Water for growth?

• Cities-industries need water for growth. Where will this come from?
• India will not follow transition of rich world – people move to cities; economies move to service-industry; water moves with it
• Water wars will grow
• Already cases of protest and police firing over water allocation to industry or city
Need to reinvent

- Indian cities need to become prosperous without more water
- Indian cities need to grow but not destroy rivers
- How is this possible?
- This is what Anil Agarwal dialogue is about

Water story in cities

1. Planners obsessed with water, not supply

Water sourced from further and further away
Leads to increasing cost of supply
Leads to high distribution losses
Less water to supply at end of pipeline
Less water means more costly water
Cities not able to recover costs of supply, have no money to invest in sewage
Pumping adds to costs

Cost of energy high and growing component of water supply

= ‘Official inequity’
Groundwater: abused

2. Water supply does not reach all, only few. No alternative but to move to groundwater

But this is not accounted for
Cities only consider ‘official’ groundwater use
Millions depend on private wells, tanker mafia, bottled water

No recognition of this water source; no respect for its management

Where pipeline does not reach
People depend on groundwater
Falling groundwater levels tell us about inequity

PCD: Units per capita daily
Source: Central Ground Water Board, 2002
Lakes: Present lost

3. Groundwater is not considered as critical for water supply, recharge is neglected

Land is valued, water is not
No legal protection for city lakes, catchment and drainage systems

Sponges of cities being destroyed. Deliberately

Lakes: Future lost

- Climate change is new threat
- Extreme rainfall events will grow
- More rain, fewer rainy days
- Cities need sponges to capture rain, recharge for scarcity
- But not considered in planning
- Cities see land, not water
4. Cities plan for water, forget waste

80% water leaves homes as sewage
More water = more waste
Cities have no accounts for sewage
Cities have no clue how they will convey waste of all, treat it, clean rivers

Excreta: sums

• 2009:
  Sewage generated = 38,255 mld
  Capacity to treat = 11,788 mld (30%)
  Sewage actually treated = 8,251 mld (22%)

Delhi and Mumbai alone have 40 per cent of sewage treatment capacity in the country

78 % sewage is officially untreated and disposed off in rivers, lakes, groundwater
We flush, we forget
Planning for hardware

5. Cities plan for treatment not sewage
   • Treatment plants are not simple answers
   • Can build plants to treat, but there is no waste being conveyed for treatment
   • Most cities do not have underground sewage But engineers sell pipe-dreams of **catching up with infrastructure**
   • Politicians buy pipe-dreams
   • We lose rivers. Generations of **lost rivers**

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Cities do not have drains
New growth cities are growing without drains
Backlog and front-log impossible to fix
As cities fix one drain, another goes under

<table>
<thead>
<tr>
<th>% of area covered</th>
<th>Cities</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-10</td>
<td>Cuttack, Guwahati, Jabalpur, Jammu, Ranchi, Thane, Aizawl, Bathinda, Bhilwara, Siliguri, Srikakulam</td>
</tr>
<tr>
<td>10-30</td>
<td>Agra, Allahabad, Indore, Mathura, Meerut, Puducherry, Thrissur, Thiruvarur, Thiruvananthapuram, Thiruvannamalai, Coimbatore, Madras, Hubli-Dharwad, Jhansi, Kozhikode, Lucknow, Jalapet, Tamku, Udaipur, Ujjain, Dhanbad</td>
</tr>
<tr>
<td>30-50</td>
<td>Allahabad, Bengaluru, Bhopal, Delhi, Lucknow, Patna, Srinagar, Amritsar, Bhubaneswar, Jodhpur, Mumbai</td>
</tr>
<tr>
<td>50-70</td>
<td>Faridabad², Hyderabad, Jaipur¹, Kanpur, Kolkata, Nagpur, Gwalior, Mysore, Namakkal, Rajkot, Vadodara, Yaminanagar</td>
</tr>
<tr>
<td>&gt; 70</td>
<td>Chennai, Pune, Surat, Gurgaon²</td>
</tr>
</tbody>
</table>

¹Claims 85% coverage in CSE survey, 65% in City Development Plan for JNNURM, ²Faridabad and Gurgaon: only 64 cities within municipal limits included

Source: Asian 2011, 71-City Water-Security Survey, 2005-06, Centre for Science and Environment, New Delhi
Bengaluru: not reaching

- 3610 km of sewage pipes
- 14 sewage treatment plants = **781** mld
- Generates 800-1000 mld of sewage
- **But treats only 300 mld**
- Rest does not reach
- Now plans to build 4000 km more
- **Builds, grows and more lines need repair**
- Catch-up that does not catch-up

Partial treatment=pollution

**6. Cities do not control pollution**

The current water-sewage is both capital intensive and resource intensive
Cities cannot build new sewage systems or refurbish old systems
As a result sewage is treated partially or not at all
This leads to pollution
High cost to human health and environment
Agra: will spend more on treating water than it costs to treat sewage
144 mld
water treatment plant
Capital cost: Rs 1 crore/mld
Operation costs: Rs 3-4/kl

Cities forget:
we all live downstream

Generation of lost rivers

• Delhi knows only Najafgarh – a dirty drain of Yamuna
• Delhi does not remember that this was Sahibi – which once flowed from the Aravalli into a jheel
• Mumbai knows only Mithi – a dirty drain. It even calls it a drain. But this was its river
• Ludhiana knows Budha Nullah as a drain. But this was a darya – a river

Generation of lost rivers. How many more will we have to lose before we remember
7. Reform agenda

1. Plan to cut costs of water supply
2. **Invest in local water systems:** learn and innovate on decentralised water supply
3. Reduce water demand
4. Spend on sewage not on water
5. **Cut costs on sewage systems:** innovate on redesign of the sewage system
6. Plan to recycle and reuse every drop

We all live downstream