

Ground water recharge by rain water harvesting systems in rural area in small river location at Sikar district, Rajasthan”

The Board of Directors of the Company has approved the Project on ground water recharge by rain water harvesting systems in rural area in small river location in Rajasthan” under its CSR policy for implementation during 2022-23.

The present proposed location is highly draught affected area which needs effective water harvesting system to improve the water conservation and livelihood development. The project is expected to benefit the app. 4000 households around 7 villages with 1, 83, 115 cusec water storage. The duration of the project is 18 months.

1. Background of the proposed project

The district is largely part of semi-arid region and is typically characterized by hot summer, fairly good rainfall. Humidity levels are quite low resulting into general dryness in the air, except in the brief monsoon season when the humidity reaches up to maximum of 60%. The months of March to June are summers when the maximum temperature approaches 38°C to 40°C whereas the winter months witness extremely cold nights with temperature dropping to about 1°C. The average temperature around the year is about 16 to 20 °C. The average rainfall in this district is just about 465.7mm, mostly received from the south-west monsoon during the months of July to September.

The Katli River is a rainfed seasonal river of Shekhawati region of Rajasthan in India. Its length is little more than a hundred Kilometers and mostly flows through Jhunjhunu District for entire of its length. The Katli River originates in the hills south and southwest of Guhala village in Sikar District (27° 44': 75° 32'), flows north through Sikar and Jhunjhunu districts and finally disappears in the sand dunes near Naurangpura village in Churu district (28° 22'30": 75° 27'30") after flowing a distance of about 134 km. The Katli river flows through the villages Ganeshwar, Khandela, Guhala, Panchlangi, Bagholi, Ponkh, Kakrana, Gadhla Kalan, Khatkar, Ked, Chnana, Solana, Sultana, Badagaon, Makhar, Bagar and Sulkhania. The river Katli flows only during rainy season. Further the natural conditions like arid climate, high temperature and low amount of rainwater affect the availability of surface water. The other sources like groundwater are the major source of water which mostly fulfills the demands of rural and urban households. Mostly the water scarcity is one of the major issues in this region.

Ground water resources are under stress in the district as indicated by resource assessment studies and further categorization of blocks on the basis of stage of development. The district falls within 'Over Exploited' category implying that more than 100% development has already taken place and the dynamic ground water resources in the aquifers of are exhausted (Ground water department, Rajasthan). In view of above water scarcity scenario in the proposed project region, the proposed project is mainly aim to increase the ground water level through construction of anicut/mini dam across the Kantli River at Guhala village, Sikar district.

Catchment Area:-

The Catchment area is around 3.7 km in diameter and the proposed location elevation is 428 m.

The outside edge of a catchment is always the highest point. Gravity causes all rain and run-off in the catchment to run downhill where it naturally collects in creeks, rivers, lakes, or ocean.

Aerial photograph:-

Let-Long= 27 ° 42'12"N 75 ° 37'09"E



Proposed Anicut location (Guhala village, Katli river, Sikar, Rajasthan)

Objectives and work plan

The main objective of the proposed project is to construct the mini dam across the river Katli to increase the ground water recharge and to overcome the water scarcity in the region.

The specific objectives are:

- Identification and design the mini dam for the proposed location
- Construction of Anicut/Mini dam within Katli river at Guhala village of identified location

Expected outcome

"Mini dams" are small barriers built across the direction of water flow on shallow rivers and streams for the purpose of water harvesting. The small dams retain excess water flow during monsoon rains in a small catchment area behind the structure.

The specific outcome includes following:

The after successful implementation of the proposed project, the 2 km below highlighted area with approx. 22,975 human populations and approx. 3000 animal population will get direct benefit.

- Pressure created in the catchment area helps force the impounded water into the ground. The major environmental benefit is the replenishment of nearby groundwater reserves and wells.
- The water entrapped by the dam, surface and subsurface, is primarily intended for use in irrigation during the monsoon and later during the dry season, but can also be used for livestock and domestic needs.
- The check dams have helped to reduce poverty by providing additional surface and underground water leading to:
 - Increased agricultural yield
 - Increased income from the sale of crops
 - Increased revenues from livestock
 - Increased growth of fodder