



Web: water.cedare.int
E-mail: water@cedare.int

Water Resources Management Programme

برنامج إدارة الموارد المائية

Workshop on Legal Frameworks for Cooperation on Transboundary Waters

“Key Aspects & Opportunities for the Arab Countries”
Tunis-Tunisia 11-12/06/2014

An Arab Perspective on the Applicability of the Water Convention in the Arab Region

Khaled M. AbuZeid, Ph.D., PE, PMP
Regional Water Director, CEDARE

Copyright © 2014, Khaled M. AbuZeid, CEDARE

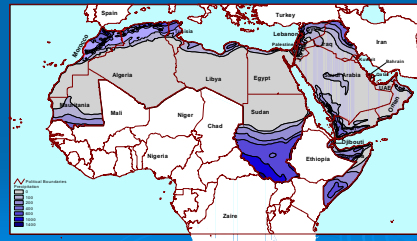


Web: water.cedare.int
E-mail: water@cedare.int

Water Resources Management Programme

برنامج إدارة الموارد المائية

Precipitation Patterns in the Arab Region



Copyright © 2014, Khaled M. AbuZeid, CEDARE

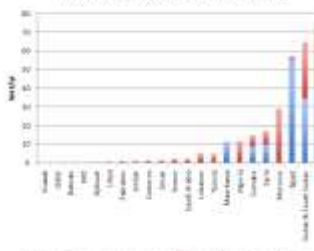


Web: water.cedare.int
E-mail: water@cedare.int

Water Resources Management Programme

برنامج إدارة الموارد المائية

Volume of Internal vs. External Renewable Water Resources in the Arab Countries



Copyright © 2014, Khaled M. AbuZeid, CEDARE

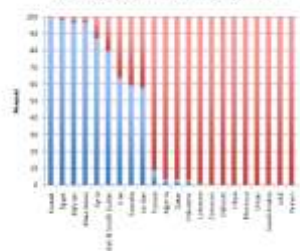


Web: water.cedare.int
E-mail: water@cedare.int

Water Resources Management Programme

برنامج إدارة الموارد المائية

Ratio of Internal vs. External Renewable Water Resources in the Arab Countries

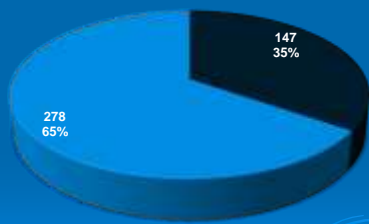


Copyright © 2014, Khaled M. AbuZeid, CEDARE



المجلس العربي للمياه
Arab Water Council

External/Internal Renewable Blue Water Resources in the Arab Countries (BCM)



■ Internal Renewable Blue Water Resources (IRBWR)
■ External Renewable Blue Water Resources (ERBWR)

Copyright © 2014, Khaled M. AbuZeid, CEDARE & Arab Water Council



Web: water.cedare.int
E-mail: water@cedare.int

Water Resources Management Programme

برنامج إدارة الموارد المائية

Main Transboundary Water Issues in the Arab Region

- External Water Resources
- Securing historical Rights/Uses
- Occupied Territories including Arab Population dependent Water Resources
- Protection against Upstream Activities & Infrastructure that affect Arab Region Water Rights/Current Uses
- Joint development additional transboundary water resources
- Transboundary Impact of shared groundwater exploitation
- Concrete Prior notification and consensus mechanisms for planned measures
- Dispute Resolution Mechanisms on transboundary waters violations

Copyright © 2014, Khaled M. AbuZeid, CEDARE



Web: water.cedare.int
E-mail: water@cedare.int

برنامج إدارة الموارد المائية
Water Resources Management Programme

Convention on the Protection & Use of Transboundary Watercourses & International Lakes

Copyright © 2014, Khaled M. AbuZeid, CEDARE



Web: water.cedare.int
E-mail: water@cedare.int

برنامج إدارة الموارد المائية
Water Resources Management Programme

The Term "Transboundary Watercourses" in Title of the Convention & the Definition of "Transboundary Waters"

lacks reference to "International/Shared River Basins" which is a more acceptable term with its associated definitions in the Arab Region

Copyright © 2014, Khaled M. AbuZeid, CEDARE



Web: water.cedare.int
E-mail: water@cedare.int

برنامج إدارة الموارد المائية
Water Resources Management Programme

The River Basin Approach versus the Watercourse Approach

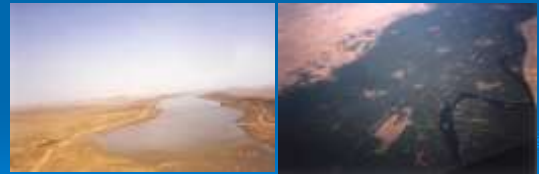
Copyright © 2014, Khaled M. AbuZeid, CEDARE



Web: water.cedare.int
E-mail: water@cedare.int

برنامج إدارة الموارد المائية
Water Resources Management Programme

Embracing a River Basin Approach not a Watercourse Approach



Fighting over Blue Water

Sharing Blue and Green Water

Copyright © 2014, Khaled M. AbuZeid, CEDARE



Web: water.cedare.int
E-mail: water@cedare.int

برنامج إدارة الموارد المائية
Water Resources Management Programme

The Blue Water / Green Water Concept

Copyright © 2014, Khaled M. AbuZeid, CEDARE



Web: water.cedare.int
E-mail: water@cedare.int

برنامج إدارة الموارد المائية
Water Resources Management Programme

Green and Blue Water

- Blue water is defined as surface water or groundwater that is abstracted manually for the purpose of development or production.
- Green water is defined as the portion of beneficial abstractions of renewable water resources from green cover which comes from atmospheric water directly and is consumed by rain-fed agriculture, natural pasture, and forests .
- The term "Basin" is closely related to the consideration of blue and green water in the assessment, and the associated green cover of natural pasture, forests, and rain-fed agriculture, as well as irrigated agriculture and other uses, which suggests more equitable allocation and benefit sharing.

Copyright © 2014, Khaled M. AbuZeid, CEDARE



Web: water.cedare.int
E-mail: water@cedare.int

Water Resources Management Programme

برنامج إدارة الموارد المائية

Upstream / Downstream Environment



> (Upstream)



> (Downstream)

Copyright © 2014, Khaled M. AbuZeid, CEDARE



Web: water.cedare.int
E-mail: water@cedare.int

Water Resources Management Programme

برنامج إدارة الموارد المائية

Green Water contributes to Livestock

- > In the Nile Basin, Green Water contributes about 150 Billion Cubic Meters (BCM) per year to livestock only in Ethiopia and Sudan which host about 2/3 of livestock heads Africa
- > This 150 BCM is about 3 times Egypt's total annual water consumption for Agriculture, Industry, Municipal and other Uses
- > Should the huge amount of green water be ignored, and conflicts arise over the little available blue water ??

Copyright © 2014, Khaled M. AbuZeid, CEDARE

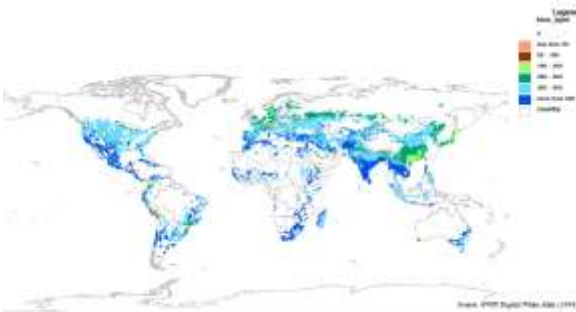


Web: water.cedare.int
E-mail: water@cedare.int

Water Resources Management Programme

برنامج إدارة الموارد المائية

Blue Water for Crop Consumption



Copyright © 2014, Khaled M. AbuZeid, CEDARE

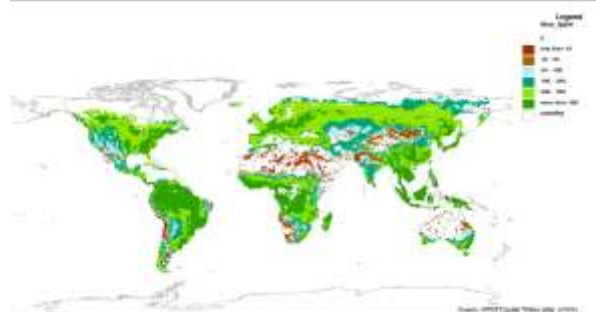


Web: water.cedare.int
E-mail: water@cedare.int

Water Resources Management Programme

برنامج إدارة الموارد المائية

Green Water for Crop Consumption



Copyright © 2014, Khaled M. AbuZeid, CEDARE

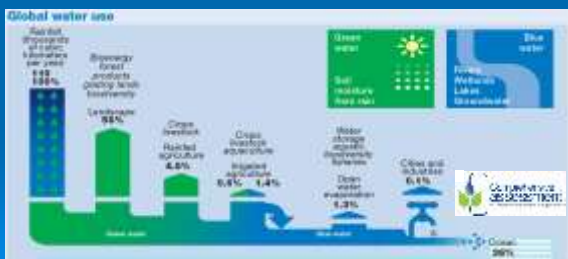


Web: water.cedare.int
E-mail: water@cedare.int

Water Resources Management Programme

برنامج إدارة الموارد المائية

إستخدام المياه الخضراء والمياه الزرقاء على مستوى العالم



Copyright © 2014, Khaled M. AbuZeid, CEDARE



Web: water.cedare.int
E-mail: water@cedare.int

Water Resources Management Programme

برنامج إدارة الموارد المائية

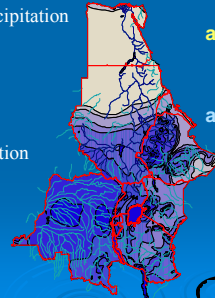
7000 BCM/Y rainfall on the 11 Nile Countries

Very Low Precipitation

1660 BCM/year
annual precipitation
on the Nile Basin.

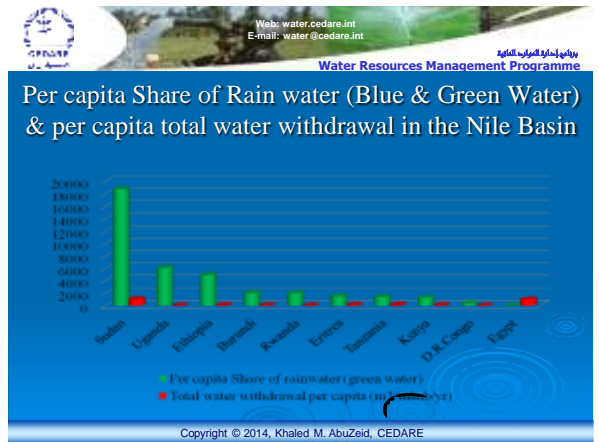
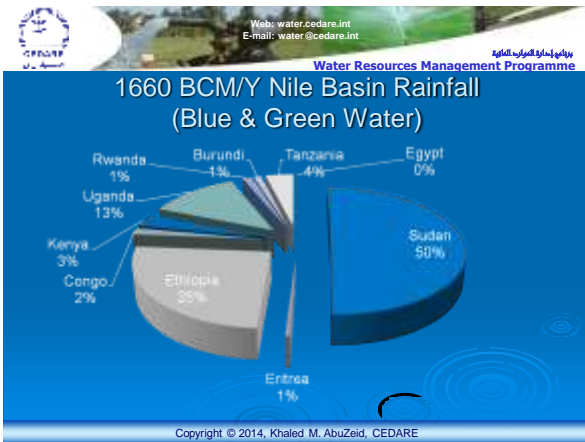
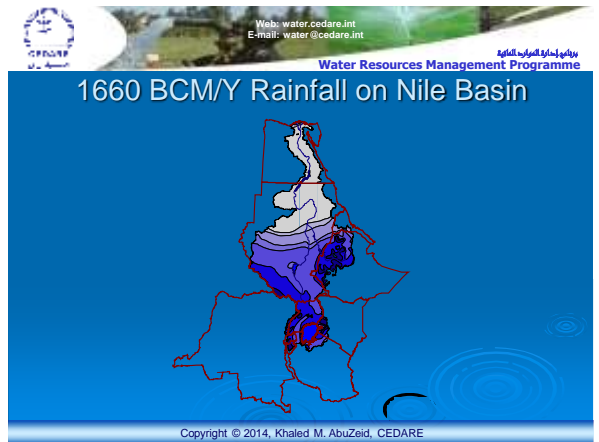
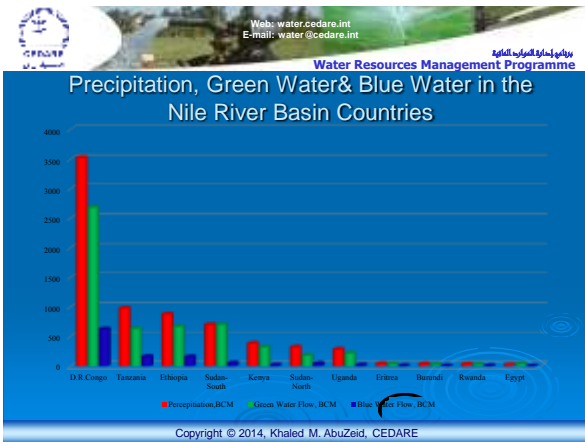
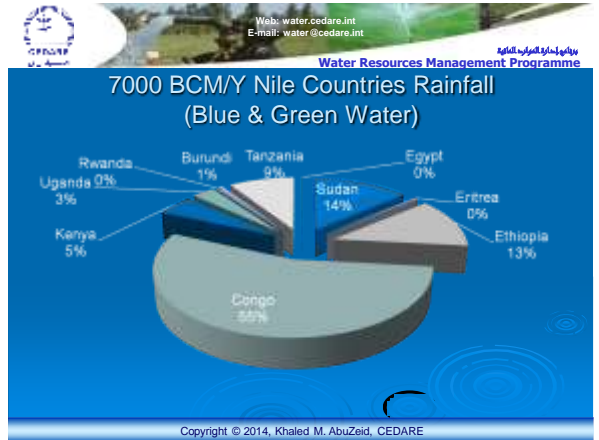
High Precipitation

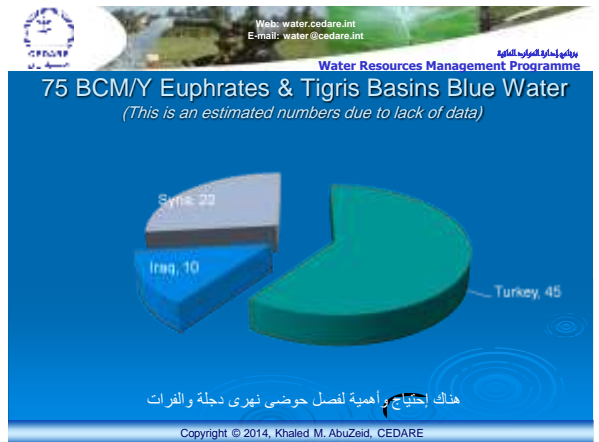
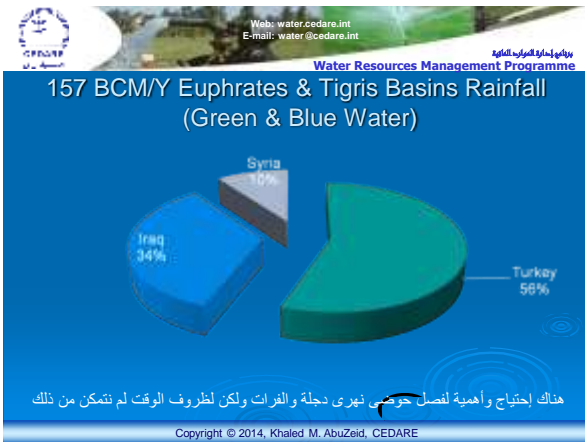
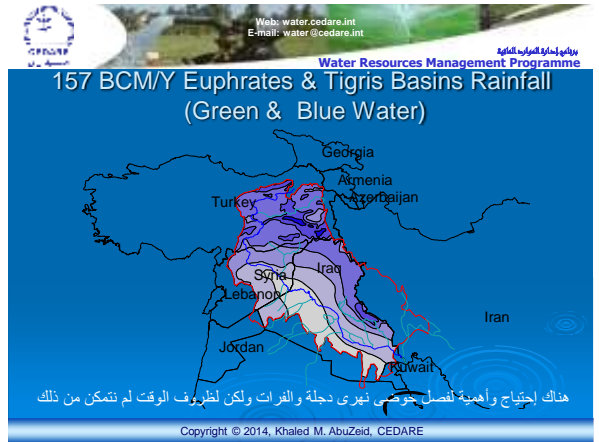
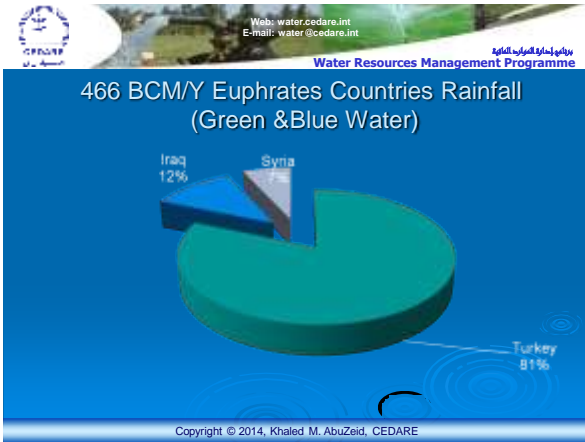
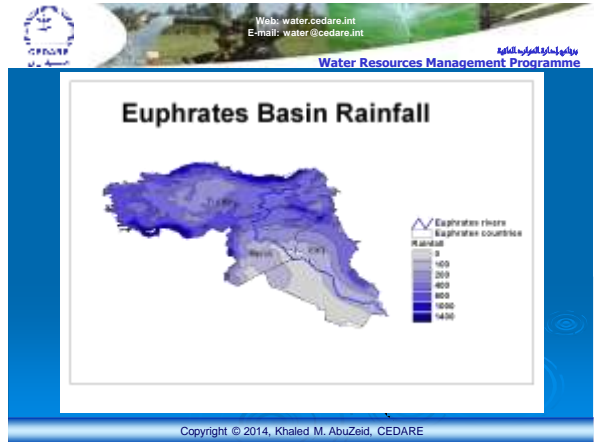
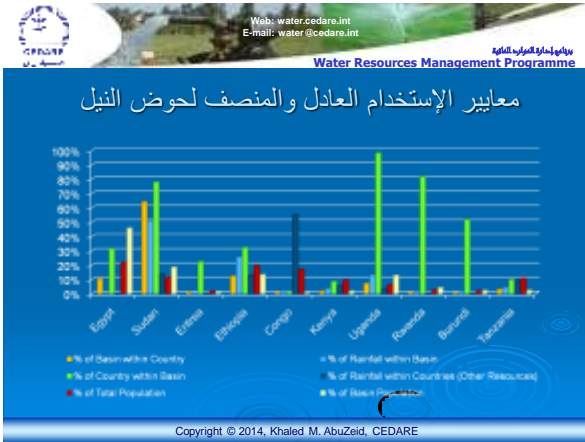
7000 BCM/year
annual precipitation
on the Nile Basin
Countries.

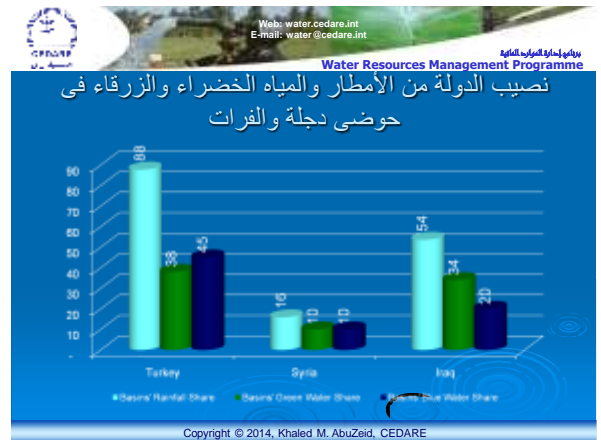
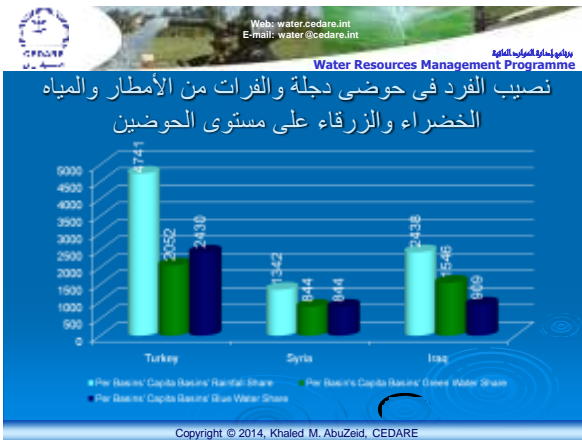
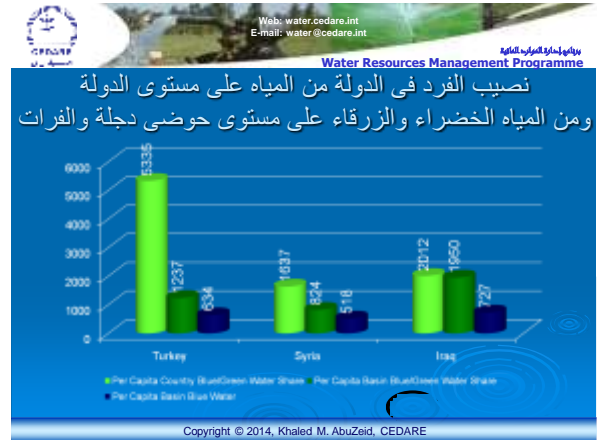
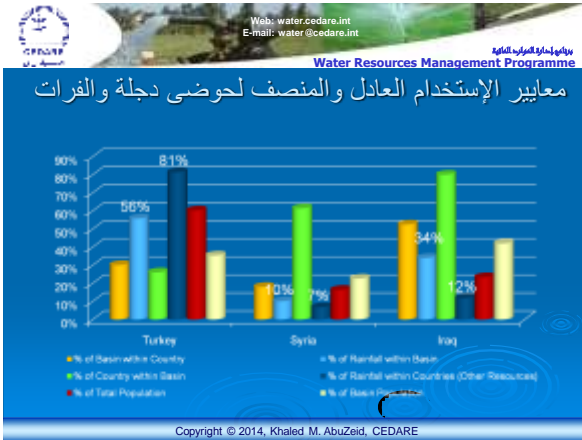


Use of Most DS
country from the
Nile is **55.5**
BCM/year.

Copyright © 2014, Khaled M. AbuZeid, CEDARE







Web: water.cedare.int
E-mail: water@cedare.int

Water Resources Management Programme

Helsinki Rules - Chapter 1 (General)

➤ Article II:

An "international drainage basin" is a geographical area extending over two or more States determined by the watershed limits of the system of waters, including surface and underground waters, flowing into a common terminus.

A "basin State" is a State the territory of which includes a portion of an international drainage basin.

Copyright © 2014, Khaled M. AbuZeid, CEDARE

Web: water.cedare.int
E-mail: water@cedare.int

Water Resources Management Programme

Helsinki Rules - Chapter 2 (equitable utilization of the waters of an international drainage basin)

➤ Article V: reasonable & equitable share in light of:

- extent of basin in each state,
- contribution of water by each state,
- climate affecting the basin,
- past & existing water utilization,
- economic & social needs of each state,
- population,
- comparative costs of alternative means of satisfying needs,
- availability of other water resources,
- avoidance of unnecessary waste,
- practicability of compensation,
- degree of satisfying needs without causing substantial injury to other states

Copyright © 2014, Khaled M. AbuZeid, CEDARE



No Provisions for Procedures of Prior Notification & Consensus on Upstream Infrastructure & Planned Measures

Copyright © 2014, Khaled M. AbuZeid, CEDARE & Arab Water Council



Storage in Ethiopia: for water regulation, or for hydropower, or for domestic use or for irrigation? An opportunity upstream but a challenge downstream

E.S of 4 dams on the Abay River.

Total storage of 73 BCM

Total hydropower capacity of 5,570 megawatts

Copyright © 2014, Khaled M. AbuZeid, CEDARE



No mention of Socio-Economic Transboundary Impact Assessment & Mitigation and Compensation Measures

Copyright © 2014, Khaled M. AbuZeid, CEDARE & Arab Water Council



Original Renaissance Dam site on Blue Nile in Ethiopia



Protection against Pollution more than Protection against Reduced Flows Harm


Items 2-c & 5-c in Article 2 are the only ones that refer to quantity related aspects

Copyright © 2014, Khaled M. AbuZeid, CEDARE & Arab Water Council




Title & Definition does not address Isolated Non-renewable Transboundary Aquifers

Copyright © 2014, Khaled M. AbuZeid, CEDARE & Arab Water Council



 Web: water.cedare.int
 E-mail: water@cedare.int
 برنامج إدارة الموارد المائية
Water Resources Management Programme

Nubian Sandstone Aquifer


Copyright © 2014, Khaled M. AbuZeid, CEDARE


 Web: water.cedare.int
 E-mail: water@cedare.int
 برنامج إدارة الموارد المائية
Water Resources Management Programme

Geographical Boundary Assessment




Copyright © 2014, Khaled M. AbuZeid, CEDARE


 Web: water.cedare.int
 E-mail: water@cedare.int
 برنامج إدارة الموارد المائية
Water Resources Management Programme


No Provisions for Equitable Utilization of Groundwater

Copyright © 2014, Khaled M. AbuZeid, CEDARE



 Web: water.cedare.int
 E-mail: water@cedare.int
 برنامج إدارة الموارد المائية
Water Resources Management Programme


North Western Sahara Aquifer

Copyright © 2014, Khaled M. AbuZeid, CEDARE



 Web: water.cedare.int
 E-mail: water@cedare.int
 برنامج إدارة الموارد المائية
Water Resources Management Programme

North Western Sahara 1960



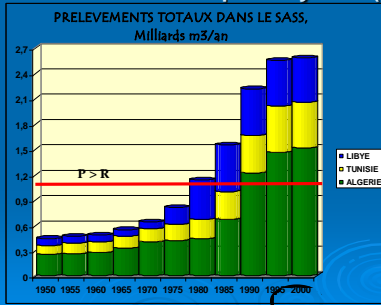

 Web: water.cedare.int
 E-mail: water@cedare.int
 برنامج إدارة الموارد المائية
Water Resources Management Programme

North Western Sahara 2000





The North Western Sahara Aquifer System (NWSAS)

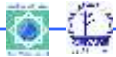


Copyright © 2014, Khaled M. AbuZeid, CEDARE



Obligations to monitor & report water quality & possible abundance by EU Water Framework Directive which may incur unaffordable cost and infeasible implementation

Copyright © 2014, Khaled M. AbuZeid, CEDARE & Arab Water Council



Document on implementing the Convention is not constituted as a Formal Part of the Convention like the Annexes

Copyright © 2014, Khaled M. AbuZeid, CEDARE & Arab Water Council



Other Issues

- Convention does not refer to how to deal with previous agreements
- The inclusion and voting of Regional Economic Integration Organizations which may include countries beyond riparian countries of a specific river basin may cause unfair imbalance.

Copyright © 2014, Khaled M. AbuZeid, CEDARE & Arab Water Council



Adopt the Green/Blue Water Basin/Watercourse US/DS Balance



Copyright © 2014, Khaled M. AbuZeid, CEDARE



Are the Main Arab Transboundary Water Issues Addressed

Copyright © 2014, Khaled M. AbuZeid, CEDARE & Arab Water Council



Web: water.cedare.int
E-mail: water@cedare.int

برنامج إدارة الموارد المائية
Water Resources Management Programme

Sharing Water: Sharing Benefits



Thank you for your attention

Copyright © 2014, Khaled M. AbuZeid, CEDARE