MENA: Towards Leadership of the Global Water Security Agenda

Introductory Remarks for CMI/World Bank Conference on Desalination, NRW and Public-Private Partnerships

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MENA’s context suggests that it is well placed to become a global leader in managing water security

- Greatest regional water stress
- Rapid urbanization
- High sensitivity to climate change
- High dependence on shared water resources
- Recognition of water as national security concern
- Capital intensive development

So why is MENA, as a region, not yet the global leader in water security?

The need to modernize our approach to water management.
The Old Paradigm: Water Services Managed Separately from Water Resources

- **Utilities and irrigation authorities responsible for:**
  - 24/7 supply
  - Water quality
  - Financial sustainability
  - Irrigation canal flow and soil moisture
  - **Tools and technologies**
  - Tariffs focused on cost recovery
  - Acoustic leak detection
  - Water and wastewater treatment plants
  - Civil works, DBOTs
  - Mechanical meters for monthly use
  - Canals
  - Weir, velocity rod

- **Basin agencies and bulk water suppliers responsible for:**
  - Surface water storage and allocations
  - Groundwater monitoring and permits
  - Water quality
  - **Tools and technologies**
  - Public agencies
  - Dams
  - Desalination
  - Monitoring wells
Rapid global and local shifts are driving a major paradigm shift in how water is managed

- Integrated Management
- Growth of Cities
- Technology Innovation
- Transboundary Cooperation
- Fiscal Constraints
- Climate Change
- National Security Threats
The New Paradigm: Integrated Management of the Water Cycle

- **Urban Water Security:**
  - Diversification of water sources
  - Water use reduction per client
  - Integrity of local aquifer as water security storage
  - Reutilization of water
  - Energy efficiency and use of renewables

- **Tools and Technologies:**
  - Tariffs focused on demand management
  - Water markets
  - Network meter reading and advanced meter analytics
  - Performance based PPP contracts (including resources)
  - Rainwater harvesting and groundwater replenishment system
  - Green infrastructure for water quality
  - Multi-spectral remote sensing imagery for green landscapes
  - In line hydro and methane capture for energy

- **Food-Water-Energy Nexus:** Explicitly account for and manage interrelationships
  - Agricultural water and energy productivity (Ag GDP or employment per m3 or kWh)
  - Food availability and nutrition (not self sufficiency)
  - Irrigation service reliability
  - Evapotranspiration
  - Aquifer drawdown and quality – local and transboundary

- **Tools and Technologies:**
  - Food supply risk systems approach (financial and physical mechanism)
  - Drought resistant varieties
  - Integrated land management for flood protection
  - Smart weather and subsurface irrigation systems
  - Solar pumps, covered irrigation canals and in-line hydropower
  - SCADA and Telemeters
  - Satellite imagery and gravimetry
Increased Co-Management Across Users
Where are we now?

* Highest subsidies (2% GDP)/lowest tariffs
* Insufficient groundwater legislation and monitoring
* Limited use of private sector to bring innovation
* Agricultural policies
  * Unclear basis for integrating resources and across users

* Technology adaptation
* Increasing focus on “groundwater security”
* Transboundary agreements
* Energy tariff reforms/renewables
* Increased imports of “virtual water”
What will allow MENA to become the global leader in water security?

Focus on how policy, technology and management systems come together for Governments to provide water security:

• **New water consciousness** – public awareness of scarcity and government awareness of need for integrated approach
• **Improved services** – reliability and quality
• **Pricing** - as management tool with attention to needs of poor and environment
• **Water accounting/water balances** - at basin (including groundwater) and municipal and irrigation scheme levels
• **Transparent monitoring** - water quantity and quality
• **Innovation networking** - at regional and global level amongst utilities, private sector and researchers
• **Support marketing of “made in MENA” expertise** – encourage local, private companies to provide services which can then be exported