of 2021-22.

After the discussion with the Block level officers, the following work sites were visited by the team.

1. **Rainwater harvesting structures**

Though the state receives 3000 mm of annual rainfall, the water stress situation is experienced during the summer months only. In order to avoid water shortage in the summer season, rainwater harvesting structures and groundwater recharge structures were promoted under the IWMP scheme. Similarly, rainwater harvesting/groundwater recharge structures were adopted across the Block either at the individual household level or in public places like Schools and Anganwadis,and a total of 1166structures were created under the scheme and 24 were rejuvenated.

a) Renovation of Rainwater harvesting tank at BDO office

The ferrocement tank structure located at the back of the BDO office was renovated at a cost of Rs. 1 lakh. It lies in theNedumtharakavu watershed of Vijayapuram Panchayath. This tank is the major source of water for the staff working at the BDO office.

b) Rainwater harvesting tank at Govt. U.P. School,Velluthuruthy

This structure is located in the Kalathil Kadavu watershed of Panachikkad panchayat.The rainwater harvesting tank was constructed using aFerrocement material

with a capacity of 15,000 litres at a cost of Rs.89,000/-. The tank is a major source of water for the school children (500) and the staff working there.

2. **Groundwater recharge**

i. A groundwater recharge structure was practiced at BDO office premises in theNedumtharakavu watershed of Vijayapuram Panchayath with a unit cost of Rs. 8000/-.

ii. Groundwater recharge at Ammayanoor

This work is practiced by‘Bibin’, a household at Manarthodu-Maalam-Areeparambu watershed of Ayarkunnam grama panchayat.It had a unit cost of Rs. 8000/-.

These groundwater recharge structures help in increasing the groundwater table wherever it is adopted thereby solving the problem of summer scarcity of water. Hence, these kinds of structures will be promoted in the block in order to reduce the scarcity of water during the summer months.

3. **Pond/Well renovation activities**:

Pond or well renovation activities were carried out under the IWMP project in the study area mainly to increase the catchment of water, which will help in increasing the quantum of water available to the people.

(i) Pond renovation at Kalathikkadav watershed

This pond lies in Kalathikkadav watershed of Panachikkad panchayat. Nearly 50 families use the pumped water from this pond for their daily needs. The cost of renovation was Rs. 5.48 Lakhs.

(ii) Public well renovation at EravinalloorLakshamveed colony

This renovation work is located at Parakkalkadavu watershed of Puthuppally Panchayath. This work was completed with a total cost of Rs. 50,230/-. The renovation work includes cleaning the pond and installinga well cover and also a well recharging unit. As a result, the

water scarcity in the area was solved and 15 families of the colony gets good quality water throughout the year.

(iii)Well construction of Richel at Kunnampalli

This construction lies in the EreyilKadavwatershed of Panachikkad panchayat. The construction cost stood at Rs. 30,000/-.

4. Side protection and Check dam activities:

Side protection and check dam activities are a must, especially in areas where there will be more water logging and continuous desiltation. Some of the activities visited by the team include:

a) Chirappalam Stream Check dam

This check dam is constructed across the Thundiyilppady-Orappani-Chirappalam drain in the Manarthodu-Maalam-Areeparambu watershed of Ayarkunnam grama panchayat. The side protection of this dam has 60 m in length on both sides. The construction was completed at a cost of Rs. 25,35,000/-.This makes it possible to irrigate 8 hectares of agricultural landand more than 8 families use this check dam for various purposes.

b) Side protection at Poothiri

This work islocated at the Manarthodu-Maalam-Areeparambu watershed of Ayarkunnam grama panchayat. The side protection is 176m long on both sides. The work was accomplished at a cost of Rs. 9 lakhs.

c) Side protection and desilting at Kadanchira stream

This work is situated at the Ereyil Kadavu watershed of Panachikkad panchayat.The desilted earth from the drain is used for bund formation along both sides of the drain and it is protected by laying coir geotextile.The bund formation and coir geotextile laying were done in convergence with MGNREGS. The desilting work in the drains resulted in a risingin water level in the nearby wells ensuring drinking water availability and also protecting the drainage channel by increasing the depth.The work also helped in converting a few hectares of fallow land into agricultural land.

5. Production system and microenterprise activities:

PSME provides an excellent opportunity for self-employment of unemployed people mainly by providing subsidies for cow rearing, goat rearing, poultry and agriculture purposes. It became an important source of subsidiary income for farmers and agricultural labourers in the project area. Some of the activities visited by the team include:

i. Backyard poultry by 'Sneha' JLG

This activity is situated at the Maalam watershed of Manarkkad grama panchayat. Distributed seed money of Rs. 25,000/-.The program helped in increasing additional income for people in watershed areas and also had a great influence onwomen's empowerment.

ii. Silpaulin tank of Biji George

This work is located at Eravinalloor, Parakkalkadavuwatershed of Puthuppally Panchayath. The Silpaulin tank is constructed in convergence with MGNREGS. The pit for the tank is done in MGNREGS and the Silpaulin is provided in the PMKSY scheme.The tank allows harvesting and storing of rainwater from early monsoon and utilisation of harvested rainwater for irrigation or pisciculture purposes.Due to improper maintenance, the tank was not in working condition at the time of the visit.

iii. PSME at Kaniyamala.

This activity is situated in the EreyilKadav watershed of Panachikkad panchayat. A cow rearing unit was commenced by 'Joy C. Andrews' at Kaniyamala under the IWMP project as a subsidy component.

iv. PSME at Kunnampalli

This activity is also located inthe EreyilKadav watershed of Panachikkad panchayat. Under PSME, the cow rearing unit was carried out by 'AnilaViju' at Kunnampalli. An amount of Rs.24,.000/- was given to the household as a subsidy.

6. Livelihood activities:

a) Agriculture by 'Thejas' JLG

This activity is situated in the Kalathil Kadavuwatershed of Panachikkad panchayat. Seed money of Rs. 25,000/- has been providedto the JLG group to take up agricultural activities. Similarly, the JLG group started agricultural crops like cowpea, Okra, and other vegetables on 35 cents of land.

b) 'Unity' JLG at Kanjikuzhy

This activity is situated at Thiruvanchoor watershed of Vijayapuram grama panchayat. Here also they make use of the seed money of Rs. 25,000/- to set up a unit.Initiall,y they started carry bag making and now expanded to other activities.

Under the scheme 80 JLG's were assisted with Rs. 20 lakhs for carrying out different livelihood activities. The programme helped in increasing employment opportunities in the project area and also had a greater influence on women's empowerment. Hence, activities like these can be promoted and encouraged among the different SHGs or JLGs in the watershed area to increase women's empowerment and achieve gender equality.

Summary of the Evaluation of Outcomes of PMSKY-WDC Projects

District	Kottayam	Date of Visit	04/07/2022

1. Project Details:

Project No	IWMP -3/2012-13
Name of Block	Pallam Block Development Office
Sanctioned Area (ha	5100
Sanctioned Cost (Rs. in lakh)	612

Name of Villages included in the project	Vijayapuram, Ayarkunnam, Manarcadu, Kooropada, Pampady, Panachikkadu and Puthuppally

2. Impact Details

Sl. No.	Items	Unit	Pre-project status	Status at the end of project	Remarks
1	Average depth of watertable in dug wells	m	11.5	11	A marginal increase in water table level
2	Average depth of watertable in tube wells	m			No data available
3	Number of groundwater structures (dug wells + tube wells + hand pumps) rejuvenated	nos.	-	185	Increase in groundwater structures
4	Increase in Irrigation potential	ha	2613	3240	627 ha area increased under protective irrigation
5	Area of Wasteland brought under productive use (like agriculture, plantation, fodder, etc.)	ha	67.1	18.2	Nearly 48 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	3020 308 67.1	3708 368 18.2	Agriculture area increased
7	Area Under Agriculture Crop (i) Area under Kharif crop (ii) Area under rabi crop (iii) Area under double crop	ha	812	854	Marginal increase in area under Kharif crops
8	Cropping intensity	%	105	108	3 % increase in cropping intensity
9	Increase in Yield /ha of crops (i) rabi crop (ii) Kharif crop	qt/ha	20	21	Increase of 1 qt/ha in case of paddy

10	Area of horticulture crop	ha	308	368	60 ha area underhorticultural crops increased
11	Employment in agriculture related activities among beneficiaries	Man days	8623	9392	29400 mandays of employment generated under the project
12	Employment in non- agricultural sectors	Man days	--	34322	
13	Fodder production	Ha	3315	4250	Increase in area was noticed
14	Fuelwood production	qt	--	--	No data is available as most of the residents depend on LPG for cooking
15	Number of milch cattle	nos	632	743	Increase in milch cattle
16	Milk production	Kl/yr	7584	9659	Increase in milk production
17	Duration of flow of water in streams (upto November/December/January/February….May)		Up to Feb	Upto March	Streams used to dry up by end of February increased by one more month
18	Improvement of drinking water facility	nos	Upto March	UptoApril	Availability of water by one more month
19	No. of persons engaged in ancillary activities like fishery,poultry, rural craftsmanship	nos	312	380	Slight increase was noticed
20	Number of children enrolled in schools in the project area	nos	--	--	Cent percent enrollment was observed in the project area.
21	Reduction in migration from rural to urban area in the project area	nos	390	365	Migration to urban reduced during the project period.
22	Annual mean household income	Rs	65000	68000	Marginal increase in income
23	Any other measurable indicator of impact assessment ❖ SHGs assisted: 133 ❖ 158 units of cow rearing, 115 units of goat rearing, and 212 units of poultry were promoted under the production system. ❖ 29400 mandays of employment generated under the project.				

Some of the works visited in the project are

	
Renovation of Rainwater harvesting tank at BDO office	Ground water recharge at BDO office
	
Chirappalam Check dam	Side protection at Poothiri

	
Ground water recharge at Ammayanoor	Backyard poultry by Sneha JLG
	
Silpaulin tank of Biji George	Public well renovation at EravinalloorLakshamveed colony
	
Pond renovation	Rainwater harvesting tank at Govt. U.P. School, Velluthuruthy

	
Agriculture by Thejus JLG	PSME at Kaniyamala.
	
Side protection and desilting at Kadanchira stream	PSME at Kunnampalli
	
Well construction of Richel at Kunnampalli	Unity JLGat Kanjikuzhy

Success story

Rainwater harvesting at St. Thomas U.P. School.

The ST.Thomas school situated in ward 15 of Puthuppally Grama Panchayath in the Parakkalkadavu watershed was suffering from severe water scarcity. Water was often purchased for their needs. For the school, which is mostly attended by children from economically backward families, paying for water caused financial liabilities. At this stage, a rainwater harvesting tank with a capacity of 15,000 liters was constructed under the PMKSY project spending 0.89 lakh rupees. The rainwater harvesting tank is also provided with an overflow system which allows the excess water from the tank to flow into the nearby well and thus recharges the well. The tank construction resulted in a permanent solution to the water scarcity issue faced by the school.

Concluding Remarks

- The NRM activities carried out in the project area include Rainwater harvesting tanks, Well recharging, Check dam construction, Silpaulin tanks, Rejuvenation of ponds,Drainage line treatments,Soil & Moisture conservation activities etc. The water level in the nearby wells has risen due to these interventions in the project area. Moreover, the check dams are very useful for agricultural production, as it brings more area of fallow under agriculture.
- The irrigation potential was also found to increase in certain watersheds due to the renovation of structures like ponds, check dams, etc.
- It was observed that some of these activities like desiltation, geotextile of bunds etc.were carried out in convergencewith MGNREGS has helped in solving water

logging problems in the area. Hence, convergence activities will be increased in order to effectively utilise the MGNREGS labour as well as to reduce the cost of IWMP projects.

- The desiltation work in the drains resulted in the rise of water level in the nearby wells ensuring drinking water availability and also reducingwater-borne diseases to some extent, creating a conducive environment for water tourism, preventing soil erosion, increasing fish stock and promoting livestock. Hence, desilting activity may be taken up once every two years to reduce flood inundation and to avail of the indirect benefits that arise from it.
- In all the watersheds included in the project, it has been observed that there was a significant improvement in the drinking water availability due to the implementation of rooftop rainwater recharge units and other natural resources management interventions.
- Drinking water shortage to a certain extent was taken care of by the installation of rainwater harvesting tanks and well-recharge units.Groundwater recharge pits were constructed near the wells at BDO office and at Ammayanoor increased the water level in the wells and the availability of drinking water was prolonged up to April, which used to dry up in the months of February and March earlier. This may be taken up widely in other parts of the project area also.
- Delay in the timely availability of funds was a problem reported in this Block also like other areas. Even though the fund was made available towards the end of the project, some of the important schemes could not be taken up due to scarcity of funds.
- JLGs carried out different livelihood ventures in the Block, thishad a significant impact on the empowerment of women as well as improved economic prospects for those living in watershed areas. Hence, activities that increase confidence among women and improve their empowerment, will be promoted extensively and ensure more SHGs or JLGs will be brought under these kinds of interventions by allocating more money as it promotes Gender equality in the region.
- PSME activities provide funding for livestock management in all watershed areas thereby providing an excellent opportunity for self-employment for unemployed

people. With these activities employment was generated both in agricultural and non-agricultural sectors and also the annual mean household income was improved.

- The public wells are located in areas suffering from water scarcity during summer and the project was successful in ensuring drinking water availability for families, throughout the year. The wells are cleaned and well coverings are provided.Many families share the newly constructed wells because the majority of them do not have their own wells. Regular cleaning of water ponds is required as there is a menace of Water Hyacinth weeds in most of the ponds renovated in the watershed area. This can be taken care of by regularly cleaning the pond by deploying MNGNREGS labours through convergence mode.
- The Silpaulin tank construction helped the harvesting and storing of rainwater from early monsoon and the utilisation of harvested rainwater for agricultural related activities. It was understood that proper supervision is needed from the watershed committee in order to efficiently utilize these tanks.
- Before undertaking side protection activities, consent from the stakeholders is required as most of the side protections were carried only on one side of the stream rather than on both sides. As the concerned farmer, whose land is fallen on one side of the side protection is not ready to trust the Panchayath's activity. Hence, before undertaking the work, ensure full cooperation and participation of all the stakeholders for the successful completion of the planned tasks.
- The creation of a database of all the watershed activities like watershed maps, and shape files of the watersheds will be maintained by the BDO office for future use. It was observed that no soft copies were maintained with respect to DPR and watershed maps. If possible, geotagging of all the watershed interventions will help in easily monitoring the activities and finding the structures even if all the original staff worked were transferred to different places.