

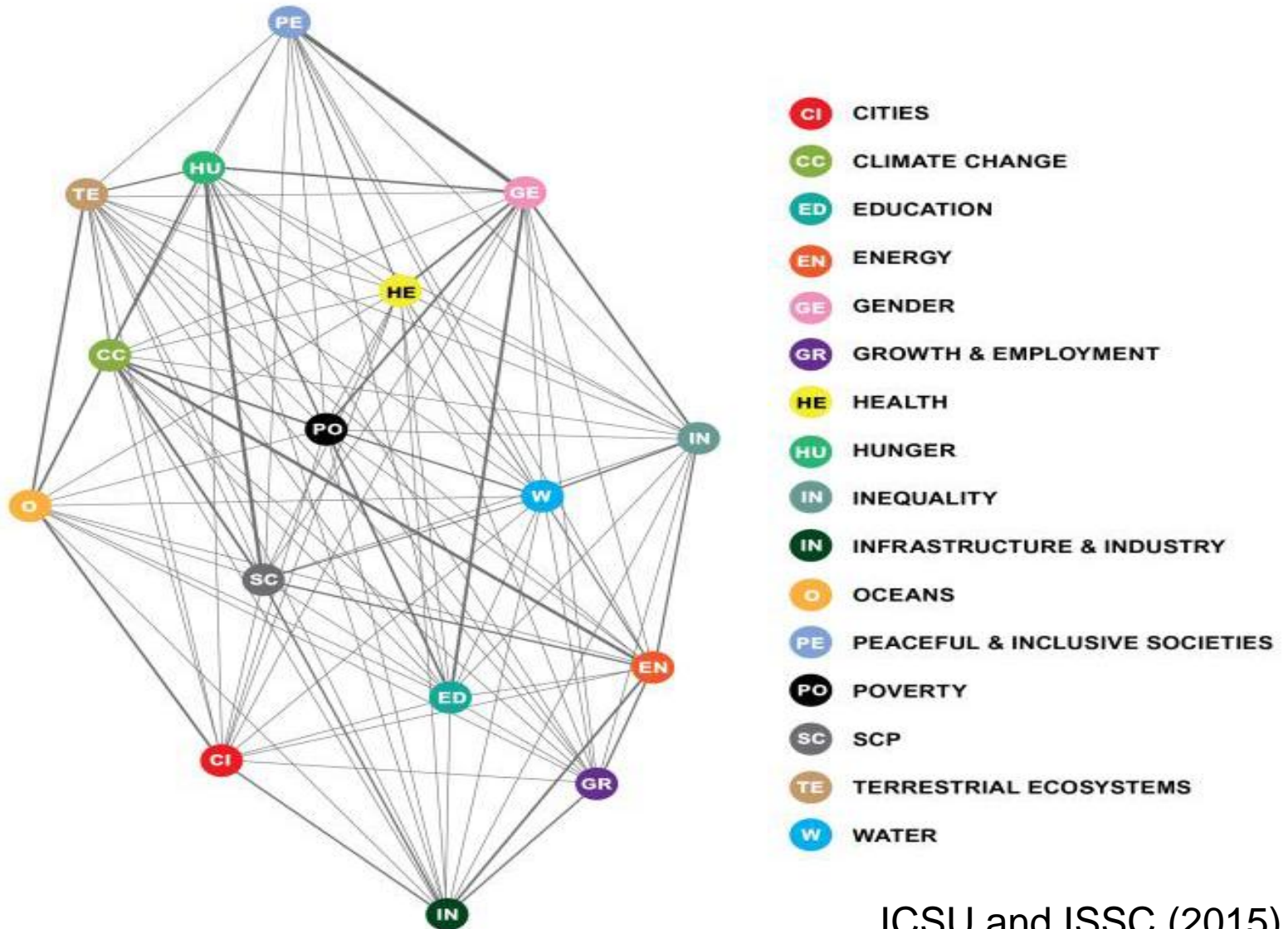


# WaterCentre@KTH

A new platform for collaboration and innovation around water



# Water: one SDG or many?



# Climate, energy and food = water stressors



Image: Aqua Mechanical

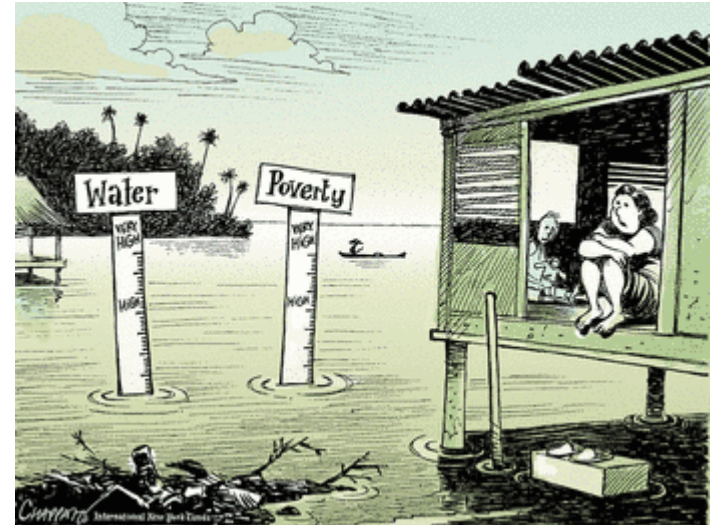


Image: UnWater.org



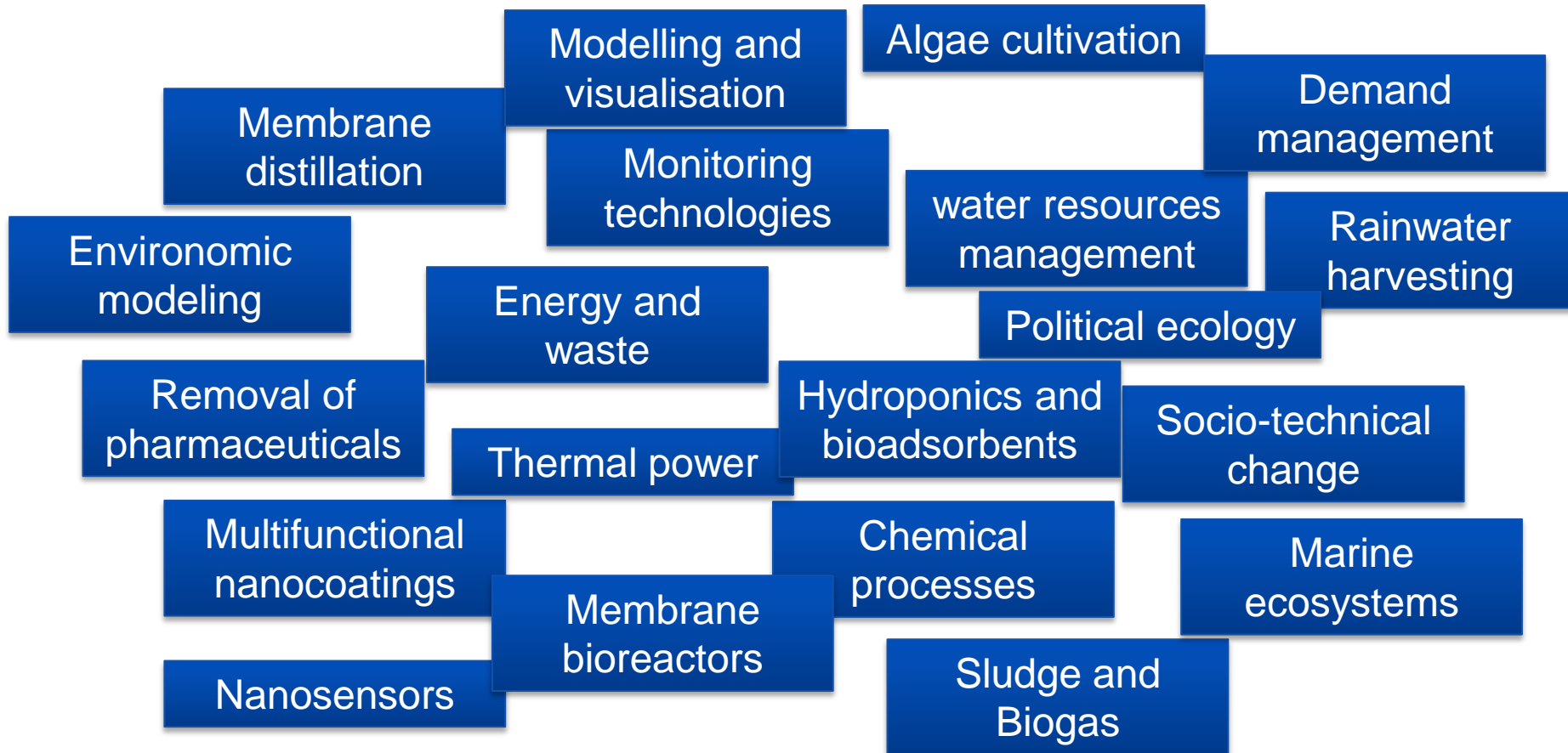
Image: Global Water Partnership



Image from msb.se



# Existing Water Research at KTH





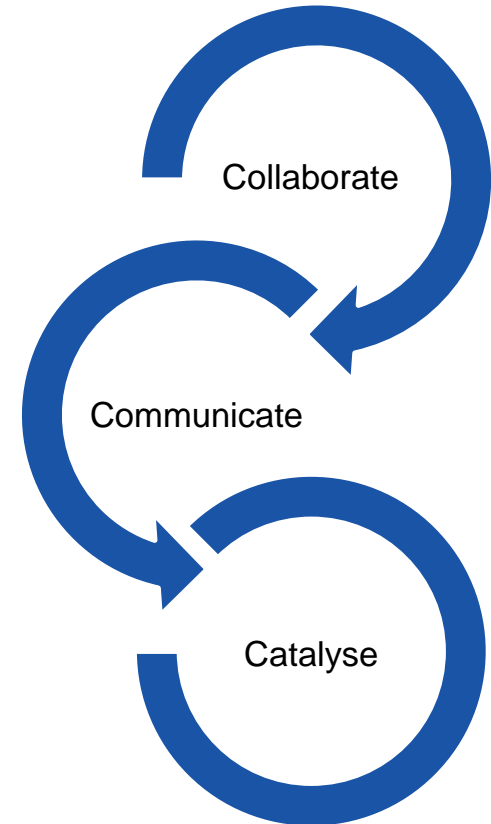
# The new KTH Centre: Vision and Mission

## Vision:

*A globally competitive research and innovation environment that generates applicable and viable solutions to challenges of sustainable and equitable use of water faced by humankind in the 21st century.*

## Mission:

- *Stimulate cross-disciplinary collaboration and new water-related research approaches within KTH and with industry partners, other knowledge institutions, and public agencies*
- *Communicate results, methods, and new approaches of the centre to raise awareness within KTH and in society at large*
- *Catalyse and mobilise funding for research and innovation projects that moves new ideas and recombined knowledge to more applied stages and products*



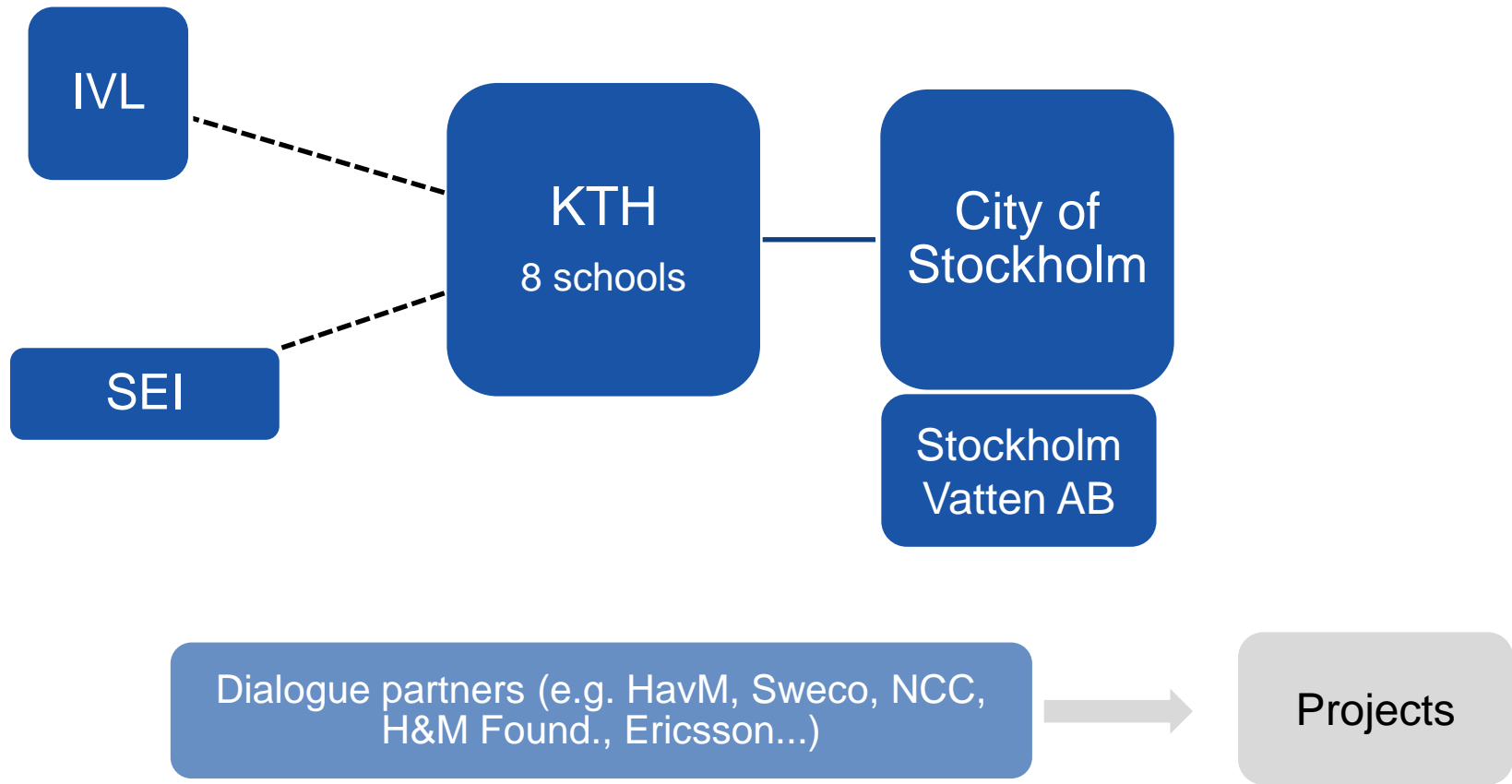


## **Three key challenges**

- **Avoiding a global water crisis**
  - **Making cities part of the solution**
  - **Managing water in a changing climate**
- 
- **... but mutually defined with partners**



# Partners



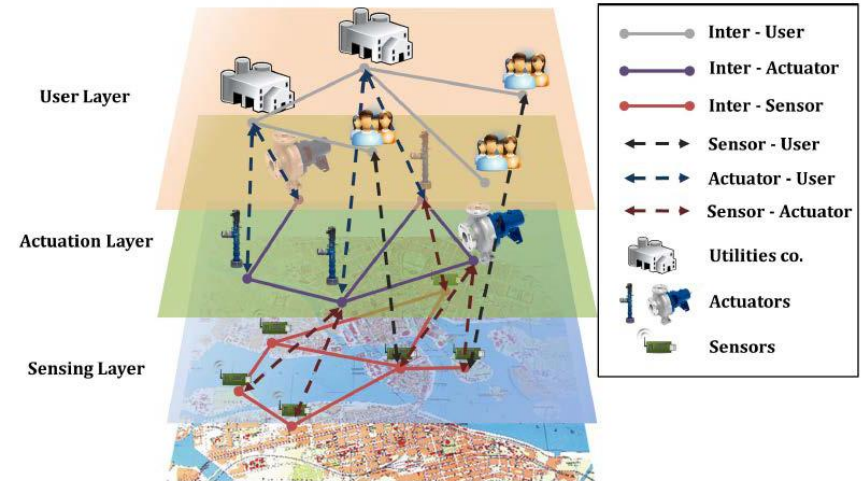
# Addressing challenges in the global North

## 1. MANAGING POLLUTANTS



Source: IVL, Sjöstadsverket

## 2. MANAGING CITIES



Source: Carlo Fischione, KTH

## 3. MANAGING THE OCEANS



Source: Fredrik Gröndahl, KTH





# Addressing challenges in the global South

Examples:

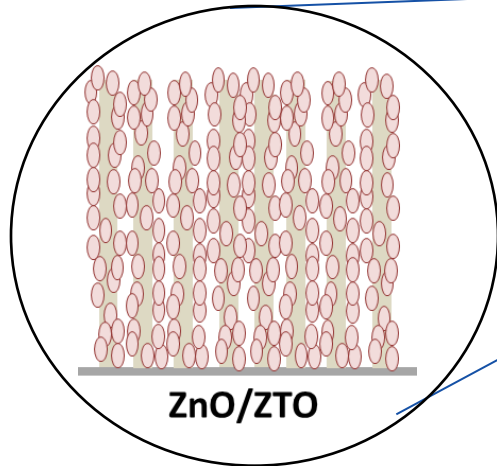
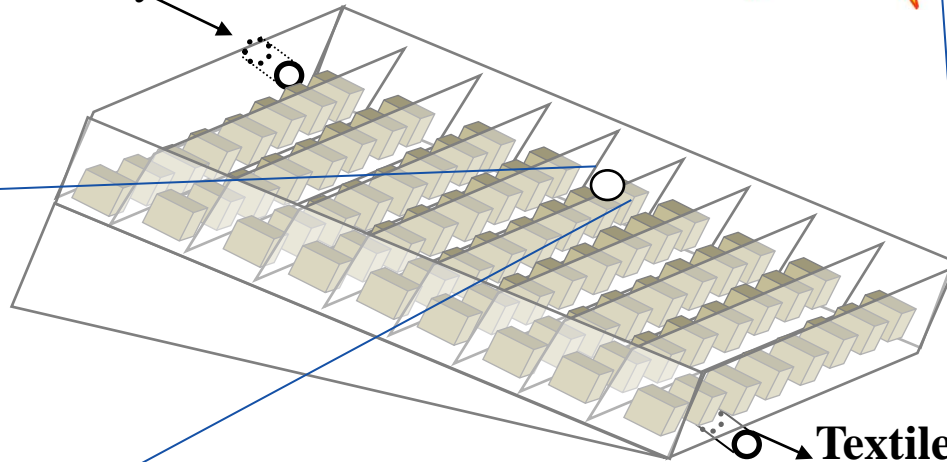
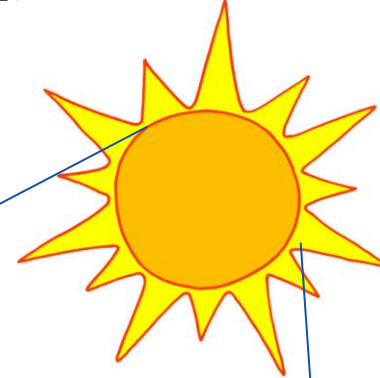
1. Using sunlight to purify water in Thailand and India
2. Mitigating arsenic in drinking water in Bangladesh
3. Innovation systems for water in slum areas in Kenya and Uganda

TECHNOLOGY -> SOCIETY -> INNOVATION SYSTEMS

# Thailand: purifying water in textile industry

## Solar Photocatalytic Degradation Bath

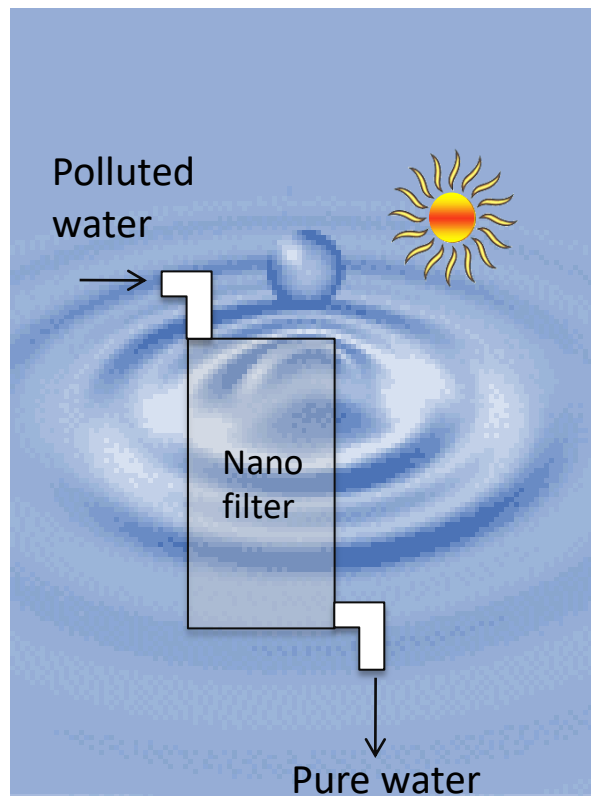
**Textile wastewater in:**  
COD = 465 mg.L<sup>-1</sup>,  
pH = 8.37 and turbidity  
= 60 NTU



**Textile wastewater out:**  
COD = 105 mg.L<sup>-1</sup>,  
pH = 8.24 and turbidity  
< 5 NTU

# India: ZnO nanorods based water purifier

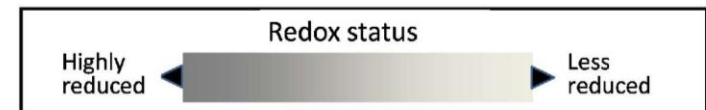
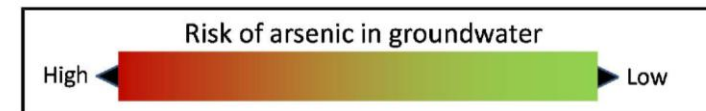
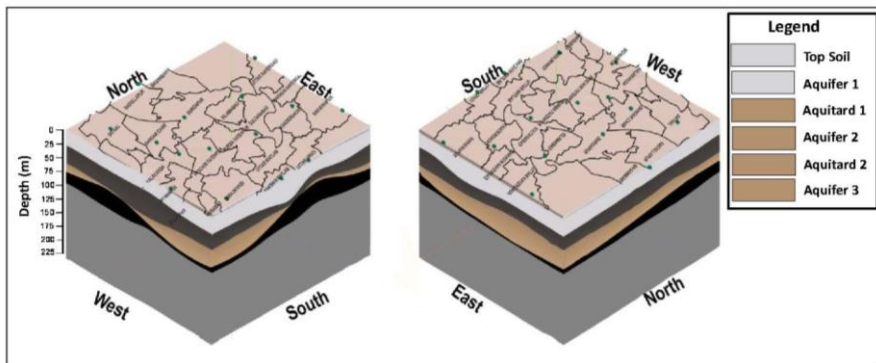
The vision:  
Pure drinking water for everyone!



Mohammed Abbas Mahmood, Sunandan Baruah, Anil Kumar Anal and Joydeep Dutta  
Environmental Chemistry for a Sustainable World Vol. 2: Remediation of Air and Water Pollution,  
Eds. Eric Lichtfouse, Jan Schwarzbauer and Didier Robert (2012), Springer, ISBN 978-94-007-2438-9

# Bangladesh: mitigating Arsenic in rural water supply

- hydrogeological modelling and sampling, chemical analysis
- working with local drillers to understand practice
- developed a “sediment colour tool” for easy risk identification
- national framework: collaboration with UNICEF and DPHE, and dialogue with Sida





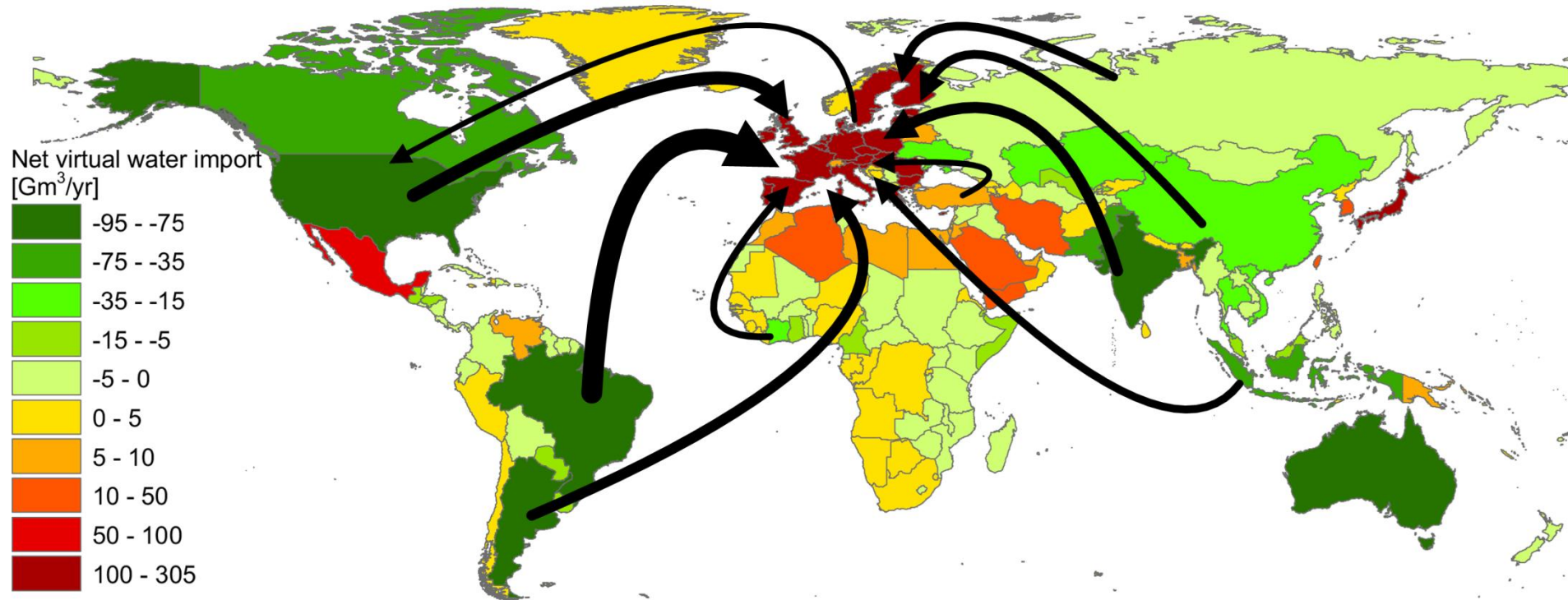
# Kenya and Uganda: innovation systems for water in low-income areas

- understanding socio-technical change in urban WASH
- community-based approaches
- water, sanitation and flooding
- Univ. of Nairobi, Kenya Institute of Technology, Makerere University, NGOs, and others
- challenge-driven education through KTH Development Hub



# Is the global North-South dichotomy valid?

1. global challenges are shared

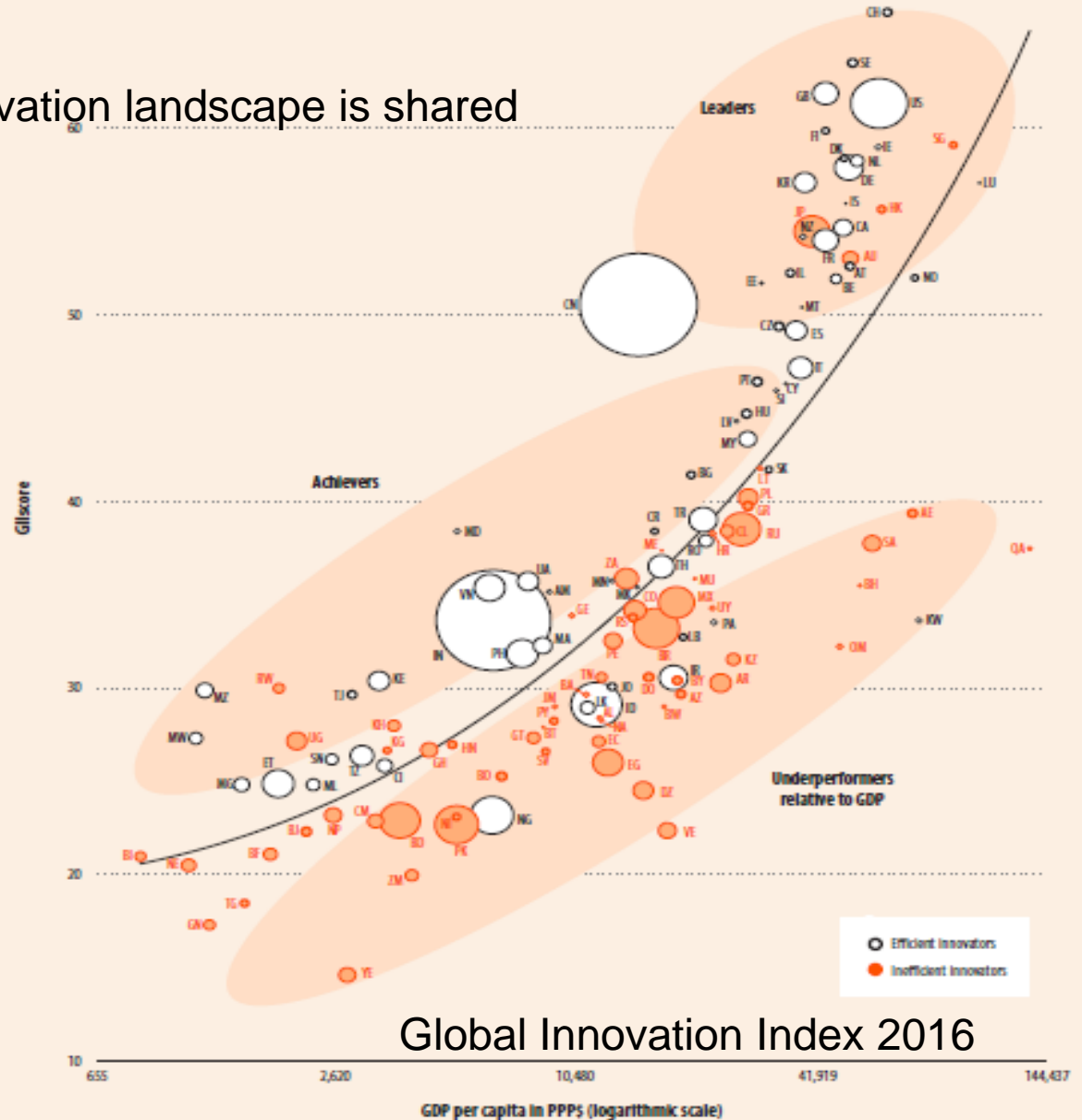


Mekonnen, M.M. and Hoekstra, A.Y. (2011)



# Is the global North-South dichotomy valid?

2. global innovation landscape is shared



Global Innovation Index 2016



## WaterCentre@KTH – Innovations for the Blue Planet

The Water Centre at KTH is a wide collaborative effort based at KTH Royal Institute of Technology. Our mission is to bring about water innovations for a sustainable future of the Earth. We believe in the meeting of experts, practitioners, and policymakers. We connect scientists that never would have met and we offer an arena for joint knowledge creation with industry, government and civil society. Expect the unexpected.

### PROJECTS



### EVENTS

**22 March**

Wednesday

EVENTS [World Water Day: Launch of WaterCentre@KTH](#)