



Waste Water Treatment, Recycle and Reuse

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Government of India - Directions

- **Jal Jeevan Mission (JJM)** - Rural Drinking water program Subsumes the earlier National Drinking Water Program is having nearly allocations of **Rs 86,000 Cr for Jal Shakti – 2022-23; Rs 60,000 Cr for JJM for 2022-23** **(Rs 1 crore = 126,000 USD)**
- **For SBM – Rural 2.0 is another 146,000 Cr for the 2021-2024**
- **WHAT IS JJM:** **(potable tap water in adequate quantities, quality and sustains)**
 - Functional HH tap connections FHTCs; schools, angan wadis, GPs, Community buildings
 - Prioritising quality-affected villages (access and availability – drought stricken; desert areas);
 - Community owned and driven operations – plumbing, O&M, water treatment and water quality;
 - Institutional reforms – strengthening state water and sanitation missions (SBM). Developing district and Village level water sanitation committees.
 - Source Sustainability – Rainwater harvesting ground water recharging, and other measures and rainwater harvesting

National Water Policy – 1987- 2002 - 2012 ...

- **Steps for augmentation**, conservation and efficient management of water resources a **state subject** although technical knowledge provided **through centre**
- **Amrut 2.0 – 2021 October** – aims for promoting circular economy of water through City Water Balance Plans; focusing on recycle/reuse of treated sewage, rejuvenation of water bodies and water conservation – 500 cities to all towns...

---- **This is where your topic is important**

Therefore I want to stress that – My House, My City, My Water My Responsibility

- we have to have an understanding of water balancing at HH levels
- How much - 135 Urban litres per capita/day (LPCD) and 55 LPCD Rural
- Start at Individual; HH; Community Neighbourhood/RWAs;
- CGWB – Aquifer Mapping & Management Program
- **National Water Mission** launched Sahi Fasal Campaign 2019 – farmers water stressed crops; example wheat/Chickpea

Reuse and Recycling of water

- **Scarce and a depleting resource**
 - *Over 2 billion people live in water-stressed countries, which is expected to be exacerbated in some regions as result of climate change and population growth.*
 - Globally, at least **2 billion people use a drinking water source contaminated** with faeces.
 - Microbial contamination of drinking-water as a result of contamination with faeces poses the greatest risk to drinking-water safety.
- **Of total water availability 2.5% is fresh water** and 30% of it is ground water; 68% is in glaciers and ice caps and **1.2% is surface water**
- **Water is pumped** to build the pressure and that requires electricity – 6-7 times it is pumped to reach homes.

Provocative Thoughts

- **Plug the wastage in supply systems** – Urban and Rural Context with water supply planning in the unauthorised colonies
- **Water Use Efficiency** Urban HHs and Rural Agriculture
- **Water seen - Government/Governance** problem – No Citizen Ownerships, Lenient approach
- **Mandatory:** Treated and recycled water to be used in horticulture than the Fresh water – RWAs, industry etc
- **Water Usage** to have Differential Pricing Systems
- **Focus on Water Budgeting; Rationing lest DISPUTES**
- Are we all feeling water is Important – NO !! As we get it easily, Scarcity; Difficulty is not Felt. – Largely
- **May be time has come to back to household water conservation methods.**
- **At HHs energy and water efficiency has to be adopted – Focus pressure cookers; allied low cost technologies**

Many Thanks

- Depending on the product being manufactured and the raw water quality in the region, **different levels of treatment technologies will be needed.**
- For example, for **medical, electronics manufacturing and food processing, deionized water is an essential ingredient.**
- **Called ultra-pure water (EUP)**, this has almost all of the minerals, dissolved gas and dirt particles removed from the water which could otherwise interfere with the manufacturing of precise and sensitive products, such as circuit boards.
- Feed water used in boilers and cooling towers to ensure efficiency, maximise boiler and system life, reduce maintenance costs and maintain levels of operational performance