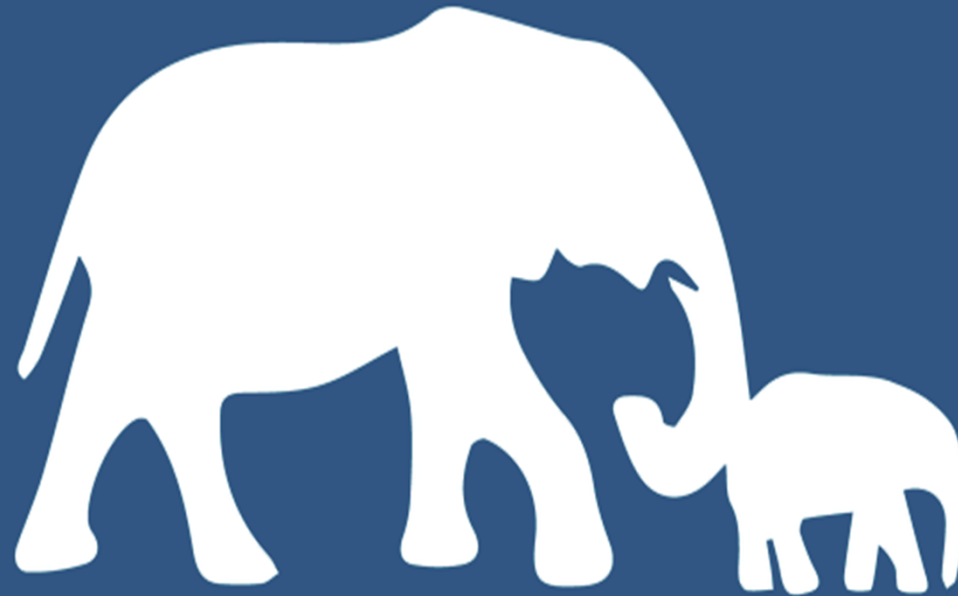


BEHAVIOR ECONOMICS BASED NUDGE FOR WATER CONSERVATION



SHUT THE TAP

Macro Context



Gap between Supply and Demand



Urban Drinking Water Supply –
Partial Coverage



Urban Supply at the Cost of Rural
Resource



Sporadic Metering



Pecuniary Disincentives not Acceptable

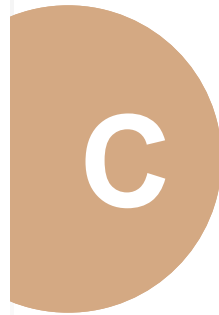
Behavioral Bottlenecks



**Individual
Inertia**



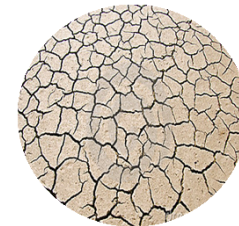
**Mindless
Action**



**Lack of
Contextual
knowledge**



**Knowledge
Action Gap**



**Discounting
Future Gains**



**Social Norms
of Frugality
(Social
Benchmarking)**

NUDGE

A nudge, is any aspect of the choice architecture that alters people's behavior in a predictable way without forbidding any options or significantly changing their economic incentives.



Behavior Economics (BE)

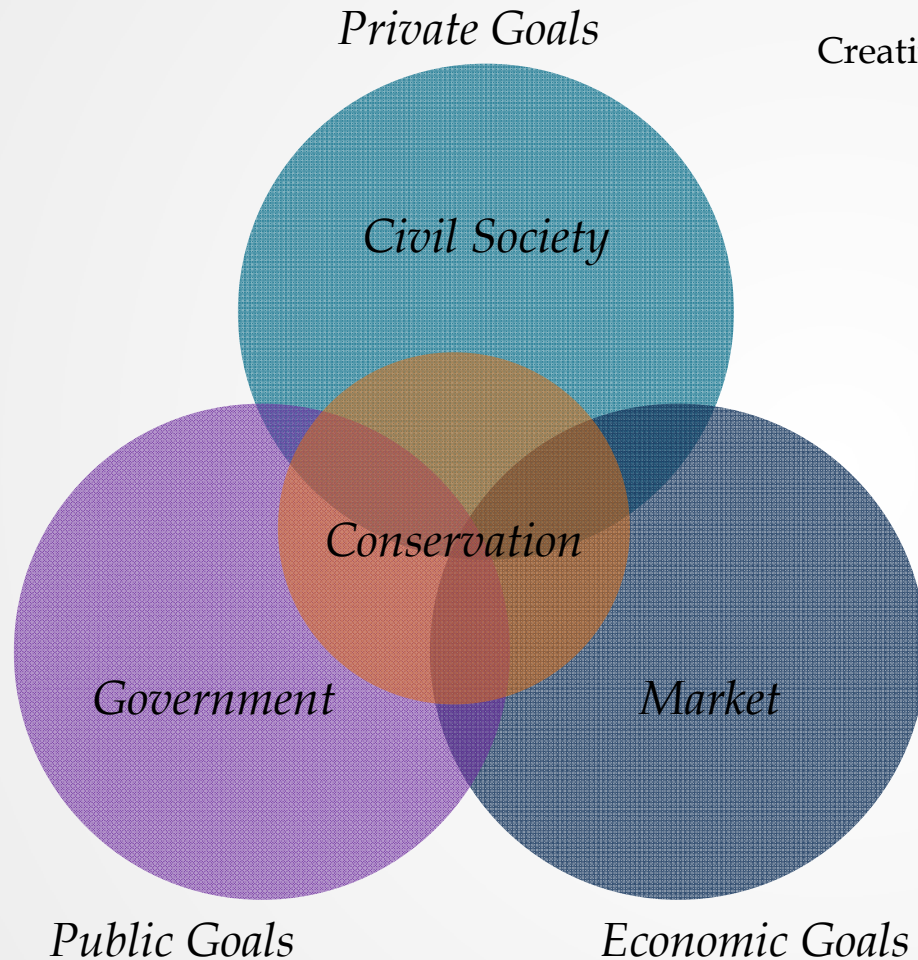
BEHAVIOR ECONOMICS = Psychology + Economics

BE enables “individuals use different cognitive systems to assess information during the decision making process”



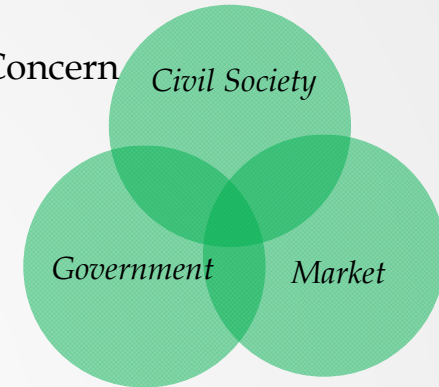
Stakeholders and Pathways to Change Behavior

Stakeholders

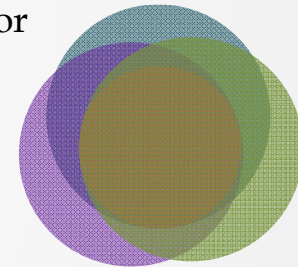


Behavior Change Pathways

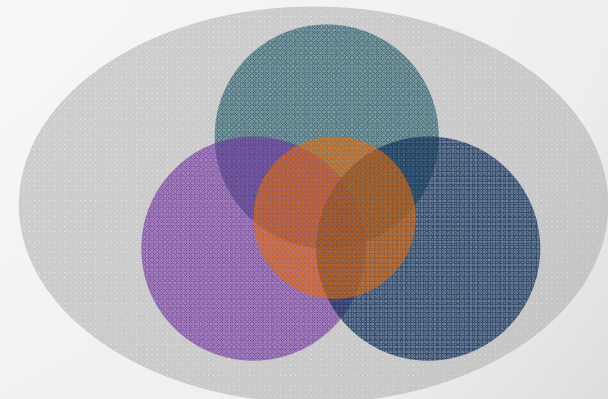
Creating Awareness & Concern



Encouraging Behavior



Nudging Behavior



Pathways to Behavior Change

Reflective Pathway

Rationale: Change the determinants of behavior (Eg. Knowledge, awareness, attitudes, motivations)

#1 Creating Awareness & Concern

Lack of contextual knowledge,
Pro Conservation Behavior

Extrinsic Incentives
(Eg: Pecuniary)
Intrinsic Incentives
(Eg: Values, desires)

#2 Encouraging Behavior

Inadequate,
conflicting
incentives

Automatic Pathway

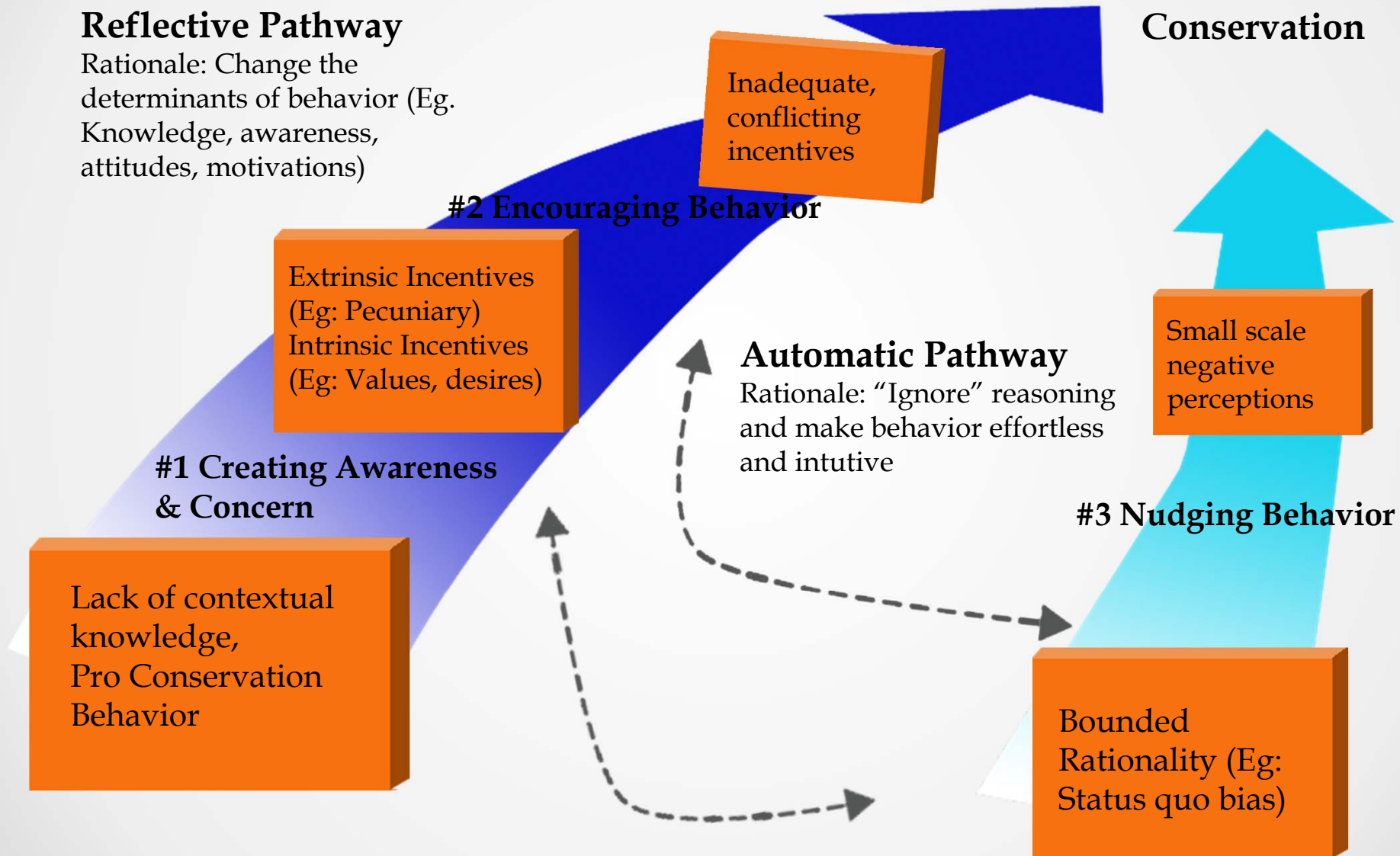
Rationale: "Ignore" reasoning and make behavior effortless and intuitive

#3 Nudging Behavior

Bounded
Rationality (Eg:
Status quo bias)

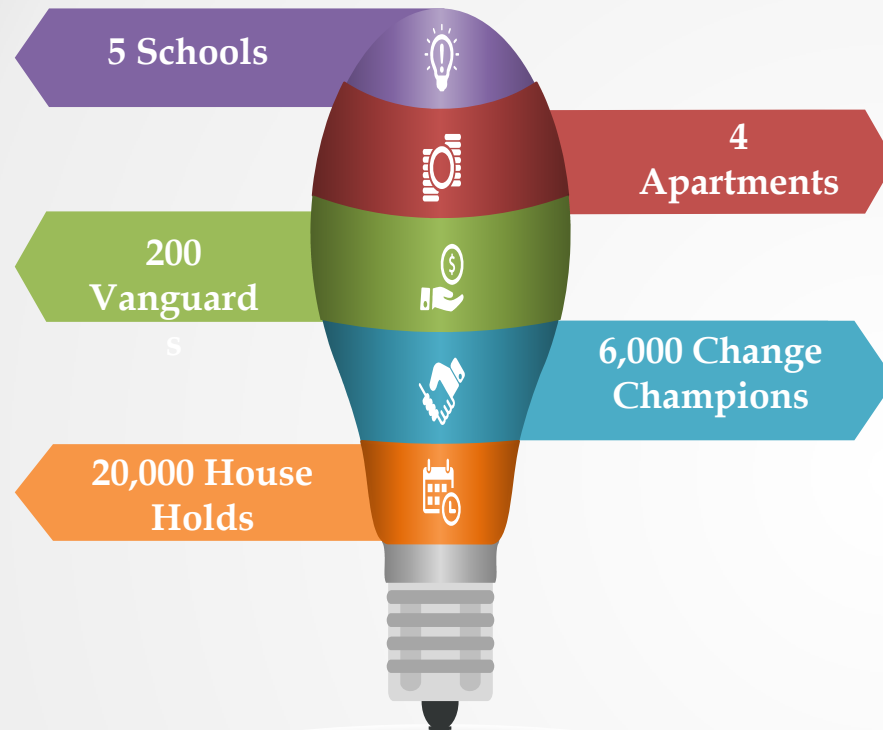
Conservation

Small scale
negative
perceptions



Shut the Tap - Campaign

Reach



✓ *SHUT THE TAP* is a programme to NUDGE Residential consumers to use water more conservatively and prevent it's wastage

✓ The campaign was rolled out through

✓ School Children

✓ Apartment Residents

✓ Mass Media (Press & Electronic Media)



Shut the Tap - Campaign

Reaching out through School Children:

- ✓ Programme was rolled out through School Children
 - ✓ To Impart Contextual Knowledge
 - ✓ To address issue of 'Devaluing the Future'
- ✓ More than 6,000 school children of 5 major schools were involved
- ✓ Water Conservation awareness through audio and visual media were given to children
- ✓ About 1,00,000 IEC materials were printed and distributed through School Children
- ✓ Nudge tools like Information Cards & Reminder Stickers along with Appeal letters were also distributed



Shut the Tap - Campaign

Reaching out Apartment Residents:

✓ Programme was rolled out in below 4 large residential apartments in Chennai

✓ Arihant, Thoraipakkam

✓ L&T Eden Garden, Siruseri

✓ Atrium Apartments, Perungudi

✓ Arihant Heirloom, Navalur

✓ More than 2,000 residents were given awareness through audio visual media

✓ IEC materials and Nudge tools were distributed to all residents

✓ Mobile whatsapp groups formed and conservation messages were shared

✓ Painting competition and presentation on water conservation by Apartment Children were conducted in collaboration with "The Hindu"

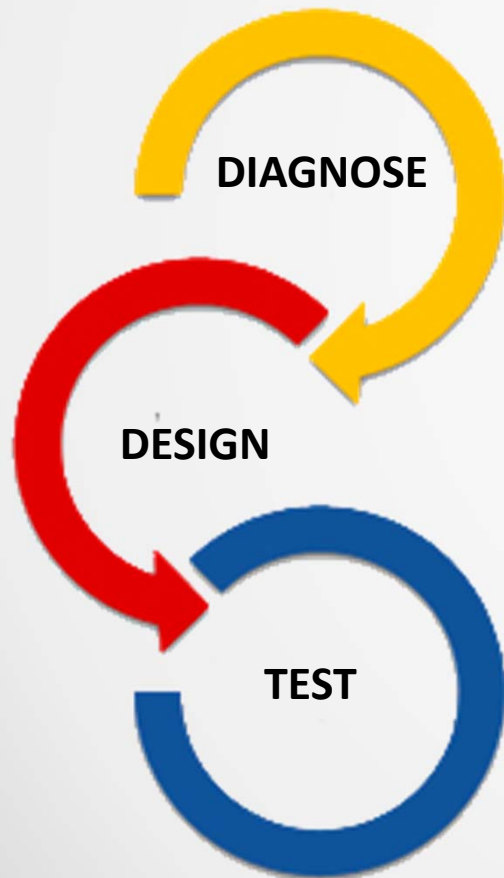


SHUT THE TAP - Nudge based Experiment



Objective

Applying behavioral economics based nudges for water conservation in select areas of Chennai city



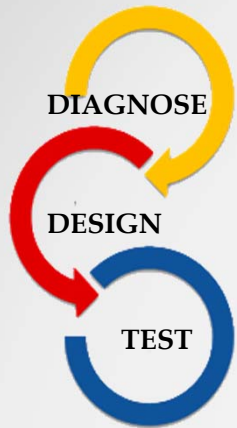
Rationale for Intervention

Through Classroom & Focus Group Discussion,

- Broad consensus on importance of water conservation in general
- Residents did not know how much water they themselves used
- Residents could not evaluate whether a given level of water consumption was too high or reasonable, due to lack of benchmark to compare

Shut the Tap - Experiment

Designing Behavioral Intervention



CHANGING THE CHOICE ARCHITECTURE
with
Mindfulness and Default

ENCOURAGE

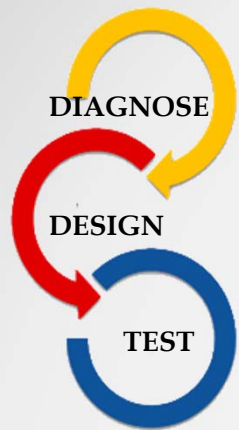


SOCIAL COMPARISON



SOCIAL NORMS





Shut the Tap - Experiment

Designing Behavioral Intervention

Information Cards -

- ✓ *Highlighting the plight of have nots (Social Norms),*
- ✓ *Positive acts of Peer Group &*
- ✓ *Action points on how to save water (Changing default option)*

Can You Save Some Water ?

We are using about **135** liters per person daily.

But Rural India gets only **40** liters per person daily.

Some Friends in Chennai have reduced consumption to 75 liters.

SO CAN YOU!



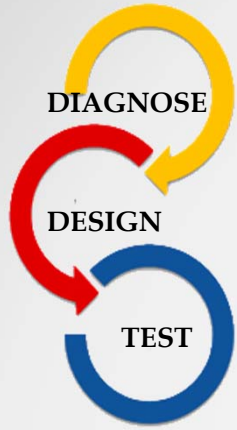
I shall save water today, for our children's tomorrow!



How U Can Help

- Avoid Shower - Use a bucket!
Save 36,000 litres a year!
- Use a Mug to brush and shave!
Save 16,000 litres a year!
- Wash vegetables and fruits in a pan instead of running water!
Save 20,000 litres a year!
- Avoid overflow in Over Head Tanks!
Save 20,000 litres a year!
- Use Waste Water from RO Plant for Washing!
Save 10,000 litres a year!

 **CENTRE OF EXCELLENCE FOR CHANGE**



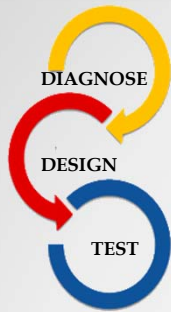
Shut the Tap - Experiment

Designing Behavioral Intervention

Reminder Stickers *at consumption points*

- Decision Point
- Addressing Discounting
Future Gains





Shut the Tap – Study Details & Results

Through School Children

- Treatment n = 615
- Control n = 150

Randomized Control Trials

Samples spread in the following CMWSSB Areas,
Area VII – Ambattur, VIII – Anna Nagar & X - Kodambakkam

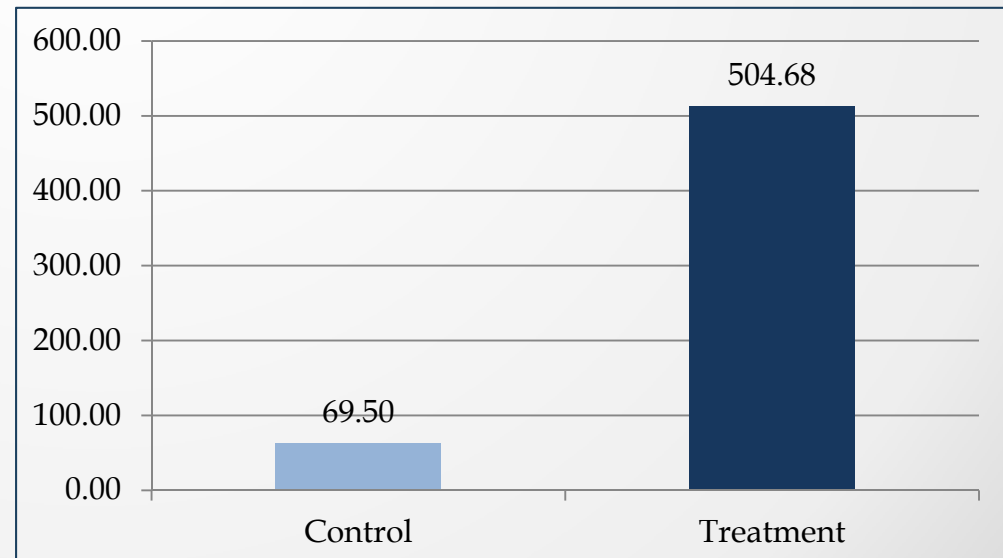
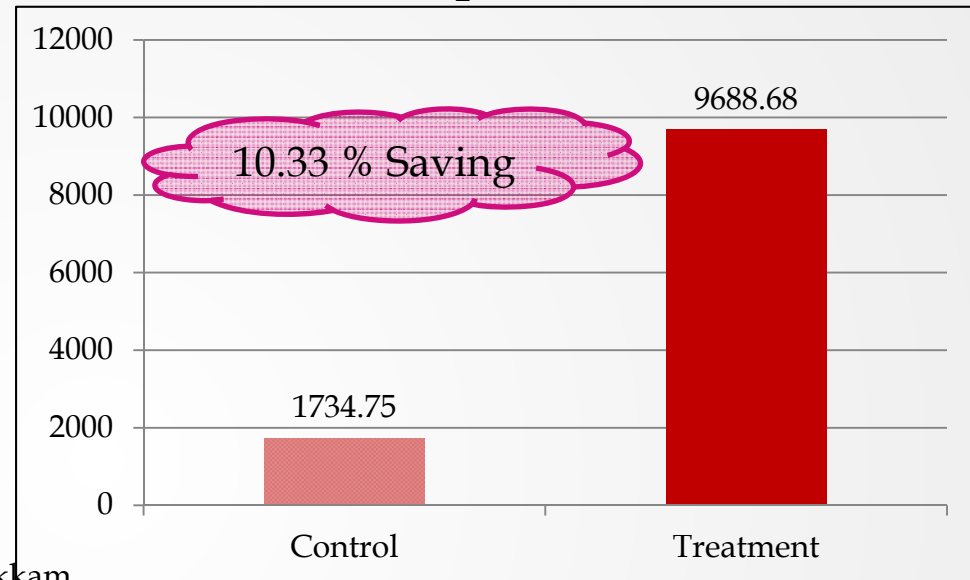
In Apartments

- Treatment n – 58
- Control n - 16

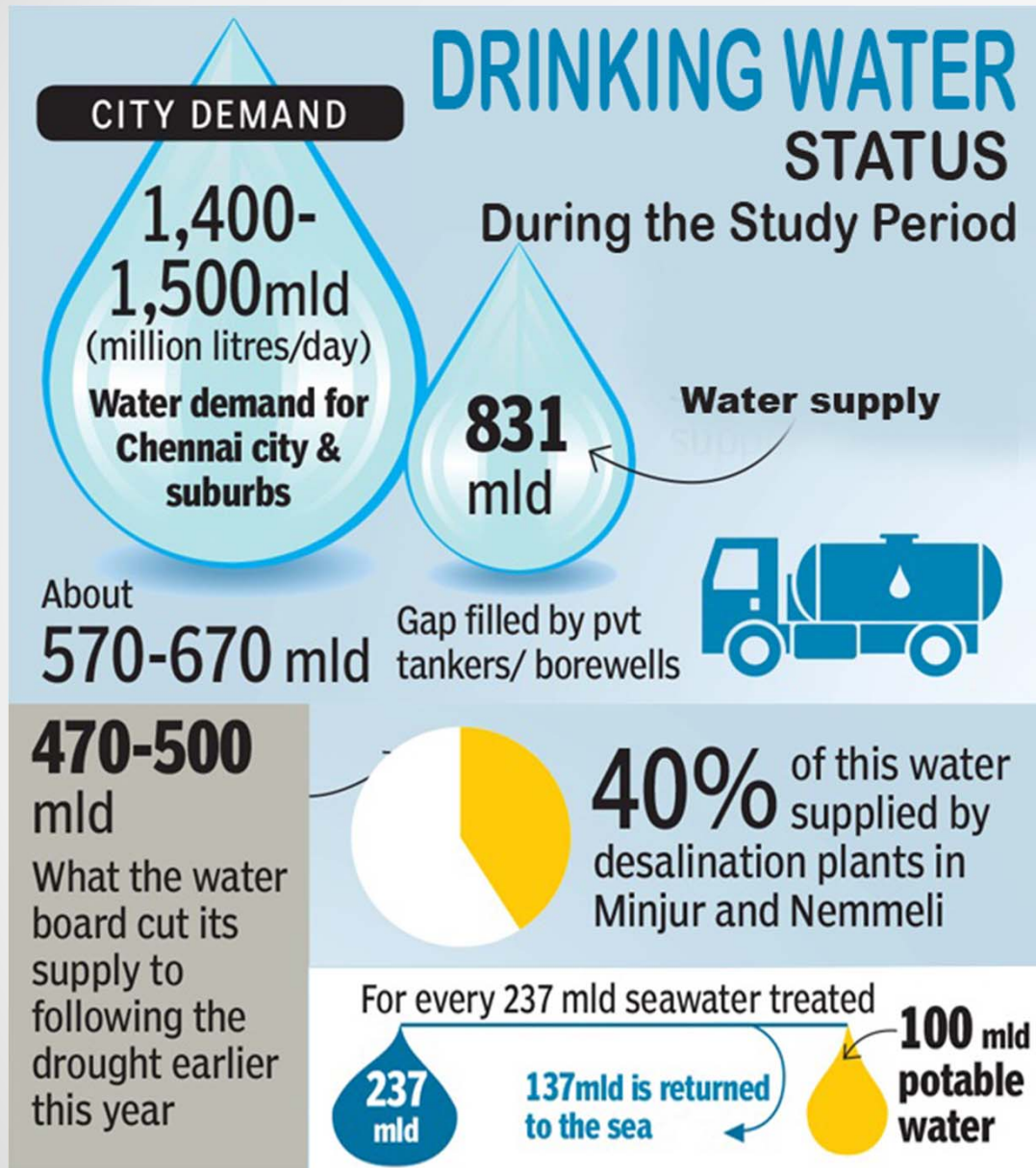
Purposive Sampling

Sample is in CMWSSB Area XIV – Perungudi

Reduction in Average Monthly Water Consumption in litres



Inferences



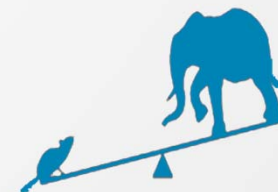
10.33 % saving in water consumption may result in around **86** mld gap reduction between water demand and supply



About **7170** Tankers water savings per day



About **Rs 43,00,000** savings per day



SMALL CHANGES CAN MAKE BIG DIFFERENCE

Policy Brief

This study is to be taken up in a more detailed manner for the following reasons.

- It encourages practitioners and policymakers to consider the impact of Nudges, as they have exciting potential for conservation and do not require changes in awareness or attitudes or potentially costly incentives.
- This is an unique behavioural economics study on water use in a developing country especially in the setting of a corporation or other local government city.
- Also the study is very significant, as the interventions based on selected nudges are very effective at reducing water conservation and its findings suggest that behavioural economics interventions can usefully supplement the persuasion based tools currently in use to undertake this issue at the neighborhood level.

Policy Brief

- Moreover, the study shows that interventions leveraging behavioral economics, which have thus far not been widely used so far in developing countries can be implemented and are effective in resource and technology-constrained settings, such as Chennai metropolitan.
- In addition to the above, the study also provides policy makers, a hint of addressing “future discounting tendency”
- Educating School Children to influence the family can address the behaviour to discount future gains. Therefore, Education Department can add this to the syllabi with more emphasis on resource conservation especially water besides environmental concerns like pollution.

Policy Brief

Other suggestions to the concerned authorities are as below

- Water Meter to be made mandatory for all new buildings
- Existing water meters to be made functional
- Volumetric measurement of water supplied to be effected
- Billing information to be furnished to the consumers
- Linear (upto certain quantity) and Slab System of pricing
- Peer comparison to be effected
- Advocating Technological tools on water conservation

THANK YOU