

Groundwater Resources Management

Results summary by the Groundwater Expert Group
from the AGUASAN Workshop 2022

The idea in a nutshell

The Challenge Addressed

Foster strategic planning and implementation around groundwater resources

The Vision

Improved groundwater management contributes to water security in a changing socio-economic and climate context in the MENA region

The Potential Solution

Improved water information systems for evidence-based decision-making in groundwater management in the MENA region

Key target group

Water and non-water authorities, key decision-makers, local communities

Region

Middle East and North Africa (MENA)

The ideas and results presented have been co-created by one of the five water and climate expert groups during the [36th AGUASAN Workshop “Water Management in Times of Climate Change - Finding Actionable Solutions for Fragile Contexts in the Middle East”](#), taking place in Jordan in June 2022. Through an innovative format, the 5-day workshop supported the five thematic working groups to co-develop potential actionable solutions for water-climate issues, highly relevant for the region.

In order to protect and sustain groundwater resources, on the one hand the information and management systems of groundwater must be further developed, while on the other hand local communities, incl. households, as well as agricultural and industrial key stakeholders must be sensitized and involved in the development and implementation of the solutions to manage and reduce water demand.

For an evidence-based decision-making in groundwater management in the MENA region, the expert group suggests to develop an improved information system management, enhance community awareness, enlarge groundwater storage projects as well as regulate water demand at large scale.

Beneficiaries of these activities will be communities in the MENA region, who mainly depend on groundwater.

The idea

Short description

The water regime in water scarce, (semi-)arid areas like the Middle East and North Africa (MENA) is dominated by high pressure on groundwater sources, due to socio-economic and politico-institutional reasons including water governance, population increase, upstream dams and unsustainable development of infrastructure and unregulated withdrawals, and is amplified by the effects of climate change. These reasons have led to the deterioration of the quality of groundwater and partly of its depletion. Despite its key role as central water source in the MENA region, information and data is insufficient for an evidence-based decision-making.

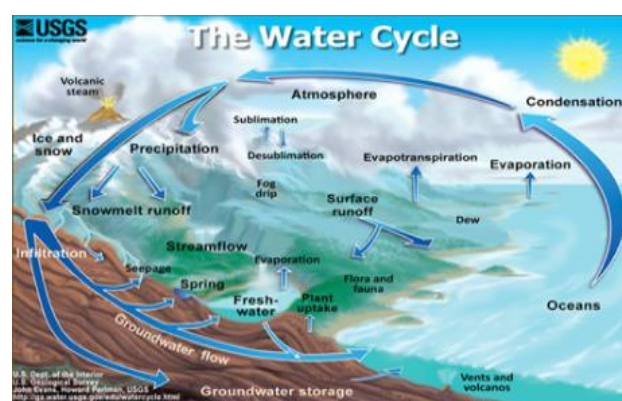


Figure 1: The Water Cycle (source: US Geological Survey)

Specific Aims:

This expert group focused on developing ideas to address several topics related to water resources and water utility management with the goal to support key decision-makers and local communities in the targeted countries in the following regards:

1. Improve the water information base for decision-making, including the full hydrological cycle
2. Improve awareness and understanding of the relevance of groundwater
3. Establish and implement a data-based, actionable, and integrated long-term strategy
4. Support relevant stakeholders to coordinate and cooperate on water resources management

Lines of activities

Activities to address these specific aims have been formulated along the four lines:

1. Improve water information base for decision-making, including the full hydrological cycle
 - Activate/ establish national water information unit with necessary authority.
 - Improve/ establish centralized data collection, processing and sharing system.
 - Data from all relevant sources are feeding in national water information system that provides comprehensive overview.
 - Monitor properly and update regularly the water budget/ balance and make it available for decision-makers.
2. Improve awareness and understanding of relevance of groundwater
 - Raise awareness for local community, water and non-water authorities to adopt key groundwater management challenges and best practices.
 - Conduct awareness campaigns, e.g. on how improved groundwater management contributes to dust storms mitigation

- Support ministries of education to integrate groundwater and climate change issues in school curricula
 - Inform key decision-makers (e.g. PM, parliament members, etc.) about the groundwater challenges and its relevance for the water security in the countries.
 - Raise awareness that goes beyond traditional methods such as giving advice, as awareness is a societal culture based on an applied approach that is built into the community's culture and the behaviour. This can be reached through methods and means of education, training and the media.
3. Establish and implement a data-based, actionable, and integrated long-term strategy
 - Activate a water strategic advisory unit to steer the implementation of the strategic plans and ensure alignment with national development strategy.
 - Assess the progress and inform coordination based on Key Performance Indicators.
 - Plan water demand, supply, groundwater recharge management in synergies and implement measures using innovative technologies.
 4. Support relevant stakeholders to coordinate and cooperate on water resources management
 - National water council is established under the PM/ cabinet.
 - Stakeholders mapping and define communication pathways.
 - Discuss and coordinate actions based on the results of the KPI and changes in the context and needs.

Potential partners

- Water and irrigation ministry
- Education ministry
- Agriculture ministry

Roadmap with key milestones

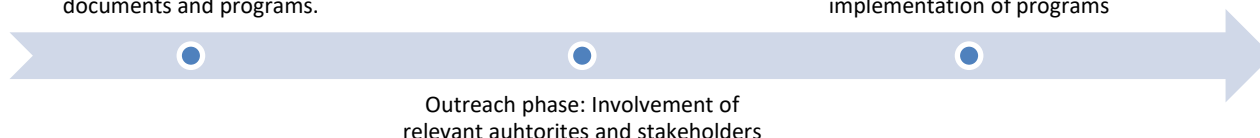
First stage: Preparation process to develop strategies and work teams concerned with popularizing methods for dealing with groundwater. It includes the preparation of initial documents and the development of applied programs.

Second stage: Outreach to relevant authorities and partners related to groundwater with the aim of developing, improving and involving all parties and finalising the prepared plans and programs.

Third stage: The programs and plans are discussed and implemented with beneficiaries directly on the ground.

Preparation phase: Development of strategies, work teams, documents and programs.

Implementation phase: Engagement of beneficiaries and implementation of programs



Potential outcomes of the implementation of the idea

- Improving the quality of information, its management and circulation
- Improving decisions taken in the field of groundwater and its management
- Improving groundwater management and protection

The Groundwater Management Expert Group

Contacts

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