

TAMIL NADU

K.1. A Case Study from Mannchanallur, Tiruchirapalli

The Integrated Wasteland Development Programme Project – II being implemented in Mannchanallur Block, Tiruchirapalli District. The number of Watersheds sanctioned is 11 with Project Area of 5650 Ha. In the Palaiyur Watershed under IWDP – II that lies in Palaiyur Panchayat, the number of land holdings by the Marginal & Small Farmers is 242 out of a total of 275 – 88 % and that of SC / ST Holdings is 47 – 17 %. The number of BPL family is 405 out of 707 – 57 %. The Treatable area in the watershed is 480 Ha and the area so far treated is 409 Ha.



Photo 1: A view of the plot before treatment

The land was left barren for nearly 4 years even though it is cultivable. The topography of the land is sloping and irrigation is not possible for cultivation of crops. The Small farmer was unable to take up the Land Development on his own and was in need of motivation as well as assistance.

The main objective is to motivate the Small Farmer Thiru. Nagaraj, S/o. Krishnan in Palaiyur Watershed to develop the land with financial assistance under IWDP to bring back the land to irrigated cropping during Kharif season and Rainfed cropping in the Rabi season. All the works proposed were identified and finalized during BLS & PRA and are got approved by Gram Sabha and District Administration. The financial assistance provided for Land Development Work is Rs.5,000/- per Ha. and any additional amount incurred should be borne by the beneficiary farmer apart from remitting 10% contribution to WDF. The work requires the personal involvement of the beneficiary as it is carried out in his own land and hence, the Small Farmer was requested to take up the development work on his own. The total expenditure incurred by the farmer was Rs.7,000/- and the financial assistance released to him was Rs.5,000/-.



Photo 2 & 3: Views of the plot during the land development work and in the cropped stage

The cultivable fallow land is 1.40 Ha. and 1.00 Ha. land was taken up for treatment. Sorghum was cultivated in 0.50 Ha. and Field beans & Castor was cultivated in 0.50 Ha. under irrigated condition. The additional income was Rs.15,000/- in the same season in which the land was developed. As the work was carried out by the beneficiary himself, the maintenance & after care is taken care of and sustainability is ensured.

The beneficiary farmer is Thiru.Nagaraj, S/o. Krishnan from Palaiyur Village in Palaiyur Watershed. The S.F.No.193/5 with total area of 1.40 Ha and the treated area is 1.00 Ha. The execution of the work was done by the beneficiary farmers. The estimate cost is Rs.5,000/- and the Actual Expenditure was Rs.7,000/-. The excess expenditure was met out by the beneficiary farmer himself. The contribution towards the Watershed Development Fund is Rs.500/-. Area conversion was entered in Revenue Records.

The work shall be executed with technical knowhow of the farmers and hence it is easy for other farmers to take up land development work in their land with a morale boosting financial assistance from the Watershed Development Programme. The number of farmers so far taken up Land Development works in their land is 115 and the area treated is 87 Ha. in the Watershed.



K.2. A Case Study - Vaiyampatti Block, Tiruchirapalli

The Integrated Wasteland Development Programme Project – IV is being implemented in Vaiyampatti Block, Tiruchirapalli District. The number of Watersheds sanctioned is 10 and Project Area is 5000 Ha. In the Pudevadi Watershed lies in Pudevadi Panchayat and the Treatable area in the watershed is 500 Ha.

The drinking water supply for the Gram Panchayat depends on the 2 nos. of bore well nearer to the proposed work. There was acute shortage of drinking water every year especially during summer. The water level has gone down in 11 wells used for Agricultural purpose, in and around the proposed work. The only source of recharging the groundwater in the area is New Checkdam Only.

The work proposed was identified and finalized during BLS & PRA and got approved by Gram Sabha and District Administration.



Photo 1 & 2: Before and after construction of check dam under the project

Rainwater was harvested immediately after construction to its full capacity. The Groundwater level is increased in the nearby well by 2 m. The water is now available for an additional period of 30 days. This year in the first season, the farmer has cultivated Groundnut and in the next season he preferred Sorghum as the water available now is more.

The nearby beneficiary farmer is Thiru.Nehru, S/o. Alagarsamy Naidu from Puduvaadi Village in Puduvaadi Watershed in S.F.No. 4/2 with an area of 1.00 Ha was also one among the benefited. The execution of the work was done by Gram Panachayat. The Estimate cost is Rs.65,000/- and the Actual Expenditure was Rs.65,000/-. The contribution towards the Watershed Development Fund is Rs.3,250/-. The total number of Land Holdings benefited is 14 Nos.

On seeing the impact due to the Construction of Checkdam in Puduvaadi Watershed, 2 nos. of Checkdam has been constructed. The total number of beneficiaries is 42 nos. The above positive outcomes are being taken as motivation for applying to the other development works.



K.3. A Case Study -Mannavur Watershed, Kodaikanal Block, Dindigul District

The watershed in the kodaikanal block are situated in the steep sloppy western Ghat hills. The slope of the land is more than 31 % and the lands in this sloppy portion starve for conservation from all types of erosion and loss in the top fertile soil. It makes the roots exposed and even hills the plant and destroys agriculture.



Photo 1: Before project

It was planned to construct stone bunding in the possible contours of the agricultural field with the dimension of 0.60 m width and height ranging from 0.60 m to 1.20 m. It was constructed with the available stone in the respective field itself. The movement of the top soil was collected within the field and the soil around the root zone was unearthed.



Photo 2 & 3: Stone Bunding, Mannavur Watershed

The annals reveal that the run off was arrested efficiently in the sloppy lands of the watersheds. It stabilizes the agriculture in approximately 65 ha per watershed affected seriously from the erosion. The 4 watersheds which have black cotton soil as its top soil the erosion was controlled remarkably. The soil retained soil moisture, humus content, applied fertilizers and microbial activity.

The sharp raise of 15-22% in the production of the vegetables is recorded in the potato, carrot, garlic, beans and fruits like orange and plums compared to the yester years. There is notably low collection of fine top soil in the loose rock check dam, Gabion check dam and masonry check dam in the drainage systems.



K.4. A Case Study -Kupilipatti Watershed, Kodaikanal Block, Dindigul District

The watersheds are situated in the dry belts of Athoor and Natham blocks of Dindigul District. It receives to an average rainfall 755 mm/year. the distribution of rainfall is also irregular. It has a hilly range as its ridge. There are 21 backward class families and 3 schedule caste families owning 67 ha of lands in Natham and 11 BC families in Athoor owning 19 ha the lands were facing a great threat of erosion since the slope of the land lies between 7 to 13%.



Photo 1: Before project

There is a felt need in the foot hills of the watershed to arrest the high velocity of runoff which removes the top fertile soil and to conserve the soil to improve agriculture. The high intensity of rain fall cre3ated a vulnerable effect due to erosion in the foot hills. To combat the intensity of rainfall, the concept of pit cum bunding was adopted.



Photo 2 & 3: Pit cum Bunding, Kupilipatti Watershed

The continuous trenches with dimension of 10m x 0.90m x 0.90m were dug with 0.70m gap between the trenches in a line. The earthen bunds were formed in the down stream side of the slope continuously. DWDA gave necessary advice to the village watershed community to motivate the farming community and to level the field in between the trenches. According to the availability of water, the agro forestry seedlings, horticultural plantations were planted.

The pit cum bunding was done in the field as shown in the impact snap. The watershed received 275 mm of rainfall between the 21st – 27th of November 2010. Near the seserve forest boundary where the breath of the land is 400 mts 8 rows of pit chain were formed. Since the intensity of the rainfall is abnormal, the formed pits witnessed efficient water harvesting. It was measured 45cm to 10cm depth of topsoil that was accumulated in the series of rows from the highest elevation in the ridge to the bottom of the field.

The impact was noted in the 11 nos of wells in the downstream portion of the field. Before the depth of water in the bore well was recorded 25 ft during the rainy season and later it got dry during the summer which gave confidence for growing only a single crop. After the intervention in spite of the rainy season the wells had 58ft out of 65 ft depth of standing water level which gave confidence to the farmers to go for the 2nd crop.



K.5. A Case Study - Palanipatty Watershed, Athoor and Natham Block

The watershed is situated in the dry belts in Athoor and Natham blocks of Dindigul District. It receives a minimum rainfall to an ave 725mm/year. The distribution of rainfall is also irregular. The farmers belonging to the middle class. Below poverty line and schedule caste could not spend money on initial land preparation over a period of 5 years. Before the scheme started, the lands were facing a great threat of erosion and devoid of any soil conservation or water harvesting techniques. There are 13 backward class families and 8 schedule caste families owning 42 ha. of land in the ridge portion of the Watershed.



Photo 1: Before project

The earthen bunds halts rain water run off and allows more time for percolation which improves the soil moisture besides arresting the top soil erosion.



Photo 2 & 3: Land leveling & Earthen Bunding, Palanipatty Watershed

The Watershed comprised of red soil and red loamy soil. It was initially decided to form bunds along the contours in the upper portion of the Watershed. Compartmental bunding was formed in the middle and lower portion with the dimension of top width of 0.45m, bottom width of 1.05m and to the bund height of 0.45m. DWDA gave necessary advice to village Watershed community to perform the bunding from the ridge and to maintain the excess water draining outlets. According to the availability of water, the agro forestry seedlings, horticultural plantations with the suitable intercropping were advised.

The maximum run off was collected within the field which improved the soil texture and soil moisture. The top soil erosion was arrested and restricted within the bunds. The

segregation of their land with bunding gave basic layout for planning during planting and fertigation. They grew grass over the periphery of the bunding which stabilized the cross section.

The formation of new agricultural land and the subsequent farming activity to the schedule caste families improved their annual income.

The land leveling and earthen bunding from the ridge of a Watershed added new area of cultivable land it will increase the confidence on Agriculture to the farming community.

Block	Extent leveled (Ha)	Total No of families benefited		Crops grown	Ave. income (Rs.)	New agri lands created (Ha.)	New income from this field (Rs.)
		BC	SC				
Athoor	745.00.0	231	21	Millets, Pulses, Vegetables	19,000 23,000	73.25.5	11,000 21,000
Natham	750.00.0	171	18	Millets, Pulses, Flowers, Vegetables	9,500 35,000	43.50.0	12,500 35,000



K.6. A Case Study - Sempatty Watershed, Athoor and Natham Block

The Nadupatty and Old Sempatty Watersheds in the Athoor block are situated in the steep sloppy Western Ghats. The Karuthanayakanpatti, Palanipatti and Kupilipatti Watersheds in Natham block are situated in the foot hills of the karandhamalai hill.

The slope of the land is more than 7% and the lands in this sloppy portion starve for conservation from all types of erosion and loss in the top fertile soil. There was a great need that the stream water had to flow with lesser velocity which could reduce scouring the Agriculture lands in the curves of the stream. A structure was needed to protect the patta land from erosion by stream and erosion from the land.



Photo 1: Before project

It was planned to construct retaining wall built with random rubble masonry structure in the vulnerable curves between the Agricultural field and the stream. So that the retaining wall could collect the movement of top soil within the field itself in the upper side and protection from the severity of high velocity steam. Since the retaining wall gives boundaries to the particular field, the new area in the tipoff the field which was previously sloppy without agri usage is now made into an agri field.



Photo 2 & 3: Retaining Wall & its impact

It was constructed with the dimension of 0.50m width and height ranging from 0.60m to 1.20m. It was constructed with the random rubble masonry. There were 220 mts of retaining wall constructed in each Watershed.

The construction of retaining wall stabilized the Agriculture from approximately 31 Ha. per Watershed which was affected seriously from the erosion directly and 39 Ha. of land indirectly by submerging during monsoon.

The reporting of crop damage due to standing water column through the breaches in the stream was reduced considerably.

The 4 Watersheds which have both red soil and black cotton soil patches as its top soil, the top soil retained within the field and the erosion was controlled remarkably. Thus it retained soil moisture, humus content, applied fertilizers and microbial activity in the protected agri fields.

The sharp raise of 15-22% in the production of the vegetables was recorded yield in flowers, fruits like grapes, vegetables like tomato, brinjal etc., and pulses, chow chow etc., compared to the yester years. There is no crop damage claim from the Watershed area during the last monsoon even after a shown of 415 mm within 10 days. The construction of retaining wall in the vulnerable curves of the stream is a needy soil conservation structure and it restricts the erosion sharply and improves the Agriculture.

