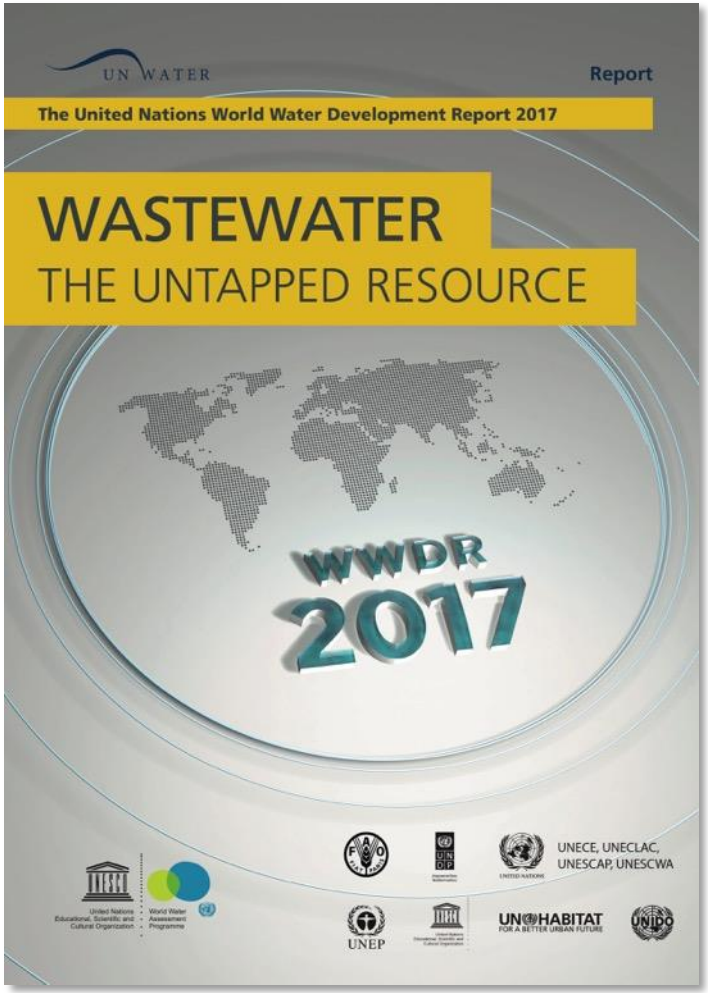


UN WATER

United Nations Educational, Scientific and Cultural Organization

World Water Assessment Programme

UNITED NATIONS ESCAP

Economic and Social Commission for Asia and the Pacific

Asian and Pacific Centre for Transfer of Technology (APCTT)

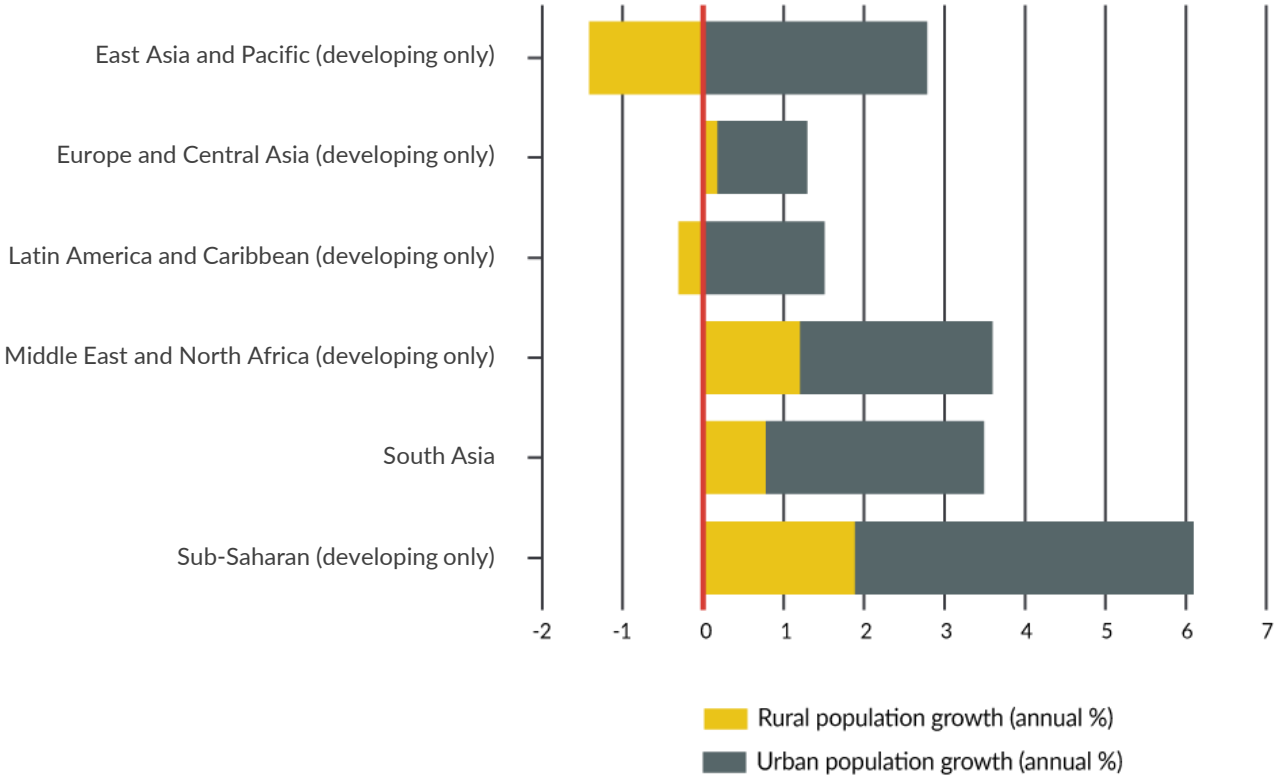
WASTE WATER – THE UNTAPPED RESOURCE : A SNAPSHOT OF THE UNITED NATIONS WORLD WATER DEVELOPMENT REPORT 2017

Krishnan S. Raghavan Ph.D.
Coordinator, Technology Transfer
United Nations ESCAP-APCTT

PART 1

THE STATE OF THE WORLD'S WATER RESOURCES

THE DEMAND FOR WATER HAS BEEN CONSISTENTLY INCREASING AND WILL CONTINUE TO DO SO OVER THE COMING DECADES



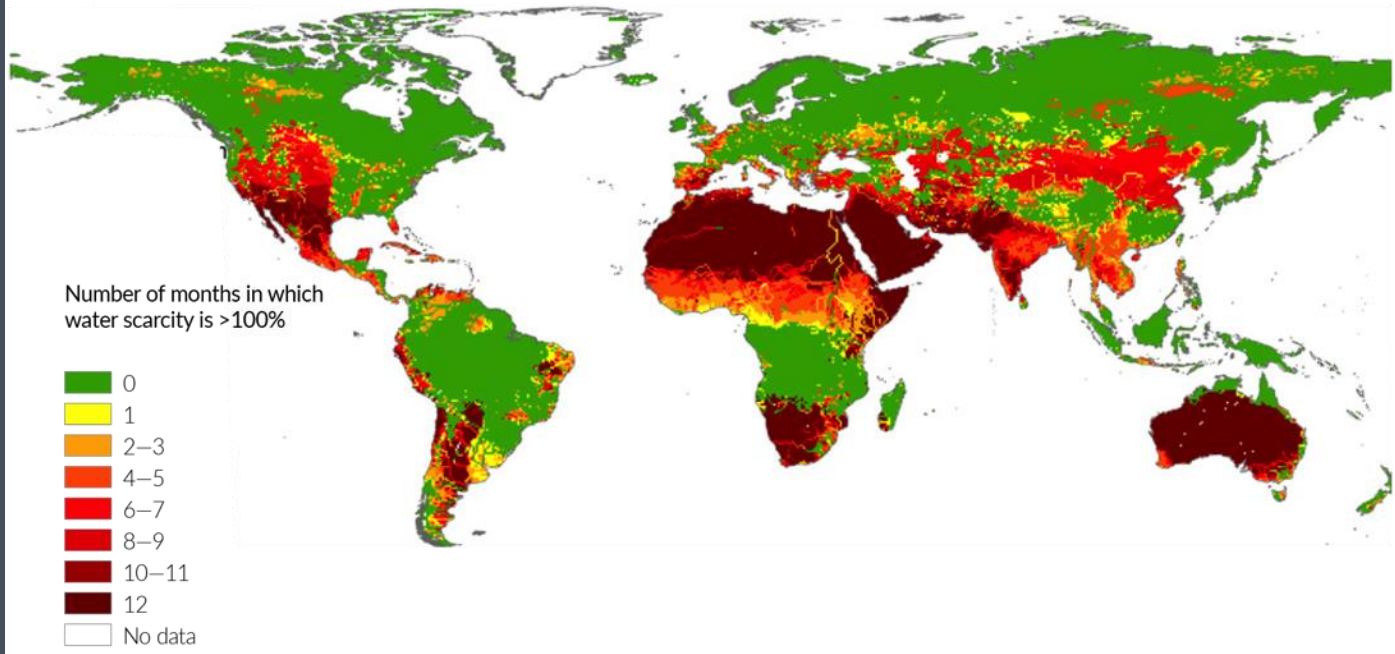
Source: Based on data from the World Bank (n. d.)

ACCELERATING URBANIZATION

Additional 2.3 billion people living in cities by 2050

INCREASING WATER SCARCITY

Two thirds of the world's population currently live in areas that experience water scarcity for at least one month a year



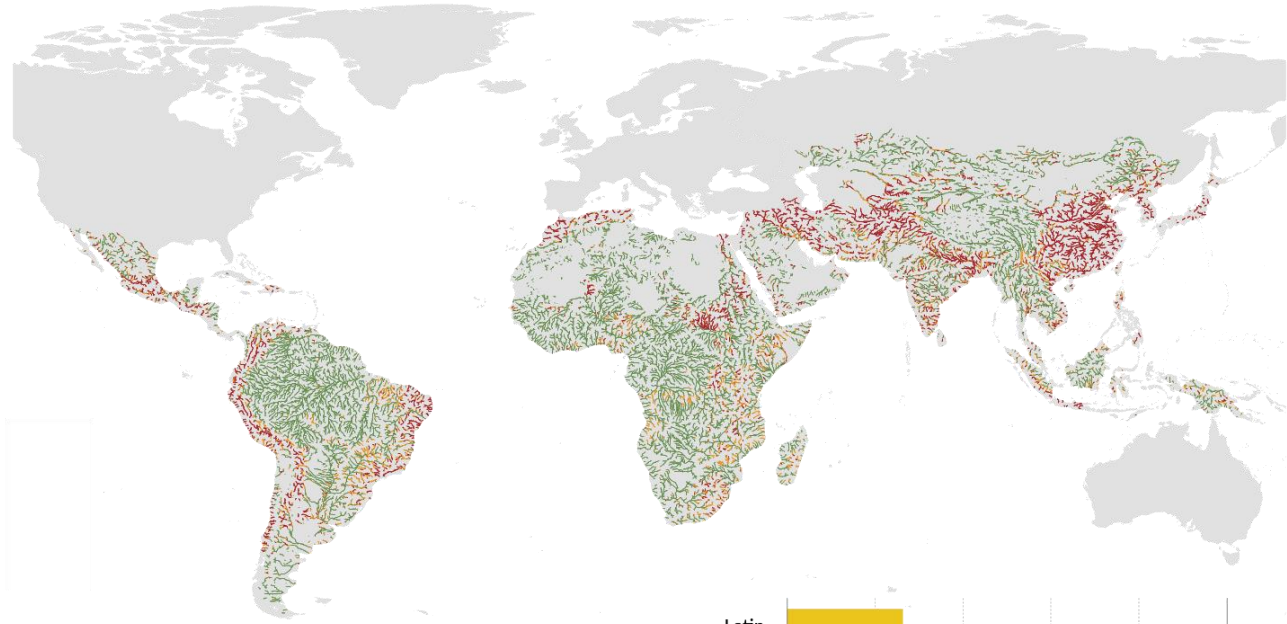
Source: Mekonnen and Hoekstra (2016)

INCREASING WATER SCARCITY

Climate change will exacerbate the frequency and severity of floods and droughts

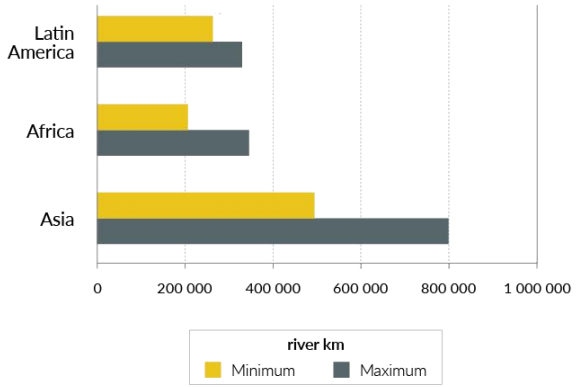
DEGRADATION OF WATER QUALITY

Severe pathogen pollution affects around one-third of all river stretches in Latin America, Africa and Asia, putting the health of millions of people at risk



February 2008–2010
FC [cfu/100ml]

- Not computed
- Low pollution (=200)
- Moderate pollution (200<x=1000)
- Severe pollution (>1000)



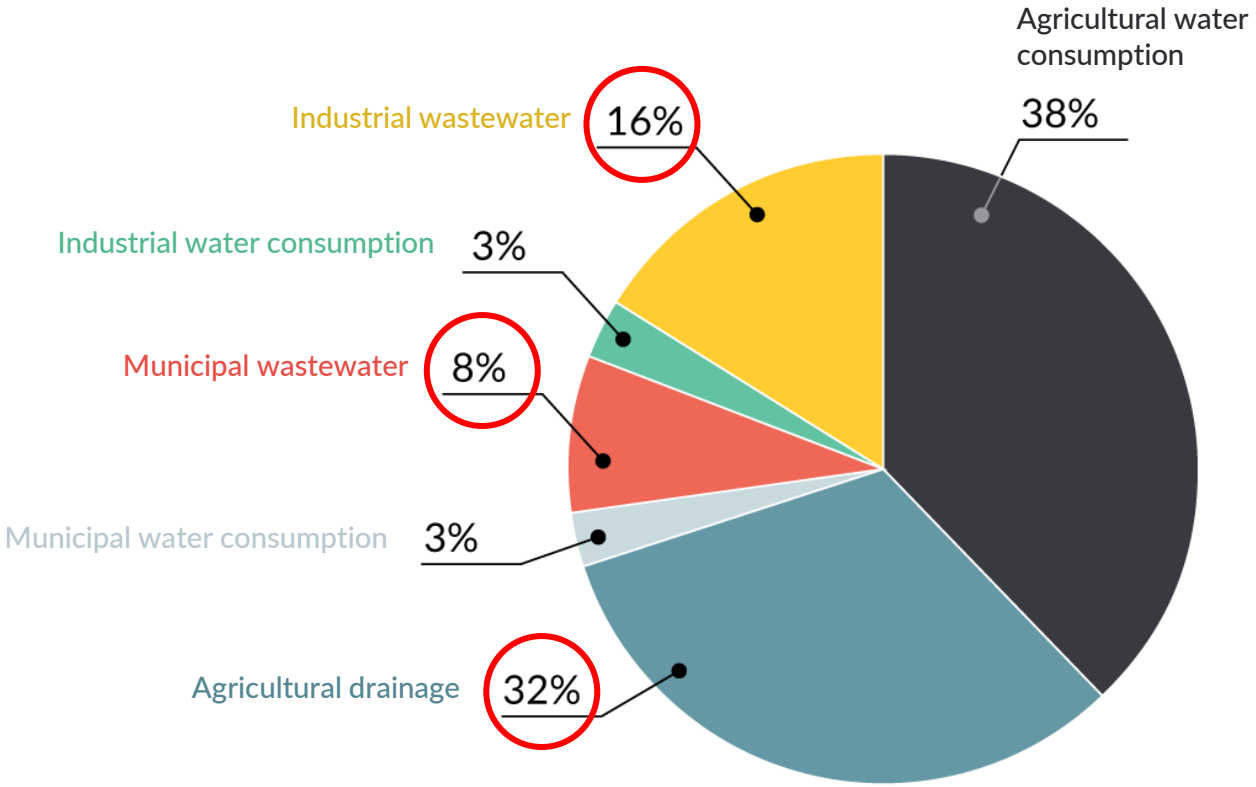
Source: UNEP (2016)

MORE WASTEWATER THAN EVER

The quantity of wastewater produced and its overall pollution load are increasing worldwide

MORE WASTEWATER THAN EVER

As the overall demand for water grows, the quantity of wastewater produced and its overall pollution load are increasing worldwide



Source: FAO, based on data from AQUASTAT (n.d.a.), Mateo-Sagasta et al. (2015), and Shiklomanov (1999)

MORE WASTEWATER THAN EVER

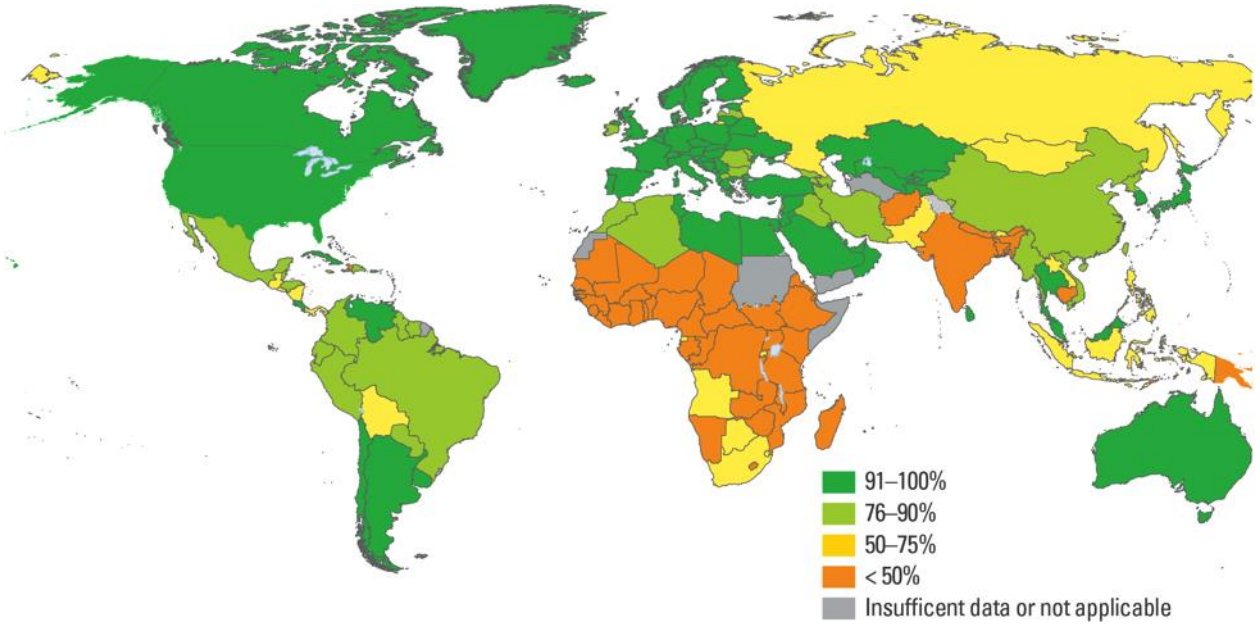
PART 2 HUMAN HEALTH, SANITATION AND THE SUSTAINABLE DEVELOPMENT AGENDA

HUMAN HEALTH AND IMPROVED SANITATION

2.4 billion do not have access to improved sanitation

Nearly 1 billion people worldwide still practice open defecation

Access to improved sanitation



Source: UNICEF and WHO 2015

THE 2030 AGENDA FOR SUSTAINABLE DEVELOPMENT

SDG Target 6.3: By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally

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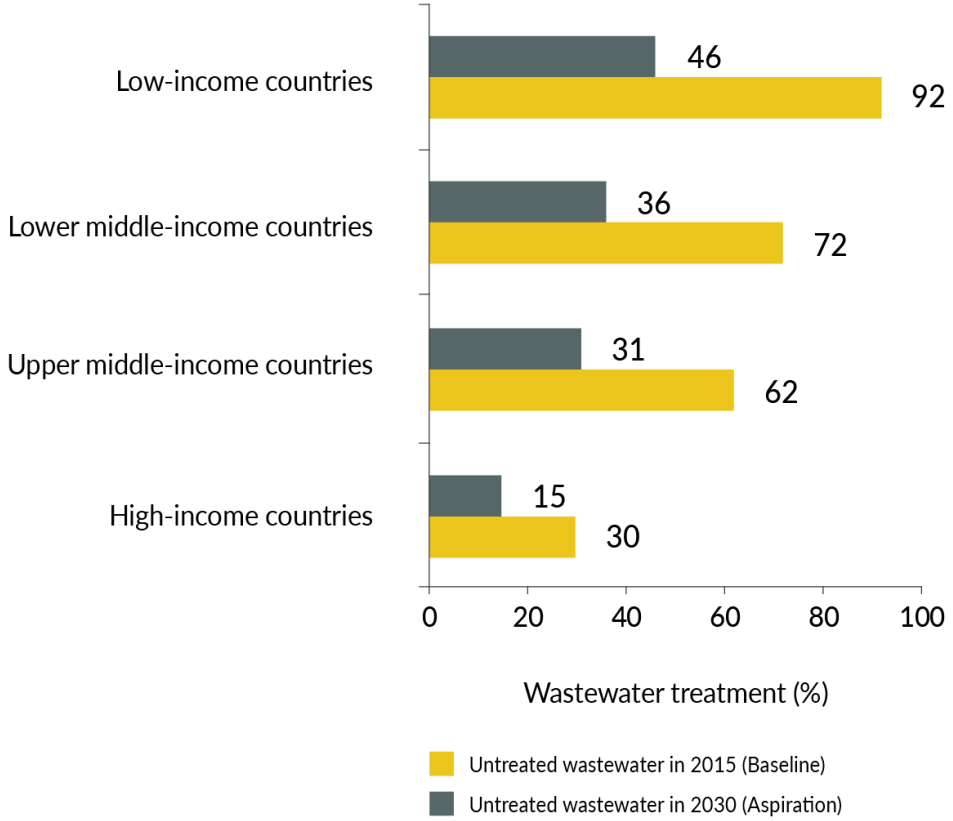


Source: Based on data from Sato et al. (2013)

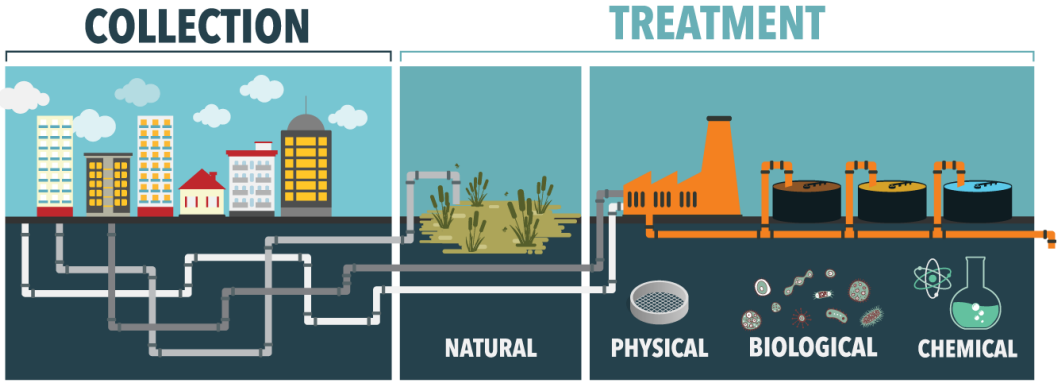
PART 3 MEETING THE CHALLENGE OF IMPROVING WASTEWATER MANAGEMENT

WASTEWATER:
Not a
BURDEN
but a
VALUABLE RESOURCE

REDUCING or PREVENTING POLLUTION at the SOURCE

Pollution prevention and the minimization of wastewater flows should be given priority over traditional ‘after-use’ treatment whenever possible

REMOVING CONTAMINANTS from WASTEWATER: COLLECTION and TREATMENT



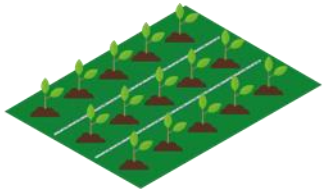
In Brazil, the cost of simplified sewerage (a type of low-cost sewerage) per person has been shown to be twice lower than the cost of conventional sewerage (i.e. US$170 vs US$390)

REMOVING CONTAMINANTS from WASTEWATER: COLLECTION and TREATMENT

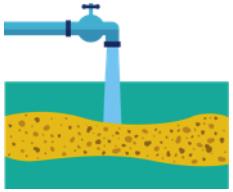
Healthy ecosystems can also complement engineered solutions to wastewater treatment in a cost-effective manner

REUSING WATER

IRRIGATION



AQUIFER RECHARGE



INDUSTRIAL PROCESSES

HEATING/COOLING

POTABLE WATER

Treated wastewater is a safe and reliable source of water that can be used to offset water scarcity

RECOVERING USEFUL BY-PRODUCTS

Wastewater's vast potential as a source of recoverable resources remains largely underexploited

The recovery of nutrients and energy can add significant revenue streams to help cover the investment and operational costs of wastewater treatment and sanitation

3. MINIMIZING RISKS to PEOPLE and the ENVIRONMENT

Exposure of vulnerable groups, especially women and children, to partially treated or untreated wastewater requires specific attention

4. BUILDING CAPACITY and KNOWLEDGE

Capacity building, research and development aimed at improving wastewater management generate employment opportunities and promote green growth

5.
RAISING PUBLIC ACCEPTANCE and SOCIAL AWERENESS

Extensive information campaigns and participation by the public are required to build trust and overcome the so-called ‘yuck’ factor

TAKE HOME MESSAGES FROM THE WWDR 2017

1. Wastewater increasing worldwide
2. Vast majority released without treatment
3. Affordable ('low-cost') treatment options are available
4. Reliable and sustainable source of water
5. Sustainable source of energy, nutrients and other recoverable by-products
6. In a circular economy, wastewater use and by-product recovery can generate new business opportunities while helping finance sanitation services
7. The costs of improved wastewater management are outweighed by benefits in terms of human health, socioeconomic development and environmental sustainability
8. Essential for achieving the 2030 Agenda for Sustainable Development

Thank you

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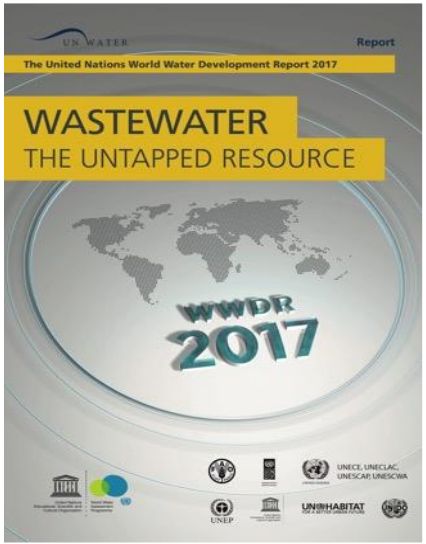

Download the Report at:
www.unesco.org/water/wwap/wwdr

For More Information on WWDR 2017

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