# Peri-urban water markets as an instrument for managing urban water supply needs – A Pondicherry Perspective

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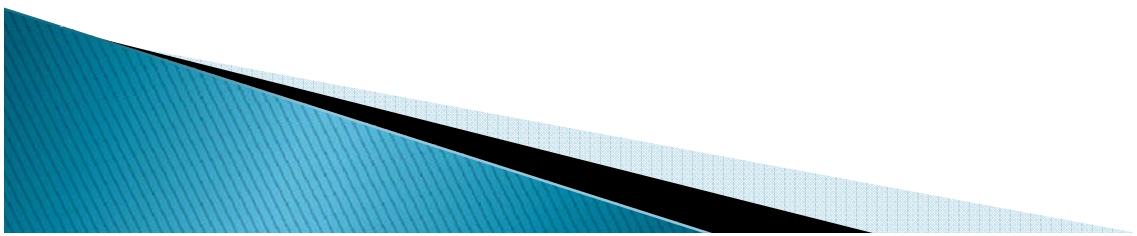
# Urban Water Needs

- Urban water needs can only increase in the immediate future
- Urbanization with covering of soil layers with concrete and asphalt coupled with increased drawals are likely to have adverse impact on the ground water
- Would we be able to meet the 135 lpd/caput in Indian cities in the years ahead?
- What is the current state in Pondicherry? Chennai?

# Urban needs without surface sources

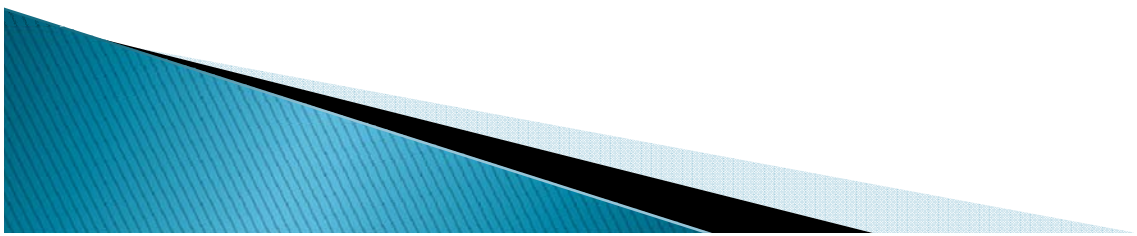
- What happens in cities that do not have surface water sources?
- What happens to cities that have ephemeral surface sources?
- Inter-basin transfers?
  - Are they sustainable?
  - Equity and justice issues – are they addressed?
  - For whose benefit and at whose cost?
- De-salination – is it a sustainable alternative?



| Place | Puducherry UA |
|---|---|
| Year | 2011 |
| | |
| Urban Population | 654392 |
| Rural Population | 292208 |
| Growth rate for the last decade (%) | 28.73 |
| *Water requirement norm (urban &rural) in lpcd | 135 |
| Urban water demand (litres per day) | 88342920 |
| Rural water demand (litres per day) | 39448080 |
| Total water demand (mld) | 127.79 |
| *Total water supply (mld) | 70 |
| Demand Supply Gap | 57.79 |

# Water Markets

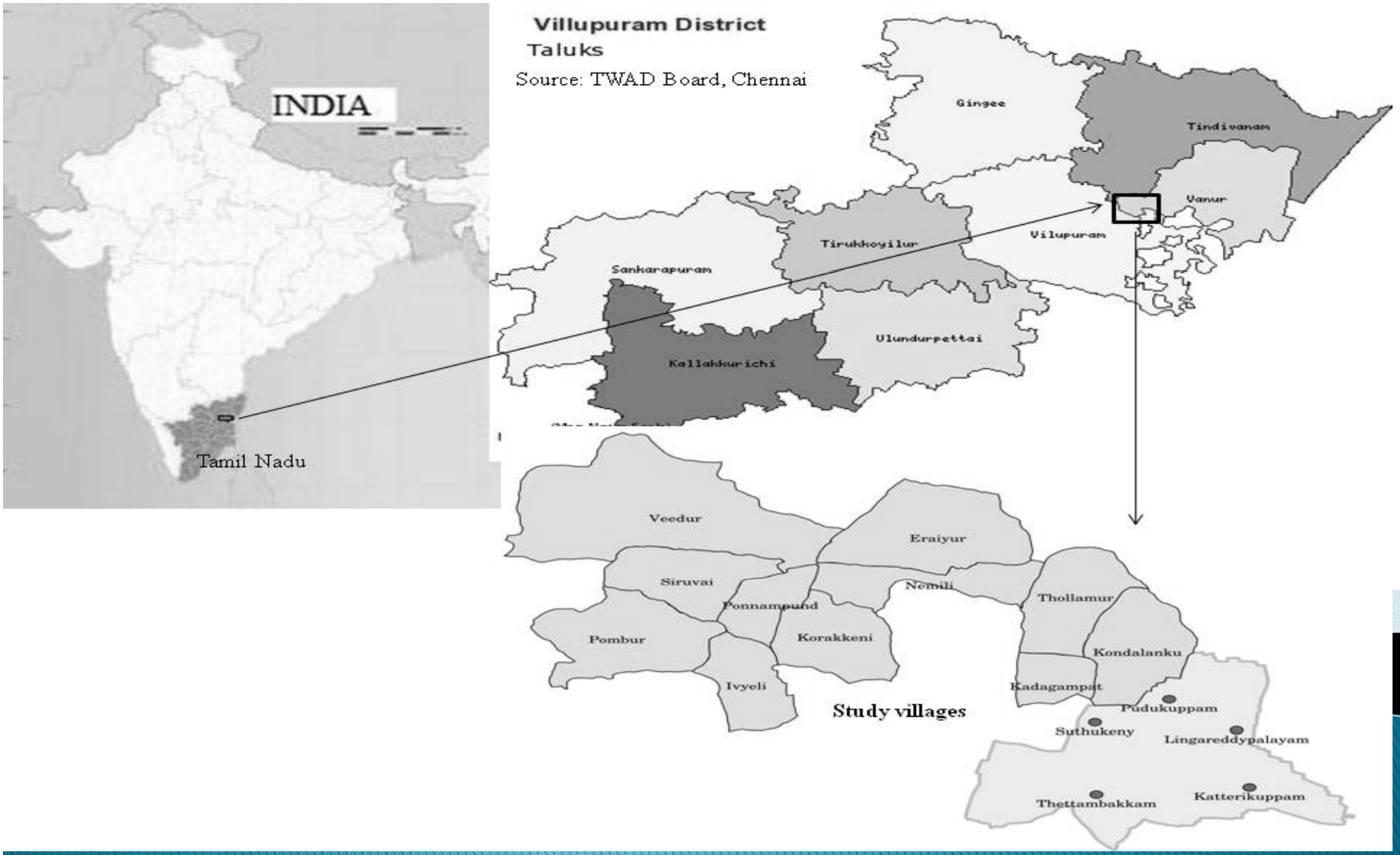
- Water markets are enabling constructs that allow trading of water or rights over water [as a commodity]
- It is presumed that players are *willing participants*.
- Water is sold by those who have a disposable surplus to those who are in need
- It has long been in vogue in agriculture
- But are they good or bad?
- Jury is still out. Strong views on both sides exist
  - We are skirting this question



# Water Markets

- Water markets does not mean that water is sold and purchased in terms of money
- The exchange could be informal – payment good be in terms of goods/services/sharing harvest
- Have existed informally
- What is the legal basis?
  - Who has right over ground water?
  - Tamil Nadu Groundwater act -
- How is right converted into reality in practice?

# Study Area


INDIA
Tamil Nadu
Villupuram District
Taluks
Source: TWAD Board, Chennai
Gingee
Tindivanam
Vanur
Vilupuram
Tirukkoyilur
Sankarapuram
Ulundurpettai
Kallakkurichi
Veedur
Eraiyur
Siruvai
Nemili
Thollamur
Ponnampund
Pombur
Korakkeni
Kondalanku
Ivyeli
Kadagampat
Pudukuppam
Study villages
Suthukeny
Lingareddypalayam
Thettambakkam
Katterikuppam

# Preliminary results

- Studies downstream of Vidur Dam show that water markets exist.
- Agriculturists are trading water for goods/services/share-cropping and even for money outright!
- In the last few decades there has been a shift from dry crops and coarse cereals to paddy (flooding cultivation) and even cash crops such as sugar cane
- Drawal of groundwater increasing
- Vaanur aquifer is listed as in a critical state

# Preliminary results …

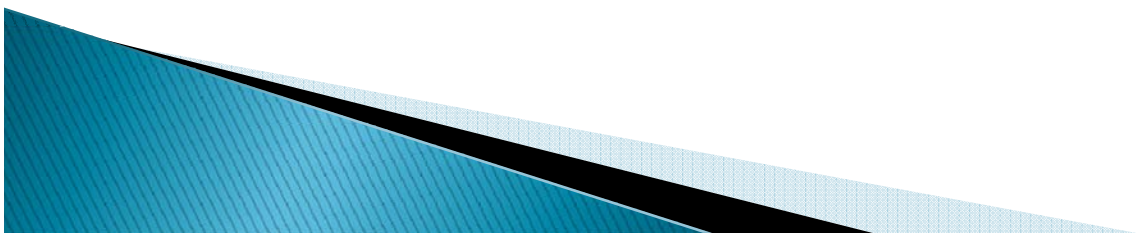
- From the field studies we explored the possibilities of Pondicherry PWD buying water for urban needs
- Simple linear models predict that it is "economically" viable and ecologically sensible
- The approach ➔
  - Persuade agriculture shift to crops/methods with less water requirement;
  - Persuade them to sell water and obtain greater "profits"
  - Persuade consumers to "pay" for water they consume

# Preliminary results…..

- Example ➔ Shift from flooding cultivation to SRI would cut down water requirements by about 0.3m/ha and this could be then bought for Pondicherry urbanites
- Need additional analysis on acceptable prices and legal framework for enforceability of contracts

# Issues outstanding

- Who would be the players /stake-holders?
- Is it a level playing field?
- Can exploitation be prevented?
- How to arrive at a “price”?



# Thanks