Integrated Watershed Management of Kanadar Village

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***Abstract*- Watershed Is Not Simply The Hydrological Unit But Also Socio-Political-Ecological Entity Which Plays Crucial Role In Determining Food, Social And Economical Security And Provides Life Support Services To Rural People. The Criteria For Selecting Watershed Size Also Depend On The Objectives Of The Development And Terrain Slope. A Large Watershed Can Be Managed In Plain Valley Areas Or Where Forest Development Is The Main Objectives. In Hilly Areas Or Where Intensive Agriculture Development Is Planned, The Size Of Watershed Relatively Preferred Is Small. We Are Working Watershed Management In Kanadar Project Which Are The Part Of Integrated Watershed Management Program. Kanadar Project Contains Nine Micro Watersheds And Our Project Located In Kanadar Village. During This Project We Will solve problem of the soil erosion, problem of drinkable water and water for the irrigation purposes. The Likely Outcomes After Complication Of This Project Are Employment, Increase Ground Water Level, And Water For Drinking, Stop soil erosion at bank of river.**

***Index Terms*- Watershed, Water, Water conservation, Soil stabilization**

I.INTRODUCTION

A watershed is an area from which runoff, resulting from precipitation, flows past a single common outlet point into a large stream, a river, lake or a reservoir.
Integrated watershed management is adaptive, comprehensive multi resource planning process that seeks to balance healthy social, economic and ecological condition within watershed.
Watershed development programme is started in Gujarat in 1994-95 with coming into effect of the first common guidelines. The three main Programmes under the WDP of ministry of rural Development, viz. DPAP, DDP and IWDP are being implemented in different districts of Gujarat. The stress on water resources started in Gujarat due to green revolution, fast development in industrial sector and change in health and hygiene habits of people of Gujarat. Hectic exploration and exploitation of ground water for drinking, agricultural and industrial purposes has been practiced all over the Gujarat state for past few decades, which has resulted in dwindling of water levels.

II. STUDY AREA

Kanadar project is located in vijaynagr Taluka, Sabarkantha District of Gujarat state and it's a cluster of nine micro-watershed. We are selected a Kanadar village from this micro-watershed for surface water conservation. Total Geographical area of this watershed is 1919.3 ha and area proposed to be treated under integrated watershed management is about 1823 ha.The area is characterized by high temperature and low rainfall. The Kanadar watershed project is characterized by heavy runoff of soil with varying slopes. Kanadar project area having totally depended on the rainfall. In this area rainfall is sufficient in this area and will be good for kharif and early rabi crops. The average rainfall of this area is about 818mm with a highest intensity of 1125mm. Area faces continual crop failure that comes on whenever there is a shortfall in the total quantum of rain. Having varying slope range of 4-7% so rain water will be percolated down very fast and cropping of Rabi crop face problem in late maturity periods.

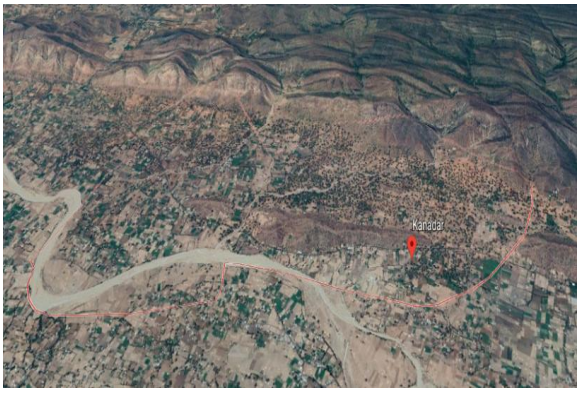
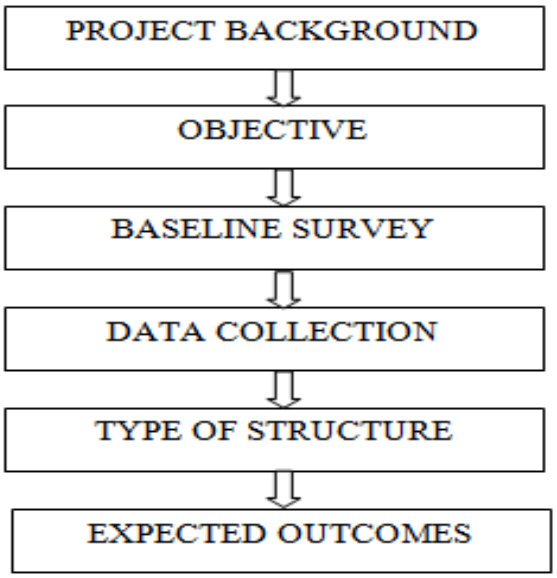


Figure 1. Kanadar Village

Figure 2. Soil Erosion

III. METHODOLOGY



IV. BASELINE SURVEY

1. Bio Physical Survey
2. Data Collection

V. DATA COLLECTION

Geographical area of project	Forest Area	Land under agricultural use	Rain fed Area	Cultivate	Non Cultivate
1919.3	1247.60	462	462	113.40	96.30

Table 1. Land use pattern

Geographical Area in Ha	Major soil Types		Topography
	a) Type	b) Area in ha	
1919.3	Morrum soil, Stony, Hilly	1823	Undulating land with varying with 4-5%

Table 2. Soil type and topography

Cause	Type of Erosion	Area affected ha	Run off (mm/ year)	Average soil loss (Tonnes/ha/year)
Water erosion				
A	Sheet	302.18	216	2-3
B	Rill	845.2	458	
C	Gully	354.97	840	
D	Ravenous	00.00	0.00	
Total		1502.35	1514	2-3

3. Soil Erosion

Rainfall Data

2011 – 976mm
2012 – 772mm
2013 – 1125mm
2014 – 871mm
2015 – 866mm
2016 – 789mm
2017 – 917mm
2018 – 540mm

So by all above survey and data collection main issue is water conservation and drinking water as well as irrigation purposes.

VI. CONCUSION

Watershed management is important because due to which increase the self-employment of the people and thus improve the life style of the people. We are trying to improve watershed management by designing or repairing the available structure. By the implementing some structure in the village like check dam, Protection wall, problems which are villagers facing against water like soil erosion and other issue of water is carried out by this implement. Land leveling is carried out by the making of Gabion protection wall.

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