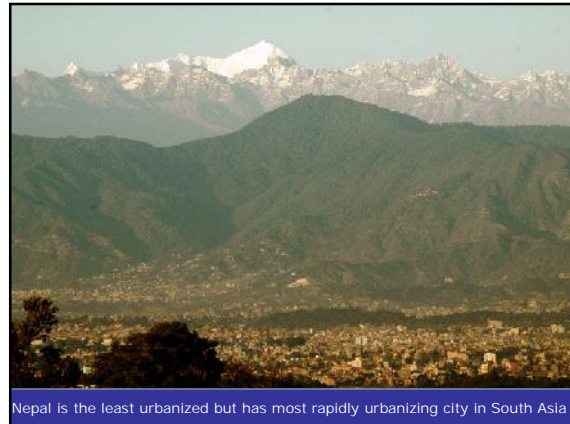


WASH SSG Meeting
23 September 2014

Urban WASH in Nepal Challenges & Opportunities

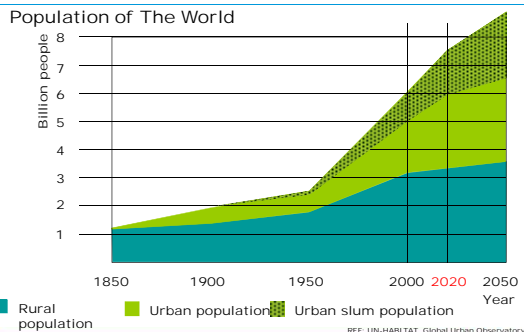
Bhushan Tuladhar
Regional Technical Advisor South Asia
UN-Habitat

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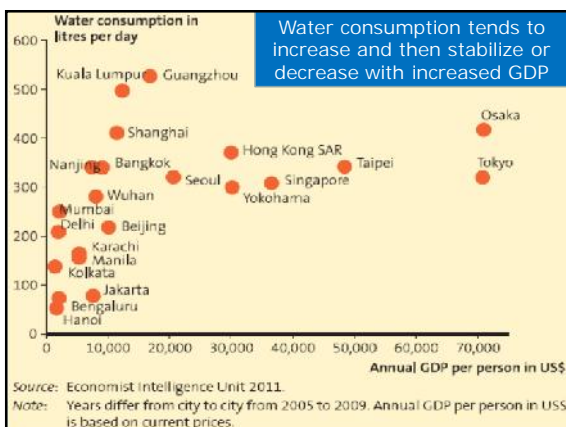
Nepal is the least urbanized but has most rapidly urbanizing city in South Asia

Global Trend in Urbanization

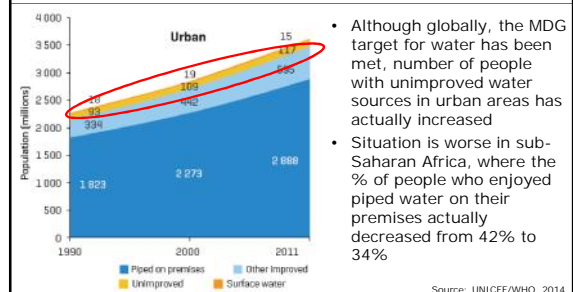


Paraisópolis Favela (Paradise City), Sao Paulo, Brazil

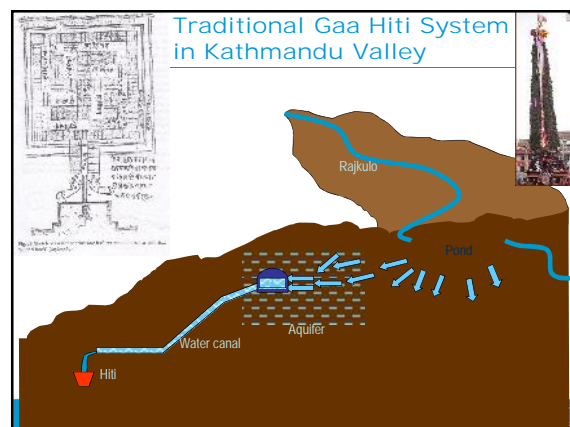
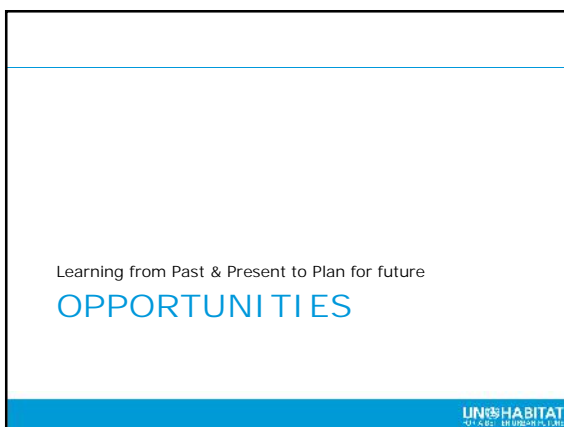
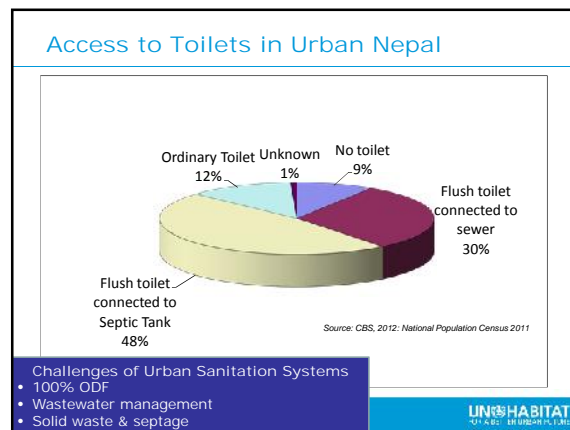
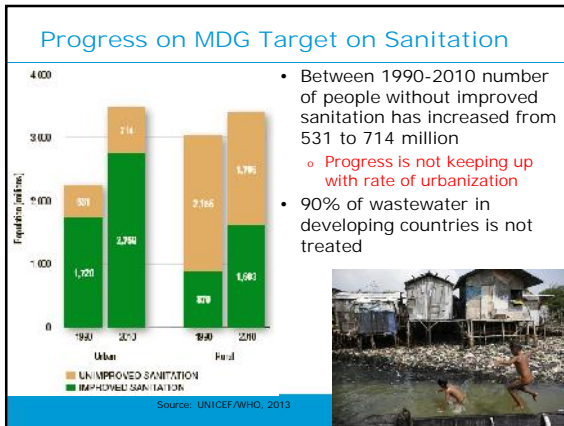
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Progress on MDG Target on Water



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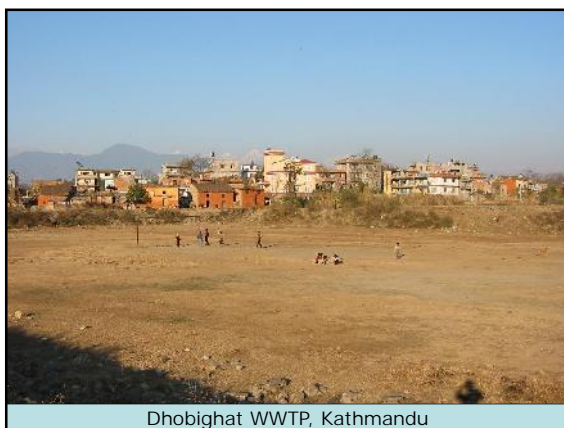


Traditional System for Waste Management in Kathmandu Valley



- "Waste was sold for Rs. 0.50 per tin"
 - G. S. Nepali, 1965
 - Waste had a value
 - Waste management meant waste recycling
 - Waste generator was responsible for waste management

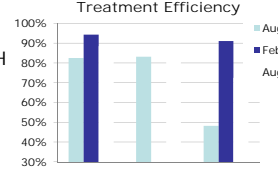
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HUMAN SETTLEMENTS PROGRAM




Wastewater Treatment at Shreekhandapur, Dhulikhel

- Constructed in 2008
- Capacity: 200 hhs
- Biogas supplied to 5 HH
- Cost: Rs. 5.5 million
- Modules:
 - Biogas: 150 m³
 - Horizontal flow CW
 - Sludge drying beds

Treatment Efficiency



Parameter	Aug-09	Feb-10	Aug-10
TSS	~80%	~90%	~85%
BOD	~80%	~90%	~85%
COD	~40%	~50%	~45%





Examples of Sustainable water management in different cities

- Chennai, India
 - Made rainwater harvesting and recharge compulsory after droughts in 2002 & 2003. Groundwater levels rose by almost 50% between 2004 & 2007
 - Earns INR 20 million per year by selling sewer for recycling
 - Biogas from four sewage treatment plants
- Windhoek, Namibia
 - About 26% of the water supplied is recycled sewage
 - Dual piping system to use semi purified sewage for irrigation
 - Recharging its aquifer
- Amman, Jordan
 - Generates 3 MW from head difference in wastewater also generates biogas

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Cities leading the way in wastewater management



- Indonesia aims to reach 5% of the total urban population through community managed DEWATS by the end of 2014. A review of almost 400 DEWATS units installed between 2003 and 2007 found that over 80% of them were functioning well and complying with effluent discharge standards (WSP, 2013)
- Phnom Penh transformed itself from a near-bankrupt, demoralized and corrupt institution into one of the best utilities in the world
 - Increased its connections to poor households from 101 household connections in 1999 to 17,657 in 2008.
 - Reduced unaccounted-for water from over 60% in 1998 to just 6% by 2008, which is comparable to Singapore
 - Received the Stockholm Industry Water Award 2010

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Post 2015 Global Goal for Water



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Summary

- Urban WASH needs to be a priority
- Cities need to move away from the traditional “linear” approach of water management to a more integrated approach that minimizes resource consumption and waste
- As many of the future cities in Nepal are yet to be built, there is an opportunity for us to learn from others and invest in integrated systems.

“Never doubt that a small, highly committed group of individuals can change the world; indeed it is the only thing that ever has.”

— Margaret Meade

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फूलको आँखामा फूले संसार = = =

