

IMPROVED WASTEWATER MANAGEMENT GENERATES SOCIAL, ENVIRONMENTAL AND ECONOMIC BENEFITS ESSENTIAL TO ACHIEVING SUSTAINABLE DEVELOPMENT

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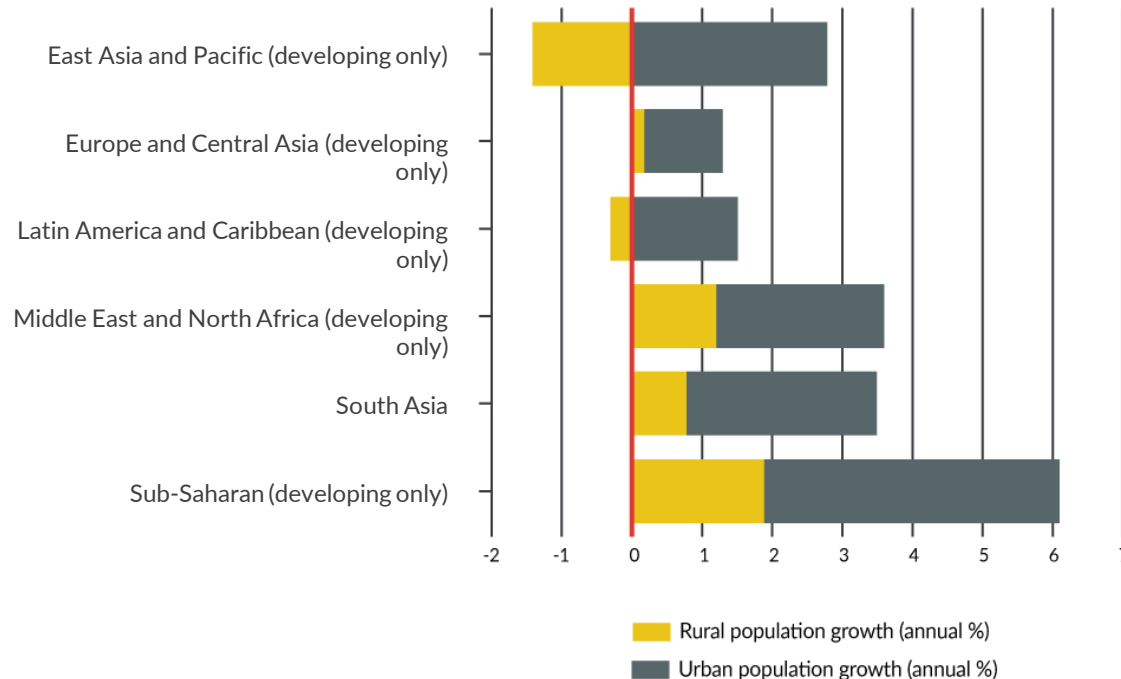
1

THE STATE OF THE WORLD'S WATER RESOURCES



INCREASING DEMAND

The **demand** for water has been consistently increasing over the past few decades and will continue to do so



ACCELERATING URBANIZATION

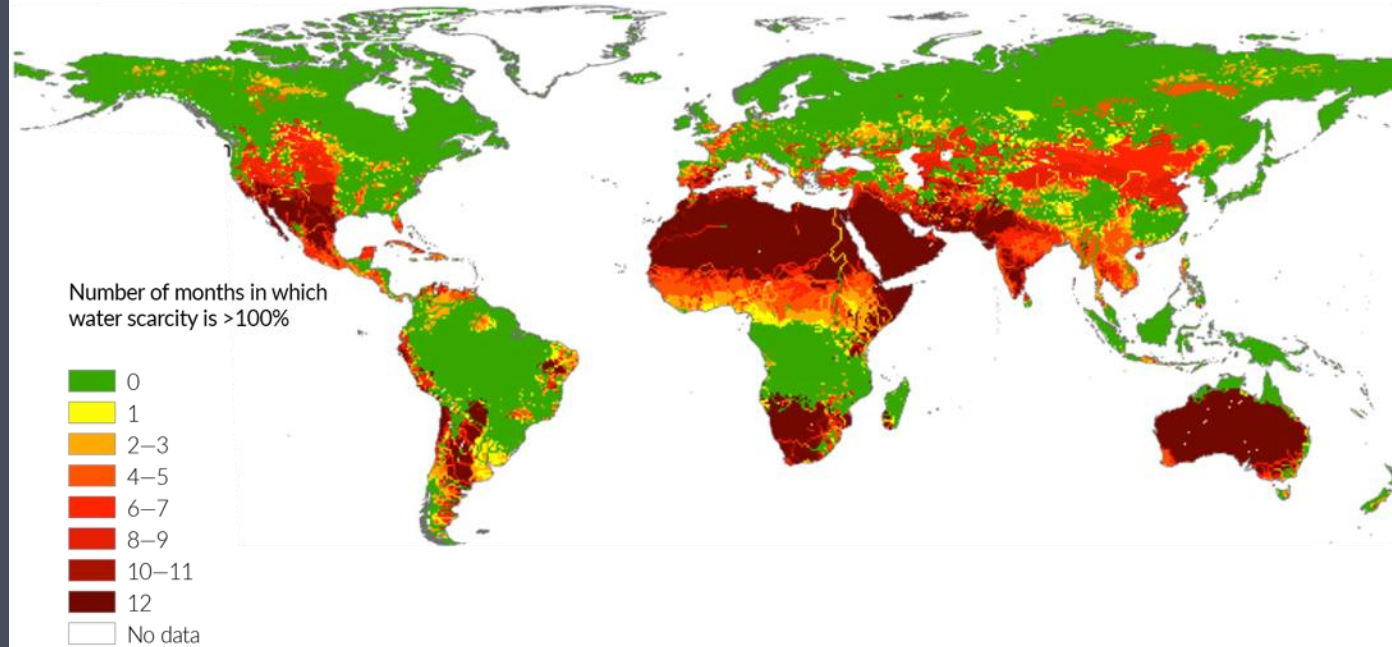
Additional 2.3 billion people living in cities by 2050

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

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

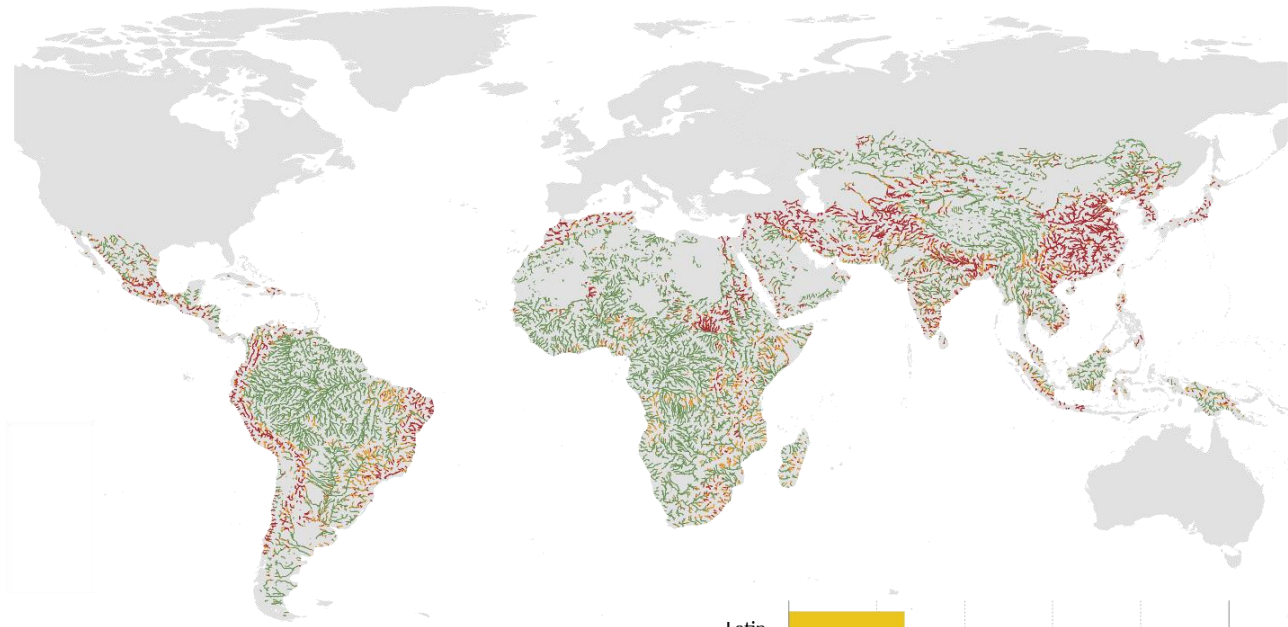
Climate change will exacerbate the frequency and severity of floods and *droughts*



Source: Mekonnen and Hoekstra (2016)

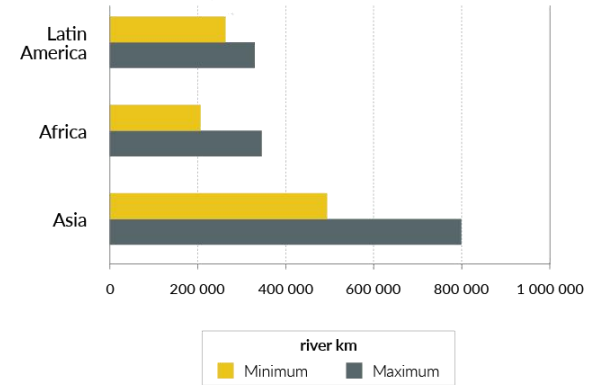
DEGRADATION OF WATER QUALITY

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)



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Source: UNEP (2016)



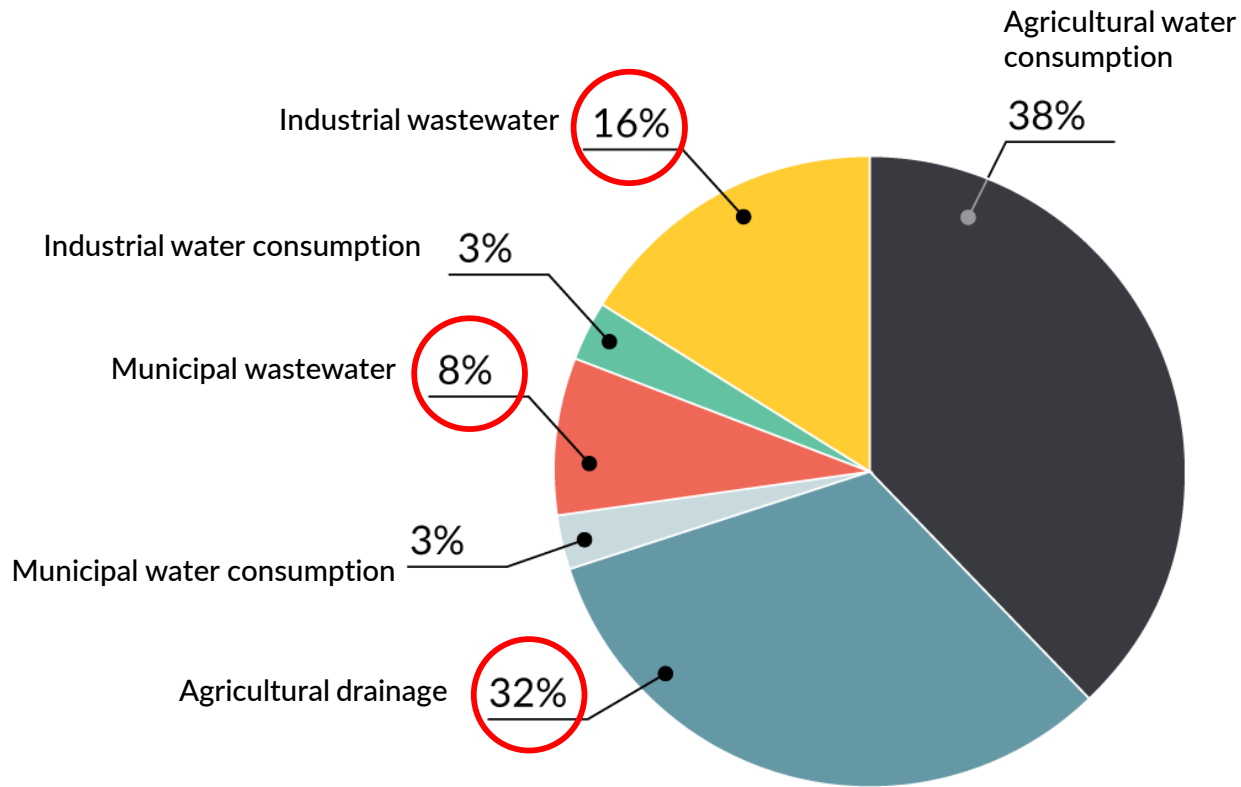
MORE **WASTEWATER** **THAN EVER**

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

Over **80%** of the world's wastewater is released to environment **without treatment**



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




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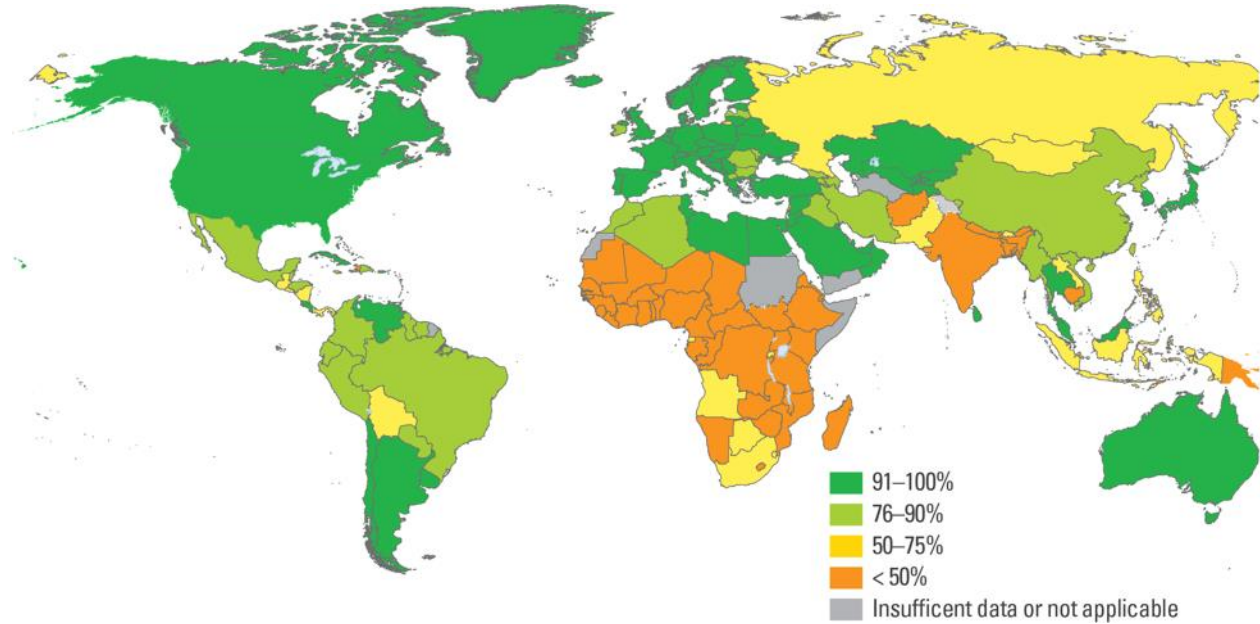
**HUMAN HEALTH, SANITATION AND THE
SUSTAINABLE DEVELOPMENT AGENDA**

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

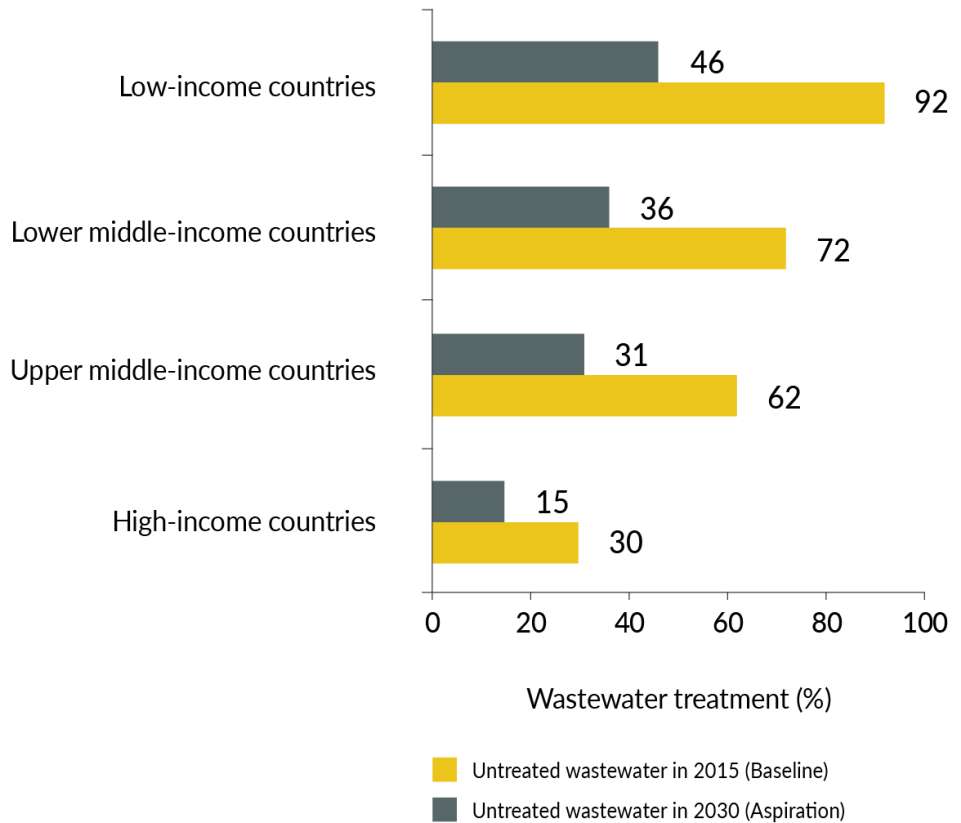


Source: UNICEF and WHO 2015



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



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



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3

MEETING THE CHALLENGE OF
IMPROVING WASTEWATER MANAGEMENT



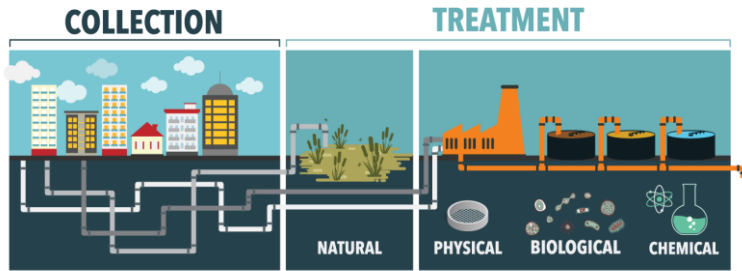
WASTEWATER:
Not a
BURDEN
but a
VALUABLE
RESOURCE

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)



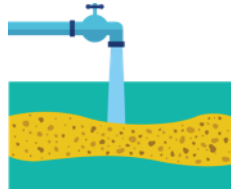
Healthy ecosystems can also complement engineered solutions to wastewater treatment in a cost-effective manner

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



PART

4

CREATING AN ENABLING ENVIRONMENT FOR CHANGE

1. SUITABLE LEGAL and REGULATORY FRAMEWORK

At least 11 out of 22 Arab States have adopted legislation permitting the use of treated wastewater





2. COST RECOVERY and APPROPRIATE FINANCING MECHANISMS

The costs of improved wastewater management are usually outweighed by benefits in terms of human health, socioeconomic development and environmental sustainability

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 AWARENESS

Water reuse schemes can fail if planners do not account for the dynamics of social acceptance





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



“In a world where demands for freshwater are ever growing, and where limited water resources are increasingly stressed by over-abstraction, pollution and climate change, neglecting the opportunities arising from improved wastewater management is nothing less than unthinkable in the context of a circular economy”

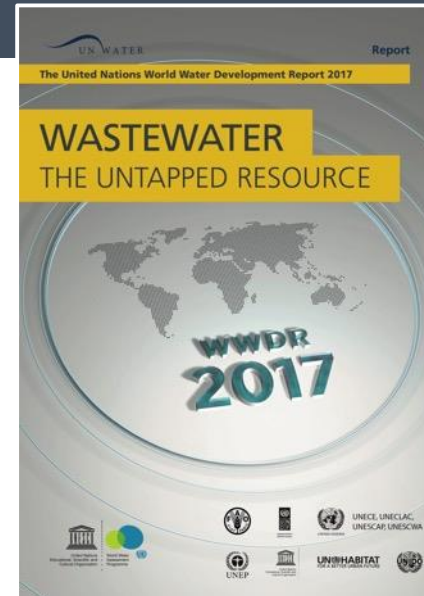
Thank you



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Download the Report at:
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