INTERNATIONAL ROUND TABLE
TRANSBOUNDARY WATER RESOURCES MANAGEMENT IN THE SOUTHERN MEDITERRANEAN

26 - 27 November 2012, Chamber of Deputies, Rome, Italy

A framework for joint monitoring and assessment in the North Western Sahara Aquifer

by

LATRECH Djamel and TREBOSSEN Hervé

Observatoire du Sahara et du Sahel

Within the framework of UNECE Water Convention
Union for the Mediterranean
GEF IW:LEARN, Activity D2
Introduction : OSS IN BRIEF

International & independent 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
North Western Sahara Aquifer System
## Key Figures

<table>
<thead>
<tr>
<th>SURFACE</th>
<th>1.000.000 km²</th>
</tr>
</thead>
<tbody>
<tr>
<td>RÉSERVES THÉORIQUES</td>
<td>60.000 Milliard de m³</td>
</tr>
<tr>
<td>RECHARGE</td>
<td>1 Milliard de m³/an</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>BESOINS (m³/an)</th>
<th>1970</th>
<th>2000</th>
<th>2030</th>
</tr>
</thead>
<tbody>
<tr>
<td>600 Million</td>
<td>2.5 Milliard</td>
<td>8 Milliard</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>POPULATION (en Millions)</th>
<th>1970</th>
<th>2000</th>
<th>2030</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0</td>
<td>4.0</td>
<td>8</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SURFACES IRRIGUÉES</th>
<th>50.000 ha</th>
<th>170.000 ha</th>
<th>400.000 ha</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>PAYS</th>
<th>ALGERIE + LIBYE + TUNISIE</th>
</tr>
</thead>
</table>

Considerable but non renewable resource
NWSAS : 3 phases

Based on several national and bilateral studies (70s and 80s)

Phase 1: 1999–2002 : Knowledge improvement

Phase 2: 2003–2007 : Consultation mechanism

Hydrogeology:

Set-up of a piezzometric and water quality common network

Set-up of a common database

Basin wide and sub-basin Hydrogeological models

Risks identification
Water points distribution evolution

NWSAS Status
Water abstraction evolution

Withdrawals per country (Billion m$^3$)

Water abstraction > Recharge

NWSAS Status
Identification of Impacts

Increase of Salinity

Decrease of artesianism

Excessive Pumping height

Depletion of Tunisian Outlet

Depletion of Algerian Foggaras

Interferences: drawdown between countries

Saline intrusion in the golf of Syrte in Libya
Setting up a Permanent Consultation Mechanism

Roma, 2002

Shared resources, shared impacts of overexploitation, shared challenges

Partnership relations throughout the NWSAS project, forged mutual confidence among the technical teams and conviction that joint actions increase the effectiveness of solutions.
POSSIBLE SOLUTIONS FOR A SUSTAINABLE MANAGEMENT

Some Observations / Challenges:
Irrigated agriculture sector is the main user of the NWSAS water but:

- A lack of data on costs and price of water
- Low water efficiency, irrigation efficiency
- Inappropriate land management
- Depletion of water vs growing needs
- Degradation of quality (soil-water) by salinisation
Hydro-economic model for decision support

4500 farmers surveyed during 2 census (2011 – 2012) in order to:

- Complement existing hydraulic data by socio-economic and environmental data
- Describe the challenges and opportunities faced by farmers
- Analyze the actual behavior of the irrigator and its ability to adapt to the challenges threatening the sustainability of the resource
- Take into account the real cost of water

Results: first Quarter of 2013

For a better understanding of the actual behavior of the water user
-2- Concrete actions on the ground

7 Pilot sites (Algeria, Libya and Tunisia):

Implementing cost and energy effective solutions to sustain use of water and to improve farmer incomes:

- Foggara rehabilitation,
- Improvement of drainage
- Desalination unit
- Etc.

Applied by farmers on their own farms

Drainage network construction

Development of operational recommendations to the NWSAS Consultation Mechanism
Thanks for your attention

(Www.oss-online.org)