

URBAN LIVEABILITY FORUM

PRESENTS

"MY RESOURCE. MY RESPONSIBILITY"

A knowledge series from the experts on effective management of resources to enhance urban Liveability during and post pandemic.

GROUND WATER CRISIS

by, Col. Shashikant Dalvi (retd.),
Rainwater Harvesting Expert & Water warrior,
Founder - Parjanya

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- STEPS TO INCREASE THE GROUNDWATER TABLE - RESPONSIBLE PARTICIPATION

"My Water. My Responsibility"

A knowledge article on effective management of Water resource to enhance Self Sustainability in Urban Societies.



Ref. Pic. 1

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**THE MAIN REASONS FOR
GROUNDWATER CRISIS**

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ADDRESSING
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THE MISSING LINKS**

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Ground Water Crisis

by, Col. Shashikant Dalvi (retd.),
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Groundwater is similar to our Recurring Deposit in Banks. In case of groundwater recharge, it is Recurring Deposit by Mother Nature, to maintain groundwater table for use in summer time. Groundwater is used by all the users, unfortunately without resorting to recharging of underground aquifers. Since most of the surface water is heavily polluted, there is huge demand on groundwater resource.

Our groundwater is over extracted at Unsustainable rate,

Reasons for Groundwater Crisis

1. The groundwater level in India has declined by 61 per cent between 2007 and 2017 and of the extracted water 89 per cent is used for irrigation, according to the census.
2. Most of the Rural drinking water schemes in India are based on Groundwater. In Maharashtra , 80 % of such Rural schemes are groundwater based. Around 60% of Urban water supply is also based on ground water.
3. Agriculture sector consumes around 60% of groundwater, in the absence of effective Irrigation network. Irrigation efficiency in India is very low around 40%, means 60% of all water, especially groundwater, used for irrigation is lost.
4. Industrial sector depends mostly on groundwater to meet their demands. Take case of Bottled Water Industry, they extract more than 20,000 liters of ground water per hour. Groundwater level in such areas is depleting rapidly.
5. In Domestic sector 80% of water in household is wasted. In Israel 100% of used water is Recycled and 94% is supplied back in to households.
6. India extracts 25% of ground, which is highest in the World and is Unsustainable. NITI Aayog on its last year's report had mentioned that 21 Cities will run out off Groundwater by 2020. Mainly because of groundwater over extraction without Recharge.
7. Rapid deforestation, has reduced natural percolation of rain water to recharge ground water. Trees help natural percolation in big way.



Ref. pic .2

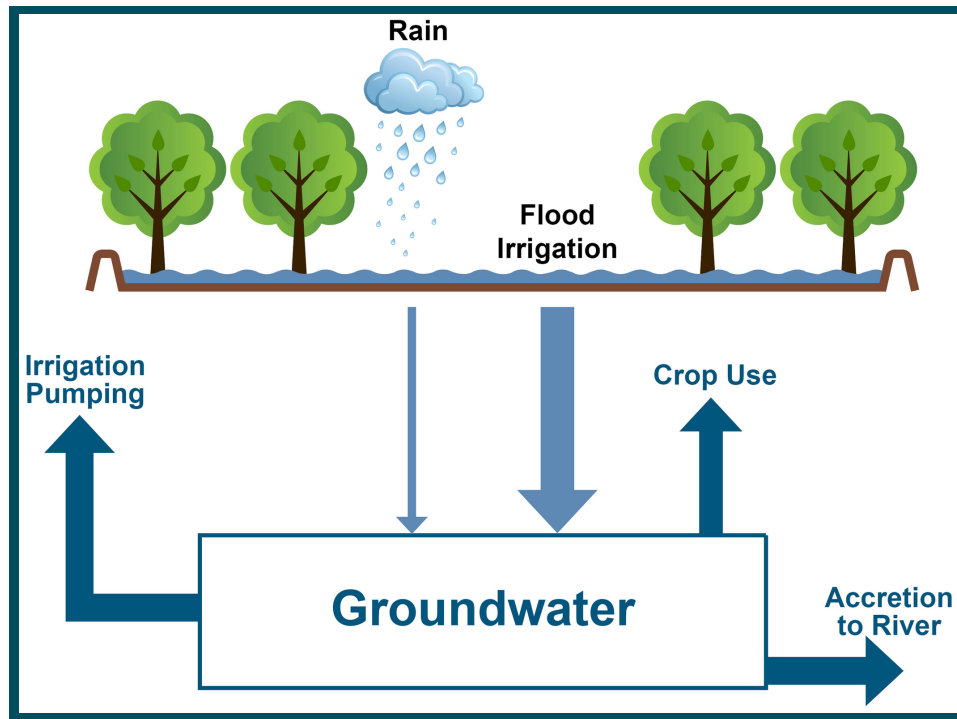
All the users heavily depend on groundwater to meet their demands. However despite groundwater recharge policy, most of the users are not implementing such policies.

Also these policies lack following support,

1. Availability of awareness material in local language including types of systems with drawings.
2. Availability of trained craftsman to implement such schemes on buildings.
3. Groundwater recharge cell in every ward office, gram panchayat Office etc should have list of approved agencies, awareness material, team to check executed system, copy of ground water recharge systems laws / guidelines.etc.

Steps to be taken to increase groundwater table :

1. Groundwater recharge channelizing rooftop rain water in to underground aquifers. Such systems should be mandatory on all existing and new buildings. This will utilize maximum potential of rain water, in domestic, industrial, commercial, government and domestic.
2. In agriculture sector all methods of Water Shade Management , to channelize rain water to percolate in to ground water table. This may be farm ponds, CCTs, etc

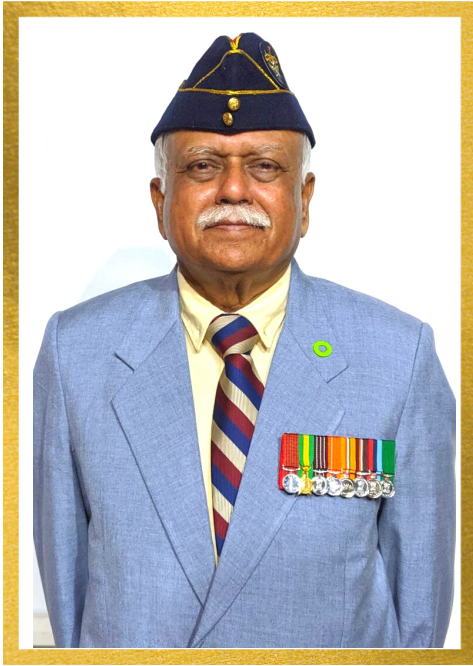


Ref. pic .3

3. Industry should be permitted to use ground water only if Industry had implemented groundwater recharge systems.
4. Audit of existing water bodies on the farm land and surrounding area must be carried out to ensure their carrying capacity is full, this will also permit percolation of flowing water.
5. Aggressive tree plantation in the farm land to permit natural recharge of rain water. More the trees more is the natural recharge.
6. Storm Water Drains every where must have recharge pits at regular intervals, to permit percolation of rain water for ground water recharging.

Majority of these are doable and economical ground water recharge systems. Based on the author's 17 years of field experience in both rural and urban sectors, he confidently advocates that Groundwater table can be recharged effectively with peoples participation.

ABOUT THE WRITER



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Col. S.G. Dalvi served in the Indian Army from 1969 to 2002, Post retirement, he implemented Pune city's first roof-top **rain water harvesting** project in 2003 in his housing society. This resulted in a 'Tanker Water' free society, which saved costs AND improved the water table in Viman Nagar area.

Buoyed by this success, he started spreading awareness on water conservation, through his organization, **PARJANYA**.

He has successfully helped more than **600** different organizations like Housing Societies, Schools, Colleges, Hospitals & Industry to improve the falling ground-water table in their locations and to overcome water shortages.

He has spread awareness through seminars, lectures and workshops in schools, colleges, community centres, and corporate events. He has also participated in more than 200 awareness campaigns on this topic, through Print, Radio & TV media.

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