

GROUNDWATER DEPLETION AND ITS CONSEQUENCES

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Abstract—“Groundwater constitutes 97 percent of global freshwater and is an important source of drinking –water in many regions of the world”(Schmoll *et al.* 2006). This may considerably influence our planet ,but unlikely the government of any country is unable to rectify this problem for saving our “Mother Earth”.85% of the rural and 50% of the urban population in India is dependent on groundwater for satisfying their basic requirements.54% of groundwater wells of India are declining-said the report. It is more likely to be next to impossible to control using water and get it purified from all the impurities such as undesirable chemicals, toxic elements etc. More the increase in population more is the rise in demand for livelihood (food, water etc.)

Introduction

As per new research currently occurred, groundwater depletion has been a major concern across the nation. India is definitely not out of the race. It has severe implications from a gradual decline in agricultural production to water scarcity. About 40% of India’s population possibly and no access to drinking water by 2030.Depletion may lower the water table level causing difficulties in extracting groundwater for usage, the user has to dwell deep down thus, increasing his cost for extraction. Deep within the ground often intermixes with saltwater that we shouldn’t drink.

What are its major causes?

HYV – The use of high yielding variety (HYV) seeds and fertilizers has led to the overuse of groundwater resources.



Figure 1 : Major causes of groundwater depletion

Source : allamericanenviro.com

Increase in population – Rapid rise in human density with increase demand for food, thus expansion in land under irrigation ,this in resultant leads in exploitation of groundwater in India. Groundwater constitutes 97 percent of global freshwater and is an important source of drinking –water in many regions of the world”

Excess pumping water from ground – This is a major cause for groundwater shortage, not allowing water levels to replenish its levels after pimping at a serious rate, cause of concern.

Natural causes– This includes uneven rainfall, climate change, Deforestation, high dependency on summer monsoon and weaker summer monsoons causes droughts. Such period results in more water extraction from the ground to meet various needs, this leads in groundwater depletion.

Governmental Leading Actions:-

Formulation of the National Water Policy (2012) by Department of Water Rejuvenation.

This policy commence:

- Harvesting and conserving of rainwater.
- Meeting the need for availability of water by direct use of rainfall.
- Conservation of river bodies and infrastructure in a scientifically manner through community participation.
- Creation of a new ministry of Jal Shakti for dealing all the water related matter at one place in an integrated manner.
- The Government of India has approved Atal Bhujal Yojana (Atal Jal), a Rs 6000 Crore Central Sector Scheme, for sustainable management of groundwater resources with community participation in water stressed blocks of Gujarat, Haryana, Karnataka, Madhya Pradesh, Maharashtra, Rajasthan and Uttar Pradesh.
- Mass programmes (Training, Seminars, Workshops, Exhibitions, Trade Fares and Painting Competitions etc.) are conducted at regular intervals every year under the Information, Education and Communication (IEC) Scheme of DoWR, RD & GR in various parts of the country to promote rainwater harvesting and artificial recharge to groundwater.
- The Department of Water Resource, RD & GR has instituted National Water Awards to encourage good hands-on on this topic.
- Government need to work out the legislation policy in order to protect and control groundwater resources, helps in evaluating the impact of agricultural operations.
- Mapping of groundwater, ground and surface water monitoring, watershed models should be implemented simultaneously in different regions as well. This allows us to control and analyze water use and factor responsible for pollution respectively.

Endorsement (Advice)

1. Using native plants in our landscape. They not only look great but also need much lesser water and fertilizer, choosing varieties that are easily adaptable to our surroundings.

2. Reducing the need and usage for extensive chemical applications by using fewer quantity.
3. Management of toxic dispose properly like unused chemicals, pharmaceuticals and other substance .Many communities hold household hazardous waste collections, contact the one near you.
4. Do not let the water run un-necessary when not in use, rather shut off the tap.
5. Be a smart washer by limiting ourselves.
6. Reduce the amount of “stuff” you use and reuse what you can. Recycle paper, plastic, cardboard, glass, aluminium and other materials.
7. Get involved in water education! Learning by doing more about groundwater and sharing with other too.

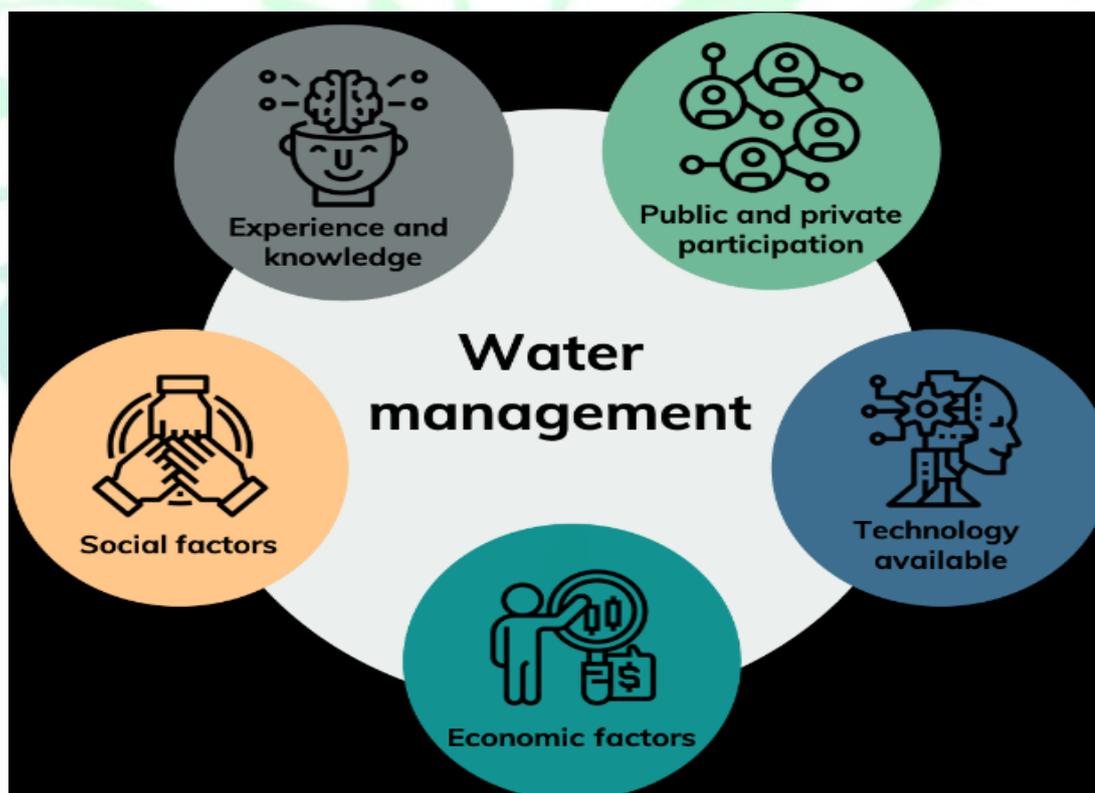


Figure 2: Endorsement for water management

Source: researchgate.net

Wrap-Up – Each person on this planet plays a vital role in the contribution for preventing land and water. Empowering the agricultural activities which will minimize its irrigation is

obligatory “to serve an increasingly productive agriculture, and investments...to adapt yesterday’s systems to tomorrow’s needs”(Molten, 2007).

Nitrate and pesticides as one of the principal nutrients that is considerable for groundwater and for health hazards due to their chemical component. Mass media need to participate to inform the people regarding the negative impact of agriculture and possible steps for its prevention. Challenges are increasing day by day with the increase in advanced technologies that blocks the raw resources route becoming irreversible .Lowering the use of hazardous elements, toxic chemicals alone would not be enough to retain the conditions. If people doesn’t care about the land they live upon then the days are not so far when the land will take exact revenge for itself, but till then the time will be gone. Therefore, this issue needs to be rectified as early as possible with prompt actions to save nation from its deadly consequences on mankind.

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