Liveable cities

The infrastructure we build today will shape the way we produce and consume for decades to come.

Workshop on Water and Green Growth
United Nations Conference Centre
Bangkok, Thailand
25 February 2015
General

• Water is core of natural capital. It is vital for human lives and for natural ecosystem, and play important role for economic development (energy, food and other goods and services) and to accomplish Millennium Development Goals (esp. Goals 1, 7).

• Asia-Pacific region is rapidly urbanizing with population of about 0.96 billion in 1990 to 1.96 billion in 2014, and 3.2 billion (64% of total) in 2050. There is also rapid economic development with high contribution by urban sector, and high and inefficient natural resources consumption.

• There is an increased demand for fresh water.

• There is poor management of urban water resources especially in cities of developing countries: inefficient water supply and consumption including water leakage, insufficient access to safe water and sanitation, poor or negligible treatment of municipal wastewater, unsustainable pattern of ground water extraction, and poor management of surface run-off water (storm water) and increased urban flooding.
Challenges

• Improve supply and consumption efficiencies of water towards closing water-use cycle.

• Ensure adequate and safe drinking water supply, improved sanitation as well as wastewater treatment.

• Utilise alternative water sources, including rainwater, storm water, and reclaimed and treated water/wastewater.

• Improve economic efficiency of services to sustain operations and investments for water, wastewater, and rainwater/storm water management.

• Reduce surface run-off water and flooding.
Outcomes

• Eco-efficiency concept should be embedded into national/urban development and water resources management policies and programmes for the development of eco-efficient urban water infrastructure to achieve both ecological efficiency & economic efficiency.

• Urban planning and infrastructure development (including greenery) development should integrate water supply, rainwater harvesting, storm water management & wastewater treatment and recycling as well as flood control measures towards closing water-use cycle. Implementation of integrated urban water management framework is recommended.

• Decentralized approach may also be considered for improved efficiency of water supply and Consumption.

• Capacity development of policy/decision makers and institutional strengthening both at central and local/urban level supported by relevant case studies and/or construction/installation of pilot projects, in developing countries is essential. Strong coordination between central and local authorities, and in some cases, decentralization is important to ensure implementation successfully.
Recommendations

• It is useful to organize activities to promote awareness of local people/communities for water conservation and management including improved sanitation service, and also to encourage them to use new waters. This may help to promote ownership and sustainability of the water infrastructure developed.

• School curriculum, may be developed on the importance of maintaining safe water and improved sanitation service and also on the need to conserve and manage all waters including new waters.

• Since urban water has large ecological footprint and also competes with other water use areas/sectors, it is important to have strong coordination mechanism between the central line ministries/agencies dealing these areas.
Thank you very much!!

Ram S. Tiwaree, Dr.Eng.
Sustainable Urban Development Section
Environment and Development Division
Email: tiwaree@un.org; tiwaree@gmail.com
Eco-efficient Water Infrastructure

- Eco-efficient approach for Water Infrastructure - process to achieve the goals to (1) maximize water goods and services values; (2) optimize natural resources and (3) minimizing the environment impacts to ecosystem - 3R principles (reduce, recycle, reuse).

<table>
<thead>
<tr>
<th>Physical Infrastructure</th>
<th>Non-physical Infrastructure</th>
<th>E/E Water Infrastructure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dams, water supply &amp; sewage treatment facilities, aqueducts, sewers</td>
<td>Laws, regulations, regulatory programs, government bureaus, civil society groups, stakeholder dialogues</td>
<td>An optimal level of water utilization &amp; a less burden to limited water resources</td>
</tr>
</tbody>
</table>
Integrated Urban Water Management

From Hoban and Wong, 2006