

Ground Water Recharging: A Sustainable Approach for Water Resource Management in Rural Area

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Abstract—Rajouri is the border district of Jammu and Kashmir state which spreads over a geographical area of 2630 Km². Lying between an elevation of 400 – 6000 m amsl and with the varying average temperature from 7°C to 37°C it experiences hot summers and moderately cold winters. Topography of the district consists of numerous hills and small valleys of meandering brooks. Water bodies exist in higher terrain are mostly seasonal which rely completely on rains. The springs are the only source of portable fresh water for the people of the region. Since, the district has a population of 4.776 lacs of which almost majority inhabit rural areas. Therefore, the challenge remains to fulfill the water requirements of people through these water bodies. The springs serve the people inhabiting higher reaches are getting dry. With the absence of regular municipal water supply in the upper reaches, women have left with no other option but to walk longer distances amidst the rough terrain to meet their domestic water requirement. Because of scarcity of water the agriculture in these hilly parts also suffer a lot accounting for poverty of the rural masses of the region. Therefore there is a dire need for following sustainable approaches for the harvesting of the water and recharging of the springs as well. Therefore switching on to the technologies such as rain water harvesting and recharging of dried springs will help the rural people to overcome problems related to dearth of water. The paper will discuss about the possible options available for the harvesting of groundwater which in turn will help in reviving of dried water bodies in this remote part of the country.

1. INTRODUCTION

Rajouri, one of the border districts of J&K state is situated at the lap of Pir Panjal mountain range. It is located between 70 - 74°4' East longitude and 32°58' -33°35' North latitude. The district can be broadly divided into hilly and plain areas, which is drained by rivers Nowshehra Tawi and Thandepaniwali Tawi. Besides, there are two other rivers like Niari Tawi and Ans river. The Dhaula Dhar range runs across the north eastern part of the district. Topography of Rajouri, Budhal and part of Kalakote tehsils consists of numerous hills and small valleys of meandering brooks. The climate varies from semi-tropical in the southern part to temperate in the mountainous northern part. Its boundaries are connected with district Jammu and Reasi on the eastern side, district Poonch on the west, Pulwama on the north and the famous Red Cliff Line (L.O.C) passes at the south end of district. The major landuse/landcover categories identified are Built up land, Agriculture land, Forest land, River/ stream, Grassland,

Grazing land, Snow covered area and Glacier [2]. Majority of the population inhabits the rural areas where there is dearth of regular supply of portable water. This obviously affects the hill agriculture as well leading to the poverty of people.

Therefore the study was conducted focusing on the possible options available for the harvesting of groundwater which in turn will help in reviving of dried water bodies in this remote part of the country and augment the water requirements of the masses.

2. MATERIALS AND METHODS:

The whole district was surveyed using GPS [1] to record the number of existing water bodies and also the sources on which people depend on fulfilling their water requirements.

3. OBSERVATIONS:

After visiting the different regions of the district it was observed that the terrain of the region is montane therefore water scarcity is obvious. Whatever water bodies which exist in the area are mostly seasonal thus relying completely on rain. Most of the springs of the region have got dried as well. Even the borewells dug at most of the places have also dried.

The worse effect of this is on the rural women who have to walk to longer distances to meet their daily water requirements.

Therefore the need is to follow a sustainable effort by either harvesting rain water or recharging of the dried springs. Recharging of springs using environmental isotopes is also being used world over and is a good option in this part also [3].

Such techniques have been successfully adopted in many parts of the world and is of maximum use as well.

Therefore, it is suggested to develop these means of water recharging and water harvesting as well to overcome the water crisis in the rural part of the country

4. ACKNOWLEDGEMENTS

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