Introduction to DWWM Session 1 : Key Issues in Wastewater Management

Module 1 Session 1

Global Trends

This module presents key global trends that set the context for decentralised wastewater management approaches.

Urbanising World

Ongoing Wastewater and Agriculture practices

Pollution of water used for Agriculture

Sanitation Gap and Health Impact

Growing experience of w*ater stress* - demand for reuse

Underinvestment in wastewater management

Risks of inaction

Urbanising World - I

- Urbanisation is one of the most important demographic trends of 21st century particularly in lower income countries.
- In 1998, 2 billion of the world's population lived in cities – by 2025 it is estimated to increase to 4 billion (1).
- Much urban growth is informal, unplanned in smaller urban settlements and peri-urban areas.

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Urbanising World - II

- Urbanization creates huge pressure for the provision of new urban infrastructure which few governments are able to meet (1).

- There are at least 600 million people living in housing and physical environments of such poor quality that their lives and health are constantly at risk (2) .

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Traditional Reuse Practices

- Wastewater provides water and nutrients for agriculture and aquaculture
- Common practice in peri-urvan farming communities.
- In peri-urban areas agriculture sustains the livelihoods of poor communities through growing food and marketable produce.

Pollution of water used for agriculture

- There is dramatic forecasted growth in coverage of water supply e.g in Asia water supply by 2025 will serve 2.5 billion pop'n.

- Moderate growth of water supply in Africa upto 500 million people by 2025

- Increasing amounts of wastewater produced is discharged into nearby water bodies

Sanitation Coverage without Wastewater Management

- Globally 2.5 billion people globally lack access to basic sanitation. This is often when there is in-house sanitation but no provision is made to manage the wastes produced.

- Wastewater is discharged into nearby water bodies leading to pollution of surface water that is used for agriculture.

Region	% population in large cities that is sewered	% sewered wastewater that is treated to secondary level
Africa	18%	0%
Asia	45%	35%
Latin America/ Caribbean	35%	14%
Oceania	15%	not reported
Northern America	96%	90%
Europe	92%	66%

Health Impacts

- Diseases are spread through contamination of water. At any one time around half of all people in developing countries are suffering from one or more diseases, such as diarrhoea, hookworm or trachoma.

- 80 percent of illnesses and 25 percent of deaths are due to contaminated water (5).

Growing levels of '*water stress*'

- 'Water use has been growing at more than twice the rate of population increase during this century. Already a number of regions are chronically water short.

- About one-third of the world's population lives in countries that are experiencing moderate to high *water stress* … by 2025 as much as two-thirds of the world population will be under stress conditions' (3)

- *(Water stress* starts to occur when the total amount of renewable fresh water per person per year is below 2000 m3).

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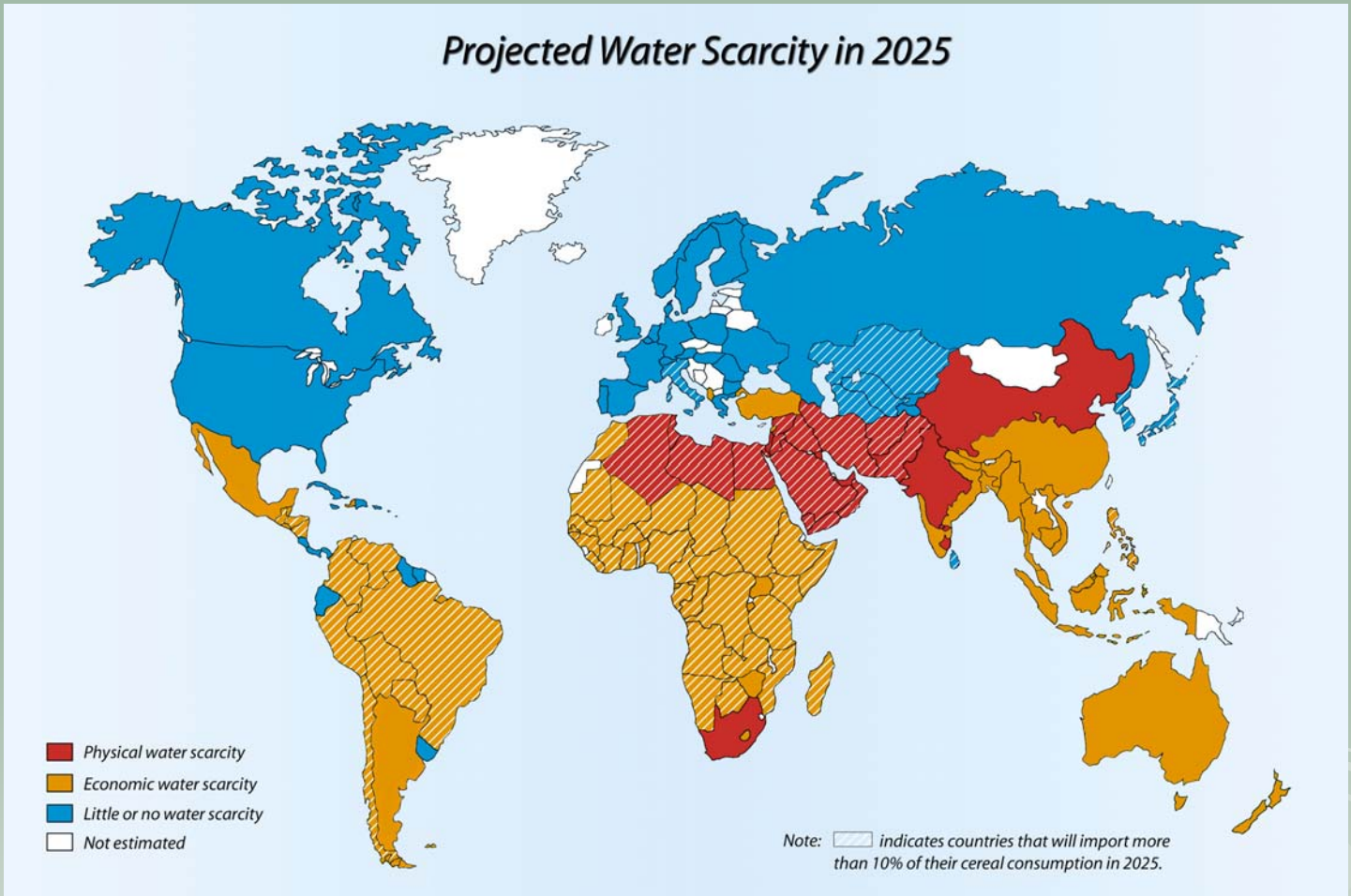
Projected Water Scarcity



Millennium Development Goals

- **Goal 7: Ensure environmental sustainability**

- Target 10: Halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation

- Target 11: Have achieved, by 2020, a significant improvement in the lives of at least 100 million slum dwellers

Underinvestment in Wastewater

- Sanitation and wastewater management are often low priorities.

- Global annual investment in sanitation and sewerage is estimated to be $901 million from national sources and $120 million external investment. These figures broadly represent $3 per person per year for water and $1 per person for sanitation (4).

- In comparison United Kingdom (England and Wales) report “modern equivalent asset values” of $1,890 per person for water and $3,530 per person for sewerage and complete wastewater treatment. The privatized industry is investing an average of about $100 per person per year (5).

Achieving the MDGs meeting the Gap

- Estimates of the global requirement to meet service gaps are $92 per person for household water and $154 for sewerage (4)

- To build to this financial investment level:-

  - Costs must be kept low and technical specifications simple.
  - There must be an emphasis on local options, on-plot and on-site sanitation at $26–50 per person rather than expensive sewerage.

  (Reference 6).

Risks of Inaction

- In an urbanising world a growing number of people live in a physical environment where their lives and health are at risk from poor sanitation.
- Increasingly, polluted wastewater is discharged to water bodies and surface water used for aquaculture and agriculture.
- Investment in sanitation and wastewater treatment is a priority.
- Affordable, local options can make a significant contribution to reaching this global solution.

References

- *1. DFID Urban Target Strategy Paper (2001)*
- *2.OECD Shaping the Urban Environment (2002)*
- *3. Comprehensive Assessment of Freshwater Resources of the World (1997)*
- 4. WHO and UNICEF (2001)
- 5. Ofwat Service Delivery Agreement, Ofwat (2001)
- *6. Information drawn from Franceys, R 2004 Charging to Enter the Water Shop?*