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Matthondu Cauvery

Water security for the Bengaluru Metropolitan Region.

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POPULATION IN THE REGION

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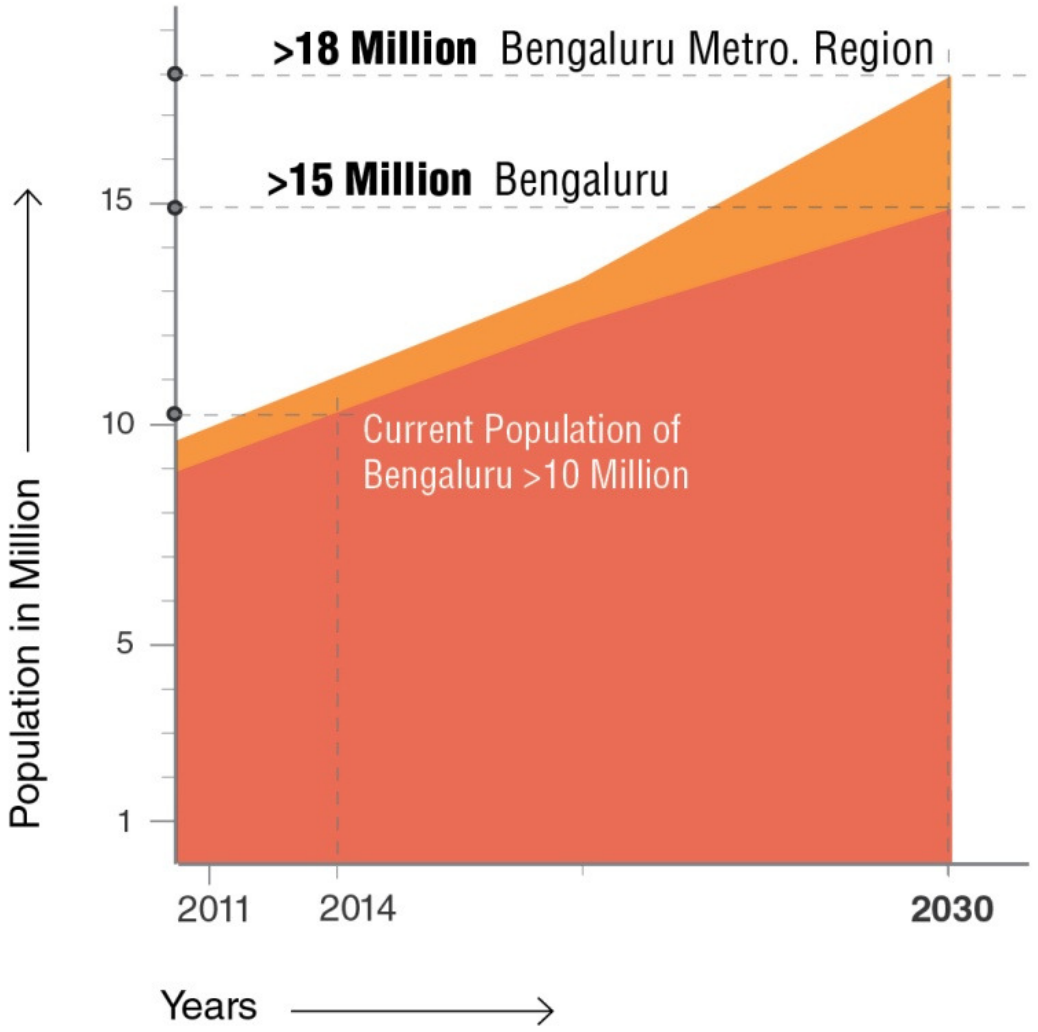

ASSESSING FUTURE WATER DEMAND

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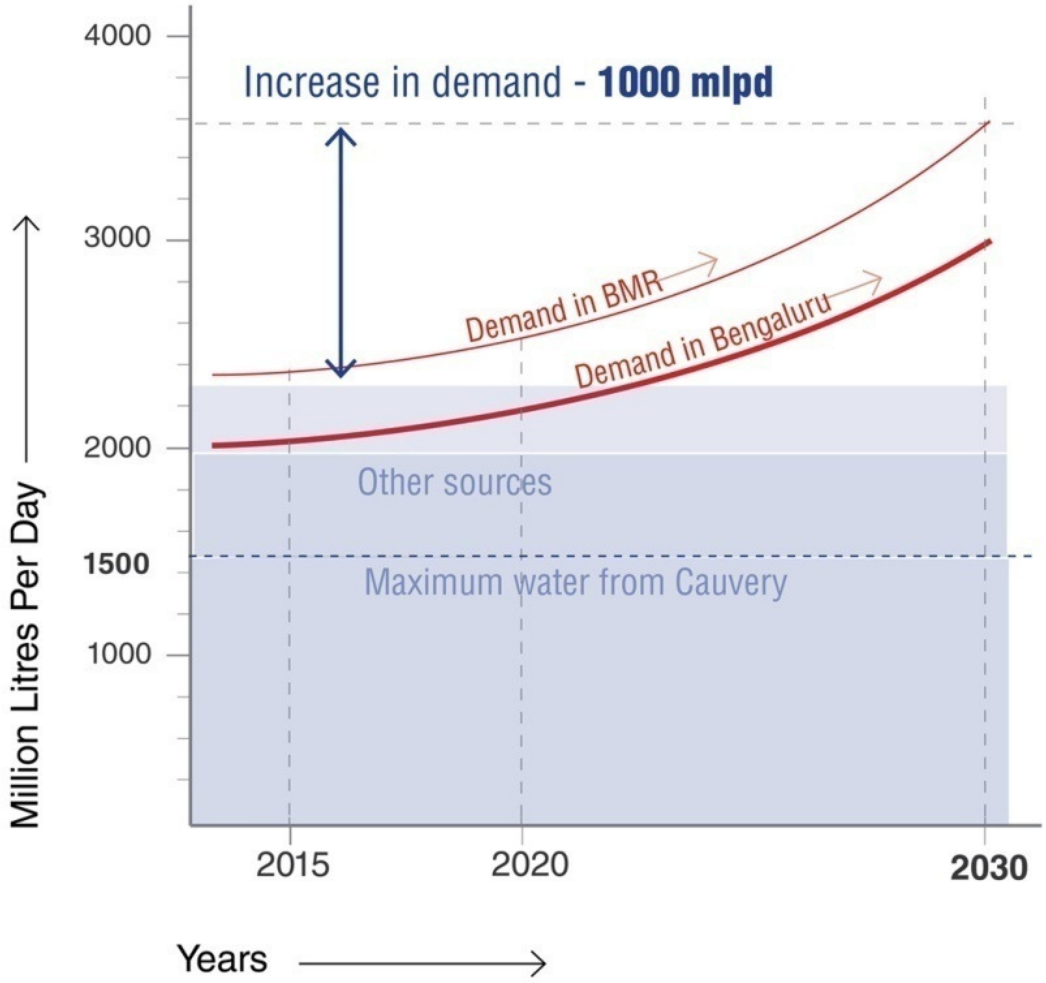

WHERE WILL THE EXTRA WATER COME FROM?

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1. **Watershed improvement and local supply from the BMR's largest lakes**
   (700 MLD, conservatively)

2. **Rainwater Harvesting in at least 50% of buildings in the city.**
   (150-200 MLD)

3. **Dual piping in industrial areas, and in all future buildings**
   (30 MLD added per year, 300 MLD in 15 years)

4. **Behaviour modification, aided by product standards, pricing reforms**
   (Proven to work, 200 MLD in 10 years)

5. **Groundwater recharge**
   (500 MLD in 15 years)

6. **Treated wastewater**
   (1000 MLD in 2-5 years)

HOW MUCH DOES IT RAIN?

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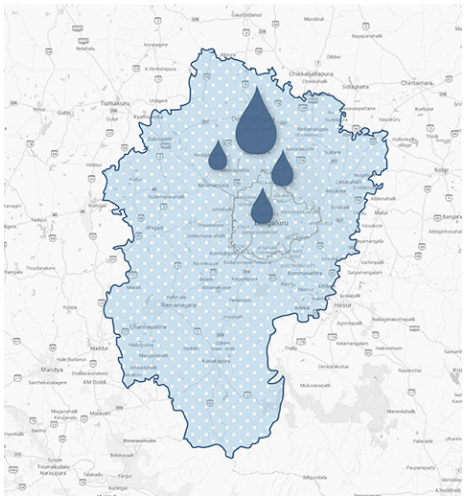

Annual rainfall in BBMP = 700 - 1000 mm

BMRDA = BBMP X 11 in area

Can we harvest and use 5-10% of this?

ENOUGH TO MEET FUTURE NEEDS

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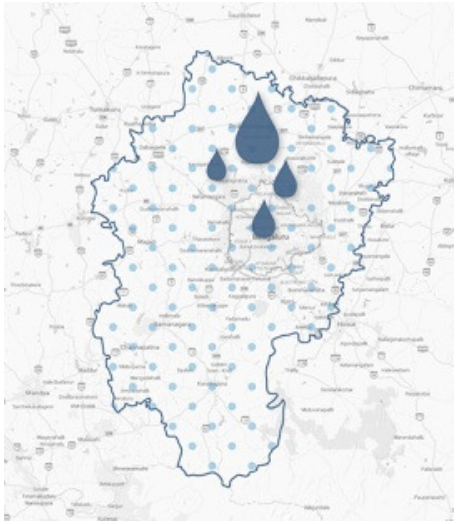
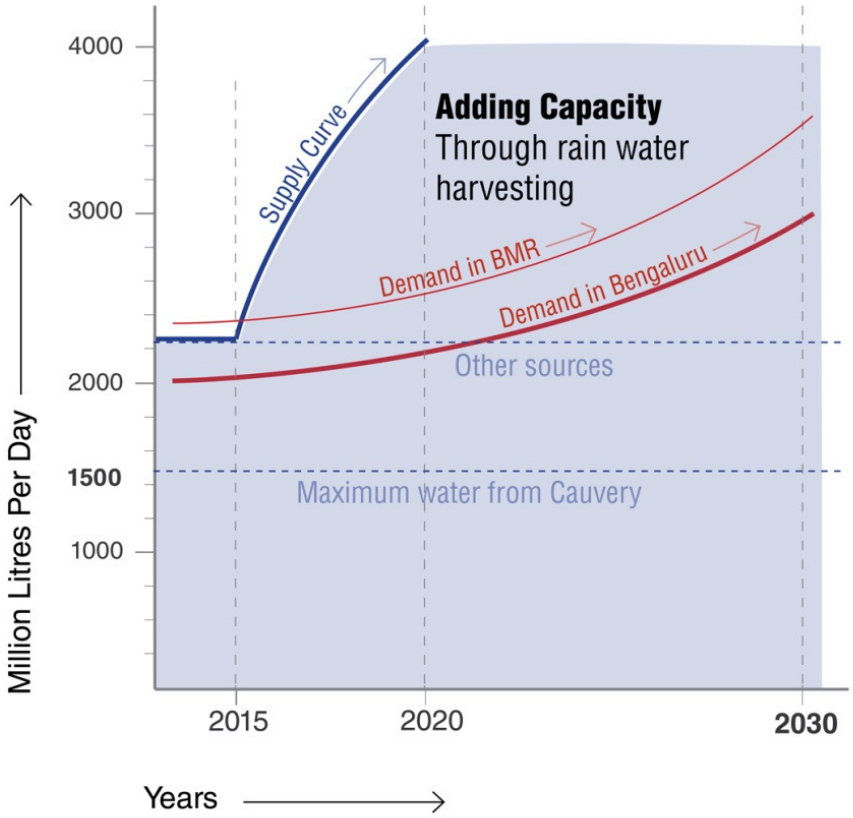
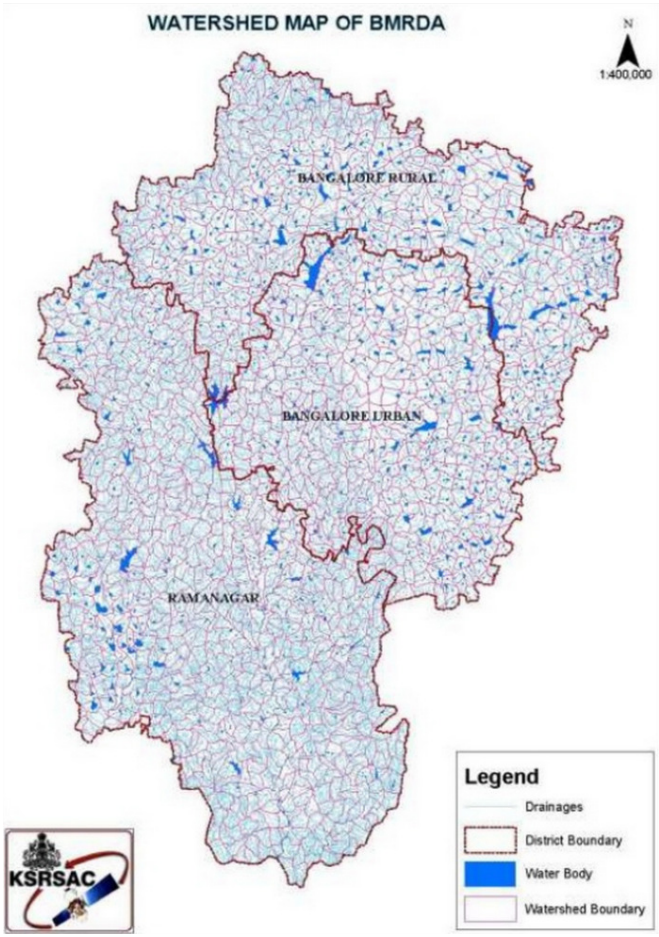


*Harvesting just **10%** rain water in BMR will increase water supply in the region by nearly **100%***



START WITH WATERSHED IMPROVEMENT



STEP 1 : 2016-2018

Strengthen watersheds in the region to maximize collection of rainwater

- Clearing natural and man-made obstacles to water flow into the large lakes. *(This will itself be a good outcome, even independent of the water supply needs)*.

- Determining the piping and pumping infrastructure needed to tap these new sources. *(All cities in the metropolitan region must be served).*

HOW MANY LAKES? HOW BIG?

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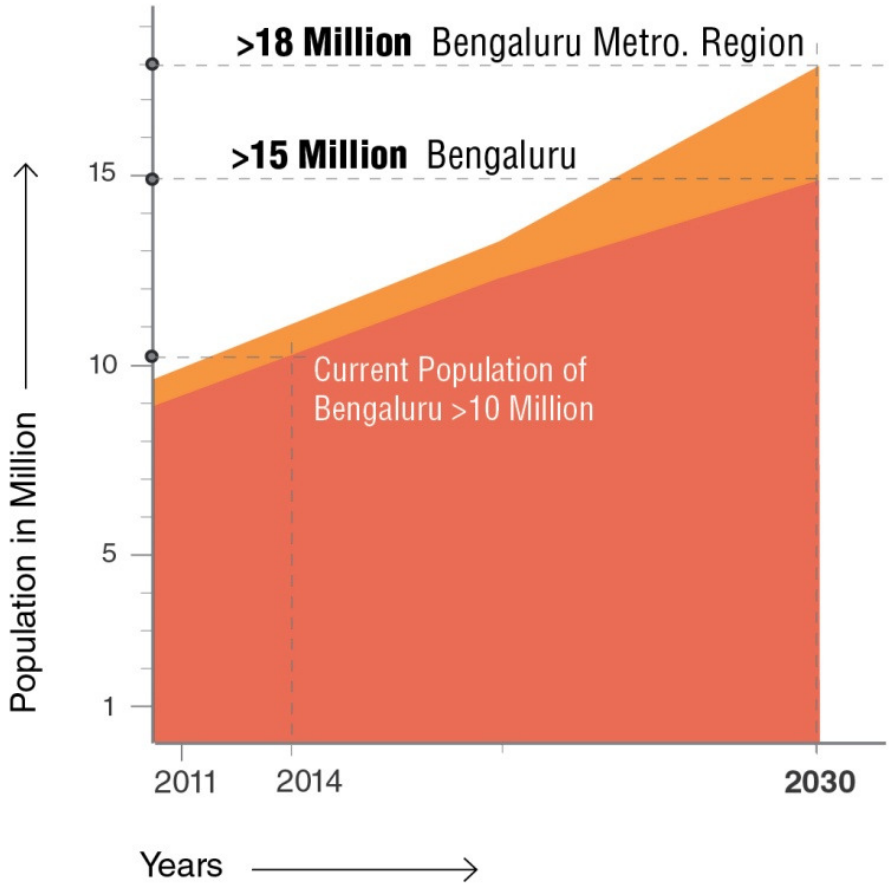
4000 people can be supported by each acre of lake. 2000 acres of lakes, therefore, need to be used to serve the entire 8 million people who will be added to the region in the next 20 years.



A FEW LAKES EACH YEAR (red = inside BBMP)

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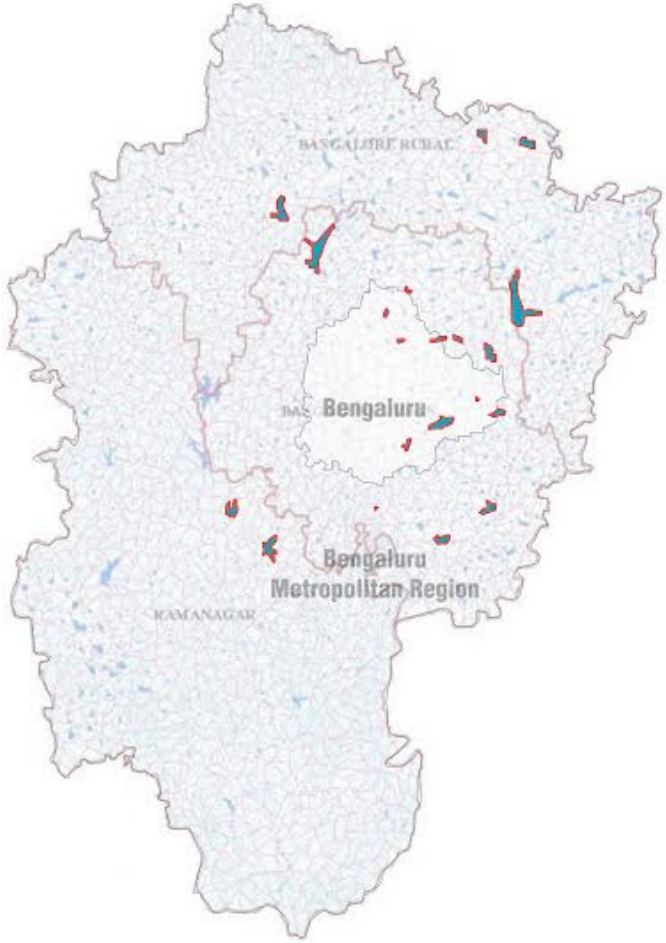
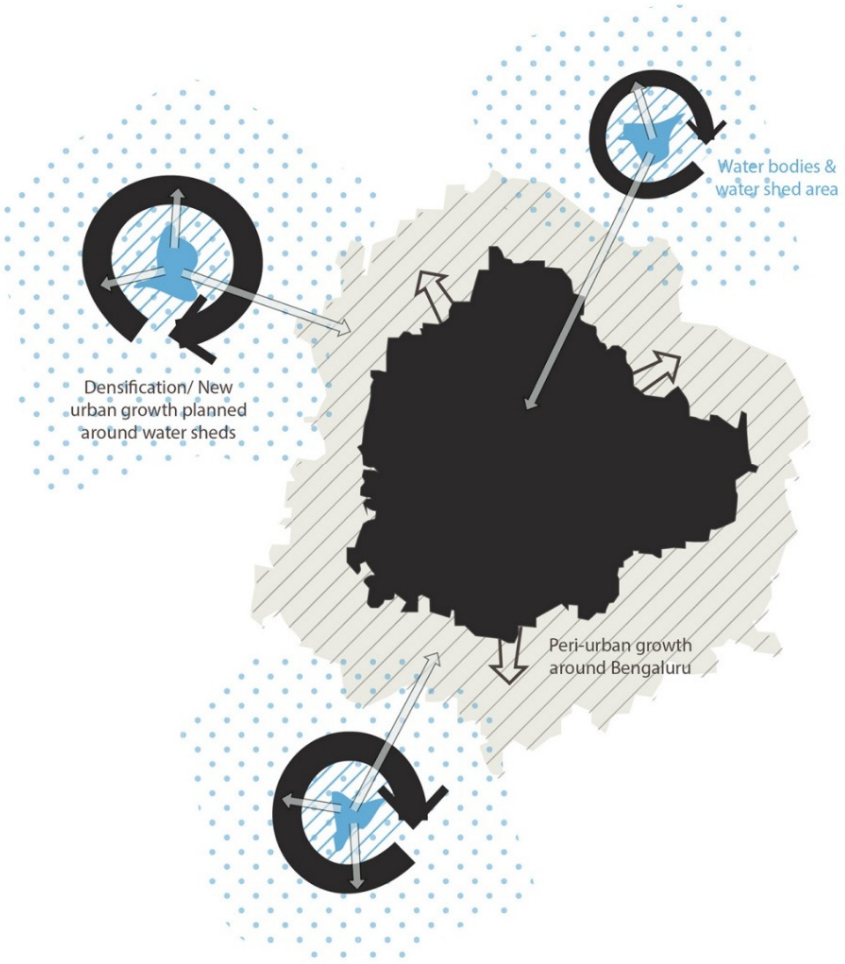
Madhure Kere
Hesarghatta Lake
Kogilu Lake
Jakkur Lake
Rachenahalli Lake
Kalkere Lake
Maragondanahalli Lake
Bellandur Lake
Madiwala Lake
Nelligudde Kere

Basavanapura Lake
Byramangala Lake
Vijayapura Kere
Venkagirikote Kere
Hoskote Lake
Yele Mallappa Shetty Lake
Chinnappana Halli Lake
Varthur Kere
Muthanallur Lake
Hennagara Lake



WATER FOR ALL THE CITIES IN THE REGION



Stored water can be used for local consumption as well as serve peri-urban areas around Bengaluru. These larger water bodies can also become focal points for new urban growth

OTHER MEASURES

INCREASE IN RAINWATER HARVESTING

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Every roof can be a catchment. With RWH in every built-up plot in the region, we could harvest 300 MLD. Conservatively, we should be able to harvest 150 MLD at least.

DUAL PIPING - RETROFIT IN EXISTING AREAS

BWSSB had set a target of 10 MLD for its dual piping project in Peenya industrial area. One project of such scale can be completed each year for the next 15 years, by choosing the best locations for intervention.

DUAL PIPING AND LOW-FLOW DEVICES IN NEW BUILDINGS

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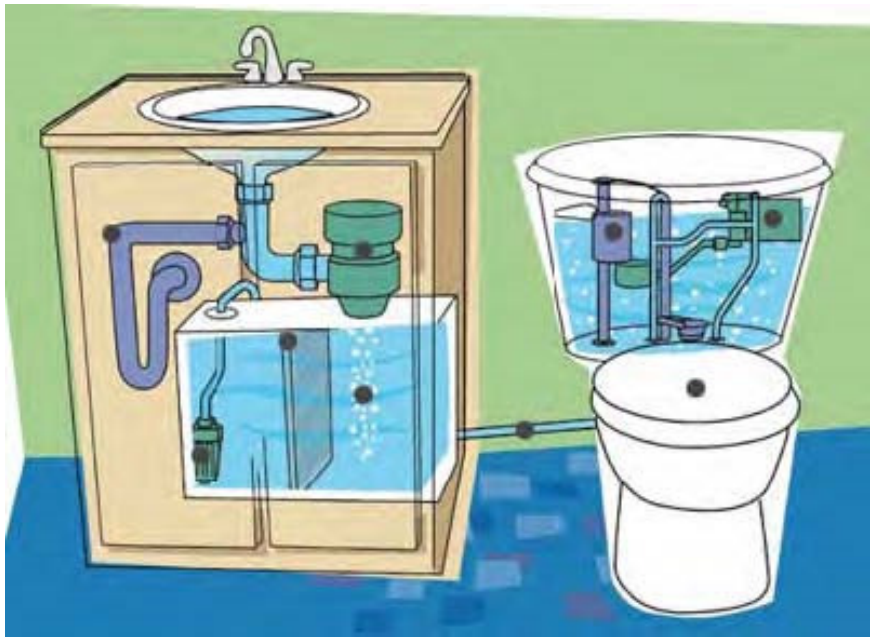

Newly-approved building plans add 3% a year of built space. In 15 years, we will have half as much new built up space as currently exists. If 1/3 of their water use is saved by dual piping and low-flow devices, that would result in 300+ MLD.

GROUNDWATER RECHARGE

Rather than allow surface water to run-off outside the BMR, we could easily direct a significant portion to recharge the groundwater. Even 20 MLD a year would be enough. Pilots have shown groundwater levels reviving fully within 2-3 years.

TREATED WASTEWATER

Treated waste water in lakes (example in picture : Jakkur Lake) can be further cleansed by the natural filtering system of the water bodies. STPs in housing communities and campuses can also be added to the city's own idle processing capacity, to provide 1100 MLD within 2-3 years.

ADD IT ALL UP = AT LEAST 1500 MLD MORE

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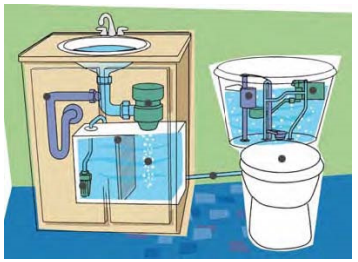

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GETTING STARTED

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- Announce comprehensive program focused on all 6 aspects.
- Set annual targets to be achieved in first 3-5 years for each focus.
- Allocate money in the State Budget to launch each focus.

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