
Success Stories of Artificial Recharge Schemes in State of Karnataka

With increasing demand of water by various sectors, pressure on ground water resources has increased tremendously in the state. The dependency on groundwater has increased many folds during the recent years and the groundwater extraction for irrigation, domestic and industries have resulted in lowering of water levels, long-term water level declining trend and even drying up of wells. Being majority of the area comprising hard rocks, replenishment to ground water is limited through fracture/ joints and in upper weathered layers. Recharging of aquifer at sites indicated feasibility and positive impact on ground water scenario.

Central Ground Water Board had also taken up Pilot and Demonstrative Artificial Recharge studies under Central Sector Schemes to augment the groundwater resources during VIII, IX & X Plans. The schemes have been executed through the State Agencies and NGOs with technical and financial support of Central Ground Water Board.

Artificial recharge to the ground water in the state of Karnataka, have been carried out at following location by agencies and proved successful:

1. Gauribidanur & Mulbagal taluk of Kolar district under Central Sector Scheme.
2. Artificial Recharge studies in Jnanbharathi campus, Bangalore University.
3. Scheme completed under Fresh Water Year activities

1. Gauribidanur & Mulbagal taluk of Kolar district under Central Sector Scheme.

Findings:

Post desilting period revealed built up in ground water storage to the tune of 2-4.5 m downstream of the tanks.

Watershed treatment revealed built up in ground water storage to the tune of 3-5 m in the phreatic zone.

Point recharge structure has benefited storage in the deeper aquifers

Financial Incurrence:

Gauribidanur & Mulbagal taluks of Kolar district- Cost of Project: 44.116 Lakhs

2. Artificial Recharge studies in Jnanabharathi campus, Bangalore University.

Under Central Sector Scheme, a scheme on artificial recharge to ground water is being executed in Jnanabharathi campus, Bangalore University which cover an area of about one sq km. The scheme on completion would harness 0.043 MCM (43,000 m³) monsoon run off going as waste and can improve ground water levels and sustainability of abstraction structure in the area through artificial recharge structures such as check dams and subsurface dyke. This scheme is only a beginning in the University campus and all the plans on the advanced stage to launch a model environmental eco-park in association with the University.

The salient features of the scheme are:

Catchment details	Check Dam 1	Check Dam 2	Check Dam 3
Area (sq. m)	260000	340000	410000
Yield (cu.m)	14860	19430	23430
Water available for recharge 75% of yield (cum.m)	11150	14570	17570

Total water available for recharge: 43290 cu.m.

The benefits include direct and indirect in any concerned artificial recharge schemes. An attempt is made to harness the natural surface water run off (43290 cu.m) to recharge the aquifer system instead letting it into a drainage course. This will help to maintain the productivity of the existing water supply of the borewells which supplies water to the University and Sports Authority of India campus. The scheme after completion is likely to recharge about 21645 cu.m. (50% of 43290 cu.m.) of potable water into the depleting aquifer system in the area. Considering 20 years span of life for the structures, the annual investment with 10% rate of interest works out to Rs 80740.00. The cost per thousand litre of water harvesting works out to about Rs. 2.00. In addition to above, the possible intrusion of polluted Vrishabhavati water tot the aquifer in the area will be prevented.

An amount of Rs 13.75 Lakhs was sanctioned for the scheme. Execution of the recharge structures were completed.

3. Scheme completed under Fresh Water Activities and total amount spent in the scheme

S. N.	Project Area	Cost of project (Rs. in lakhs)
1.	Raj Bhawan, Bangalore (phase-II)	12.2
2.	Armed Police Training School/Police Driving Maintenance school, Yelhanka, Bangalore	13.5
3.	Airmen Training station, Sambra, Belgaum	15.0
4.	Indian Institute of Horticulture Research, Hesaraghata, Bangalore	1.17
5.	Bangalore Development Authority, Head Office Building, Bangalore	12.5
Total		54.37