



INTERNATIONAL ROUNDTABLE TRANSBOUNDARY WATER RESOURCES MANAGEMENT IN THE SOUTHERN MEDITERRANEAN

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



by

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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-Saharan region since 1992

Action zone :
North, West and East Africa



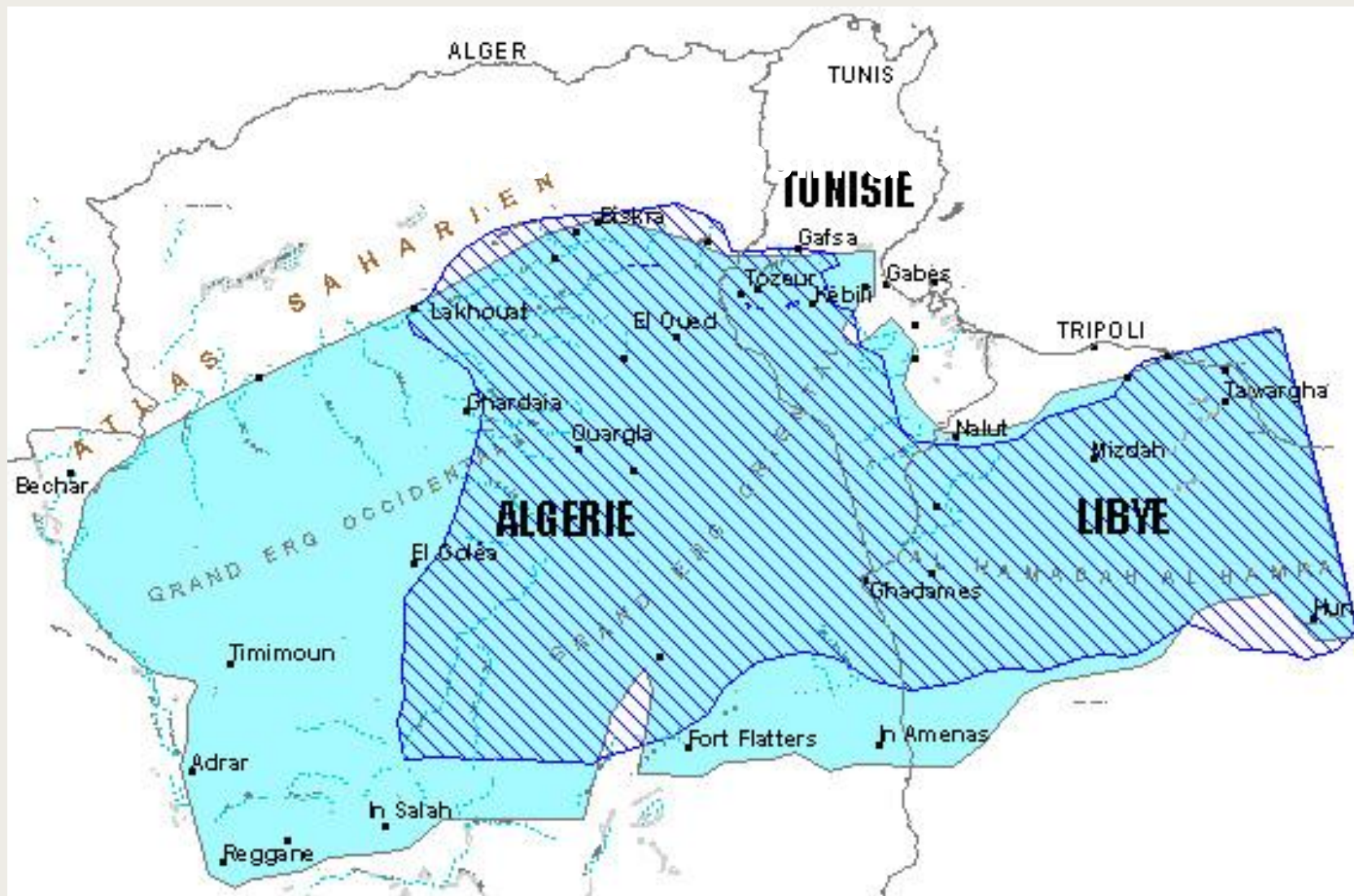
Members

- 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

SURFACE

1.000.000 km²

**RÉSERVES
THÉORIQUES**

60.000 Milliard de m³

RECHARGE

1 Milliard de m³/an

	1970	2000	2030
BESOINS (m³/An)	600 Million	2.5 Milliard	8 Milliard
POPULATION (en Millions)	1.0	4.0	8
SURFACES IRRIGUÉES	50.000 ha	170.000 ha	400.000 ha
PAYS	ALGERIE + LIBYE + TUNISIE		

Considerable but non renewable resource

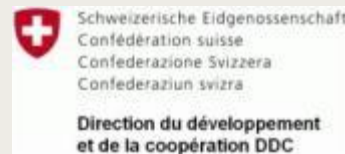
NWSAS : 3 phases

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

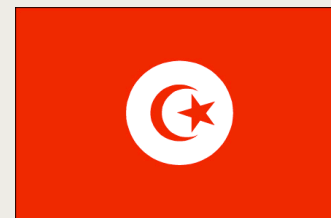
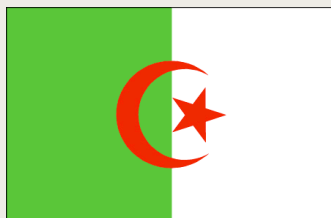
Phase 1: 1999–2002 : Knowledge improvement

Phase 2: 2003–2007 : Consultation mechanism

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



Direction du développement
et de la coopération DDC



Hydrogeology :

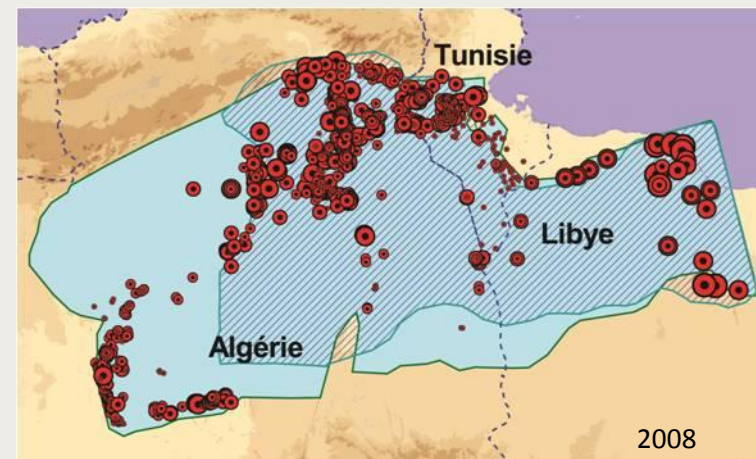
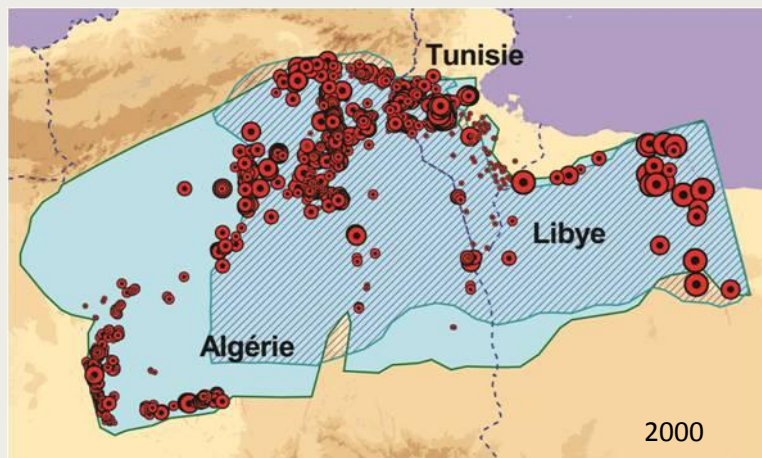
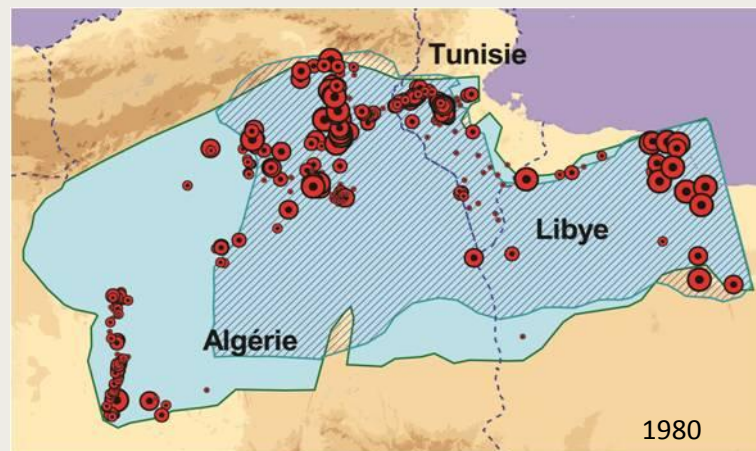
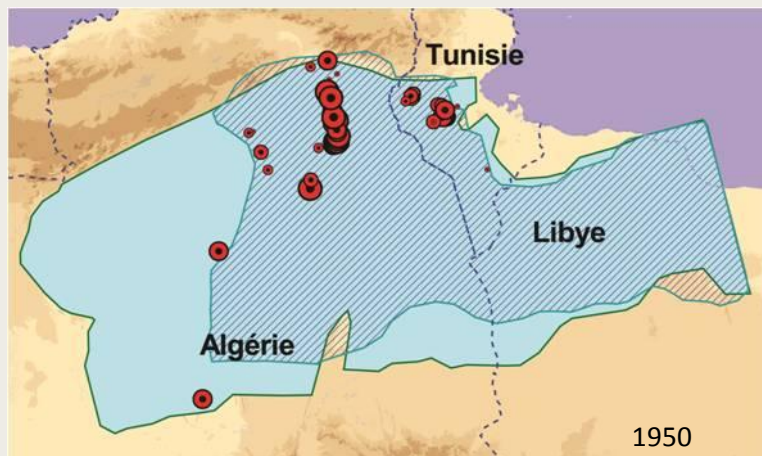
Set-up of a piezzometric and water quality common network

Set-up of a common database

Basin wide and sub-basin Hydrogeological models

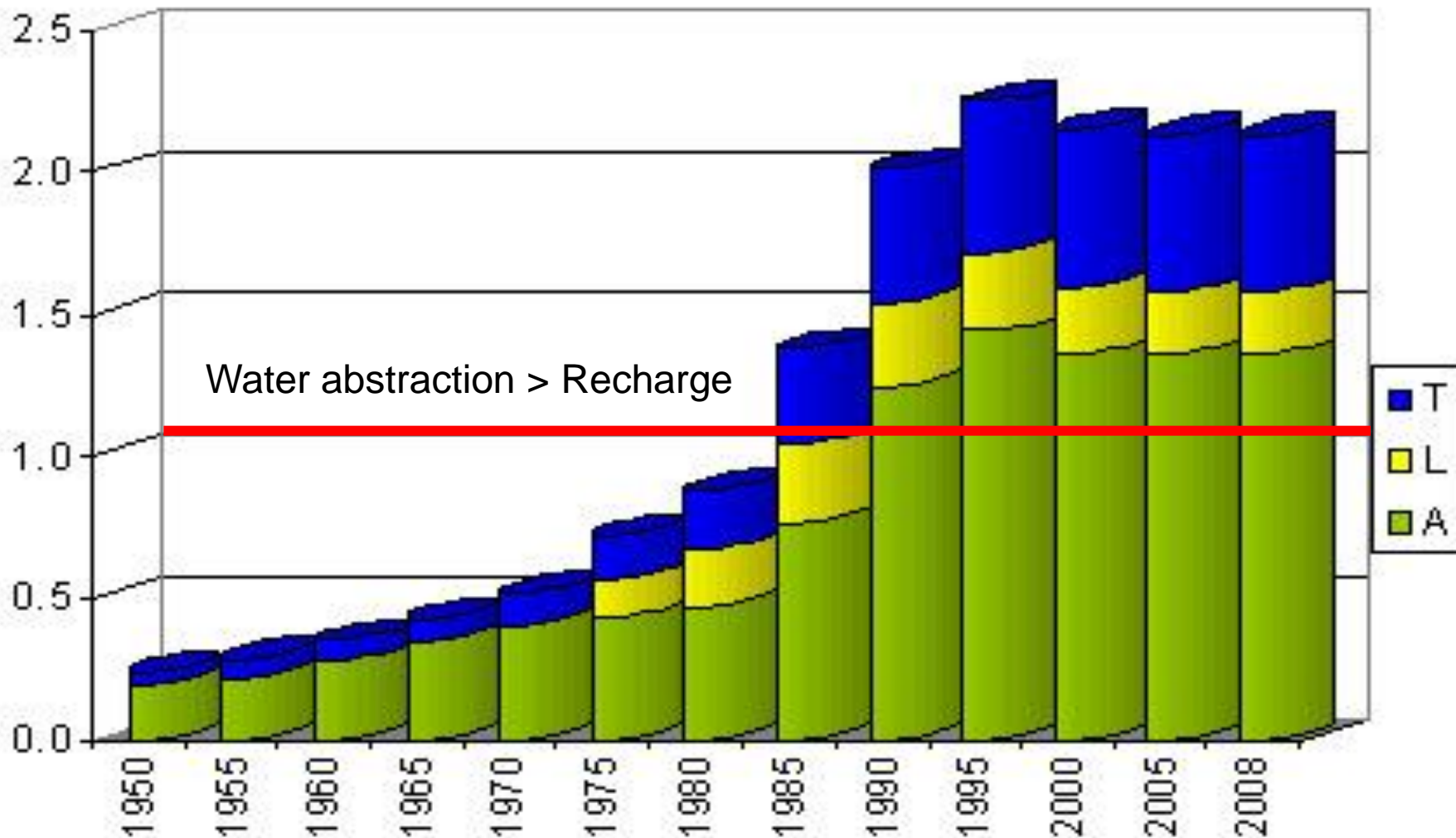
Risks identification

Water points distribution evolution



Water abstraction evolution

Withdrawals per country (Billion m³)



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

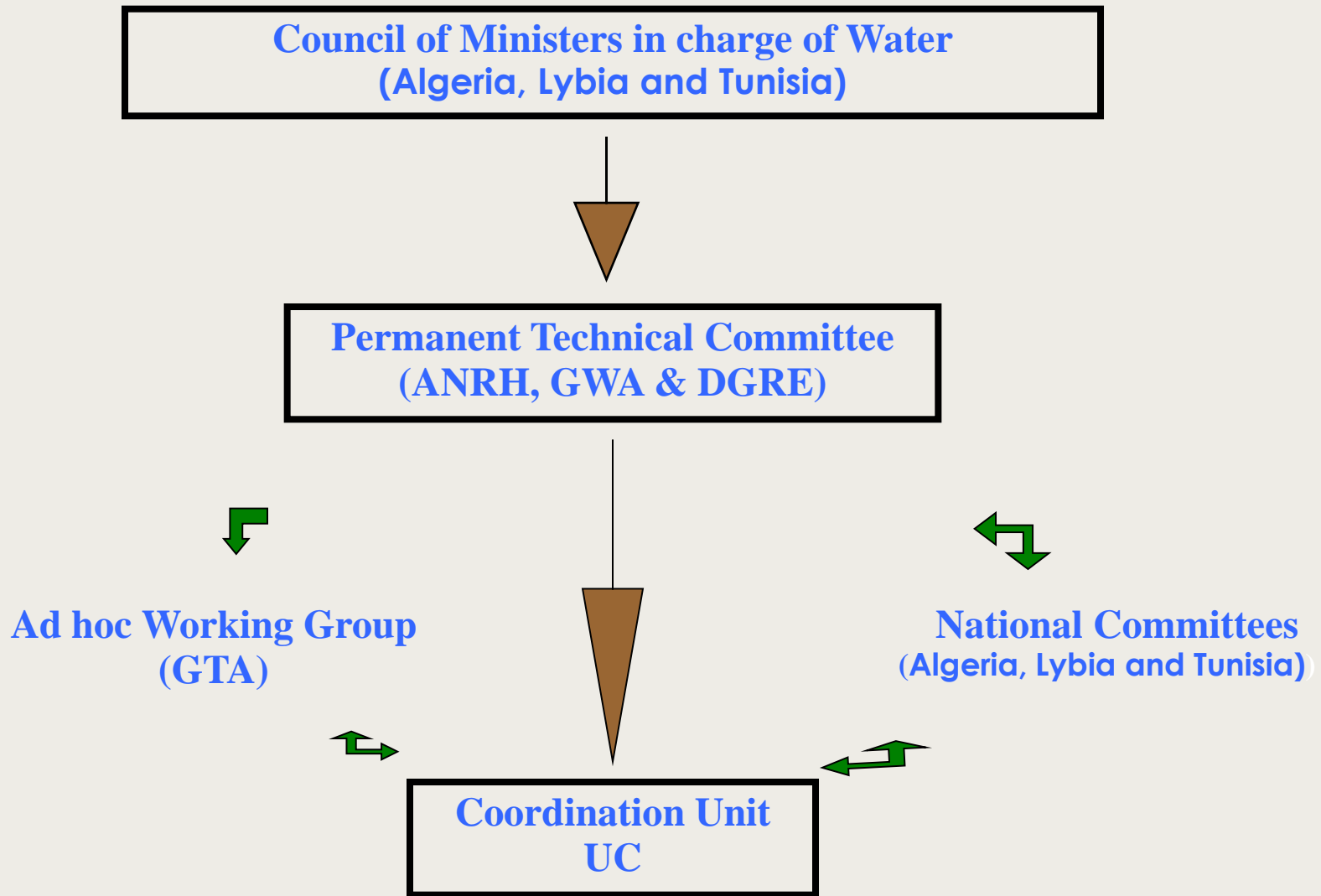


Roma, 2002

**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.**

NWSAS Consultation Mechanism Structure



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

POSSIBLE SOLUTIONS FOR A SUSTAINABLE MANAGEMENT

-1- 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

POSSIBLE SOLUTIONS FOR A SUSTAINABLE MANAGEMENT

-2- Concrete actions ont the ground

7 Pilot sites (Algeria, Lybia and Tunisia) :

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

- Foggara rehabilitation,
- Improvment of drainage
- Desalinitation unit
- Etc.

Applied by farmers on their own farms



Drainage network construction

Development of operational recommendations to the NWSAS Consultation Mechanism



OBSERVATOIRE DU SAHARA ET DU SAHEL

Thanks for your attention

([Www.oss-online.org](http://www.oss-online.org))