



Water Research & Capacity Development Priorities in the GCC Unified Water Strategy 2035

Prof. Waleed Al-Zubari

Water Resources Management Program

College of Graduate Studies

waleed@agu.edu.bh



Overview

- Vision & Mission
- Values and Principles
- GCC Unified Water Strategy
- Strategic Objectives & Main Research and Capacity Building Areas

● Vision Statement

- By 2035 the GCC countries have established **sustainable, efficient, equitable**, and **secure** water resources management systems contributing to their sustainable socio-economic development

WS efficiency, GW management, WW reuse, Energy efficiency, AGR efficiency, WS security, Governance, Awareness, Financial and economic, ...

Water security, Acquiring desalination technology, Benchmarking GCC WS&S utilities, Awareness, ...

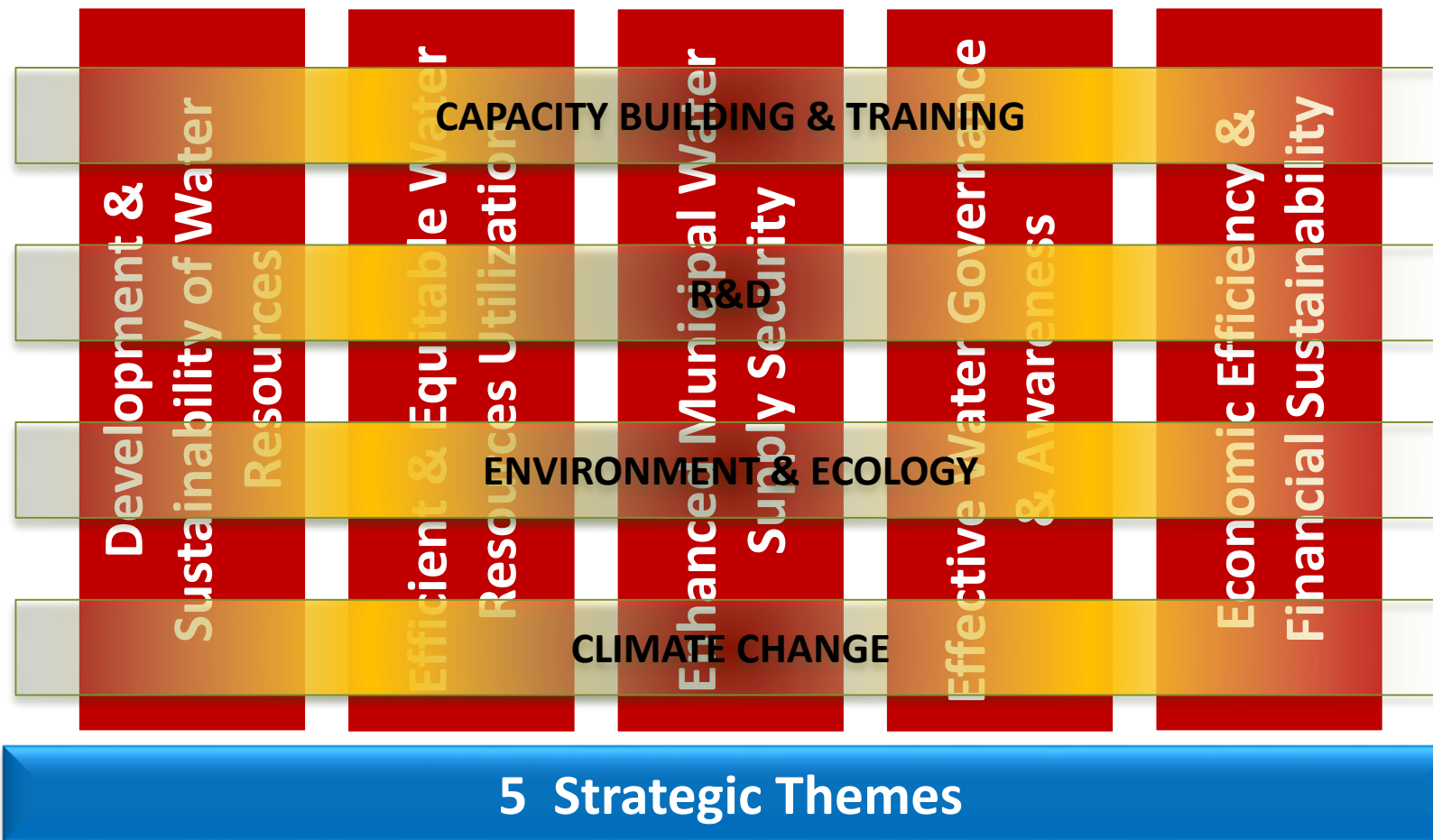
● Mission Statement

- To align GCC states' national water strategies and master plans with a unified GCC water management strategy that **foster joint initiatives** and **strengthen the capacities of each country** in achieving a rational, integrated, efficient, and sustainable management of their water resources

● Values and Principles

- Achieving **highest international standards** of service delivery in WS&S
- Implementing **effective water governance**
- Enactment of comprehensive **water laws and legislation**
- Raising **water awareness** of the GCC societies
- Adopting integrated **supply and demand driven approach** in all water consuming sectors and focusing water efficiency, demand management, and conservation
- Achieving **financial sustainability** for the water sector
- Integrating **climate change adaptation** measures in water resources planning and management
- Promoting **R&D and innovative technological solutions** in the water sector
- Enhancing **national human capacity**
- Adopting a **water-energy-food nexus** approach in the planning and management of the water sector
- Active **partnership in the international** and regional water agenda

GCC Unified Water Strategy Vision & Mission



GCC Unified Water Strategy 2035

**Development
&
Sustainability
of Water
Resources**

**Efficient and
Equitable
Water
Resources
Utilization**

**Enhanced
Municipal
Water Supply
Security**

***Development,
Enhancement,
Emergency, and
Improvement***

Effective Water Governance and Awareness

***Governance,
Control,
Sustainability***

Economic Efficiency and Financial Sustainability

***Enhancement, and
Incremental Uplift***

Theme 1: Development and Sustainability of Water Resources

SO1: To acquire technology development, manufacturing of **desalination and water treatment** plants, and diversification of energy resources

SO2: To develop and protect **conventional water resources** in all GCC states

SO3: To maximize **wastewater** collection, treatment and reuse

Theme 2: Efficient and Equitable Water Resources Utilization

SO4: To achieve the highest international Standards of **service** delivery

SO5: To increase efficiency of water use and manage demands in the **municipal** and **industrial** sectors

SO6: To establish a water-efficient and rational **agricultural** sector compatible with the available water resources

Theme 3: Enhanced Municipal Water Supply Security

SO7: To secure water supply during **emergencies** and **disasters**

Theme 4: Effective Water Governance and Awareness

SO8: To improve **governance** to achieve effective and integrated water resources management

SO9: To achieve a **water-oriented** society in GCC countries

Theme 5: Economic Efficiency and Financial Sustainability

SO10: To minimize water supply **economic costs** and increase **cost recovery** without sacrificing quality of service

SO1: To acquire technology development, manufacturing of desalination and water treatment plants and diversification of energy resources

- Establishing joint GCC desalination and water treatment **industry**
- **Establishing an advanced joint GCC R&D base in desalination and water treatment**
- Developing professional and technical capacity in desalination and water treatment in the GCC
- **Diversifying energy sources** in the water sector
- **Mitigating the impacts of desalination** and water treatment practices on the environment
- **Enhancing energy efficiency** in desalination sector and the whole water sector

SO2: To develop and protect conventional water resources in all GCC Countries

- Ensuring **longevity of non-renewable groundwater** resources
- **Restoring renewable groundwater** resources and ensure their sustainability
- Maximizing the **utilization of surface water** (increasing extremes frequency)
- Ensuring availability of groundwater data and information for planning, management and decision making **(MIS)**
- Protecting groundwater from human activities
- Enhancement institutional and individual capacity for conventional water resources **planning and management**

SO3: To maximize municipal wastewater collection, upgrade treatment and increase economic and safe use of treated wastewater and sludge

- Increase wastewater collection rates, treatment capacities, and treatment levels
- Increasing **treated wastewater reuse** in all appropriate sectors
- Enforcing legislation related to protection of health and environment in all stages of collection, treatment and reuse of domestic wastewater
- Maximizing the **beneficial use of wastewater sludge**

SO4: To achieve the highest international standards of water and wastewater services

- Ensuring the highest international standards of water supply and sanitation services to all populated areas in the GCC countries
- Achieving the highest management standards for water supply utilities
- Achieving the highest management standards for sanitation utilities
- Enhancing the **capacity and performance of water supply and sanitation personnel**

SO5: To increase water efficiency and manage demands in the municipal and industrial sectors

- Increasing supply efficiency of the municipal water network
- Managing water demands and enhancing **conservation in the municipal water sector**
- **Increasing water efficiency** and manage demands in the industrial sector

SO6: To establish a water-efficient and rational agricultural sector compatible with available water resources

- Improving **water use efficiency and increasing water productivity** in the agricultural sector
- Increase the **use of treated wastewater in agriculture** in conformity with reuse standards
- Allocating groundwater to the agricultural sector based on groundwater resources management plans
- Adopting low water consuming landscaping and forestation

SO7: To secure water supply during emergencies and disasters

- Establish a highly **resilient system for potable water supply under emergencies**
- Enhancing drinking water supply provision during emergencies in the GCC countries through water gridding
- Establish an early warning system for seawater contamination
- Protecting feed water of GCC desalination plants from pollution

SO8: To improve governance in the water sector to achieve effective and integrated water resources management

- Ensuring integrated planning and coordination among water-related sectors in each country
- Ensuring **water sector regulation**
- Improving **institutional and individual capacity in planning and management decision-making** in the water sector
- improving **legal framework** and capacities of the water sector
- Providing **water data and information for decision making support**
- Customizing water-related standards compatible with the GCC conditions
- **Regulating the utilization of aquifers** in the GCC countries

SO9: To achieve water-oriented society in the GCC Countries

- Building **water importance and value awareness** for the future GCC generation
- Building **awareness for the importance of water conservation and value for all water users**
- Building water **importance and value awareness** for the GCC society at large (**Society, NGOs, and Media**)

SO10: To minimize water supply economic costs and increase cost recovery without sacrificing quality of service

- Giving water an **economic value** in the GCC countries
- **Minimizing NRW** in the GCC countries
- Increasing **PPP in the water sector** in the GCC countries
- Adopting and implementing the “polluters pay” principle in the water sector

Credits and Acknowledgements

- **Unified Water Strategy Formulation Team (alphabetically)**
 - Abdulaziz Al-Turbak, King Saud University, Saudi Arabia
 - Ahmed Abdelwahab, Texas A&M University, Qatar
 - Ahmed Murad, United Arab Emirates University, UAE
 - Ali Al-Tkhais, Shura Council, Saudi Arabia
 - Ibrahim Al-Muataz, King Saud University, Saudi Arabia
 - Khalid Al-Ruwis, King Saud University, Saudi Arabia
 - Meshari Al-Harbi, Kuwait University, Kuwait
 - Waleed Zubari, Arabian Gulf University, Bahrain
 - Walid Zahid, King Saud University, Saudi Arabia
 - Zaher Al-Sulaymani, President, Oman Water Society, Oman
- **The GCC Secretariat General**
 - Mohammed Al-Rashidi, Director, Energy Directorate, GCC SG