A CASE STUDY OF WATER SHED DEVEPLMENT IN DAREWADI

Dr. M. Husain*[1] F. I.Chavan[2], SantoshSanap[3]

*[1]Professor, [2]Associate Professor, [3]PG Research Scholar, Department of civil engineering,
SSBT College of Engineering, Bambori, North Maharashtra University, India
santoshsanap.56@gmail.com

Abstract - The problem of water is not only arrived now-a- days but it is arising since thousands of years. ago such the man started thinking on the problem of inadequate water and its proper use from the time he started fanning and henceforth this problem is going to arise in one or the other way and it is the challenge before the people to solve the problem of inadequate water arising in their decade no one can say that whether this problem will be solved or not in ten years or hundred years) "Many a Little Manes a Mickle "each and every drop of water is very necessary but, its management is not proper. At some places implementation of sprinkler and drip irrigation is done but. That water cannot be used for wider areas due to unevenness of rainfall in different regions. The crops are destroying is commonly heart it is taking a step forward to save drop and to use it in extreme conditions. Environmental regeneration is possible only when the concerned people see a reason for it and are fully in control of all aspects of resource mobilization, management and conservation just as human being and their activities are the primary causes of environmental destruction, and they are the reassures for restarting the health of the environment that they are rained. Hence there can be no sustainable natural resources management without the active participation of all inhabitants of the concerned environment. So considering above factors we should take a step forward for proper management and letter use of available water .

Key Words: watershed development, rural development, land use, catchment stabilization, human effort etc

1 INTRODUCTION

Darewadi-shelkewadi line in sangamner talukaone of the thirteen taluka in Ahmednagar district of Maharashtra the village is located 190kms away from the Aurangabad city. Even though the village is fairly close to the Pune-Nasik highway (12 km) the village lacks adequate basic services. The village is connected only by a kuccha road and the nearest pucca road is 6 km away from the village (Rankhamb Phata) where transportation facilities are available. Many basic services are not available within the village or in the nearby villages and the villagers have to reach sakur (12 km away) to avail of these facilities. There are 130 households in Darewadi- shelkewadi the village has a total population of 921 of which 486 are males and 435 are females the average household size is 7.08 The total land area of the watershed is 1, 535, 24 n1 which 295 ha belong to the forest department the land owned by the forest department is mostly on the slopes the economy of the village is primarily agrarian in nature and the returns from agriculture depend solely on the vagaries of the monsoon as only 197 ha are seasonally irrigated the main seasonal crops grown are Bajra green gram and kuccha during kharif and wheat and jowar during rabbi crops such as tomatsummer There are 7 landless households (5 % of total household) and they depend mainly upon labor (both agricultural and non-agricultural) for their livelihood in addition to the produce that the small and medium fanners obtain from their fields they either work

as part-time laborers in other people's fields they or migrate to make both ends meet marginal farmers also migrate to the nearby villages or towns during the lean season. The village had a total livestock population of 1717 before 1997 and it consisted mainly of sheep goats bullocks indigenous breeds of cows and a few horses livestock farming was only of marginal significance as there were only 14 crossbred cows in the village the number of livestock has been reduced to 380 in the year 2000 as most of the sheep and unproductive cattle are disposed of. Darewadi-Shelkewadi line the rain shadow region of the Sahyadri range and is considered to be one of the backward village in this region over the years the environment has been heavily degraded due to the irrational exploitation of natural resources and this has given rise to problems of scarcity of fodder and bio-mass availability soil erosion and excessive run-off of water. The lack of soil and water conservation measures resulted in the decline of agricultural productivity non-viability of large or improved herd holding and migration of world force to nearby towns and cities.

2 HISTORY OF DAREWADI

Five generation ago the first group of people settled in Darewadi at that time the place used to be surrounded by thick forest and many Nallas so the people started farming and kept lots of sheep since they belonged to the Vanjari- and dhangar communities milk was always available in the villages slowly relatives and friends joined the first family and also other families started settling in Shelkewadi. Even 50 years ago the village was still surrounded by this thick forest but due to some severe drought years and less work in the agricultural fields we had to cut the trees for making charcoal which was sold in sangamner this was the only source of income we still could get within the village or we had to opt for migration as adivasis we were well aware of the importance of trees but there was no other option in the end two things happened (a) the natural resources diminished and (b) the people immigrated the people migrated the people permanently immigrated to Bombay and surat as well as seasonally to sugar cane factories brick kilns and other places where labor was in demand. We were always used to agricultural income from the crop yields as well as income from huge herds of sheep and goats grazing in the village boundaries Our village got electricity in 1970 and some employment guarantee schemes in the year of the severe drought in 1972 so we constructed Nallas bunds and percolation tanks and could find work within the village

3. WATERSHED TRAINING CENTRE

WOTR has set up a Watershed Training Centre in Darewadi as this village offers an ideal location for conducting trainings, giving the trainees firsthand experience of the field and its people, thus fostering understanding and learning of the various aspects of watershed development.

WOTR conducts trainings for various levels of staff (policy and decision-makers, middle management as well as implementing staff) of government organizations, donors and NGOs as well as for village communities. Darewadi, which was once a remote and isolated village, is now a web of activity. Visitors come from far off places to understand and share their success story and many of them go back with the resolve to replicate this effort in their own areas.

The villagers themselves explain to the visitors and some of the VWC and women's group members even as resource persons for creating awareness in other villages. Due to the 'demonstration effect' of Darewadi

Table -1: Information of Darewadi watershed

Total area of watershed	1535.24 ha
Forest land	306.53 ha
Revenue land	147.69 ha
Private land	1063.43ha
Number of households	131

Table -2: Watershed treatments implemented

Crop cultivation	1040.77ha
Horti –pasture	3ha
Grassland with trees	117.92ha
Afforestation	191.53 ha
Reforestation and aftercare	86.8ha

Table -3: Expenditure incurred

Labour	53,44,942.43
Material	18,61,655.83
Supervision	35,91,66.74
Shramdaan (people contribution)	11,21,558.35
Total exp.(including Shramdaan)	86,87,323.35

Table -4: Drainage line treatment

Name of structure	Quantity	Labour cost	Material cost	Supervision and transport cost	Total cost
Loose boulder	4 no	5580	124	285	5089.20
Gabion	9 no	8578	98695.32	5385.75	112659.57
Check weir /Check dam	1 no	28940.67	164053.79	9649.72	202644.18
Repair to nala bunds	15 no	173840		13907	187747.20

Table -5 : Expenditure incurred

Labour	53,44,942.43
Material	18,61,655.83
Supervision	35,91,66.74
Shramdaan (people contribution)	11,21,558.35
Total exp.(including Shramdaan)	86,87,323.35

Table -6 : Government development support

Drinking water supply and distribution	1,089,000
Toilet construction (182 no)	63,7000
Primary school building	18,0000
Road construction	567,000
Afforestation	621,513
Total	3,09,4513

3 DESIGN OF GULLY PLUG (GP)

Estimate to reduce high velocity of runoff
Assumeddimensions for stone plug based on actual survey

Length = 8.0m
Height = 1.0m
Top width =0.6m
Bottom width=1.0m

Volume of stone requirid for one stone plug=8.40

I) Excavation : 8x1x0.15m=1.2cum
II) Total volume of stone required : 6.4+1.2=7.6cum
III) Amount required for construction : 7.6x17=129.2Rs
IV) Amount for earthwork : 1.2x20=24Rs
Hence Total Amount required per stone plug of 8cm=129.2+24=153.20Rs

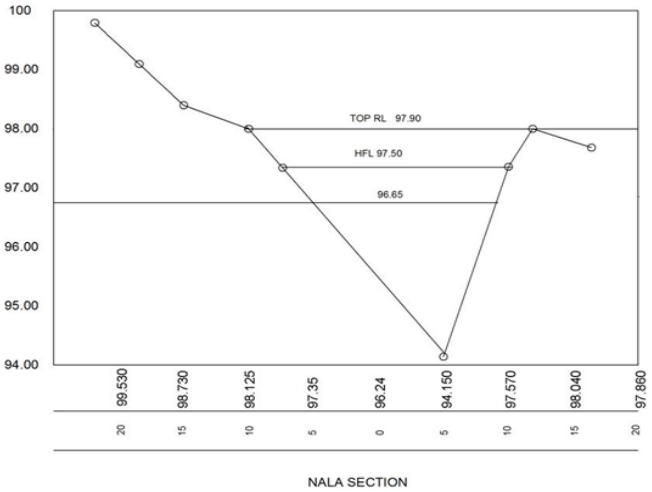


Fig -1 : Check dam longitudinal section

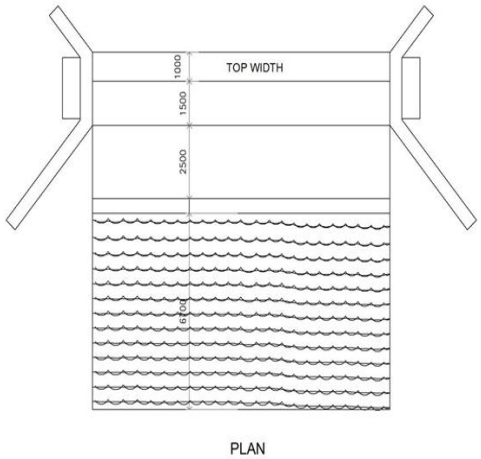
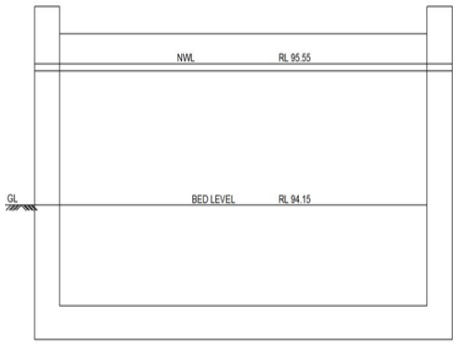


Fig-2 : Check dam plan

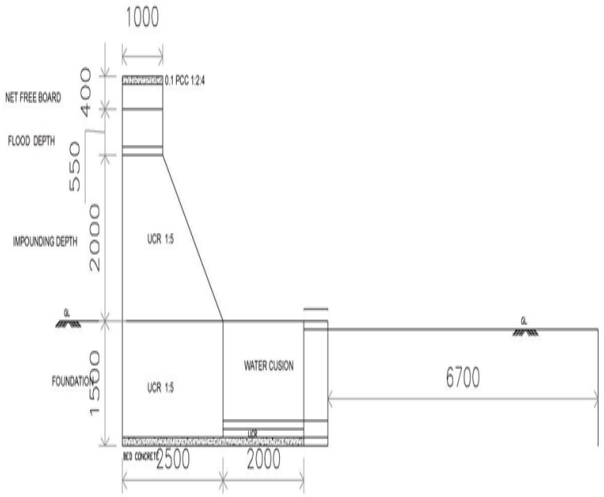
4.4 PROJECT MANAGEMENT COST.

Sr. No.	Specifications	Rate	Total Cost
1	WOTR Field staff and 0 & M of Motor Cycle		
	Community Organizer / Field Officer	3000	144000
	Agronomist/Agril.EnggiCivil Engg.	4000	192000
2	Promotion and Training (for 4 years		
	Agriculture	10000	40000
	Health	5000	20000
	Veterinary	5000	20000
	Forestry	8000	32000
	Women Development	10000	40000
	Youth Development	10000	40000
	Tribal Development	3000	12000
	Watershed Management Trg.	7000	28000
3	Project Management		
	a) Recurring Expenses		
	Project Manager	6000	288000
	Office Clerk	2500	120000
	Driver	1600	76800
	Travel Cost of Staff.	2000	96000
	0 & M. of vehicle	6000	288000
	b) Office Expenses		
	Office Rent	500	24000
	Watchman , Warden	300	14400
	Postage	200	9600
	Electric Bill	200	9600
	Stationery	500	24000
	Capital Expenses		
	Jeep	400000	400000
	Motor Cycle	42000	42000
	Survey Equipment	20000	20000
	Cupboards	4000	4000
	Computer	50000	50000



ELEVATION

Fig-3 : Check dam front view



SECTION A-A

Fig-4 : Check dam side view

5. CONCLUSION

The aim of this project is to emphasize the importance of the water conservation to overcome from shortage of water. The activities undertaken in this project include soil and water conservation measures like construction of Bandhara. We estimate the quantity of water about 0.74 TCM and work out the cost of construction about 9 lacks. By construction of Bandhara the stored water is use for agriculture purpose and to increase infiltration and to prevent soil erosion. Maharashtra has a large drought prone area (52%) and has faced recurrent drought and famines (1907, 1911, 19181920, 1972, 2013 etc.) which generated attention on the improvement of agriculture in non-irrigated areas.This study period was too short to confirm effects of watershed management. However this study can be used as a baseline study for future evaluation.

1. The control of damaging runoff and degradation and thereby conservation of soil and water may achieve.

2. The infiltration of water may achieve.

3. The downstream area is protected by moderate floods can be possible.

4. Enhance the ground water recharge wherever applicable is to be possible.

5. Runoff water is managed and utilize for useful propose is to be possible.

6. Check for soil erosion and to reduce the effect of sediment yield on the watershed may possible.

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