Urban Water Initiatives in Tamil Nadu and Karnataka

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State Level Initiatives (and some concerns)

1. Supply Augmentation (Bangalore)

2. Dual Source Supply (Tamil Nadu)

3. 24/7 Water Supply (Small Towns in KA and TN)

4. Zero-Liquid Discharge Law (Bangalore)
Central Message

Many household-level initiatives are piece-meal. The lack of a systemic view, renders them ineffective, even unsustainable.
Cauvery Supply to Bangalore City

Source: 2011 Housing Census Data
Analysed by Lele and Kuttawa

Low tariffs encourage wasteful use – of the worst kind!
Consumptive use versus withdrawals

100 L  80 L
Consumptive Use is 20 L!

Consumptive use versus withdrawals

150 L  100 L  50 L  80 L
Consumptive Use is 70 L!
More emphasis on outdoor water use is needed. Very difficult to find low-water using landscape firms.

2. Dual source supply: Tamil Nadu
Dual supply allows imported water to be spread more “smoothly”

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Litres per capita per day

Surface Water  Ground Water
If dual sourcing is more “sustainable/equitable” what does it mean for building plumbing code?

3. 24/7 Supply (Small towns)
Example household

Well: 42%
Piped: 58%
189 Litres per day consumption

Litres

Time (15 days)
Household investments in storage really matter!

![Graph showing the impact of storage on household investments in City Core. The graph compares groundwater and riverwater usage across different storage levels (No sumps, Low storage, High storage) and shows increasing coping investment as the storage capacity increases.]

But borewells are a sticky investment

![Graph showing the impact of borewells on household investments in City Core. The graph compares groundwater and riverwater usage across different storage levels (No sumps, Low storage, High storage, High storage + BW) and shows increasing coping investment as the storage capacity increases. The borewells investment is highlighted with a red circle.]

Groundwater tends to be swept under the carpet. Responsible buildings should measure and monitor groundwater use.

River Water  
Municipal Wells  
Water Utility  
Tankers  
Standpipe  
Bore well  

4. Zero Liquid Discharge
Economies of scale

Kuttuwa et al., 2017

Mandated wastewater reuse

- Doesn’t make sense in sewered areas
- Fails in small apartment complexes (economies of scale matter)
- Encourages wasteful consumptive uses in large apartment complexes –
  - Alternatives like allowing treated wastewater to flow into lakes are urgently needed (but not yet legal).