

Water Resource Conservation Through Effective Waste Water Management

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Is India Water-stressed ?

Per capita availability of fresh water has fallen from **5177 cubic meters** to **1692 cubic meters** in 50 years (2011).



Based on the mark fixed (i.e. **1700 cu.m**) by the United Nations.

India has already become a "**water-stressed**" nation.

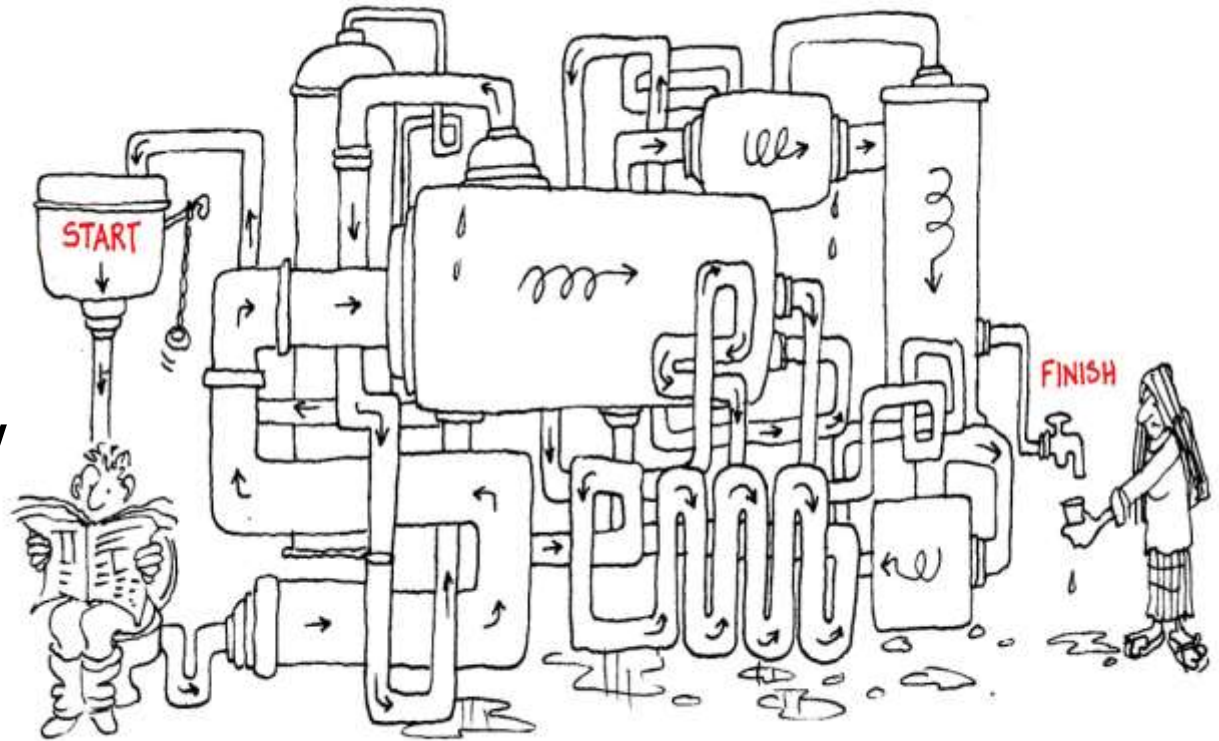
Urban Areas are new
users of water
**'Take, flush
and forget'**



Urgent Attention Needed


Cannot flush –
and forget

Have to find new
approaches :
Affordable and
Sustainable



Revolution – Change In Mindset

•Paradigm shift–

- From sewage treatment to sewage reuse and recycling
 - From Waste Management to Resource Recovery
 - Emphasize that waste water is a Resource (in terms of Water, Nutrients for agricultural use and Energy) whose effective management is essential for future water security.
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Ways to Make Wastewater Treatment Plants Optimised for Resource Recovery & Energy Efficiency

- ▶ Water Reuse
 - ▶ Nutrient Recovery
 - ▶ Heat Recovery
 - ▶ Use of Renewable Energy
 - ▶ Advanced Control system
 - ▶ Gravity Based Design
 - ▶ Energy Efficient Equipments
 - ▶ Reduce Chemical Usage
 - ▶ Digitalisation
 - ▶ Use of AI & Machine Learning
 - ▶ Capacity Building
 - ▶ Use of Less Energy Intensive Technologies
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