



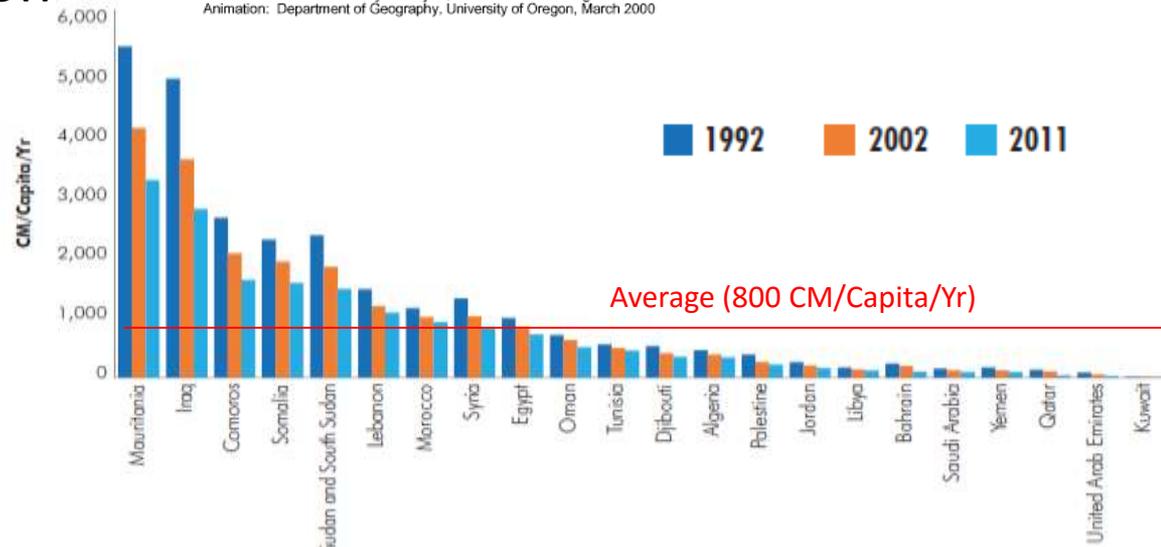
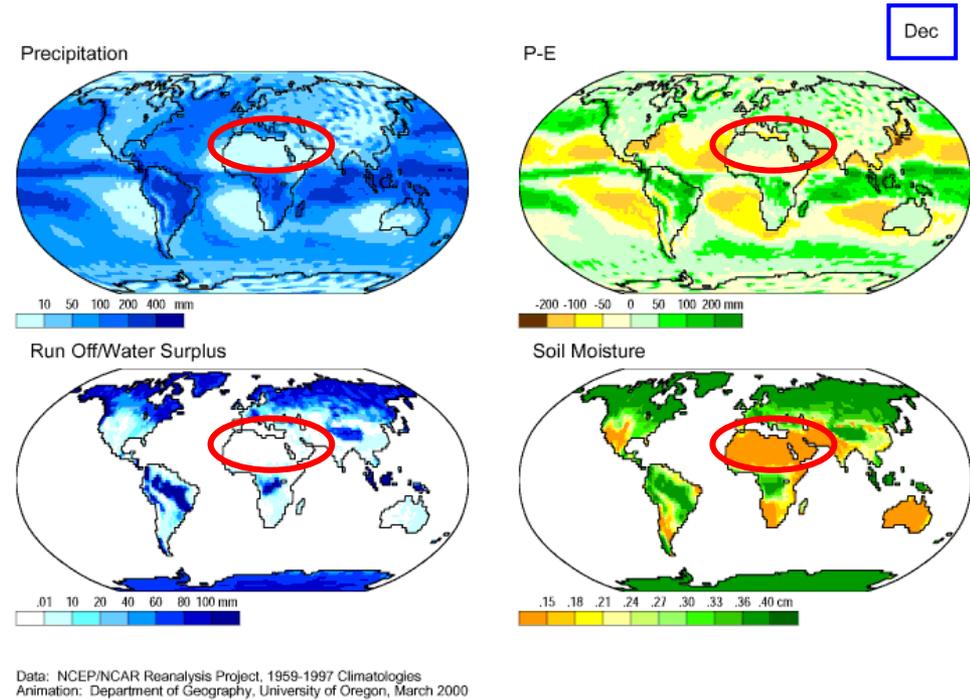
Sustainable Water Consumption in Arab Countries

Waleed K Al-Zubari
Water Resources Management Program
College of Graduate Studies
www.waleedzubari.com

Water Scarcity & Stress

- Poor endowment of water resources
- One of the world's most water-stressed regions
- Majority of countries are below "water poverty" line, rapidly declining due to escalating population growth

Trends in per capita freshwater availability in Arab countries



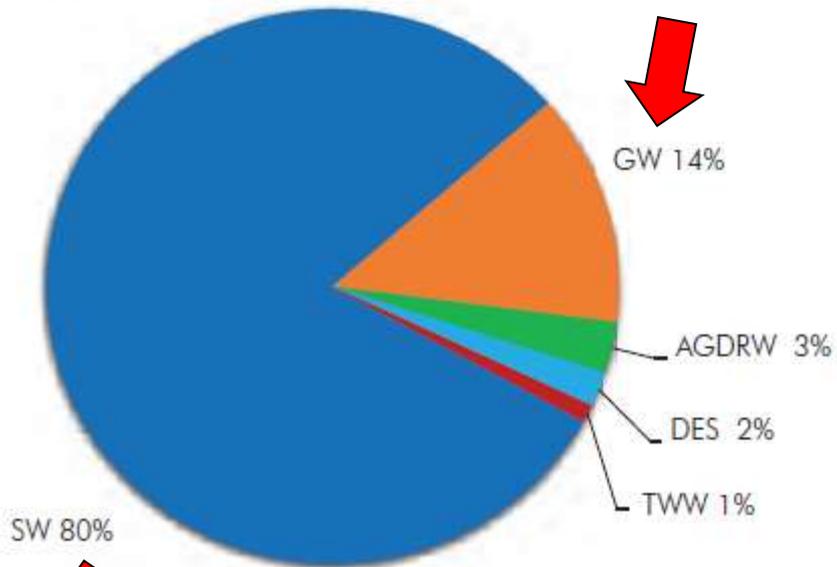
Water Resources Management

- Last three decades: rapid population growth associated with substantial increase in water demands (main drivers: rapid urbanization, food security policies, and industrialization)
- Main focus on “supply management and augmentation”; inadequate attention to controlling demand and improving water efficiency (supply, use, recycle or reuse)
- “Excess demand” is created; emergence of many unsustainable consumption and production patterns
 - escalating water demands, increasing per capita water use, high network losses, increasing volumes of effluent discharges and pollution of limited surface water and groundwater, low irrigation efficiency and productivity, ...
- Water stress and scarcity expected to worsen due to: population growth, challenges of shared water resources and military occupation, and anticipated impacts of climate change

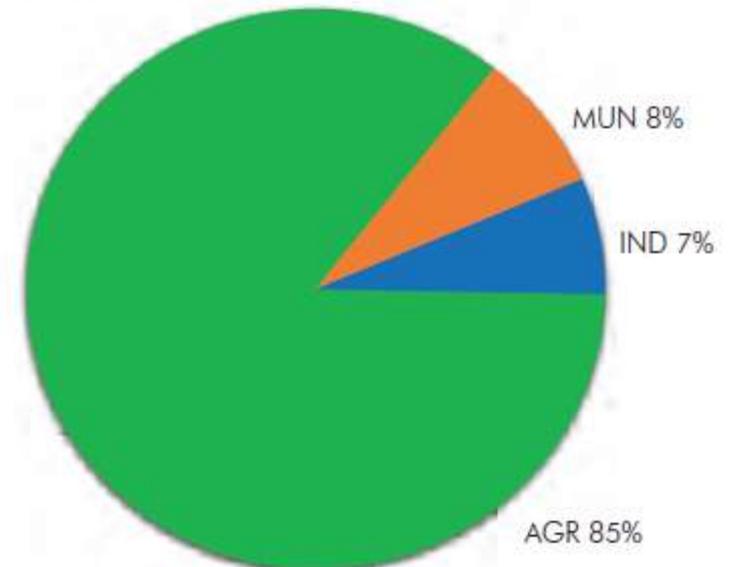
Water Uses and Sources

Water Resources and Uses in the Arab Region (2011)

a. Water Resources



b. Water Uses

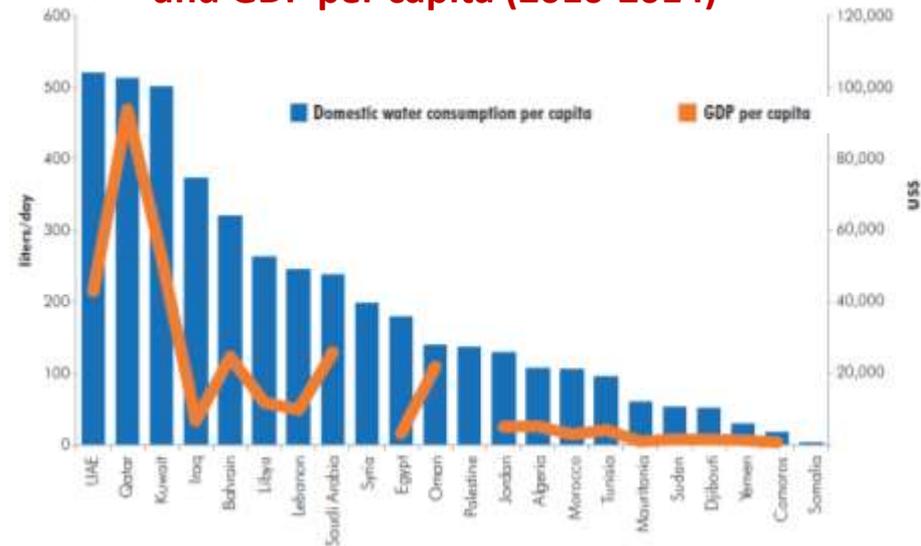


**Majority (>60%)
originate from outside
the Arab region**

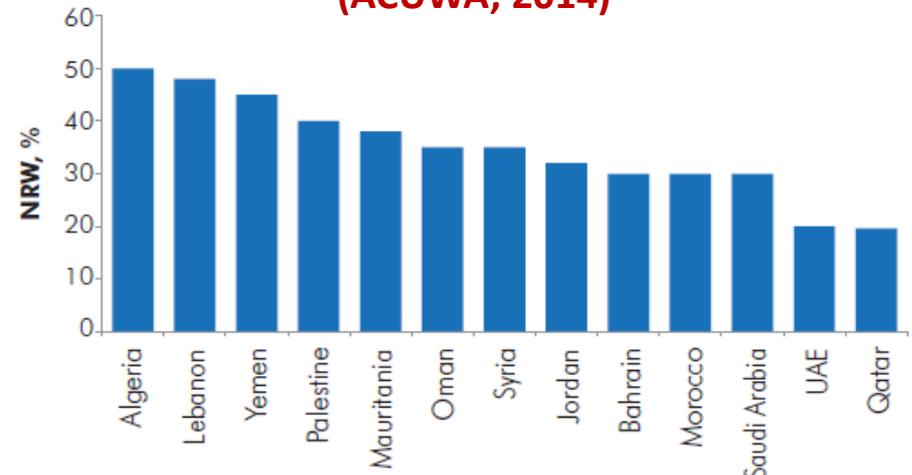
Municipal Water Sector

- Rapidly increasing demands (20.4 BCM; 43% in 10 years)
- Main Drivers
 - Rapid population growth and urbanization (70%)
 - Very low water tariff in many countries with no incentive to save water (high per capita water consumption)
 - Large losses in the supply network in many countries (up to 50%)
 - Absence of recycling programs
- Variable performance in meeting MDG7; SDGs?
- Increase in “thirsty Cities”

Per capita domestic water consumption and GDP per capita (2010-2014)



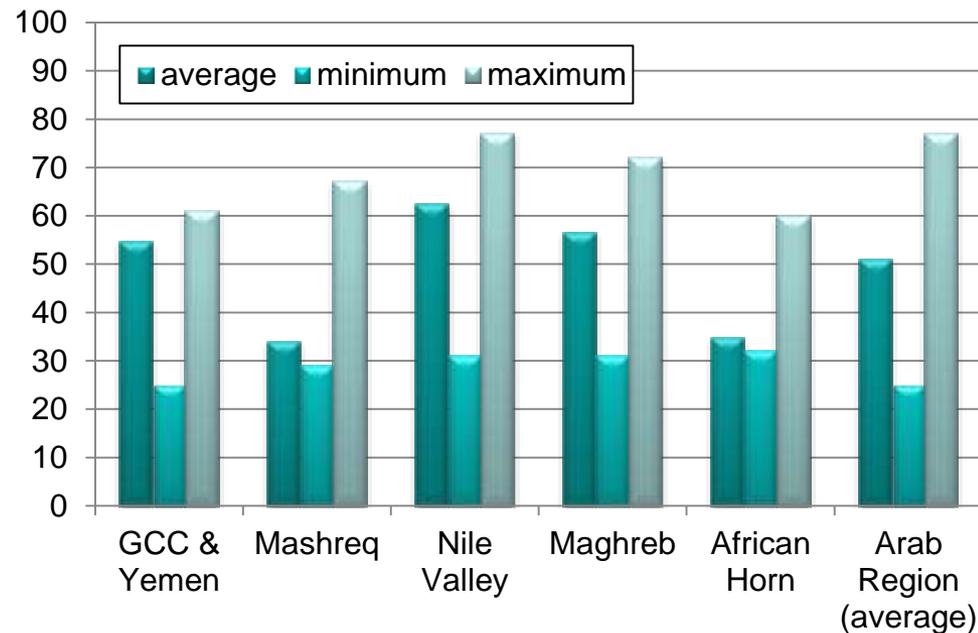
Non revenue water in some Arab countries (ACUWA, 2014)



Agricultural Sector

- Continuous increase in water demands (218 BCM; 32% in 15 yrs)
- However, agricultural performance and food production failed to advance in many countries
- Main Drivers
 - National agricultural development & food policies
 - Predominance of traditional irrigation (IE = 51%)
 - Unrestricted water use
 - Absence of water tariff
 - Cultivating high water consuming crops
- Rapid over-exploitation & depletion of groundwater resources
- Very high potential for water savings more than any other sector (85% of total water use with 50% water wastage)

Irrigation Efficiency in the Arab Region



Policies and Measures to Shift to Water SCP

- Imperative to move from “supply-side management” to “demand-side management”, improve “water efficiency” and “regulate water use”, in the consuming sectors, with emphasis on agricultural sector
- Establish a “water-oriented” society (or resource-oriented society) that value water (resources), participate in the decision making process and use water wisely
- Demand management and efficiency instruments (Economic, Structural, Legislative, Social) need to be combined to reinforce each other and be more effective
- Water efficiency measures will have a multitude of successive benefits that go beyond the water sector to other sectors (i.e., energy, environment, ...)
- Strong interdependence between water, energy, food, environment, and climate change; policy formulation need to be coordinated among these sectors (abandon “silos” decision making and planning)

*Thank
you*