

webex on Water Scarcity issues in the Middle East

***Towards A Secure Arab Water Future:***

***(Challenges and Opportunities)***

*By*

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***Where we are ... Where we go....***

***MENA Region Water - related Challenges***

***Role of AWC towards SD***

***Int./ Regional Initiatives***

***Opportunities***

***Success Stories***

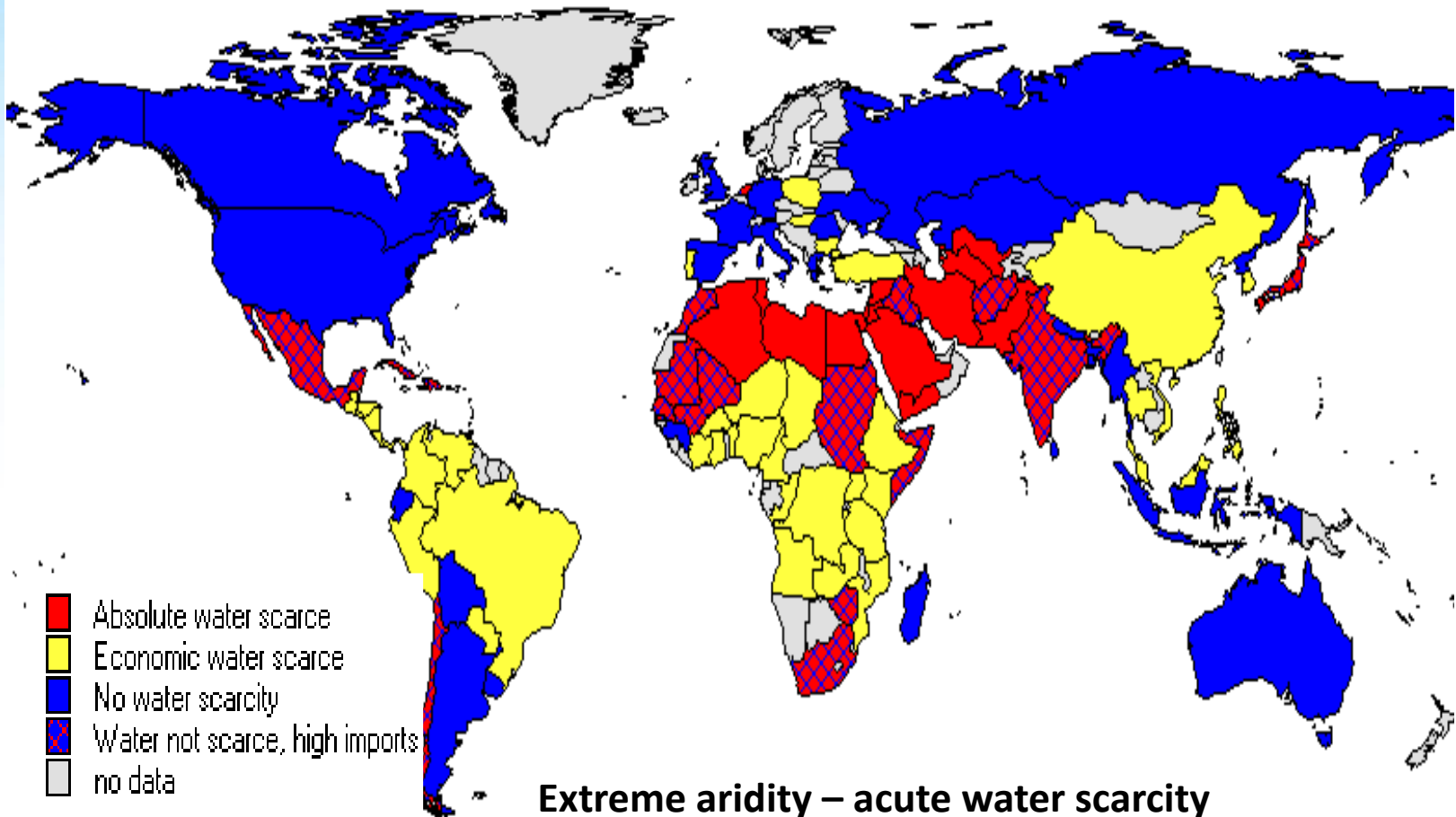
***Where to go.....!!!!***

***Conclusion & The way Forward***





## Absolute Water Scarcity by 2025



## Arab Region Contexts

- Land area about 15 million km<sup>2</sup> (agriculture exploiter area is 15%),
- Total population exceeds 360 million inhabitants to be (600 million by year 2050),
- About 6% of world population with only 1% of the world's renewable water resources,
- Out of 22 Arab Countries, 15 countries are suffering from water shortage (8 countries have less 200 m<sup>3</sup> /cap/ year) ,
- Agriculture sector accounts for an average of 85% of water use (low efficiencies - agriculture water share is declining),
- The region is net importer of food,
- Energy requirements are one of commitment.

**A Region with Multiple stresses....!!!!**

**Major Challenges  
in the Arab Region**

Economic Growth –  
demographic trends

Urbanization / Land degradation/  
Desertification

Water scarcity (acute)/  
Food In-Security

Frequent Droughts / Climate  
Change Variability

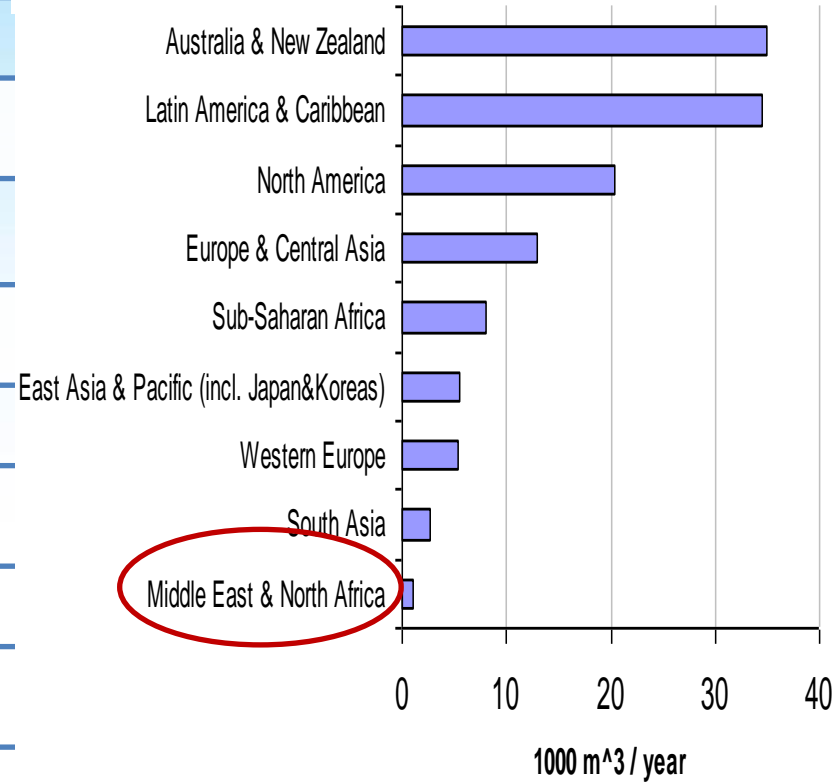
Overuse of GW – Water depletion  
and quality deterioration

Unplanned migration

Shared / Transboundry Water

**Annual Renewable Water Resources Per  
Capita**

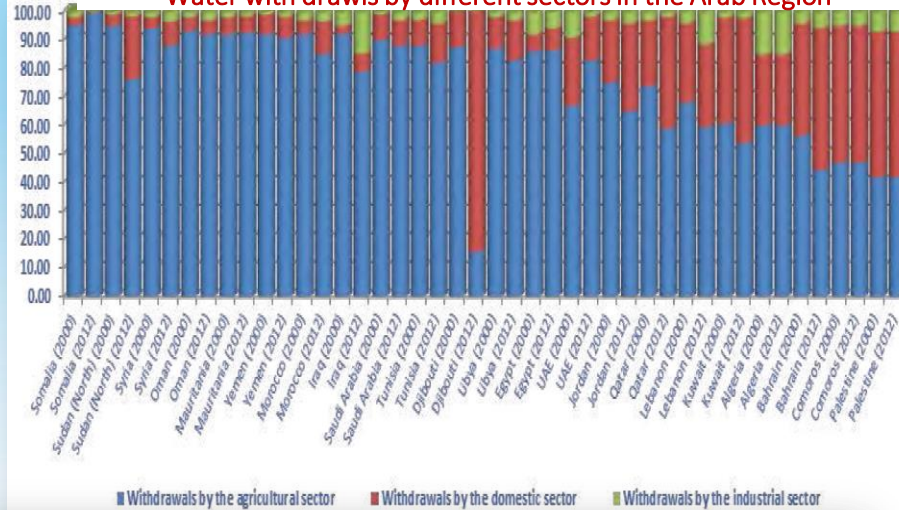
**(The lowest among the World)**



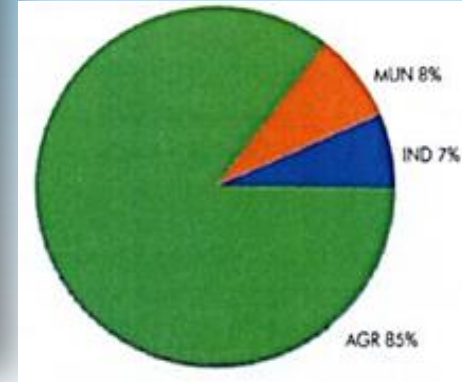
- Governance
- Major political changes



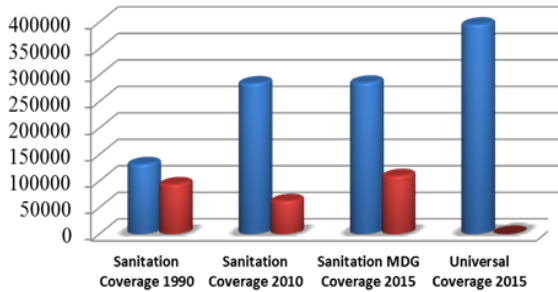
**Increasing Competition between different Sectors  
Water with draws by different sectors in the Arab Region**



**Water Uses in the Arab Region  
(UNDP,2013)**



**Total Population without improved sanitation  
in the Arab Region (1000 Inhabitants)**

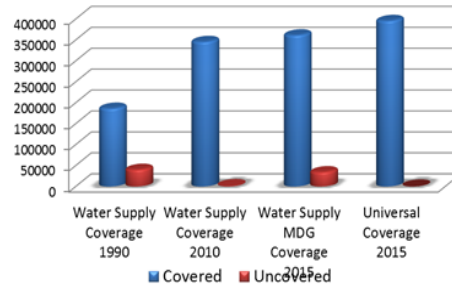


**83 million with no access to Drinking Water**

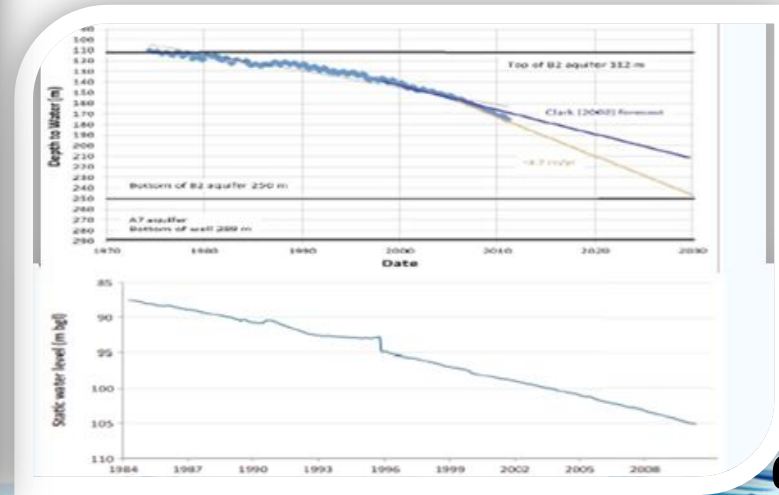
■ Covered ■ Uncovered

**96 million with no access to Sanitation**

**Total Population without Water Supply in the  
Arab Region (1000 Inhabitants)**



**Over-Pumping of Groundwater (GW depletion)**





# Extreme Weather Events in the Arab Countries

## Arab Water Council

**Flooding in Alexandria, Egypt on 2016**



**Flooding in Amman, Jordan on 2011**



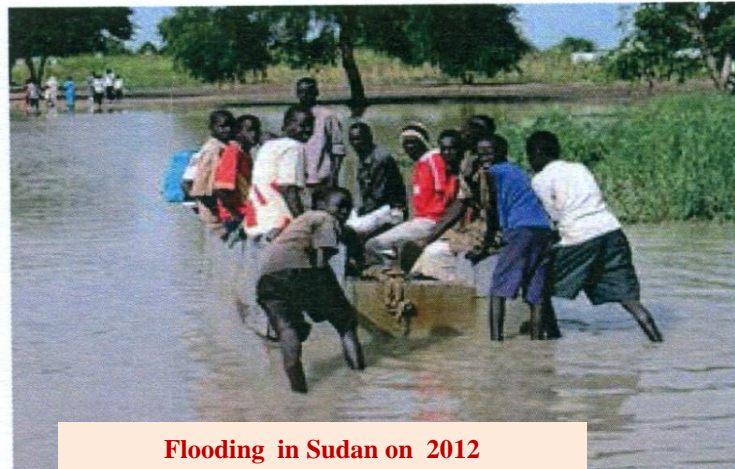
**Flooding in Morocco on 2014**



**Flooding in Saudi Arabia, on 2016**



**Flooding in Sudan on 2012**



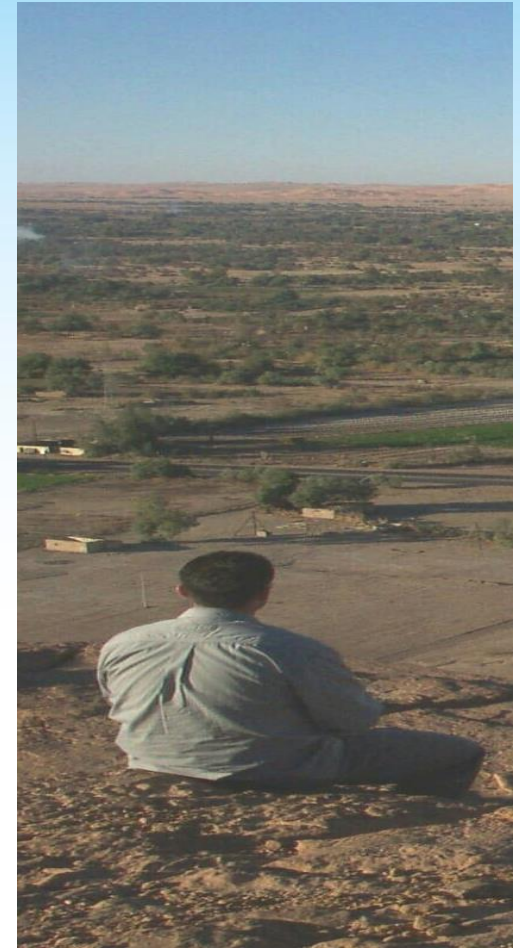
**Flooding in United Arab Emirates on 2013**





## The Arab Water Council (AWC)

- **What is AWC?** A non-profit regional organization practicing its activities on the regional and international levels since April 2004.
- **Why AWC?** AWC is devoted to promote better understanding and management of the water resources in the Arab States in a multi-disciplinary, non-political, professional and scientific manner.







## AWC Comparative Advantages

General Assembly

Board of Governors (BOG)

Executive Committee

Permanent Secretariat

Council Branches



A) The Arab Water Academy (AWA)

B) Mohammed VI International Center for Strategic Water Studies and Research in the Arab World

## AWC Board of Governors



- Governors
- Research Institutions
- Regional and International Organizations
- National Associations
- Private Works Sector
- Public Work Sector

- ❑ The BOG comprises of 22 governors and 23 elected members
- ❑ Networking (Youth, Ethics, Gender, Non-Conventional, Desalination,...) /Magazine
- ❑ Cooperation: League of Arab States (LAS), Arab Water Ministerial Council, International and regional organizations partners



## Opportunities

- **Potential for resources** (non-conventional water resources , Renewable Energy),
- **Infrastructure** , assets and Human Resources,
- **Sustainable Agricultural**, (resource use efficiency & productivity),
- **Technology** development (R&D),
- **Finance:** (Private Sector, Arab trust fund , Green Economy,...),
- **Regional Cooperation** (Shared Water, Comparative advantage ),
- **Success stories:** Regional Initiatives and National activities,
- **Interest** of partners and donors ,
- **Arab Water Ministerial Council (AWMC) (LAS)-** (Political Support).

Sendai,  
Japan

SDGs  
UN

COP21,  
Paris

COP22,  
Morocco

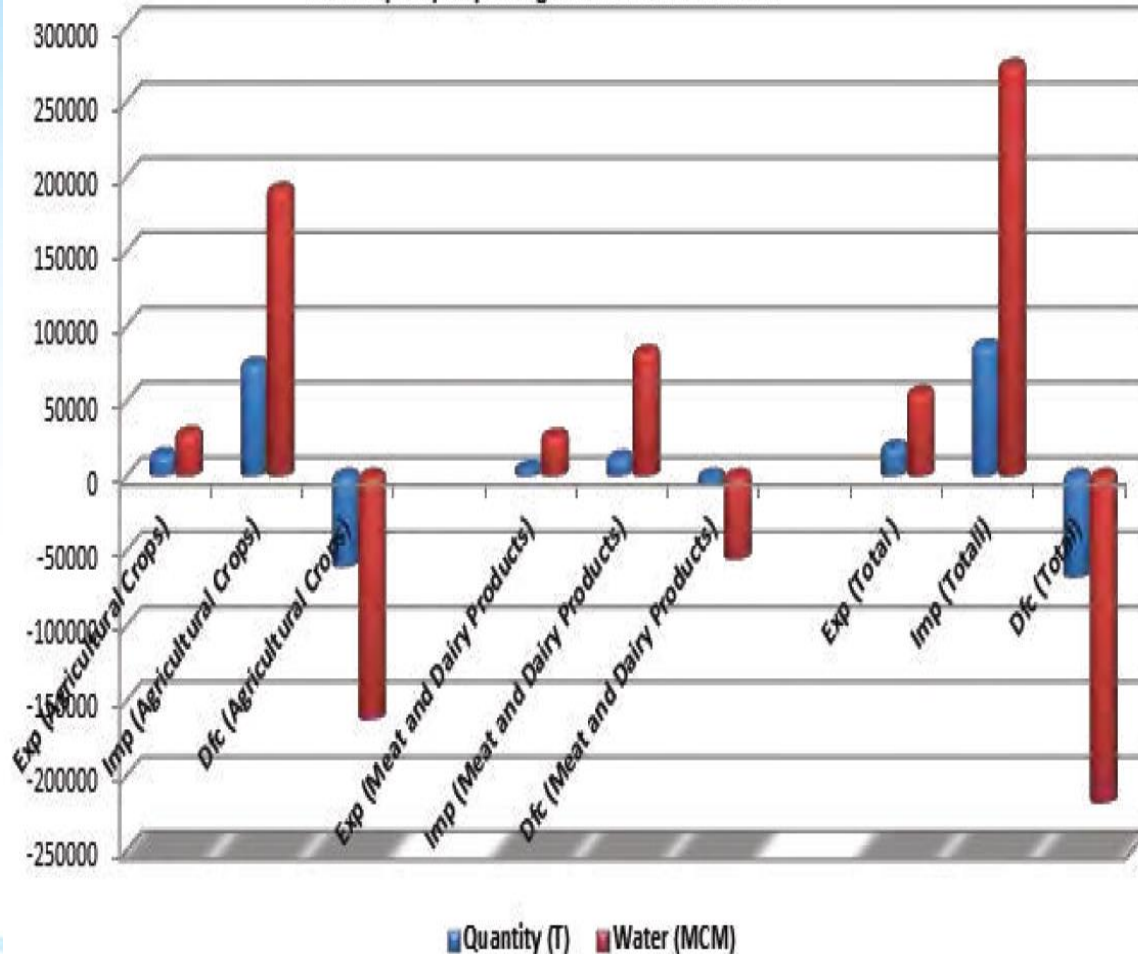


**Water is the Core of Sustainable Development**

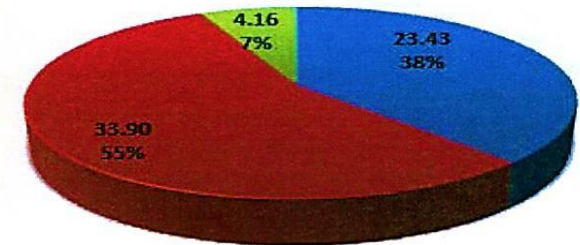
## Arab Trade – Virtual Water

## Opportunities of Non-Conventional Water Resources

Arab Export / Import Agricultural Trade Balance

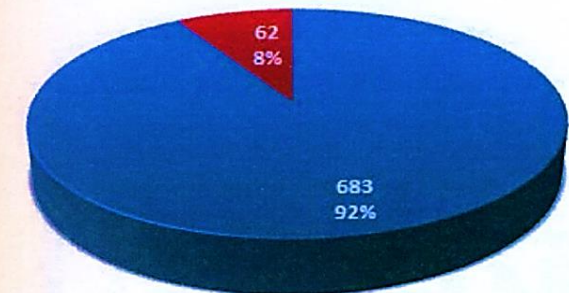


Non-Conventional Water resources in the Arab Region (BCM/Y)



- Produced Municipal and Industrial Wastewater (PMIW)
- Produced Agricultural Drainage (PAD)
- Produced Desalinated Water (PDW)

Conventional and Non-Conventional Water Resources (BCM)



- Total Conventional Water Resources (TCWR)
- Total Non-Conventional Water Resources (TNCWR)



## Regional Initiatives/Achievements

- ❑ “Strategy for Sustainable Arab Agriculture Development until 2025”,
- ❑ “Arab Water Security Strategy” (2010 – 2030),
- ❑ “Arab Strategic Framework for Sustainable Development” (2015 – 2025),
- ❑ Regional Water Scarcity Initiative (FAO – 2015),
- ❑ Water Security :Response to local, regional and Global challenges” Strategic Plan IH-VIII (2014-2021),
- ❑ LAS - CRN Initiative for Climate Risk NEXUS Addressing Food Security, Water Scarcity and Social Vulnerability in the Arab Region (LAS & Partners: AWC, WFP, UNDP, UNSIDR - 2015).
- ❑ “Arab non-conventional Water Resources Program initiatives” -AWC / UNESCO / FAO 2015),
- ❑ Arab Water Council (AWC) Strategic Plan (2016-2018).

LAS

# Success Stories

## Irrigation Improvement



Egypt



Morocco



Renewable Energy



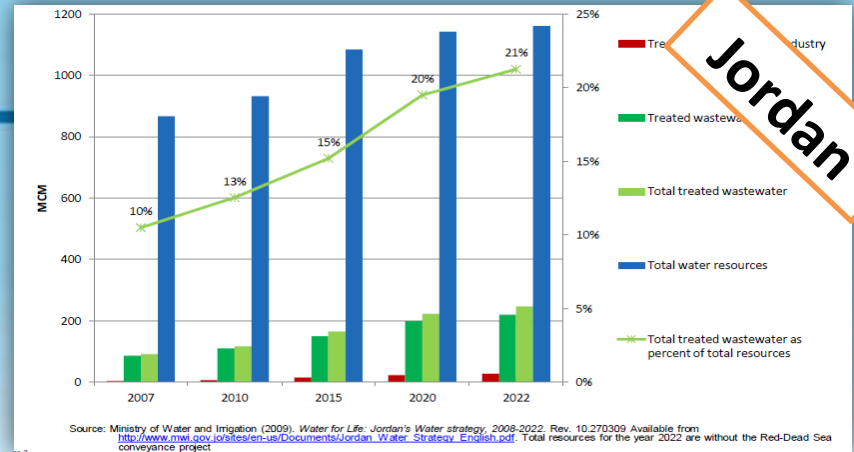
Saudi Arabia



United Arab Emirates



MASDAR Green City

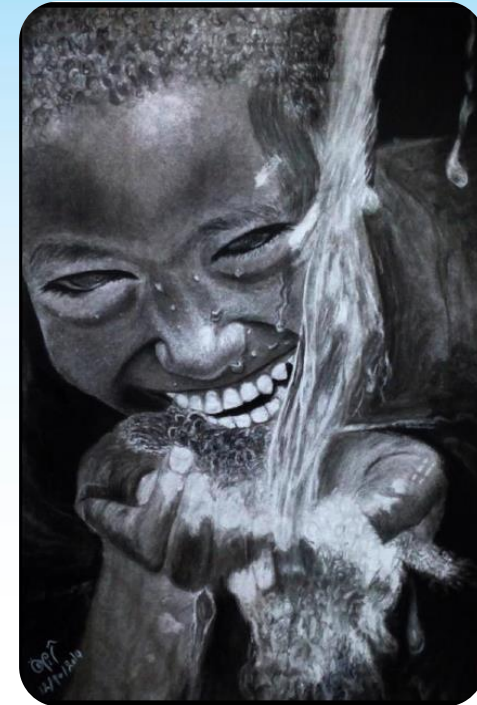


Jordan

## Non-Conventional- Groundwater Management

## Where to go????

- Coherence integrated Policies,
- Climate Change mainstreaming,
- Water Governance,
- Advanced Technology / Capacity Development,
- Sustainable Finance,
- Monitoring and Evaluation mechanisms,
- Shared / Transboundary water (Sharing Benefits),
- Cooperation at the international and regional level.

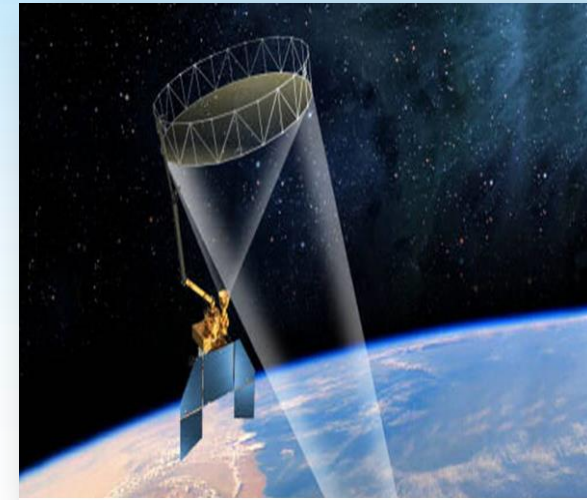


The Future We  
Want.....!!!



## Conclusions and The Way Forward

- The Arab development agenda is facing demanding challenges (W , E and F Security),
- The region should play a world leadership role in managing water under scarcity ,
- The ultimate challenge is to accelerate implementation of action plans,
- The engagement of all stakeholders from the bottom up is essential,
- The Key Elements to success are: Integration, Cooperation, Knowledge Exchange and Political Will.



# Finally..... Towards A Secure and Sustainable Arab Water Future

“The Arab Water Council stands as a platform for regional cooperation, integration and networking to face the challenges of water scarcity”



# Partners







**THANK YOU**