Groundwater Governance: Challenges, Opportunities, and Best Practices

IWRA XVIII World Water Congress

Beijing, China, September 11-15, 2023

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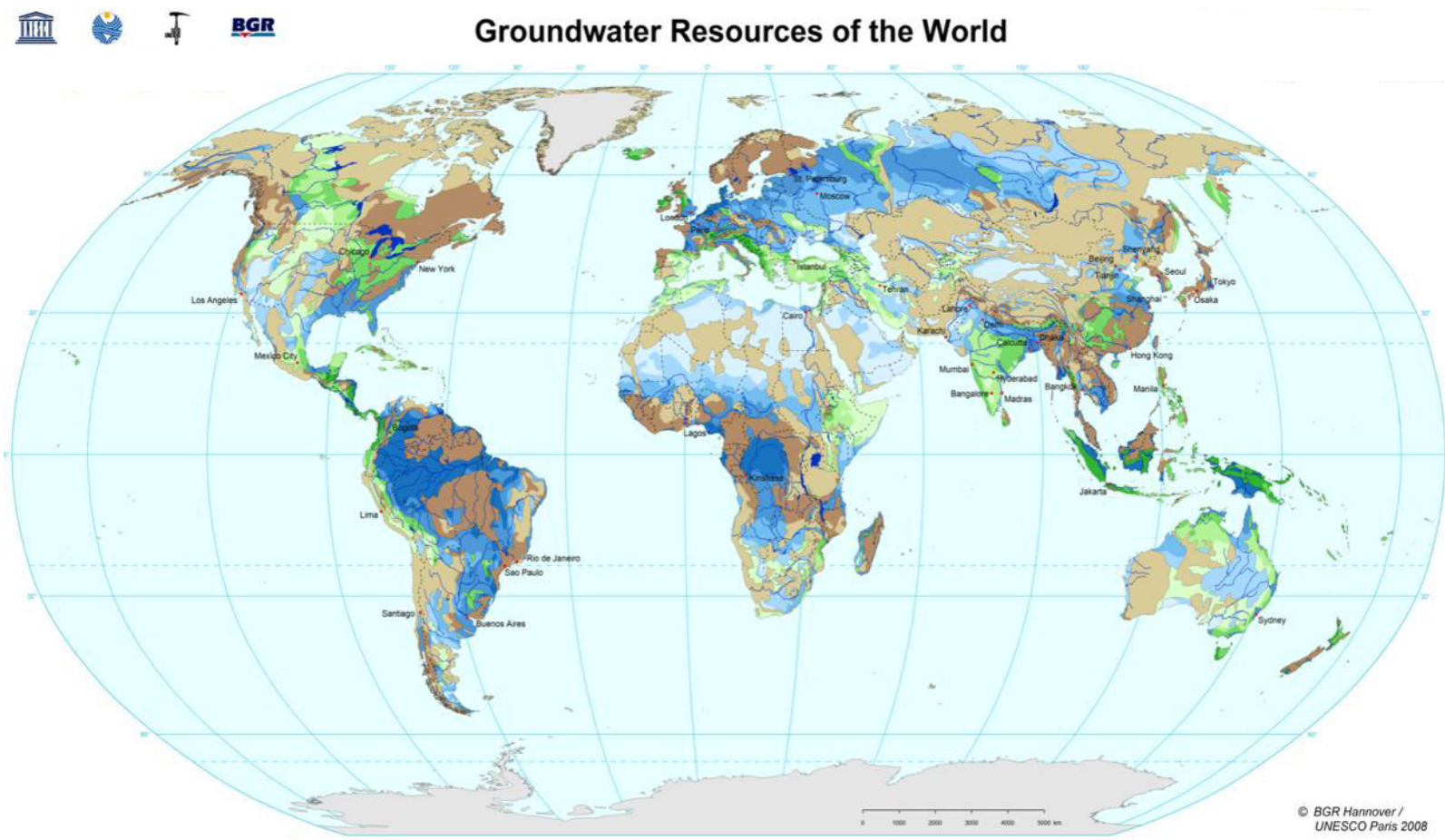
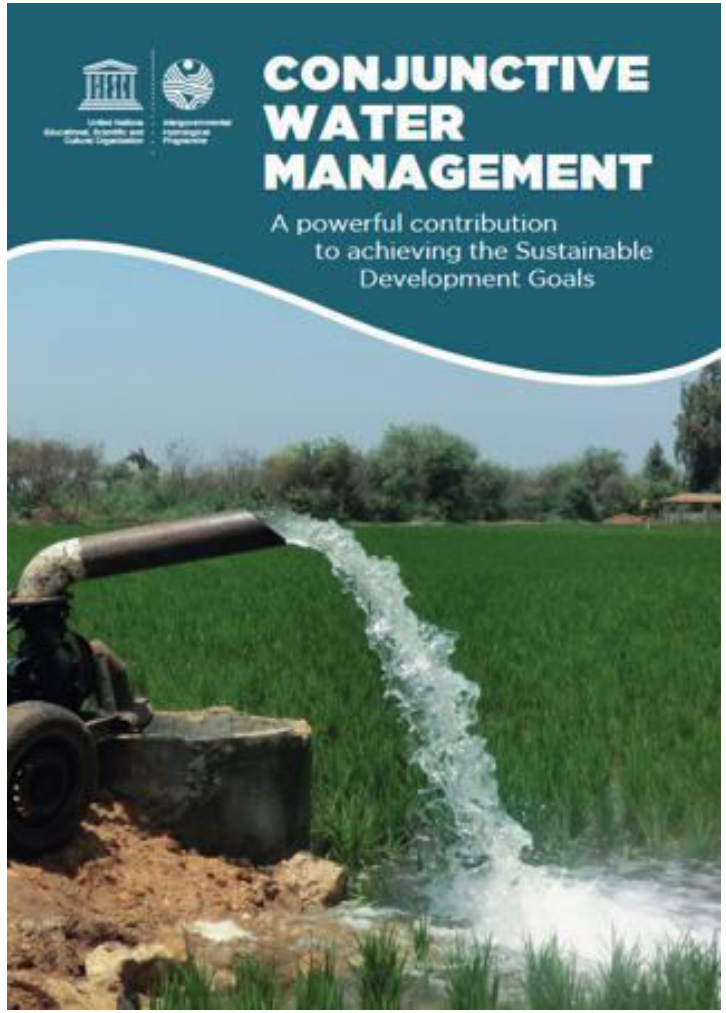
Overview of Groundwater Resources in the World

- Groundwater is the most abundant source of freshwater on earth, accounting for approximately 97% of non-frozen fresh water.
- Approximately 50% of the world's population drinks groundwater daily.
- With respect to food production, groundwater is estimated to contribute to over 40 % of the world's production of irrigated crops.
- Groundwater sustains ecosystems, maintains base flow of rivers
- Groundwater can play an essential role in climate change adaptation and mitigation,
- Aquifers can also buffer impacts resulting from seasonal variability and climate change.
- 40% of the worlds available water is transboundary

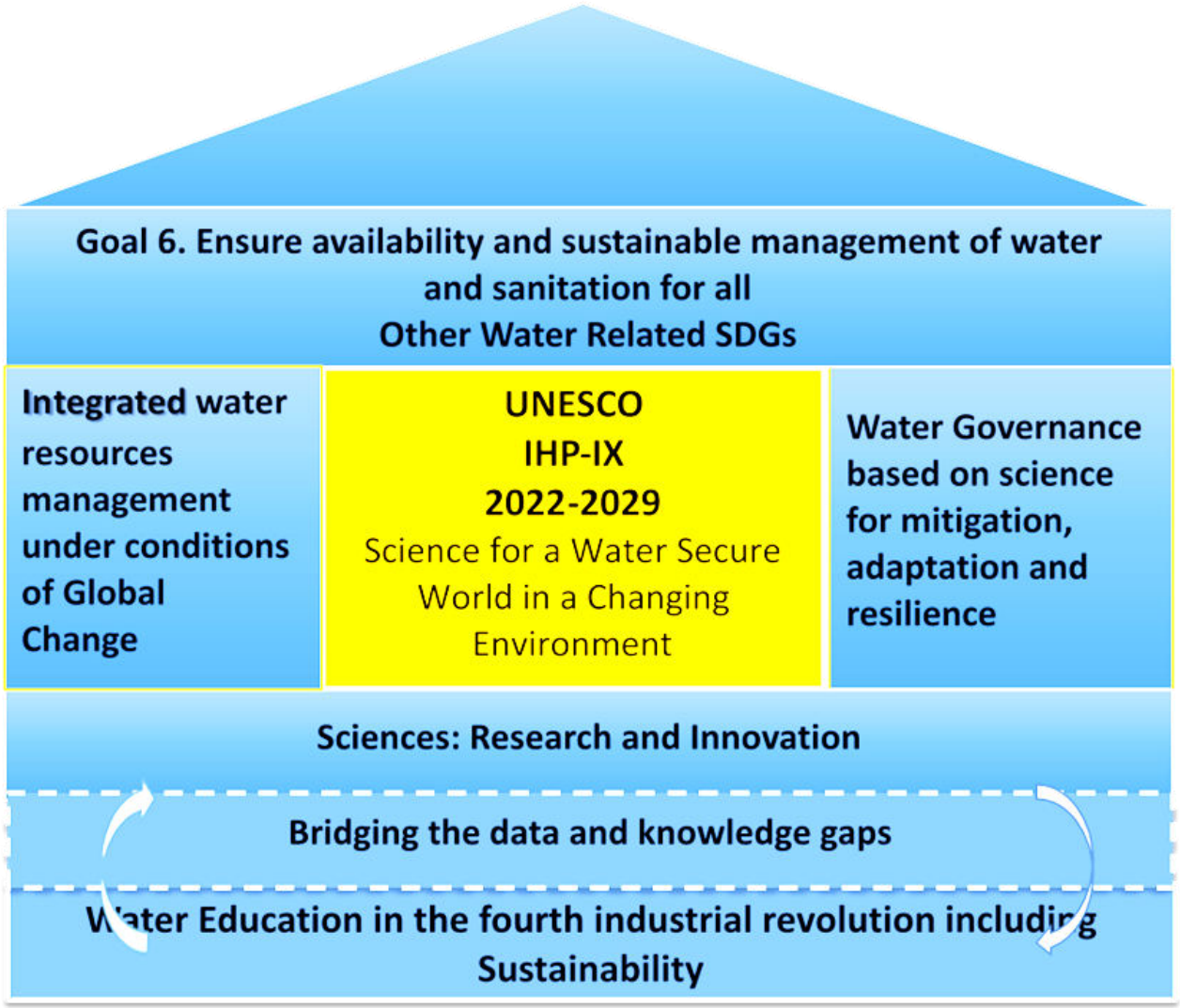


Governance provisions



- Data, information and knowledge
- Awareness raising and promotion
- Adequate institutions in charge of water resources development and management
- Appropriate legal and regulatory frameworks
- Water resources protection policies
- Water resources development and management planning

IHP IX 2022-2029
Science for a Water Secure World in a Changing Environment



Five priority areas:

- Scientific research and innovation
- **Water Education** in the Fourth Industrial Revolution including Sustainability
- Bridging the **data-knowledge gap**
- Integrated **water resources management** under conditions of global change
- Water Governance based on science for mitigation, **adaptation and resilience**

34 expected outputs

150 Key activities (draft implementation Plan)

Groundwater sustainability and water cooperation: Summary description and key activities

EXAMPLE OF ACTIVITIES

- Preparation and undertaking of the 3rd SDG indicator 6.5.2 reporting on transboundary water cooperation (**IMI initiative, 153 Member States**)
- Development of technical tools for science-based groundwater resources management in transboundary aquifers (**GGRETA, 6 Member States**)

SUMMARY DESCRIPTION

Support MS in improving **transboudary aquifers assessments, management and governance**

Promote **Water Cooperation**

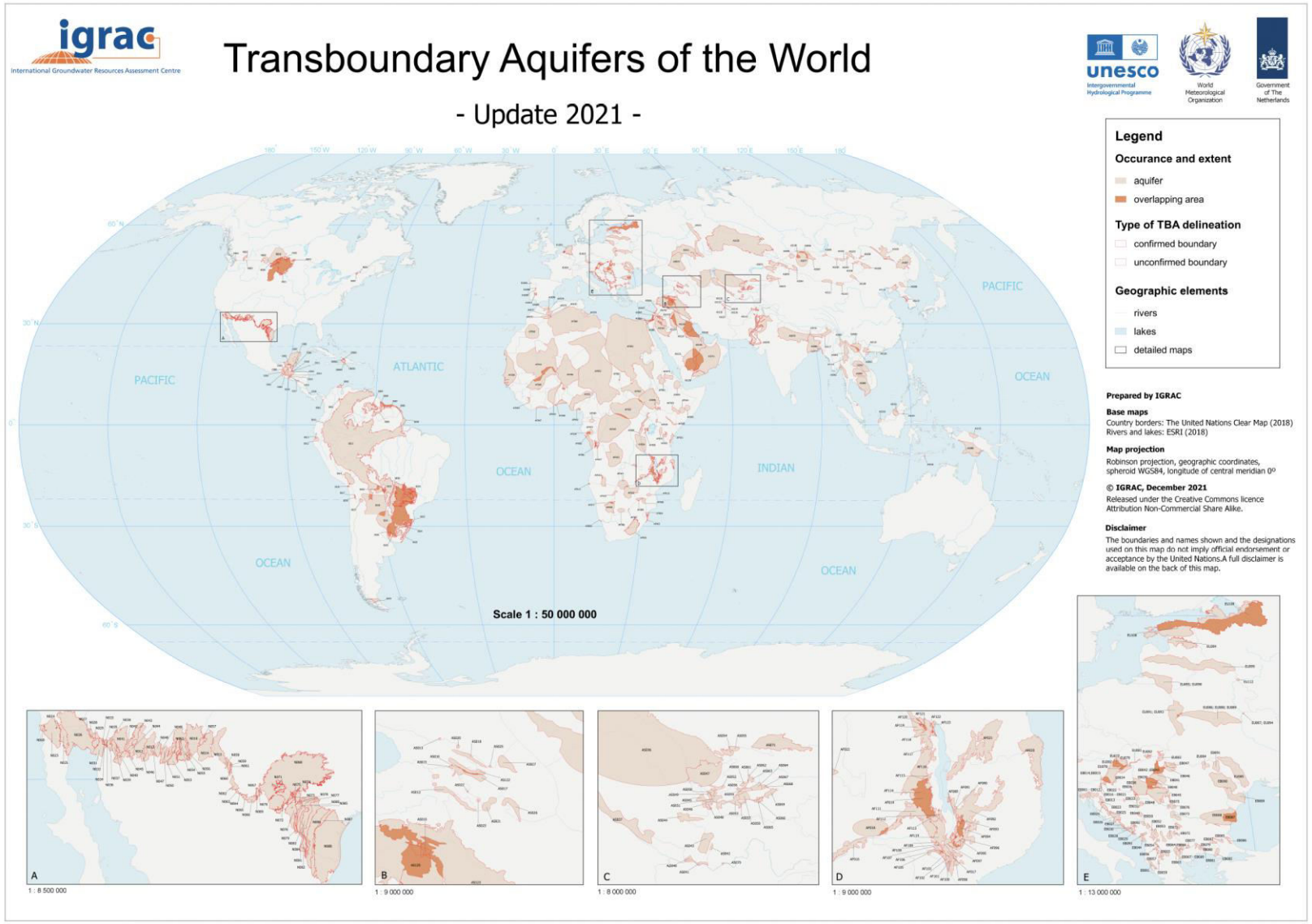
Develop and disseminate **knowledge products** on Groundwater and Water Cooperation

Build capacity of MS on water cooperation and groundwater

- Increase knowledge on coastal aquifers and submarine groundwater discharge and their management in the Mediterranean Region. (**MED, 8 Member States).**
- Formulation of a governance mechanism for the conjunctive management of surface water and groundwater (**ITTAS, 11 Beneficiary countries in North, West and Central Africa)**

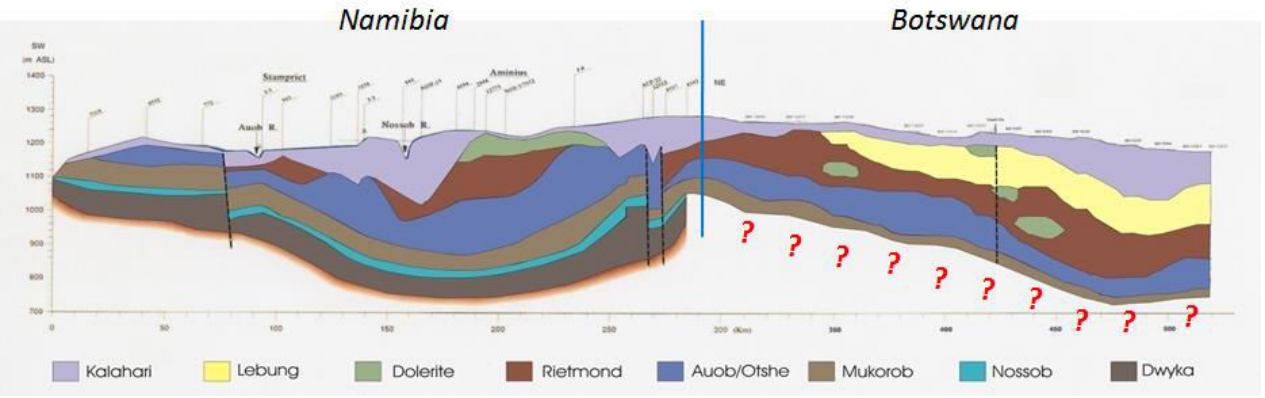
TRANSBOUNDARY AQUIFERS - 40% OF THE WORLDS AVAILABLE WATER IS TRANSBOUNDARY

- There are now 468 identified transboundary aquifers and aquifer systems identified, underlying almost every nation
- It is likely that new transboundary aquifers will still be identified in the future and that the delineation of existing transboundary aquifers may be refined once further studies are conducted.
- Assessment of transboundary aquifers is a specific step towards transboundary governance of environmental resources.
- Knowledge about transboundary aquifers is still limited.

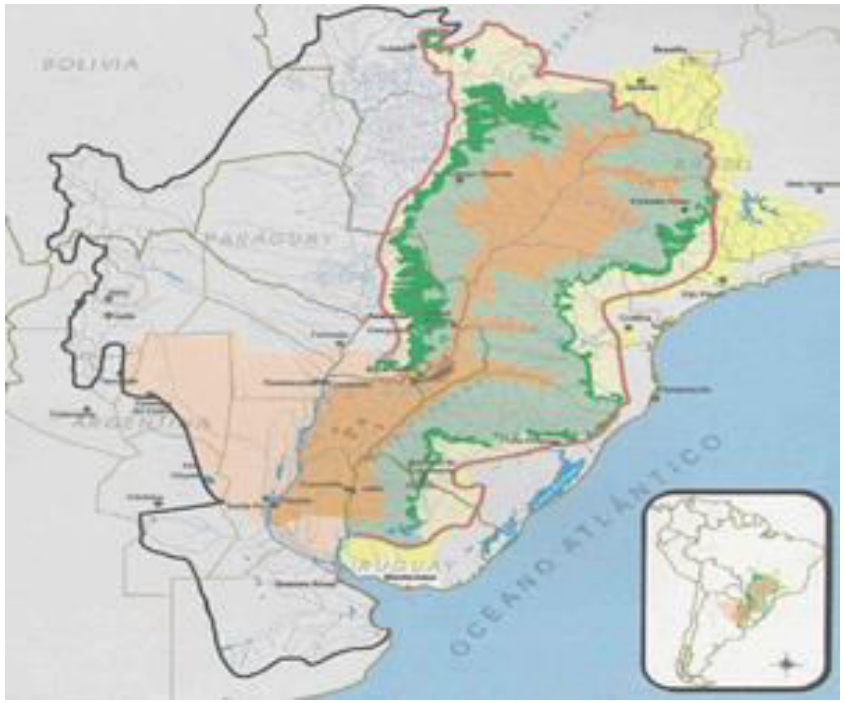


Examples of projects involving (big) confined aquifers and associated sustainability challenges

- **Stampriet Aquifer (Botswana, Namibia, South Africa)**
  - ❑ **Key role of data sharing and data information system**
  - ❑ **Coordination mechanism within the framework of river basin**

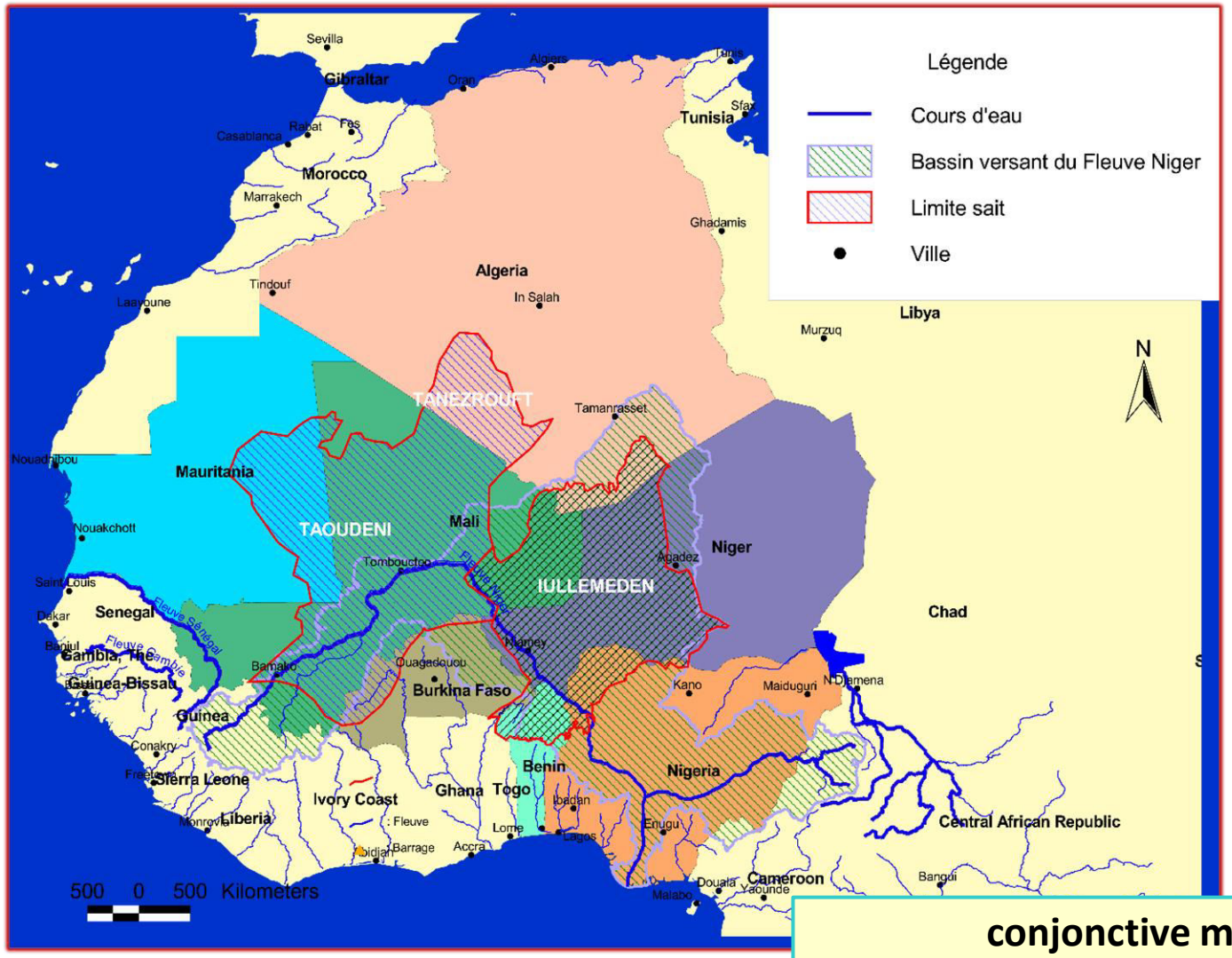


- **Guarani Aquifer (Argentine, Brazill, Paraguay, Uruguay)**



Bassin Fleuve Niger: Bénin, Burkina Faso, Cameroun, Cote d'Ivoire, Guinée, Mali, Niger, Nigeria, Tchad

Système Aquifère IULLEMEDEN-TAOUDENI/TANEZROUFT: Algérie, Bénin, Burkina Faso, Mali, Mauritanie, Niger, Nigeria



conjonctive management

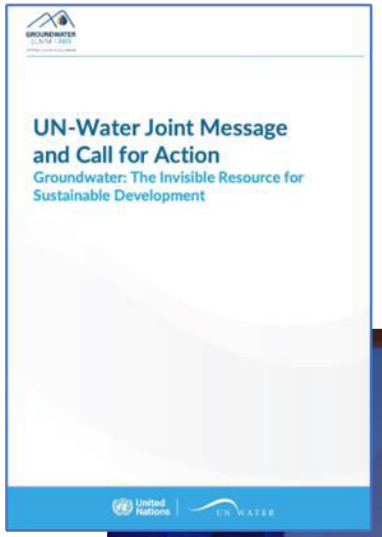
Link between surface and groundwater

Groundwater in 2022 and beyond

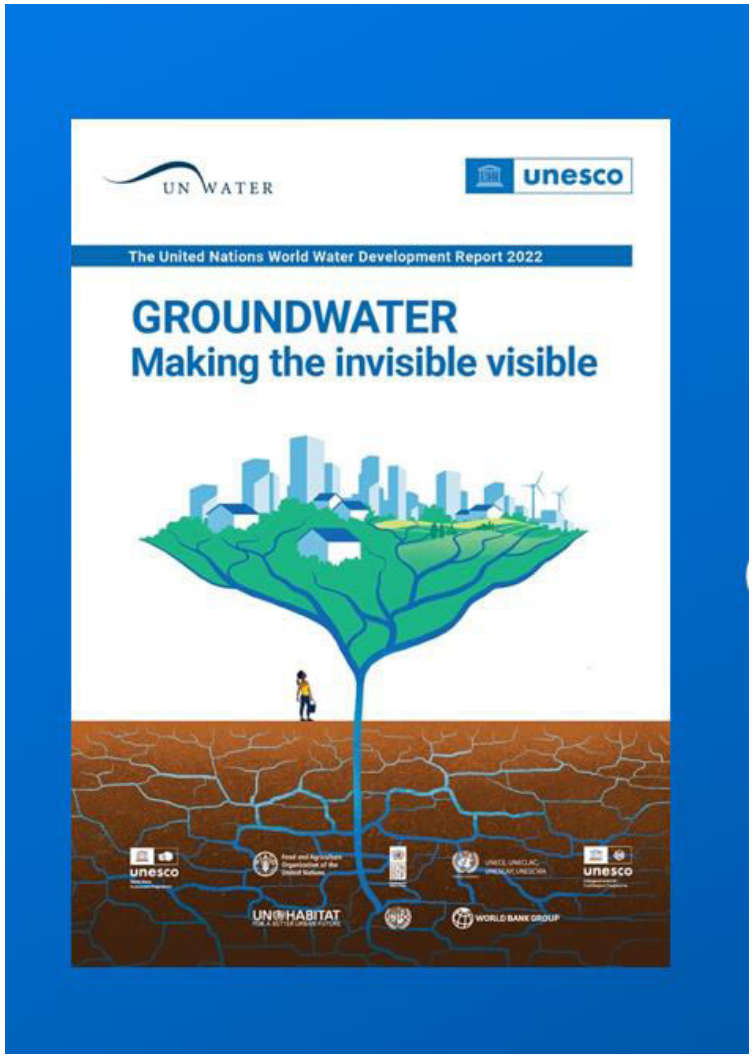
The culminating event of the **2022 campaign on "Groundwater: Making the invisible visible"** was the **UN-Water Summit on Groundwater**, which took place 6-8 December 2022

- The first "UN-Water Joint message and call for action on groundwater" was presented.

It was prepared by the UN-Water Summit Task Force and was sent to all Member States asking for voluntary commitments at the UN 2023 Water Conference and beyond. It **asks for support** **for concrete actions across the globe and across the sectors, with commitment and full engagement on groundwater of major stakeholders.**



- 800 participants on-site and almost 3,600 attendees on-line.
- 21 side events, 10 official high-level plenary sessions with participation of 18 ministers.
- 246 speakers (42% of them were women).
- First Forum of the UNESCO Youth Groundwater Network.



Thank you!

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