ALL WATER IN INDIA IS RECYCLED!
WATER AVAILABILITY

![Bar chart showing water availability over time]

- Population (Million): [361, 395, 846, 1027, 1394, 1640]
- Per capita water availability (m3/year): [5177, 4732, 2209, 1820, 1341, 1140]

The chart illustrates the trend in water availability and population from 1951 to 2050.
Demand Supply Gap

Utilizable Water Availability (1109 BCM)

Source: www.indiastat.com; CWC
Benchmarks

24x7 supply, Universal access, Efficiency, Sustainability

Reality

Intermittent, Poor coverage (slums), High cost and NRW, Poor cost recovery
We need Urban Reforms

We Build-
Neglect and
Rebuild
MSNA - Reforms in Urban Water Supply
How is Performance Gauged?

Nine Performance Indicators

1. Coverage, Water Supply Connections
2. Per capita supply of water
3. Extent of metering
4. Continuity of water supply
5. NRW Reduction
6. Quality of water Supply
7. Redressal of complaints
8. Cost recovery in water supply services
9. Efficiency in collection of water charges
Gap in Service Level Benchmarks

- Coverage Connections
- Per Capita Supply
- Metering Of Connections
- Non Revenue Water (NRW)
- Continuity Of Supply
- Quality and Treatment
- Redressal Of Customer Complaints
- Cost Recovery
- Efficiency In Collection charges

Benchmark vs Maharashtra
Key feature of MSNA

Reforms led investment for improved, sustainable services

• GoI has prescribed Benchmarks
• MSNA is an approach to reach the benchmarks; implementation in 3 phases
**MSNA Phasing**

**Phase-I (2009-12)**
- House to House Survey
- Hyd. Model
- Bulk Meter
- Water + Energy Audit
- Pressure Management
- GIS Mapping
- PPP in O&M
- Computer Billing

**Phase-II (2012-17)**
- 24x7 in pilots
- Sustainable sources
- Metering 80%
- Collection efficiency (80%)
- Sewerage system
- MIS
- Tariff framing
- Solid waste Mgmt.
- ODF cities

**Phase-III (2017-25)**
- 24x7 System
- Metering 100%
- Collection efficiency (100%)
- Sewerage including STP
Reforms and Expected Outcomes

- **Consumer Survey**
  - Detect illegal connection
  - Regularization
  - Increased Revenue

- **Water Audit and Metering**
  - Assess NRW, reduce leakages
  - Save water, reduce expenditure

- **Volumetric Pricing**

- **Hydraulic modelling**
  - Rationalize network
  - Reduced Capex, and O & M
Reforms and Expected Outcomes

**Energy Audit**
- Increased efficiency
- Reduced expenditure

**Computerized billing**
- Increased billing efficiency
- Increased income

**O & M**
- Management Contracts
- Sustainability
Results emerge

MSNA
Results start emerging...

• **Increase in Revenue**
  - Illegal connections identified
  - Better and regular billing cycle
  - Improved collection efficiency observed
Identification of % NRW

- Water Audit carried out
- Awareness regarding NRW took place due to reforms
- NRW in internal distribution is more
- Greater scope for household metering and efficient water management
Energy Audit

• *Increased pump efficiency leading to saving in power cost* +
• *Due to decreased NRW, pumping hours saved* ➔
• *Expenditure on operations reduced (added savings)*

![Bar chart showing energy efficiency improvement across different locations.](chart.png)
Translates to savings in expenditure...

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Srivardhan</th>
<th>Manmad</th>
<th>Manvat</th>
<th>Ramtek</th>
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</thead>
<tbody>
<tr>
<td>Pump Efficiency %</td>
<td>50%</td>
<td>43%</td>
<td>44%</td>
<td>75%</td>
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<tr>
<td>Energy Bill Saving, Rs. Lakhs</td>
<td>0.87</td>
<td>37.51</td>
<td>3.66</td>
<td>2.44</td>
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</tbody>
</table>
Improvements in Water Tax Collection
(Rs. Lakhs/year)

• Billing efficiency has enhanced
• Monthly billing cycle being adopted
• Computerized billing mechanism adopted
• Outsourcing has also been done in some cases
• Tax Collection doubled in some cases

![Bar chart showing improvements in water tax collection before and after MSNA for various locations.](chart.png)

<table>
<thead>
<tr>
<th>Location</th>
<th>Before MSNA</th>
<th>After MSNA</th>
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<tbody>
<tr>
<td>Godhiya</td>
<td>205.04</td>
<td>200</td>
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<tr>
<td>Karanja</td>
<td>110.53</td>
<td>106.39</td>
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<tr>
<td>Anijangaon</td>
<td>53.59</td>
<td>30</td>
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<tr>
<td>Akot</td>
<td>105.23</td>
<td>16.99</td>
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<tr>
<td>Ramtek</td>
<td>13.7</td>
<td>30.42</td>
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<tr>
<td>Ahemadpur</td>
<td>13.7</td>
<td>30.42</td>
</tr>
<tr>
<td>Pathri</td>
<td>13.7</td>
<td>30.42</td>
</tr>
</tbody>
</table>
Thank you
Challenges

- Competing demand
- *Increasing demand*
- Sustainability of source
- *Affordability & willingness to pay*
- Maintenance of assets
- *Operational sustainability*
UNDERLYING CAUSES OF PROBLEM

• WATER – AN ECONOMIC, SOCIAL, EMOTIVE GOOD

• PRESUMED RIGHT TO BE SUPPLIED FREE OF COST

• INCREASING COST OF PRODUCTION AND TRANSPORT OF WATER

• LARGE BUDGETARY REQUIREMENTS
UNDERLYING CAUSES OF PROBLEM

• LOW DEBT SERVICING CAPABILITY OF ULBs

• FINANCIAL VIABILITY AN ISSUE
  – Reluctance to levy appropriate tariff
  – Weak enforcement of recovery

• LACK OF PROFESSIONAL MAINTENANCE OF ACCOUNTS

• POOR BILLING AND COLLECTION EFFICIENCIES
UNDERLYING CAUSES OF PROBLEM

• WEAK APPROACH TOWARDS WATER MANAGEMENT (limited to water supply)

• LACK OF DEDICATED AND TRAINED PROFESSIONALS AND WEAK INSTITUTIONAL ARRANGEMENTS FOR O & M