SSRP
SUSSEX SUSTAINABILITY RESEARCH PROGRAMME

Setbacks and Opportunities for the Water Goal: Groundwater as Key Actor in the Post-COVID World

Mohammad Shamsudduha ("Shams")

UNIVERSITY OF SUSSEX | institute of development studies

SSRP Virtual Symposium, 15-16 September 2020

Through the deluge: Forging ahead with sustainability research!

Session 2: The SDGs take a hit

Setbacks and Opportunities for the Water Goal: Groundwater as Key Actor in the Post-COVID World

Mohammad Shamsudduha ("Shams")

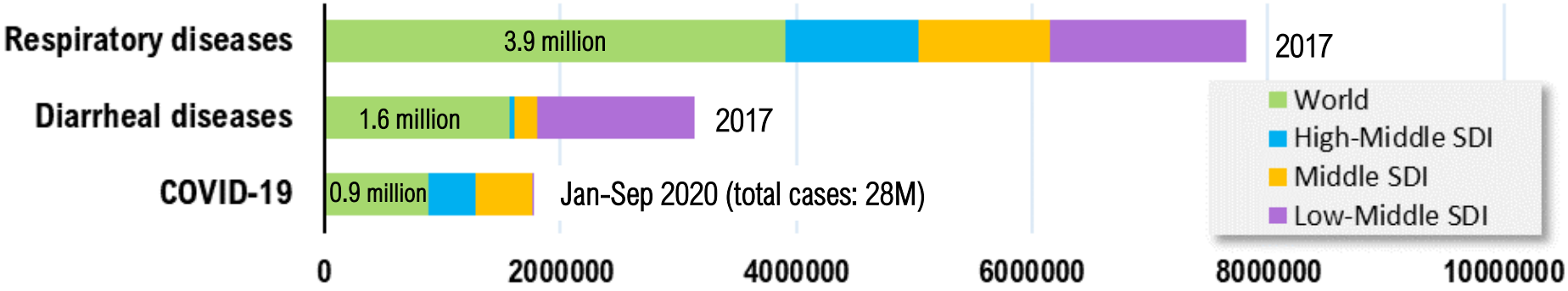
Lecturer in Physical Geography (Water)

Department of Geography

School of Global Studies | University of Sussex

13:50-14:00 | 15th September 2020

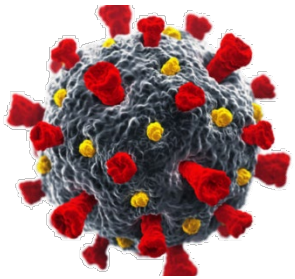
Comparing COVID-19 Death with Others and Clean Water



https://ourworldindata.org/

COVID-19 pandemic & SDG #6 (Clean water & sanitation for all):

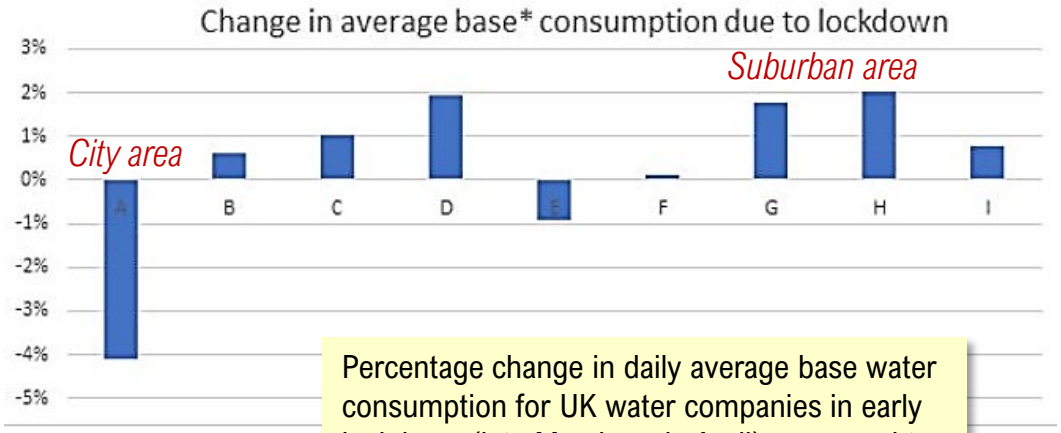
- Personal hygiene saves lives!
- **Handwashing** is one of the most effective ways to reduce the spread of pathogens and prevent infections
- Access to clean water is uneven (i.e. water inequality)



Trends in UK Water Use during the COVID-19 Pandemic

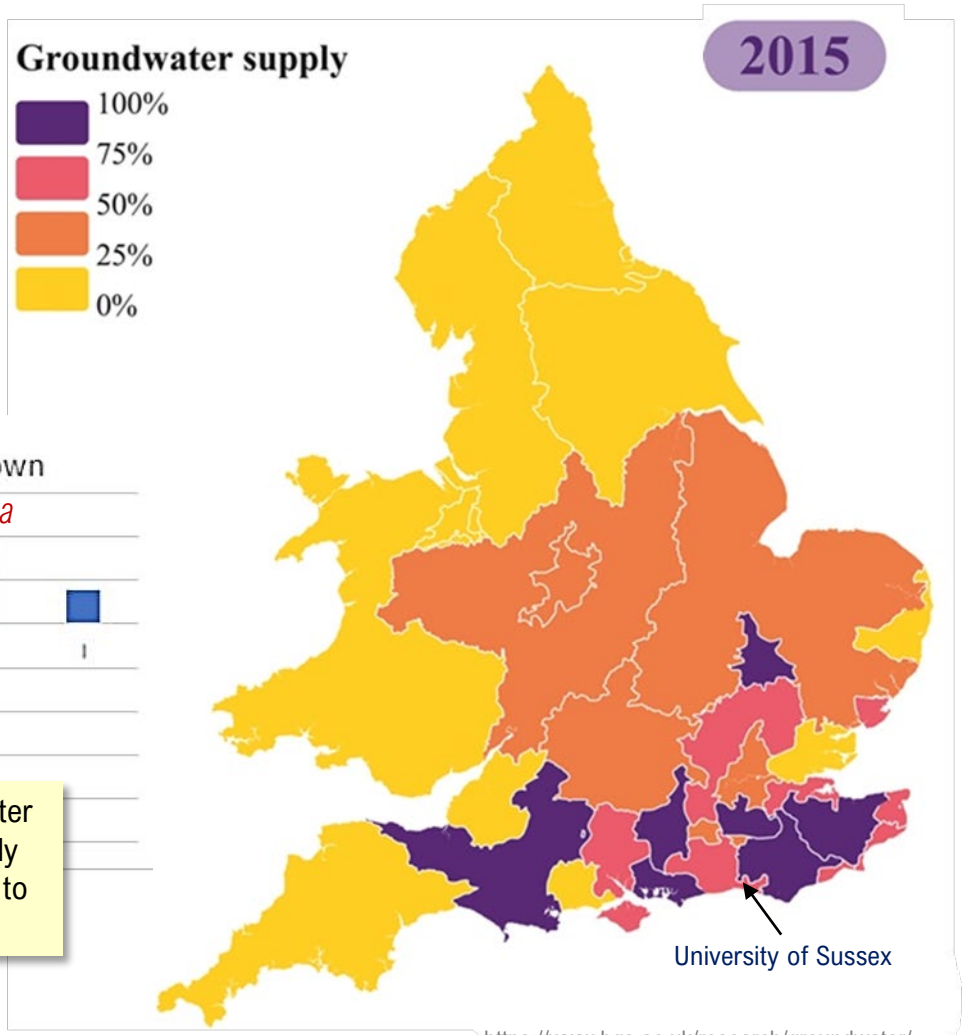
150 litres per person per day

USA: 450, Italy: 250, Tanzania: 25



Percentage change in daily average base water consumption for UK water companies in early lockdown (late March-early April) compared to before lockdown (February-early March)

UK Met Office



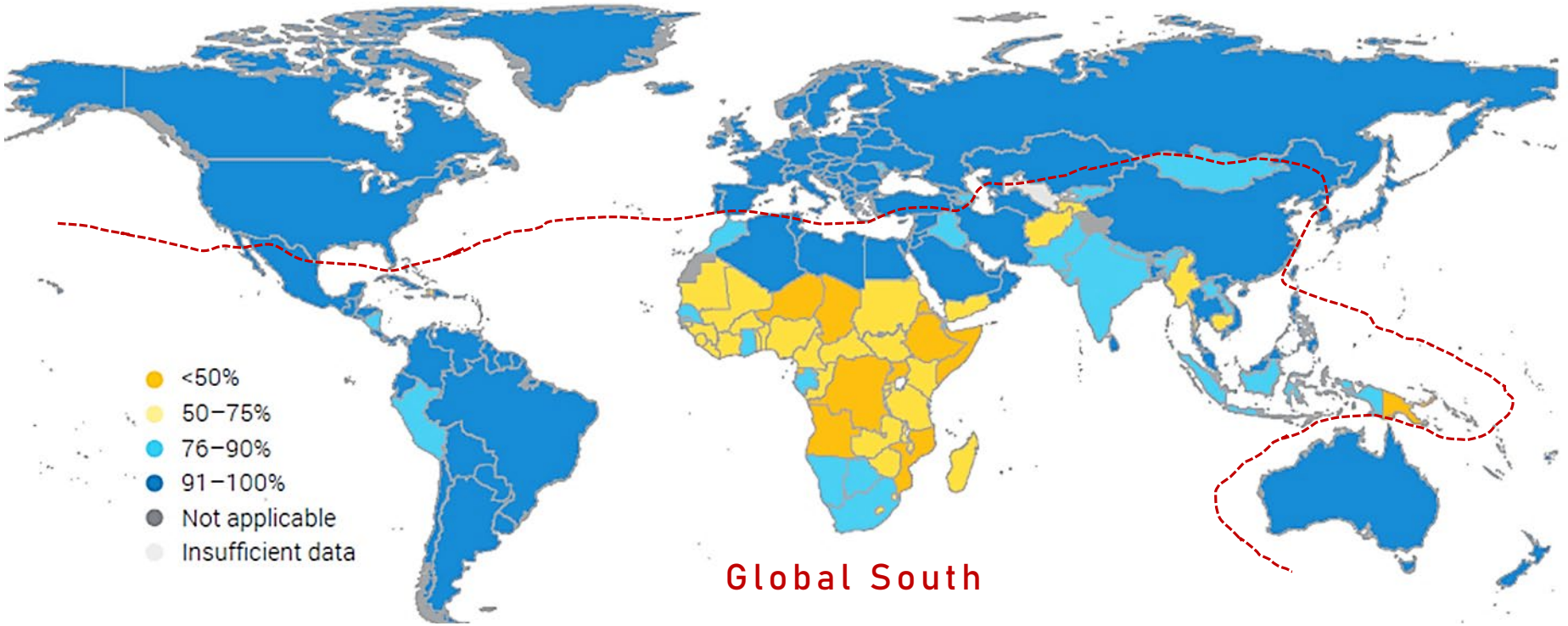
https://www.bgs.ac.uk/research/groundwater/waterResources/GroundwaterInUK/2015.html

Status of Water and WASH Services around the World

- **3 in 10 (2.2 billion)** people lack access to safely managed drinking water services
- **6 in 10 (4.2 billion)** people lack access to safely managed sanitation facilities
- **3 billion** people still lack basic handwashing facilities
- Each day, nearly **1,000 children** die due to preventable diarrheal diseases

Proportion of population using at least basic drinking water services, 2015

WWAP / UN Water (2019)



Sub-Saharan Africa and S & SE Asia clearly stand out as regional 'hotspots'

SDGs and Critical Importance of SAFE & CLEAN water

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

A child is collecting unsafe water from an open well in Hoima, Uganda

6.2: By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations

Courtesy: Richard Taylor (UCL)

SDGs and Impacts of COVID-19

The United Nations Department of Economic and Social Affairs

Setbacks in the water sector prior to COVID-19:

- Increased population growth
- Rapid urbanization (megacities)
- Off-grid, informal settlements
- Aging water infrastructure
- Global warming & climate change

Setbacks in the water sector due to COVID-19:

- Revenue losses due to lack of commercial and industrial use and tariff exemptions
- Capital expenditures will decline in the short to medium term
- Economic stimulus packages will prioritise non-water sectors
- Supply chain and logistics disruptions and potential contamination of water sources (e.g. reservoirs, lakes)

Opportunities for Achieving the Water Goal: the Role of GW

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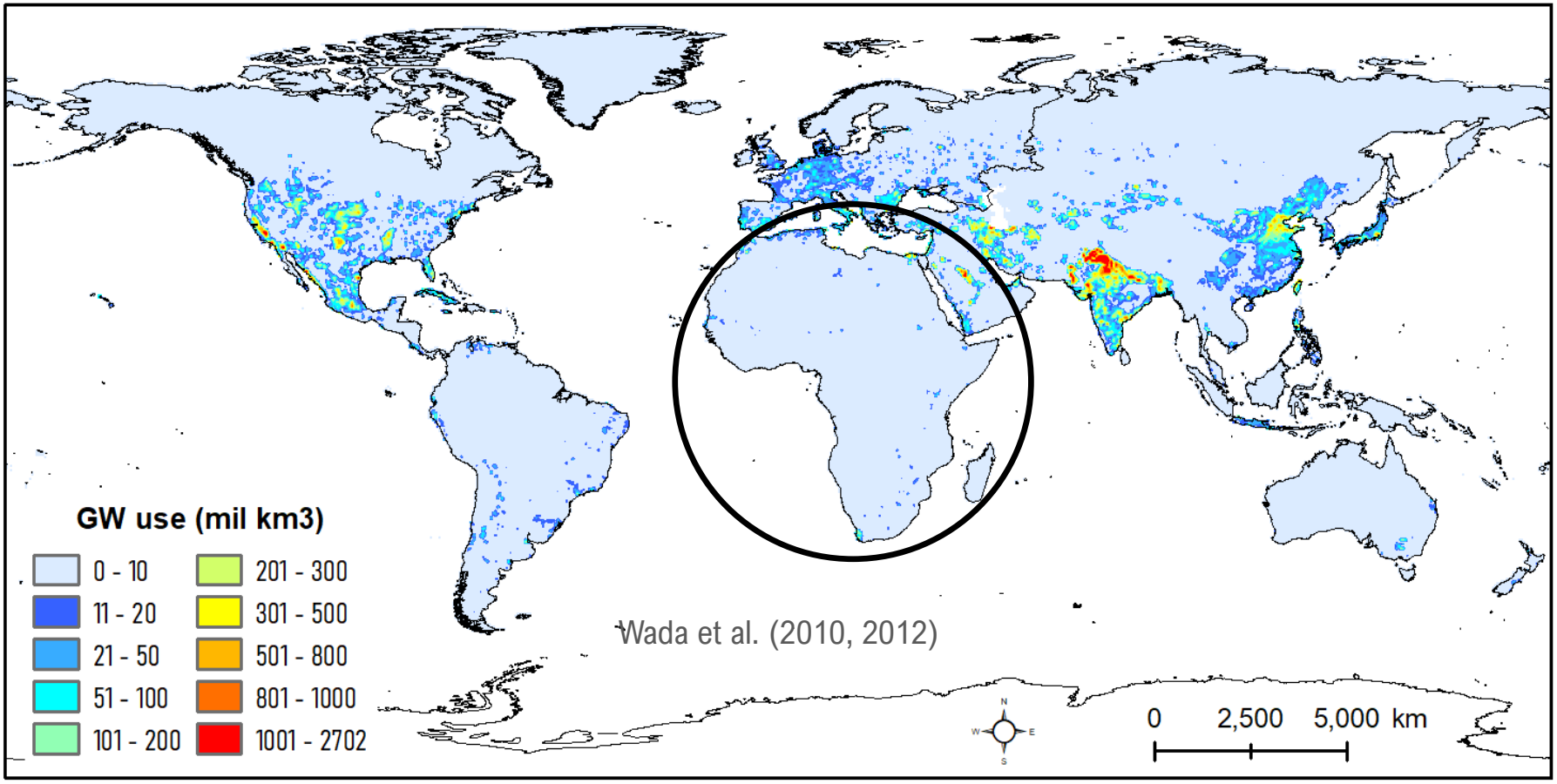
Annual groundwater (GW) abstraction in 2000 in the world



- Global groundwater use is currently ~1,000 km^3 $year^{-1}$
- 70% of groundwater withdrawn worldwide is used for agriculture
- In Bangladesh ~97% drinking water comes from groundwater
- In Tanzania, ~60% drinking water comes from groundwater

Opportunities for Achieving the Water Goal: the Role of GW

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UPGro (Unlocking the Potential of Groundwater for the Poor) research programme in Africa

https://upgro.org/

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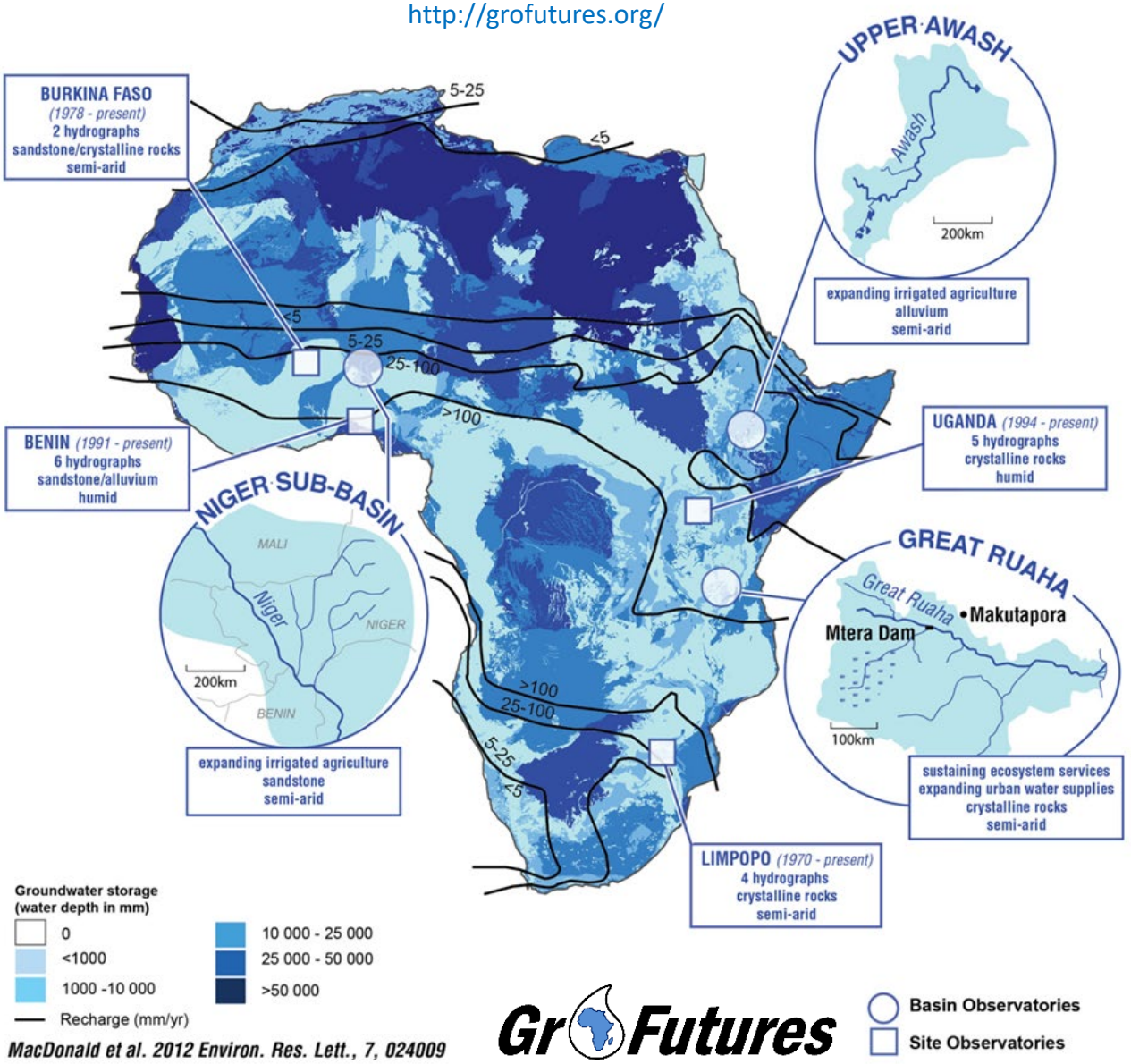
Science & Environment

'Huge' water resource exists under Africa

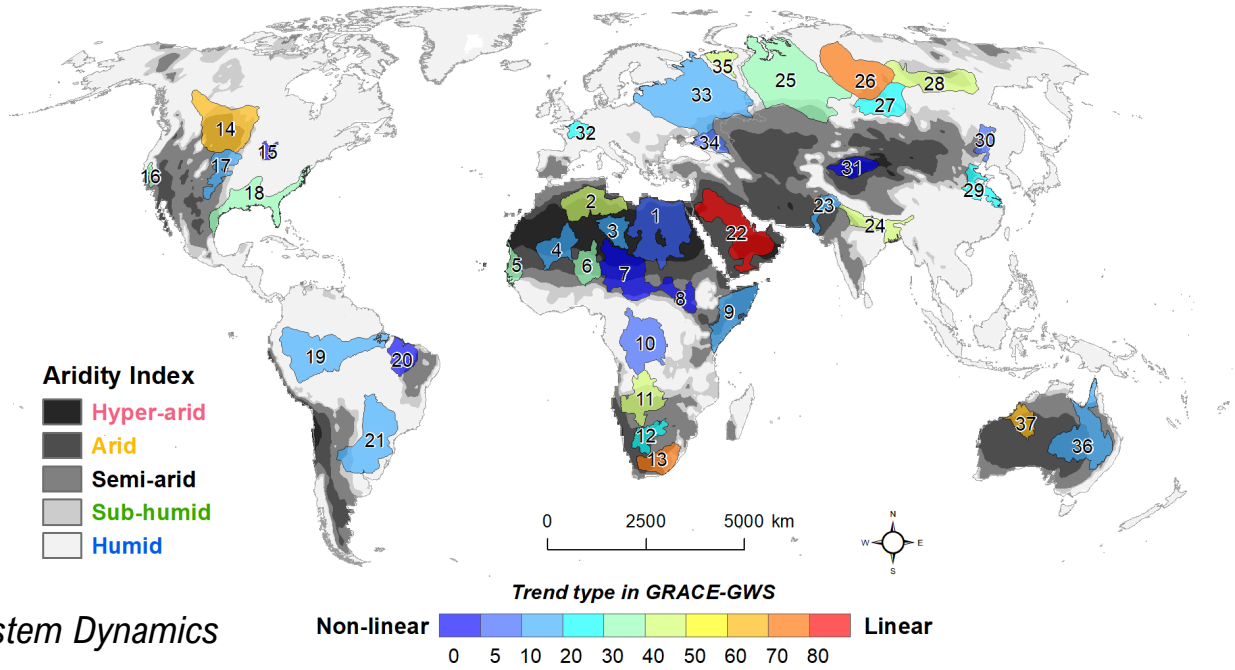
By Matt McGrath
Science reporter, BBC World Service

GroFutures Network of African Groundwater Observatories (NAGO)

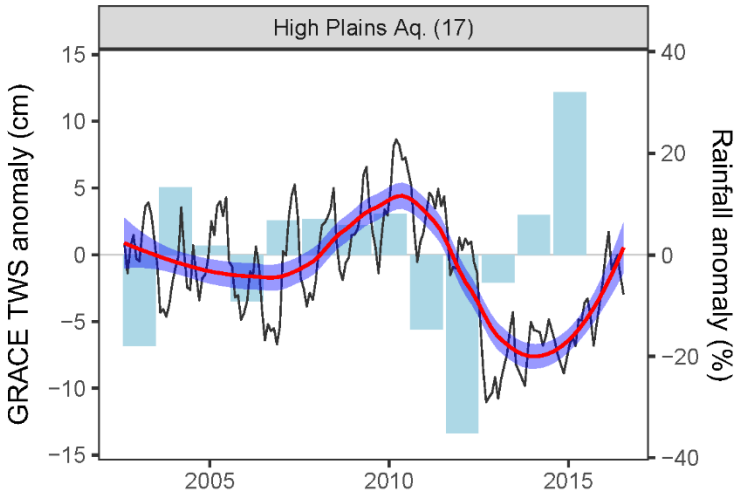
http://grofutures.org/



Is GW Climate Resilient? Does Climate Change Benefit GW?



Shamsudduha and Taylor (2020) *Earth System Dynamics*



- New evidence of the resilience of groundwater resources to climate change
- Episodic replenishment of groundwater in dry environments results from extreme precipitation events
- **Groundwater can be used sustainably to achieve the Water Goal (SDG #6)**