

OBSERVATOIRE DU SAHARA ET DU SAHEL

Status, challenges and responses: North Africa

Transboundary aquifer resources management

Khatim KHERRAZ
Executive Secretary

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OSS IN BRIEF

International & independant organisation operating in the Circum-Sahara region since 1992

Action zone : North, West and East Africa



Members

- 22 african countries
- 5 non african countries
- 5 African Sub-regional organizations
- UN partners
- 1 International NGO

Two main Axis :

- **Environment**
- **Water**

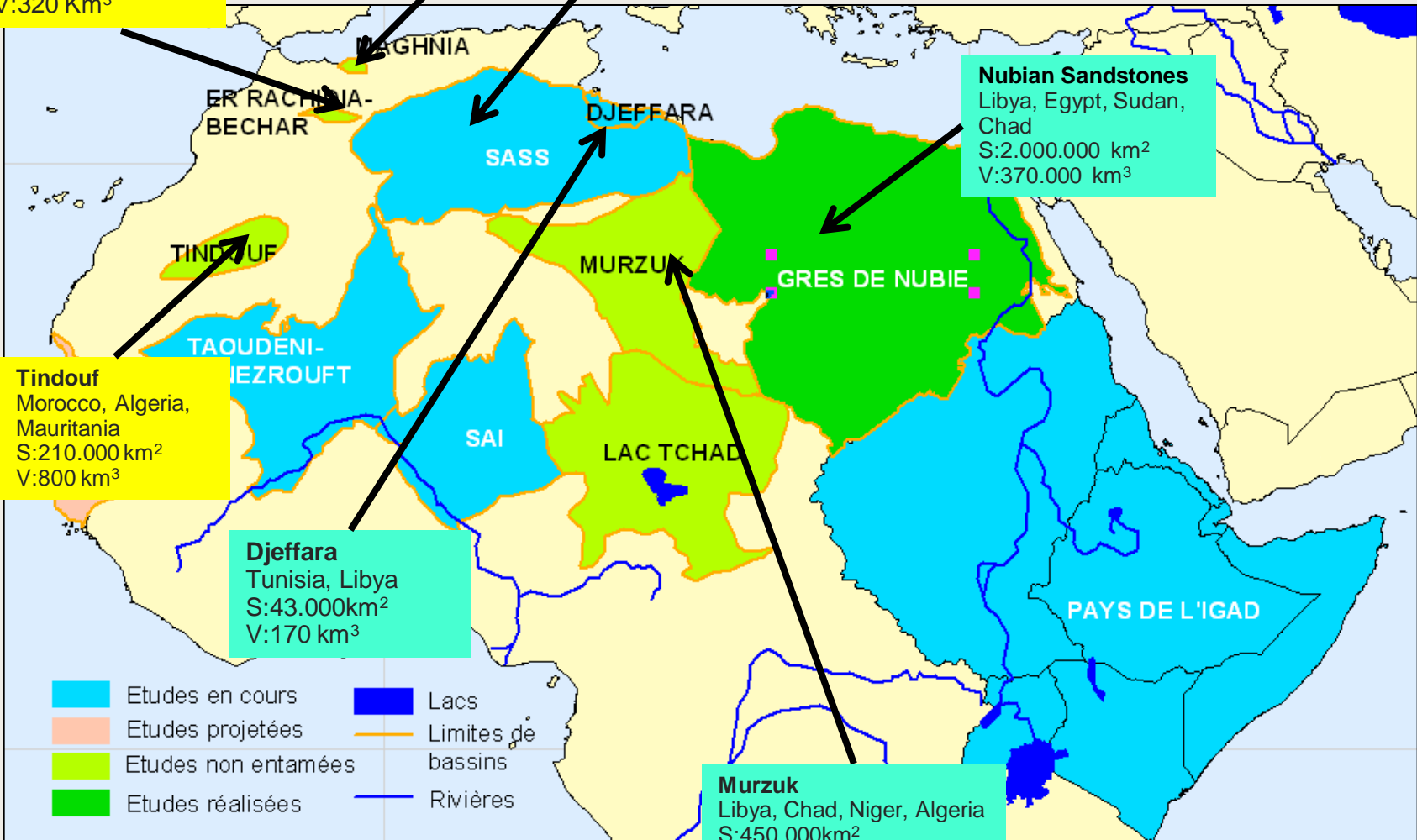
Transboundary aquifer systems in peri-Saharan region

Errachidia Béchar
Morocco, Algeria
S:70.000 km²
V:320 Km³

Angad, Maghnia
Morocco, Algeria
S:810 km²

North Western Sahara
Algeria, Libya, Tunisia
S:1.000.000 km²
V:30.000 km³

Nubian Sandstones
Libya, Egypt, Sudan, Chad
S:2.000.000 km²
V:370.000 km³



Tindouf
Morocco, Algeria, Mauritania
S:210.000 km²
V:800 km³

Djeffara
Tunisia, Libya
S:43.000km²
V:170 km³

Murzuk
Libya, Chad, Niger, Algeria
S:450.000km²
V: 4.800 km³

- Etudes en cours
- Etudes projetées
- Etudes non entamées
- Etudes réalisées
- Lacs
- Limites de bassins
- Rivières

North Africa : 07 Transboundary Aquifer Systems

Aquifer System	Recharge(km3/year)	Withdrawal (km3/year)	Use	Knowledge status
Nubian Sandstones	10	2,2	Irrigated agriculture	Fair
North Western Sahara	1	2,4	Irrigated agriculture	Fair
Murzuk	0,3	1,7	Irrigated agriculture	Fair
Djeffara	Linked with nw sas	1,1	Irrigated agriculture	Fair
Errachidia Béchar	-	0,2	Drinking water, agriculture	Poor
Angad, Maghnia	-	-		Poor
Tindouf	-	0,1	Drinking water	Poor

Impacts of the over exploitation : degradation of artesianism, increase of salinity

Water in North Africa

One of the regions of the world most affected by water scarcity

Its structural water stress is due to :

- Moderate surface water availability and rainfall
- Growth of water demand

Mobilization of resources (in %)

Country	Surface Water	Ground water	Total	Exploitation of non-renewable groundwater reserves	Reuse of waste or drainage water	Desalination of brine or sea water
Algeria	50	40	90	9	0.1	0,9
Libya	3	17	20	77	1.5	1.5
Morocco	79.6	20	99.6	0	0.4	~0
Tunisia	40	50	90	8	1.5	~0
Egypt	86.1	4.5	90.6	0	9.4	~0

PROJECTION OF WATER DEMAND

Country/year	Total water demand (km ³ .year ⁻¹)			Ratio demand/renewable water resources
	1990	2000	2025*	2025*
Egypt	57	70	82-115	200
Libya	3	5	11-15	1980
Tunisia	3	3	4-5	105
Algeria	5	6	10-12	75
Morocco	12	12	15-20	73

Source : Mediterranean vision (GWP/MEDTAC/Plan Bleu - 2000)

* projected

The growth of water demand will mostly come from the Growth of water demand in agriculture

The growth of use will be covered by :

- Non renewable groundwater
- Water drainage
- Desalinitation of sea water

A POSSIBLE RESPONSE : THE OSS APPROACH

Common Concept : Basin vision

Shared approach based on :

- 1. Knowledge of the water resources**
- 2. Establishment of a common framework for cooperation and exchange**
- 3. Permanent consultation**

NWSAS : 3 phases

OSS long term approach has first been applied successfullyt in North Western Sahara Aquifer System

(More detailed presentation in session 3)

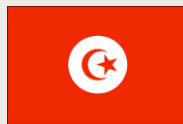
Phase 1 : 1999 – 2002 : Knowledge improvement

Phase 2 : 2003 – 2007 : Consultation mechanism

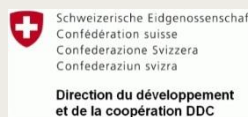
Phase 3 : 2009 – 2014 : Strategy for a sustainable management

(including social and economic studies in the region)

This has led to the establishment of a Permanent Consultation Mechanism in 2002(Algeria, Lybia, Tunisia)



Partners



PERSPECTIVES

This process is under extension to:

➤ IULLEMEDEN

- Phase 1 : 2004-2008
Mali, Niger, Nigeria
Knowledge+ settling of a concertation mechanism
- Phase 2: 2010-2014:
Extension to : Taoudeni – Tanezrouft (Algeria ,Benin, Burkina, Mauritania)

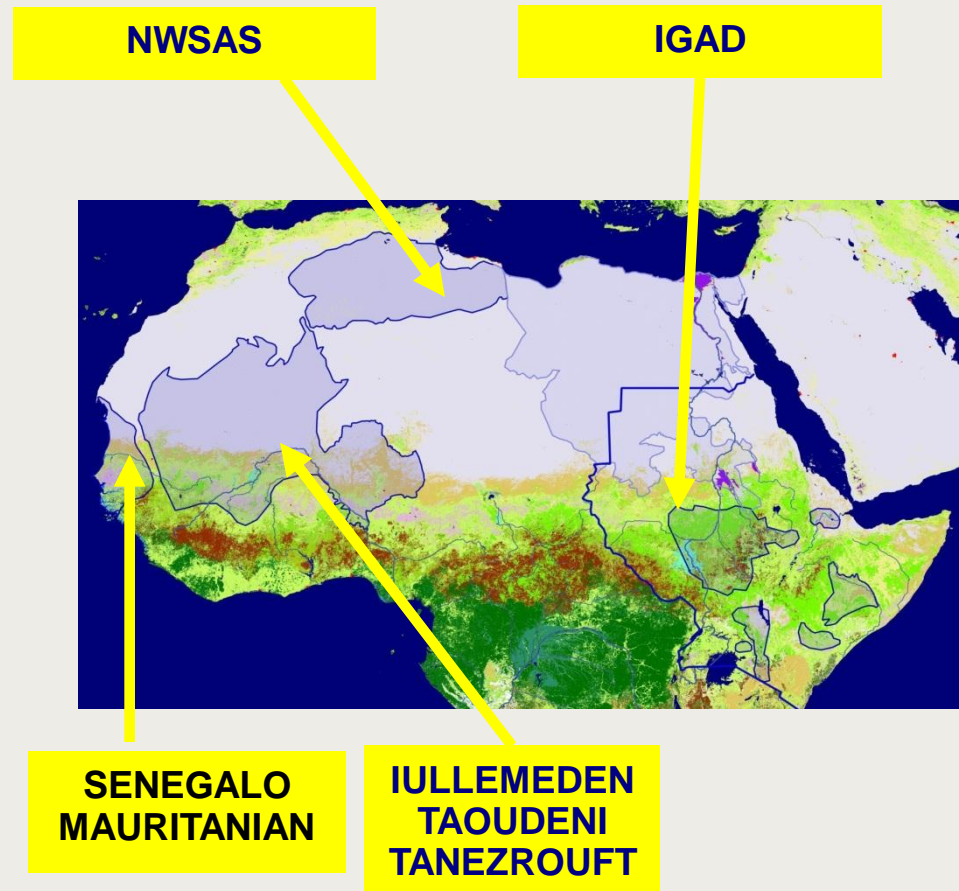
➤ IGAD

7 countries : Djibouti, Erythrea Ethiopia, Kenya, Somalia, Sudan, Uganda, and 6 transboundary aquifers) :

- Phase 1 : 2007-2012 (knowledge)
- Phase 2 : (on-going fundraising)

➤ SENAGALO-MAURITANIAN

Project document elaborated, looking for a financing source



3 MAIN GOALS FOR OSS

- 1. Contribute to enhancing the knowledge on transboundary aquifer systems and specially interactions between surface and ground waters**
- 2. Support riparian countries in the development and set-up of consultation/coordination mechanisms and in the update of strategies & policies**
- 3. Become *a Center of reference in Transboundary aquifer management.***



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Thank you for your attention

(www.oss-online.org)