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Overview Presentation for Regional Dialogues Session



Economic
Commission for
Africa



Economic
Commission for
Europe



Economic
Commission for Latin
America and the
Caribbean



Economic and Social
Commission for Asia
and the Pacific



Economic and Social
Commission for
Western Asia



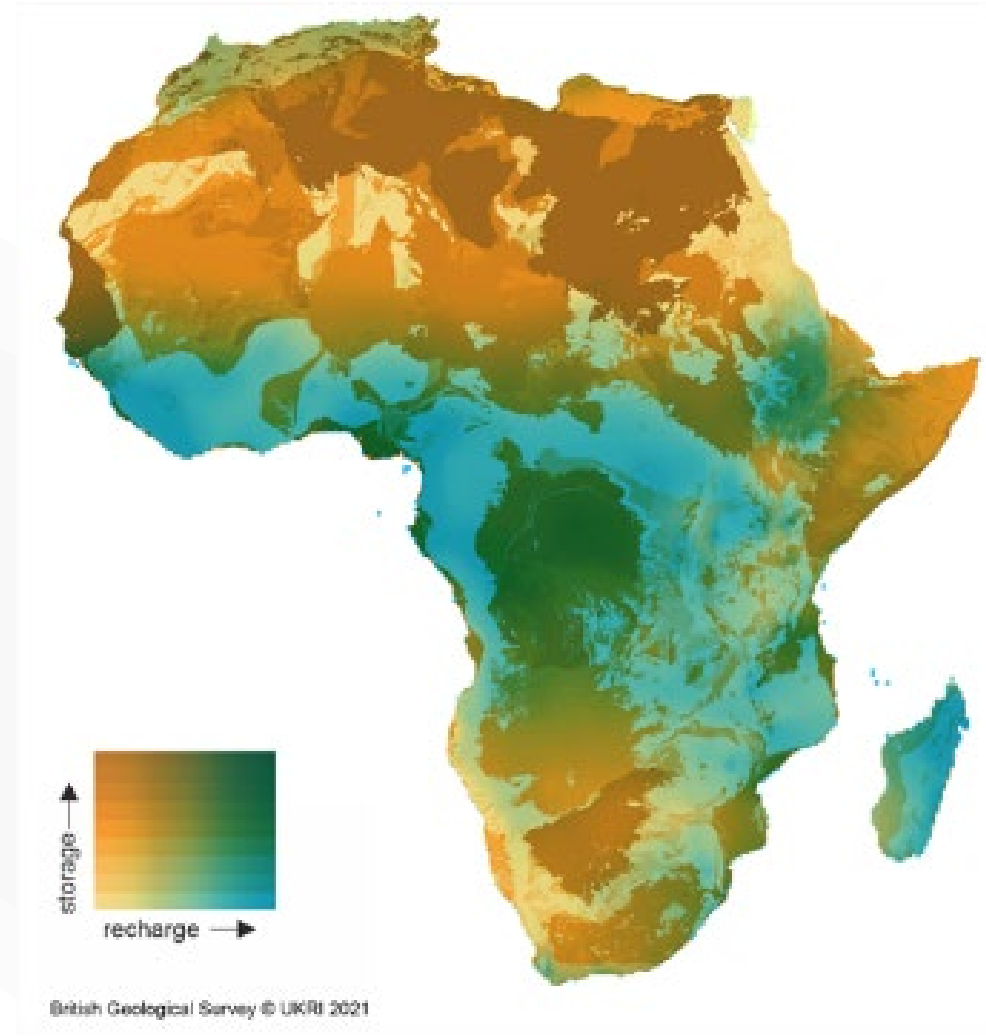
UN-WATER SUMMIT ON
GROUNDWATER 2022



Economic Commission for Africa

Groundwater in the ECA region

- Largest freshwater resource available
- Highly reliable and supports livelihood
- Helps to address water scarcity and response to shocks
- Potential to satisfy the need for increasing supply
- Promotes economic development



High groundwater storage buffers against short-term changes in rainfall, and high average long-term groundwater recharge enables an aquifer to recover rapidly after drought



Challenges	Opportunities	Priorities
<ul style="list-style-type: none"> • Governance: Overcome inertia in the institutional setup • Monitoring and data availability • Finance: insufficient financial means • Human resources: expertise is difficult to find • Hydrogeology: limited yield in some aquifers • Groundwater quality: anthropogenic contamination 	<ul style="list-style-type: none"> • Groundwater development across Sub-Saharan Africa • Conjunctive use of groundwater and surface water • Transboundary aquifers promote joint working and understanding • Technical advancements 	<ul style="list-style-type: none"> • Investments to promote safer and more efficient groundwater construction standards • Investments in the institutions required to manage groundwater • Improved groundwater management and governance • All data and information about aquifer systems should be made available to groundwater managers

Economic Commission for Europe

Groundwater in the ECE region

- In the European Union:
 - 75% of inhabitants depend on groundwater
 - Groundwater is important for the industrial and agricultural sectors
- In the USA:
 - Dependency on groundwater has been increasing over the years
- In Canada:
 - More than 30% of the population depends on groundwater



ECE region

<https://unece.org/map-region>



Challenges	Opportunities	Priorities
<ul style="list-style-type: none"> • Climate change and water scarcity • Groundwater-dependent ecosystems • Groundwater quality • Data sharing: sufficient and accurate data • Monitoring: Complexity makes it difficult • The number of agreements on transboundary aquifers is extremely small 	<p>In the European Union:</p> <ul style="list-style-type: none"> • Improving the quantitative and chemical status of groundwater • Harmonizing approaches across the EU • Improving policy coherence <p>In Eastern pan-Europe :</p> <ul style="list-style-type: none"> • Implementing technical solutions • Strengthening environmental protection <p>In North America :</p> <ul style="list-style-type: none"> • Market-based mechanisms and incentivizing (USA) • Water markets, reallocation of water rights or storage credits • Partnerships <p>The non-binding UNECE Model Provisions on Transboundary Groundwaters (2012)</p>	<ul style="list-style-type: none"> • Improved access to existing groundwater data and knowledge • Balance between sufficient coverage of monitoring and adequate attention to specific pollutants. • Improved management and governance of groundwater resources • Integrated policies for surface water and groundwater and efforts to ensure coherence • Need for transboundary cooperation • Capacity-building

Economic Commission for Latin America and the Caribbean

Groundwater in the ECLAC region

- Represents a key and strategic resource
- Plays an important role in the water supply systems of most Latin American cities
- Intensively exploited and/or contaminated
 - Endangered sustainability
 - Endangered water access



Challenges

- Groundwater quality: Natural and anthropogenic pollutants
- Increasing conflicts over access to and use of water in the region due to:
 - Water management decisions across different users
 - Land access conflicts
 - Anthropogenic activities: mining, fossil fuels, climate justice, energy projects
- In the Caribbean, groundwater threatened by seawater intrusion due to hurricanes and sea level rise

Opportunities

- Monitoring networks vary in modality, but offer an opportunity to overcome challenges
- Sustainable Management
 - Technical knowledge
 - Institutional changes
 - Legal and economic instruments
 - Social participation
 - Groundwater usage concessions and rights to contribute to the rational allocation
- The Guarani Aquifer Agreement (GAA) sets out a transboundary aquifer governance framework.

Priorities

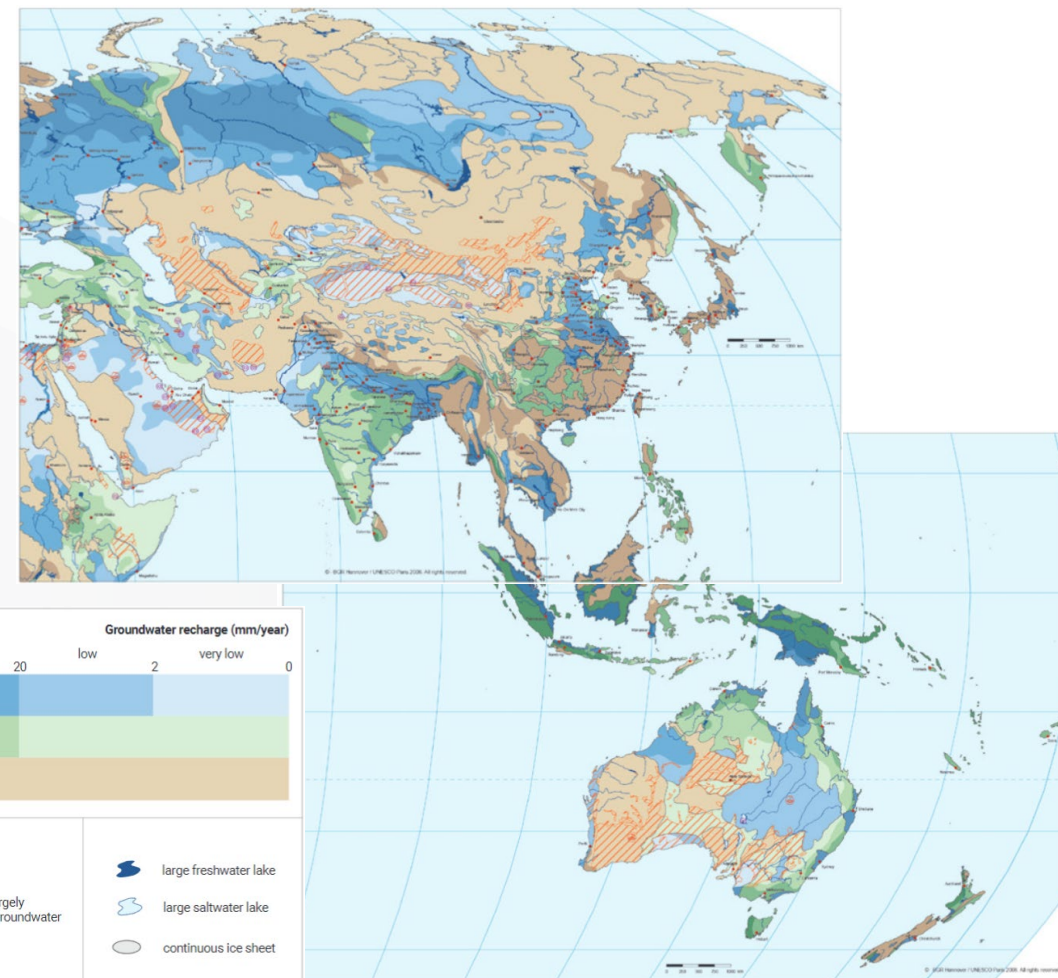
- Improved **management and governance**
- Frameworks that help ensure the sustainable use of groundwater resources.
- Move towards political processes that harmonize decision-making, monitoring and groundwater management
- Fieldwork and monitoring to **close existing knowledge gaps**
- Access and affordability to safely managed drinking water and sanitation.



Economic and Social Commission for Asia and the Pacific

Groundwater in the ESCAP region

- The Asia-Pacific region is the largest groundwater abstractor in the world. It accounts for more than 60% of the world's total groundwater withdrawal
- Groundwater serves as an important source of freshwater supply and has played a key role in the region's socio-economic development



(WHYMAP- BGR/UNESCO)



Challenges

- Groundwater usage is unsustainable with severe depletion
- Most countries do not have legal and institutional instruments
- Lack of monitoring
- Climate change
- Seawater intrusion and land subsidence
- Groundwater quality: contamination and lack of standards

Opportunities

- Groundwater recharge in Rajasthan (India) focusing on MAR
- Groundwater depletion integrated interventions in the North China Plain
- Climate change adaptation (Kiribati's adaptation programme)
- Groundwater management and ecosystem restoration in Timor-Leste

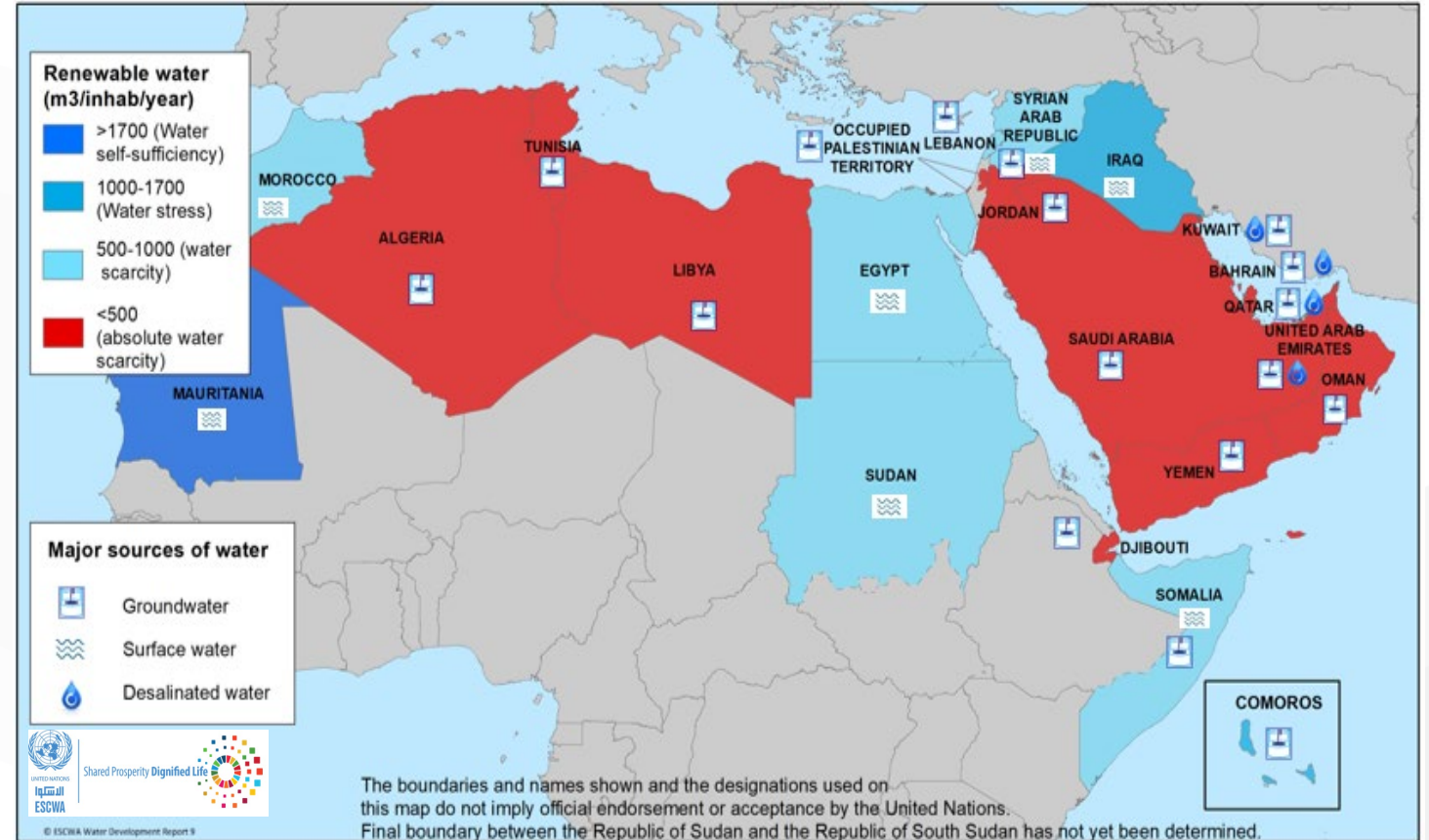
Priorities

- Improve **groundwater governance**
- Improve **transboundary water resources management and adaptation to climate change** and adequate disaster risk prevention and emergency response.
- Reinforce the commitment of governments to build, support and maintain **institutional capacity** related to groundwater
- **Build capacity** across multiple themes and in the technical, legal and diplomacy fields
- Ensure the protection and restoration of water-related ecosystems including aquifers
- Develop **multi-stakeholder partnerships** at all scales
- Fully involve experts on the economic and political dimensions of water

Economic and Social Commission for Western Asia

Groundwater in ESCWA region

- The Arab region is one of the most water scarce regions in the world.
- More than half of the Arab States rely heavily on groundwater.
- Groundwater is the only available natural water resource in some Arab States.
- Groundwater is the primary source of water for vulnerable groups in rural settings
- Food security is highly dependent on groundwater as agriculture consumes more than 80% of total water withdrawals



Challenges

- Population growth and socio-economic development
- The over-extraction of groundwater in many parts of the region has led to groundwater table declines
- Groundwater resources are threatened by anthropogenic, agricultural, and industrial pollution
- Projected negative climate change impacts on water resources in the region

Opportunities

- Innovative management tools: Aquifer contracts in Morocco and local communal management such as aflaj systems
- Managed Aquifer Recharge (MAR)
- Leveraging innovative technologies for groundwater monitoring and management
- Transboundary groundwater cooperation modalities: 4 modalities exist

Priorities

- **Improving knowledge** and information on groundwater systems.
- **Groundwater governance** especially for non-renewable aquifers needs to be strengthened.
- **Transboundary aquifer cooperation** is an essential component for the sustainable management of groundwater and water security in the Arab region.
- More studies are needed for **Managed Aquifer Storage** as a **solution to water scarcity and climate change**.
- More studies on the impact of climate change on groundwater to inform policymakers about the needed actions



THANK YOU