

Landscape Review and Strategic Roadmap for Used Water Management in Maharashtra

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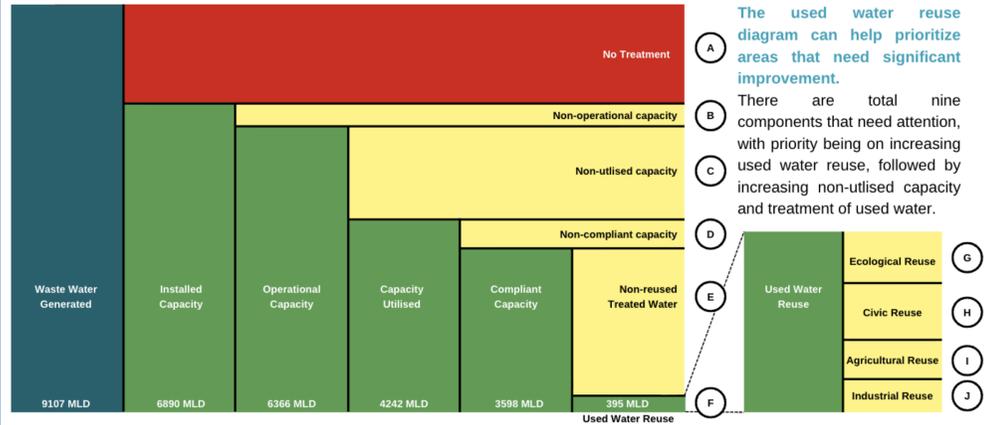


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Key Objectives The purpose of the study is to explore key challenges and solutions to strengthen the ecosystem for municipal wastewater reuse in Maharashtra.



Only 4% of wastewater generated is reused in Maharashtra



Challenges and Issues in Used Water Management in Maharashtra

Issue Priority Matrix	IMPACT		
	Extreme	High	Medium
OCCURRENCE	Extreme Policy There is no clear regulatory mandate for used water reuse. There are also no established rules for reuse.	Reuse Practices Reuse practices are limited and no systems approach. Unaccounted reuse exists, but necessary quality and quantity is not achieved.	Environmental Used water does not replenish surface or ground water sources. This will exhaust all existing water sources.
	High Infrastructure The sewerage network and treatment plants perform poorly or are non-existent.	Financing Higher capex and opex investments from setting up of STPs to conveyance. Financing mechanisms linked to reuse are unclear.	Social People are reluctant to use reclaimed water for both civic and industrial purposes.
	Medium Institutional Roles There is huge manual dependence. Inter-governmental coordination is missing. These also result in lax approaches.	Tariffs The tariff is dependent on the quality and quantity of water required. There is no mechanism to make it more affordable.	Land Land for treatment facilities is difficult due to higher urban land value and scarcity of land.

TOP FIVE PAIN POINTS

- There is no clear mandate for used water reuse. There are also no established rules or regulations.
- The cost bearer for transporting treated used water from STPs to reuse points is unclear.
- The quality of treated used water produced at STPs does not match requirements or standards at reuse points, especially for industries. This has resulted in surplus, and dumping in water bodies.
- The tariff is dependent on the quality and quantity of water required. There is no mechanism to make it more affordable.
- Priority of reuse is not clear in drought-prone areas.

Reuse Potential for Used Water and Sludge for Maharashtra



Strategic Roadmap for Wastewater Reuse

Principles: Reuse Maximization, Environmental Protection, Shared Responsibility, Conservation of Resources, Upgrading Systems and Infrastructure, Economic Sustainability.

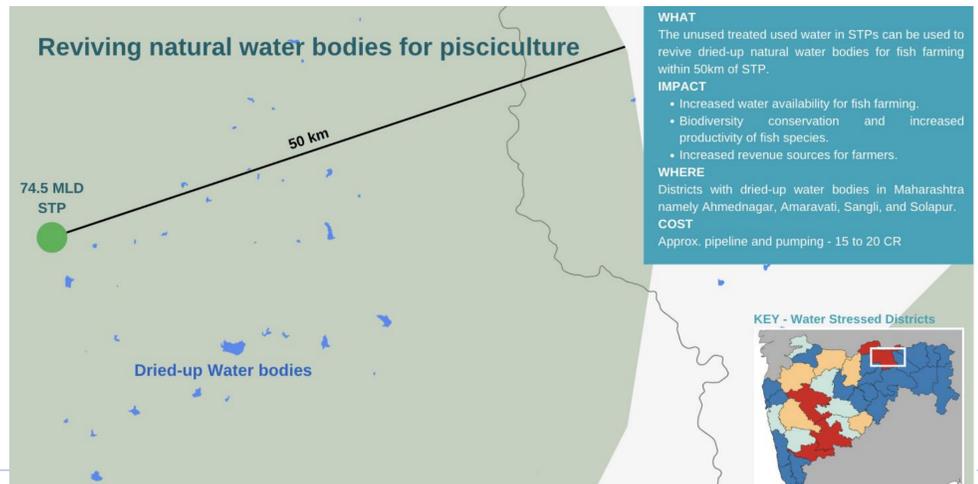
Values: Economic, Environmental, Social.

Objectives:

- Reuse of Used Water from 4% to 40%**
Maharashtra reuses 4% of its treated used water. Maharashtra can increase reuse upto 40% of total treated used water (more than AMRUT 2.0 - 20%)
- Collection and Treatment of Used Water from 47% to 100%**
The existing operational capacity can treat upto 100% of used water, but only 47% of all STPs are actually utilized.

Key Focus Areas:

- Infrastructure Requirement:** Upgrading and Establishing STPs, Upgrading and Laying Sewer Lines, Laying Treated Used Water Pipeline.
- Reuse Practices:** Industrial Reuse Practices, Agricultural Reuse Practices, Civic Reuse Practices, Environmental Reuse Practices.
- Institutional Framework:** Establishing Regulatory Framework, Collaborations and Partnerships.
- Technological Intervention:** Adopting Low-cost and Efficient Technologies.
- Environmental Protection:** Introducing Regulation and Enforcement.
- Education and Awareness:** Delivering Targeted Awareness Programs.
- Monitoring and Review:** Monitoring and Evaluation Frameworks.



Providing primary treated water to non-edible crop farmers

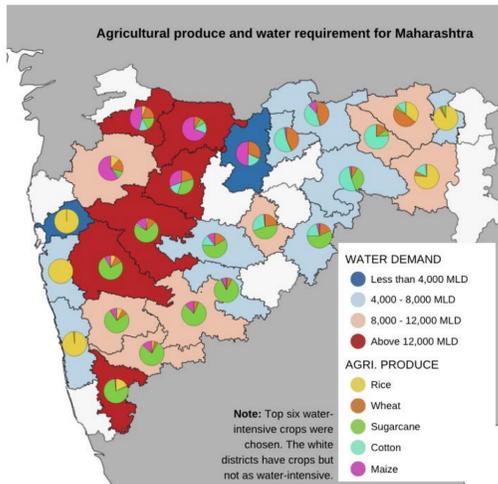
WHAT: The unused treated used water in STPs can be used to provide primary treated water to non-edible crop farmers.

IMPACT: Water availability for non-edible crop farmers, Freshwater sources left to use by edible crop farmers, Drought mitigation.

WHERE: Districts that produce maximum non-edible crops in Maharashtra.

District	Non-edible water-intensive crop	Water Demand (MLD)
Jalgaon	Cotton	17,622
Dhule	Cotton	13,841
Aurangabad	Cotton	13,497
Nagpur	Cotton	10,348

COST: Approx. pipeline and pumping - 20 CR.



Provide treated water to industries with lower quality requirement.



Impact of Reuse

Collection and Treatment of Used Water from 47% to 100%. Natural water bodies will not face unsafe discharge of untreated sewage water.

Reuse of Used Water from 4% to 40% Natural water bodies and the ground water table will face less water stress and scarcity.

Industrial and Civic Demand can be met upto 60% With appropriate reuse practices and proper network system, water shortage can be reduced.

Carbon Savings

On 100% collection and treatment of used water, methane emissions are decreased by **1 million CH4/m3**

If industries relied on water from nearby STPs instead of far away freshwater sources, it reduces **90% CO2 emission**

If agriculture relied on treated used water, then the reduced usage of fertilizers would reduce **66% CO2 emission**