

(1) In addition to new bore wells, defunct bore wells and dry wells in the surrounding area could be used for rainwater collection.

(2) Rooftop and paved rainwater harvesting should be compulsorily (legislation) done for large department / institutional buildings of the city.

(3) The rainwater collected should be put to desiltation and filtration prior to transporting down the earth through existing or newly constructed later harvesting structures like dug wells, bore wells, shafts, trenches etc.

(4) A detailed water management plan for the entire city is required to be prepared for utilizing the maximum quantity of the available surface (rainwater) resource which is currently going to waste. From the carried studies the broad description of the groundwater development and management plan envisaged for Gwalior is as under:

9. OVERALL GROUNDWATER DEVELOPMENT AND MANAGEMENT PLAN

The number of water harvesting structures should be distributed dividing balance resources equally for dug wells and tube wells and taking consideration of 100 % development of net groundwater availability in the block. Therefore, it is suggested that a scientific study at every five years' period is a must to check the impact of groundwater development on groundwater regime and accordingly number of structures should be modified. By considering these points, there are many ways to adopt this practice but the structures which are feasible in the study area & almost across Gwalior are: contour bundings, gully plugs, check dam, percolation tank, recharge shafts & subsurface dykes.

Broadly, the area for artificial recharge have to be divided into two categories i.e. overexploited and safe to semi-critical area where long term trends of groundwater level is declining. It is observed that gully plugs and contour bunds may be constructed on the upper reaches of streams. Percolation tanks can be considered in areas which provide sufficient spread. In locations where streams are of 5-6 m wide and have sufficient depth, a series of small check dams in the stream course may fulfill the objective of conservation of groundwater. During rainy season, it should be mandated that the farmers use bunds in the area for storing the water in their fields. In areas where clay beds that prevent percolation of water to the unsaturated zone in the weathered shale and granites, recharge shaft may prove good structures for artificial recharge of groundwater. In the alluvial flat terrain areas, due to very poor drainage density the feasibility of percolation tanks is almost remote. In these areas where the phreatic aquifer has gone dried and the clay beds do not allow percolating the water in deeper level, recharge shaft is only means to be adopted to augment the groundwater.

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ABBREVIATION

AR	Artificial Recharge
CGWB	Central Ground Water Board
RWH	Rain Water Harvesting
VES	Verical Electrical Sounding