WATERSHED MANAGEMENT IN SANGAVE VILLAGE – A CASE STUDY

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Abstract

Watershed management plays a important role in minimizing soil erosion and water conservation. Some of districts in costal Maharashtra face the perennial problem of water shortage despite of getting heavy rainfall in monsoons insufficiency of water is particularly acute problem during the month after monsoon season. Ratnagiri is one such district, where a number of village and hamlets inhabited by adivasis or tribal's face acute water shortage leads to many health and socio-economic problems. Also because of lack of knowledge of village level causes the water scarcity. This study aim to cater the water scarcity by implementing watershed management practices.

Keywords: Watershed, water scarcity, Cementnala bund,.

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1.Introduction

Watershed is defined as a geo-hydrological unit to a common point by a system of drains. Watershed is the land and water area, which contributes runoff to a common point. A watershed is an area of land and water bounded by a drainage divided within which the surface runoff collects and flows out of watershed through a single outlet into a large riveror lake. The entire area which applies water to a stream or rivulet or a river at a particular point in its flow is the watershed or catchment area.The top of watershed is called hill or ridge portion.The ridge line partition one watershed from another or can be said to be the boundary of watershed.

About 8208Km.sq of land in parts mandangad,Rajapur,Devrukh,Chiplun,Khed,Lanja,Dapoli,Ghuhagad,Hedchitalukas along the coast and creek have been rendered saline due to breach in age old bunds. In affected areas,ground water quality has also become saline therefore rendering it unsuitable for irrigation. The prominent hill ranges,isolated hillocks, undulation etc. in the district give rise to higher runoff rat here that natural recharge. The formation due to poor storage and transmission characteristics get fully saturated during the monsoon and situation of rejected recharge is resulted.These aquifers then are drained naturally due to slopping and undulation topography.

2. Case Study

The area taken for case study is located SangaveTalukaSagmeshwar.Total area taken under mini water shed project was 118.90ha.This watershed area comes under heavy rainfall zone even then during summer season water scarcity is noticed. The entire area is absorbs water but does not retain the water because of slope and ground condition. As a result this village face water scarcity in rest of the season and people cultivate only one crop in rainy season and hence vegetation cover is not so good in this area along with agriculture people also face water shortage for drinking purpose. Due to water scarcity agriculture is not the source of living for people in that village and hence we have taken this area under consideration for the watershed management project to solve the water problem faced by villagers.

Ratnagiri District Map

Total Population: 595

3. Problem existing in the area.

a) High rainfall above 3000mm season causes severs soil erosion.

b) Low income level hence low living standard.

c) Lack of water supplies in summer season.

d) Very low irrigation.

e) High percentage of barren, uncultivable waste land.

f) Agricultural production is only one i.e. rice.

Sr.No	Year	Average Rainfall (mm)	Highest Rainfall Intensity in a day (mm/day)	Temperature (^{o} C)		Relative Humidity (%)	
				Max.	Min.	Max.	Min.
1	2006	6222	525	41	17	74	63
2	2007	4193	276	42	16	79	68
3	2008	5086	224	38	16	83	72
4	2009	5210	225	40	18	81	69

5	2010	6762	553	39	16	84	70
6	2011	6942	223	38	16	75	66
7	2012	5874	187	40	14	73	63

Rainfall record last seven years.

4. Problem analysis in the area.

After having a meeting with Grampanchayat we came to know the water problem faced by the people in that area. The water level in well coming under our watershed area had reduced from 6-7m during rainy season to 0.8-1m.Even if the soil condition was good due to water shortage people cultivated only one season crop during the rainy season. On the hill top due to heavy rains erosion of the soil that is taking place is too high thus reducing the soil cover on the hill surface.

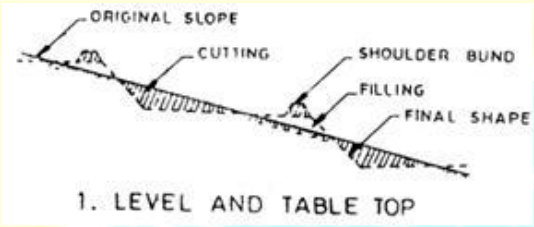
5. Geology

Deccan Trap Basalt of upper layer up to lower level also major rock formation and intruded by no. of dykes. The western part of the district consisting basalt flow is altered to latrerite recent deposits comprising beach sand and alluvium occur along the coast and in river mouth.however theydo not form potential aquifer ground water in deccan trap basalt occurs mostly in upper weathered and fractured parts down to 10-15m below the ground level under un-confined condition.The water bearing strata at deeper depth exists under semi-confined to confined condition.The dug well in these area show rapid decline in water level during post monsoon period and practically go dry in peak summer in foot hill zones near water table is relatively shallower near water course.The yield of dug well tapping upper phretic aquifer ranges between 45 to 60 m^3/day.

6. Proposed Work in the watershed

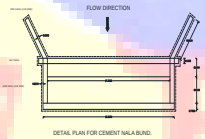
Treatment proposed on hilly area. On the hilly surface Area treatment is proposed as soil erosion in large amount has taken place. Cautious contor trenches are providing on hilly surface. The aim

of providing this tranches to reduce surface water flow velocity promotes infiltration and prevent pollution from drainage in to water bodies as shown in fig.



2) Treatment proposed along Drainage line.

Also the drainage line treatment one Cement Nala Bund is constructed across the drainage line. It is the Cement-Concert structure which helps to store the water as upstream side of nala bund as well as to recharge the ground water table in peak summer.



7. Conclusion

Water is available during rainy season. Particularly in Konkan region where more than 3000mm rainfall is available. But in this region slop of ground is so steep all the rainwater is flows towards the outlet very fast and results in scouring land, it is major problem. After the rainy season around month of December the water scarcity starts. As large amount of ground water is drawn

out from under ground reduction of ground water table which in turn reduces water level in wells.

To resolve the problem of water storage in rural area the technique of watershed management is best suited. By implemented this method the ground water table is increased thus providing sufficient water to farmer during summer season. The method is not so costlier also provides employment to villagers. It also reduces soil erosion. By implementing watershed management techniques farmers can also cultivate all season crops. Hence watershed management is so good technique to solve the problem of water in rural area and also increase the revenue of rural population.

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