

WTUN: How Can the Collective Deliver Impact on Clean Water and Sanitation?

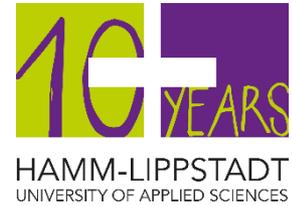
Dieter Bryniok

Vice President for Research and Transfer

Hamm-Lippstadt University

of Applied Sciences

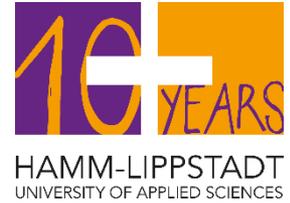
SDG 6: Ensure access to water and sanitation for all



Facts and Figures

- 3 in 10 people lack access to safely managed drinking water services.
- 6 in 10 people lack access to safely managed sanitation facilities.
- 2.4 billion people lack access to basic sanitation services, such as toilets or latrines.
- Water scarcity affects more than 40 per cent of the global population and is projected to rise.

SDG 6: Ensure access to water and sanitation for all



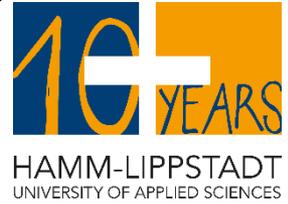
Facts and Figures affecting SDG 2 (Zero Hunger)

- Over 1.7 billion people are currently living in river basins where water use exceeds recharge.
- Approximately 70 per cent of all water abstracted from rivers, lakes and aquifers is used for irrigation

Facts and Figures affecting SDG 3 (Health)

- 1 in 4 health care facilities lacks basic water services.
- Each day, nearly 1,000 children die due to preventable water and sanitation-related diarrheal diseases

SDG 6: Ensure access to water and sanitation for all



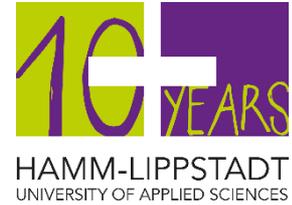
Facts and Figures affecting SDG 5 (Gender Equality)

- Women and girls are responsible for water collection in 80 per cent of households without access to water on premises.

Facts and Figures affecting SDG 13 (Climate)

- Floods and other water-related disasters account for 70 per cent of all deaths related to natural disasters

SDG 6 Targets



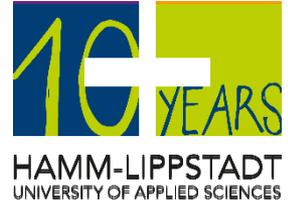
6.1 By 2030, achieve universal and equitable **access to safe and affordable drinking water** for all

6.2 By 2030, achieve access to **adequate and equitable sanitation** and hygiene for all ...

6.3 By 2030, improve water quality by **reducing pollution**, eliminating dumping and minimizing release of hazardous chemicals and materials ...

6.4 By 2030, substantially **increase water-use efficiency** (...) ensure sustainable withdrawals and supply of freshwater ...

SDG 6 Targets



6.5 By 2030, implement **integrated water resources management** at all levels

6.6 By 2020, protect and restore **water-related ecosystems**, including mountains, forests, wetlands, rivers, aquifers and lakes

6.A By 2030, expand **international cooperation** and capacity-building support to developing countries in water- and sanitation-related activities and programmes

6.B Support and strengthen the participation of **local communities** in improving water and sanitation management

Water - The Global Challenge and Everybody's Business: Social & Technological Perspective

Professor Iqbal M Mujtaba

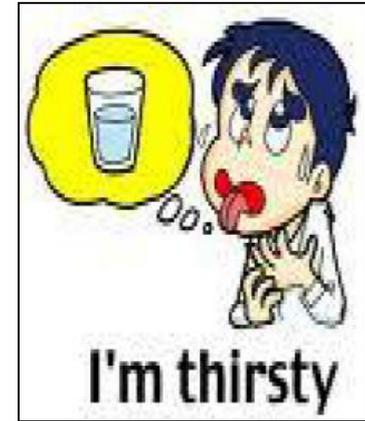
Department of Chemical Engineering
Faculty of Engineering & Informatics
University of Bradford, UK

Imagine a situation

“You have just attended nature’s call and flushed the toilet but there is no water.

Or

having woken in the middle of the night, parched and needing a drink, you make your way to the kitchen but there is no flowing water from the tap”.



- The people of the western world cannot comprehend such a situation.
- However, in many parts of the world people do not have this luxury.

Water & Health

33% of the world population do not have decent toilet

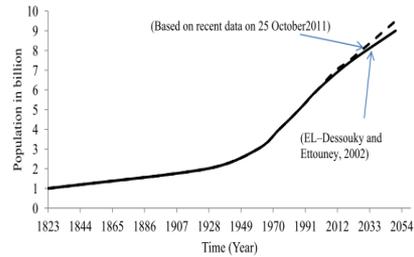
11% of the world population do not have clean water close to home

Globally, about 2 billion people use a drinking water source contaminated with faeces



Water Demand, Availability & Technology

- Increase in population
- Increase in standards of living
- Increase in water demand

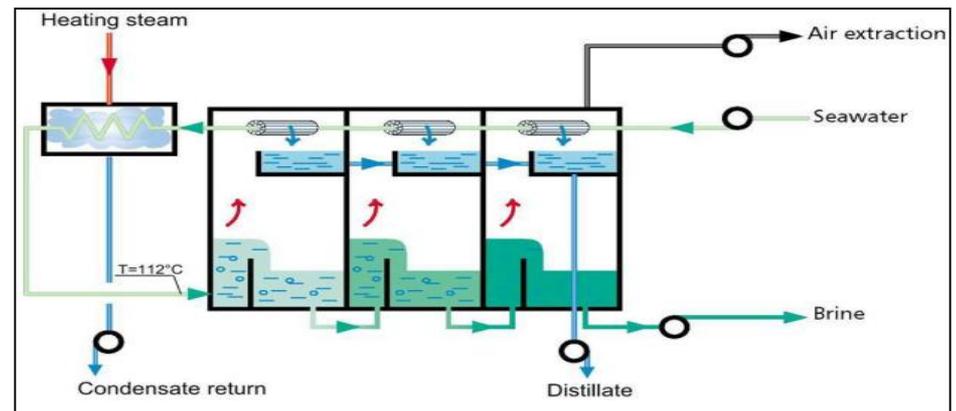


About 71 percent of the **Earth's** surface is **water!**

The Ancient Mariners' rhyme (Samuel Taylor Coleridge): "Water, water everywhere/Not any drop to drink" is in line with 97% of the planet's water being either salty or undrinkable.

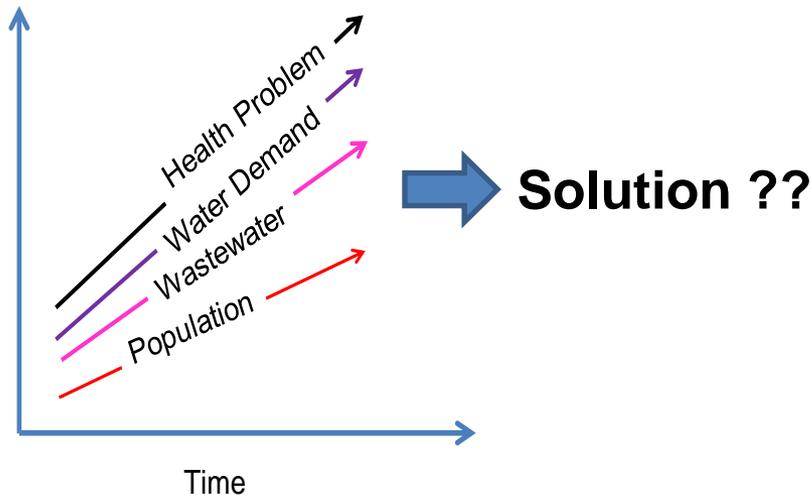
- By the year 2030, the global needs of water would be 6900 billion m³/day compared to 4500 billion m³/day required in 2009 (Water Resources Group, 2009).
- Currently the demand for freshwater is increasing by 64 billion cubic meters a year while the world's population is growing by roughly 80 million each year.

Seawater Desalination



Water Use, Consequences and Grand Challenge

- As the world population grows, the heavily industrialised world we live or strive to live continues to generate vast volumes of wastewater
- Industrial effluents, sewage, and many harmful, some carcinogenic, by-products, are often simply disposed of in rivers and oceans.



Wastewater Treatment & Re-Use: Social Perspective

The *yuck factor*, the terms such as *recycled sewage* and *toilet-to-tap* used by media in characterizing reclaimed water, give significant negative images to augment reclaimed wastewater reuse, especially for drinking and agricultural production purposes (Miller, 2006; Chen et al., 2015).

Water War/Riots/Refugees

To die for: Water tankers, public taps are Madhya Pradesh's riot spots. Jeevan Malviya, wife Sita Bai and son Raju were killed for drawing water from a supply line. The state is on a water-clash alert — 50 violent incidents have already been reported this month



Jostling crowds surround like this play out across

WATER WARS

Water war in India (2009). 25 May 2009:

<http://www.treehugger.com/clean-water/violence-over-water-already-happening-in-india.html>

- Global thirst will turn million into water refugees. The disputes over water will inevitably become more common, as **220 river basins globally are shared** by two or more countries (The Independent, 2001).
- Extreme water shortages escalated the sectarian violence in Yemen.
- The link between environmental problems and conflict is already well established and given the extreme water shortages, the Middle East is particularly vulnerable to environmentally induced instabilities (Shahi and Vachkova 2018).

Without more effective water management systems, lack of water availability will become a problem threatening national security in many countries important to the United States – US Intelligence (9 May 2012)

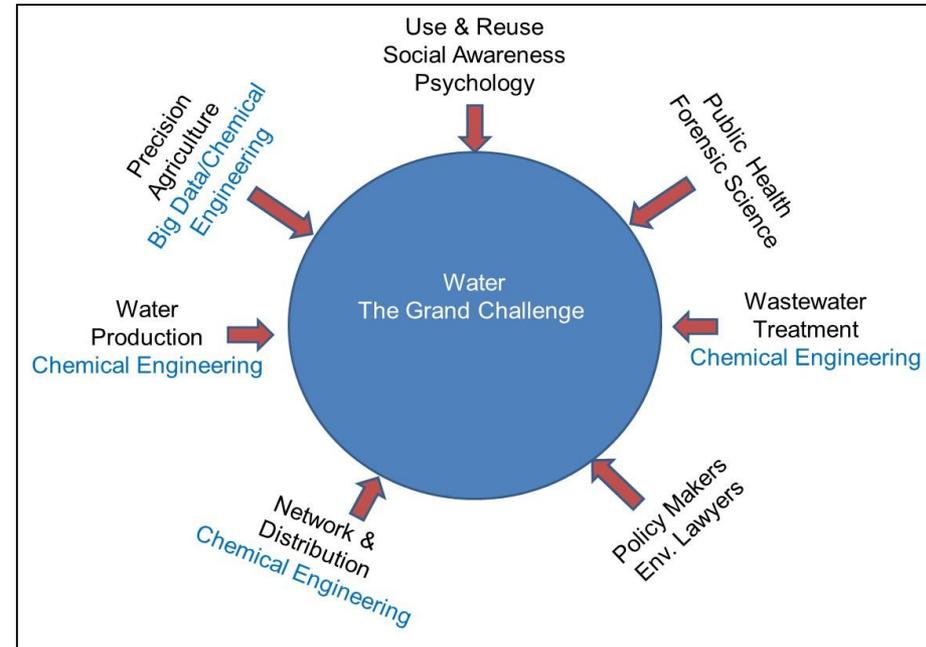
Water – The Grand Challenge and Everybody's Business

Water affects everybody (personal, social, political). Water insecurity cannot be understood from the perspective of one discipline.

Apart from the technological, scientific and engineering dimensions, there is an essential social dimension to water insecurity.

Although some of the technological problems could easily be resolved in a matter of years, social and political issues regarding water management will take much longer time to resolve.

Therefore, social scientists, working with technology providers, will have to play a leading role



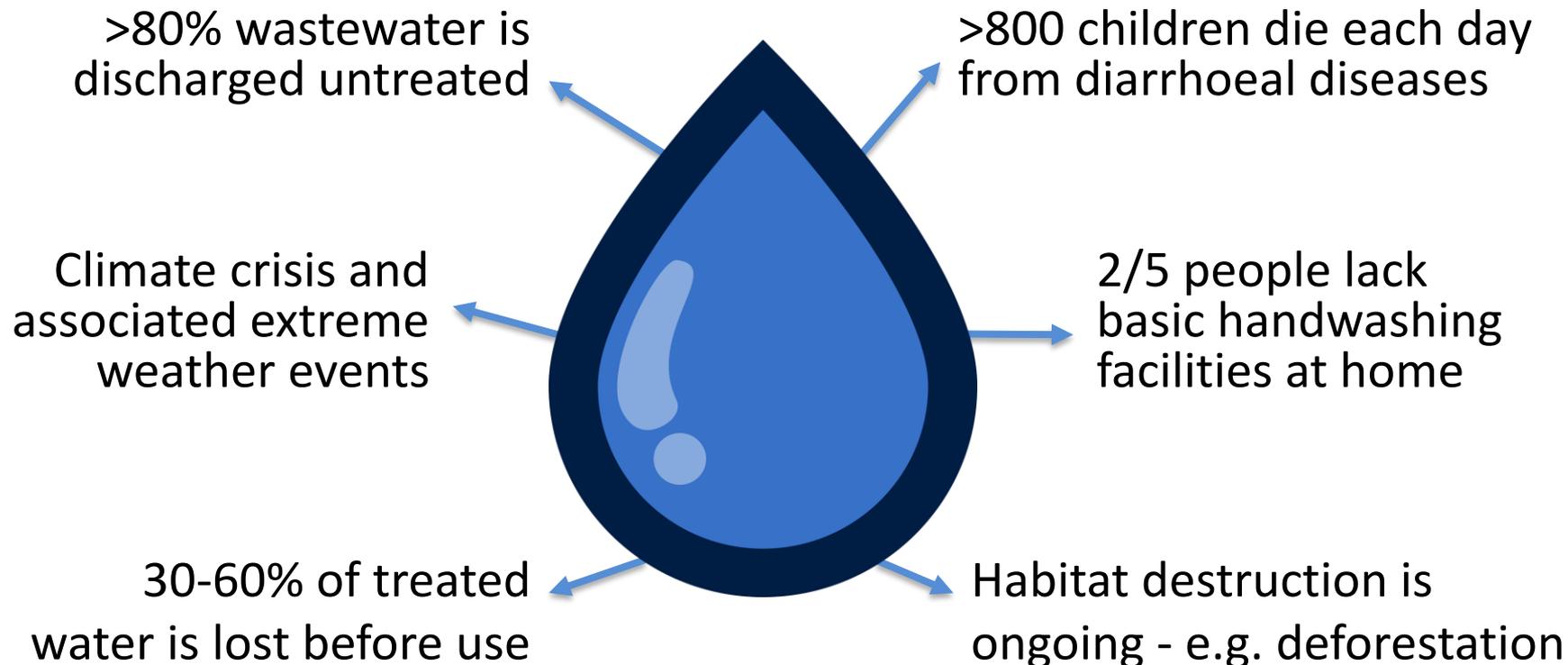
Safe water: A biological perspective

Dr Katie O'Dwyer

Lecturer & Researcher

Galway-Mayo Institute of Technology

Biologically safe water – the issues

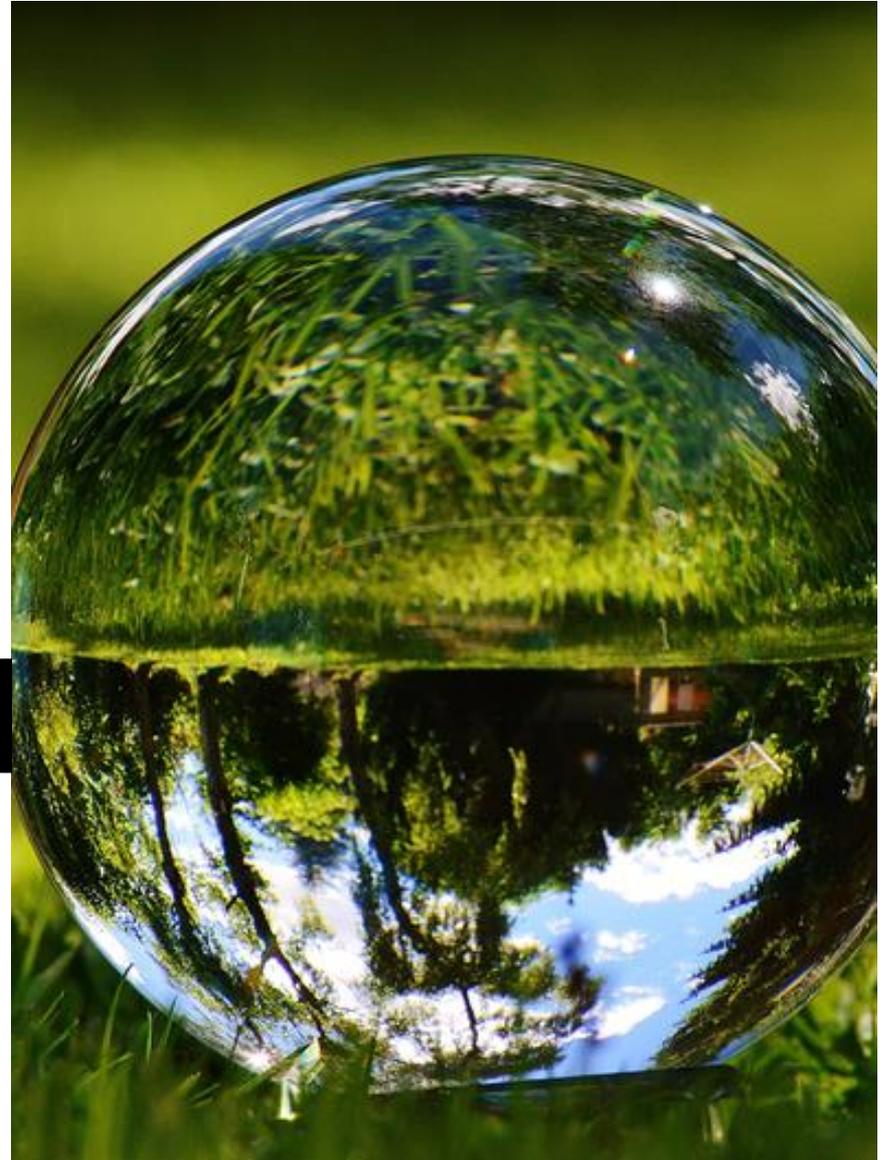


Source to supply: the biology of safe water

- Maintaining sources
- Developing sustainable supplies



SDG6: Protecting & restoring
water-related ecosystems is
'essential'



UN SDG project

MANILA

PHILIPPINES

PRO-WATER: Promoting water and sanitation access, integrity, empowerment, rights and resiliency.

This joint programme builds on the experiences and gains of two previously implemented MDG-F programmes on on water and sanitation and on climate change adaptation. It seeks to empower citizens and communities with access to sustainable safe water and sanitation services.

- SDG3: Good Health & Wellbeing
- SDG4: Quality Education
- SDG5: Gender Equality
- SDG6: Clean Water & Sanitation
- SDG11: Sustainable Cities & Communities



84.4%

of families have access to safe water supply but 56.9% of households do not treat their water..



35.2%

of those who treat their water use appropriate treatment methods.

1 out of 4

people do not have access to individual sanitation facilities.

Thematic Area

Water and sanitation

Total programme budget

\$3.6 million

% funded by SDG-F

42%

UN agencies

UNDP, UNICEF and WHO

Duration

January 1, 2015 to December 31, 2016

National partners

Government departments, national Water Resource Board, private sector organizations, regional hubs and local CSOs



SDGF

SUSTAINABLE DEVELOPMENT GOALS FUND

WTUN approach

Building upon WTUN exchanges:

- Set up twinning between campuses, industry and/or community groups
- Establish ties with schools
- Sponsor campus and community led projects
- 'Adopt' a focal area near each campus
- Develop scholarships

References

- UN Sustainable Development Goals
<https://sustainabledevelopment.un.org>
- International Panel on Climate Change
<https://www.ipcc.ch>



Thank you - 謝謝

Discussion