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Joint mechanism on a transboundary aquifer: a key for a successful cooperation

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Outline

I. Importance of transboundary waters & of cooperation

II. Cooperation on transboundary aquifers: selected cases

III. Conclusion/lessons learnt

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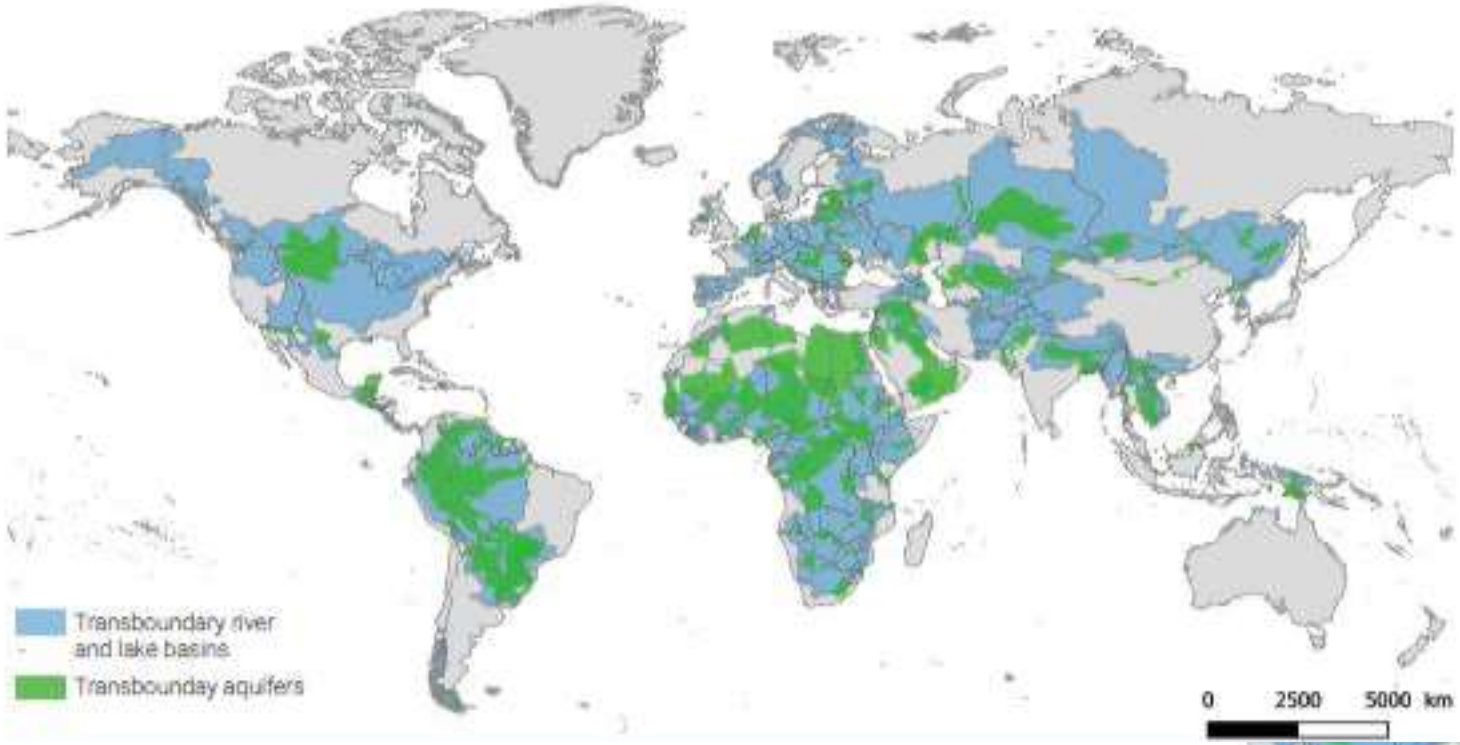

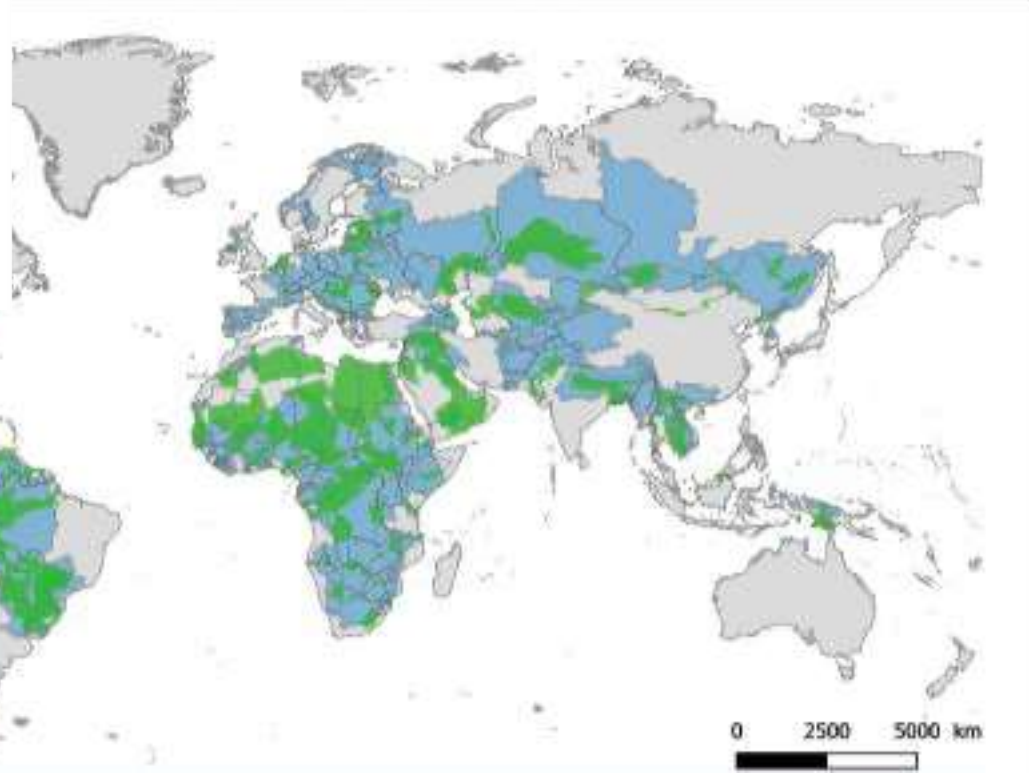

- 286 transboundary rivers and lakes
- 366 TBA + 226 TB GW bodies (EU) (IGRAC 2015)
- 153 countries have territory within at least a transboundary water body

(SDG 6.5.2 Progress report (2021))

Importance of cooperation between the riparian States for the management of shared waters:

- **Benefits:** Economic growth, increased human well-being, enhanced environmental sustainability and increased political stability
- Cooperation includes information sharing, coordination, collaboration and joint action, addressing climate change impacts
- SDG 6.5: implement integrated water resources management at all levels, including through transboundary cooperation as appropriate
- For transboundary aquifers even more important because of the invisible character
- Development of cooperation has generated different legal and institutional frameworks

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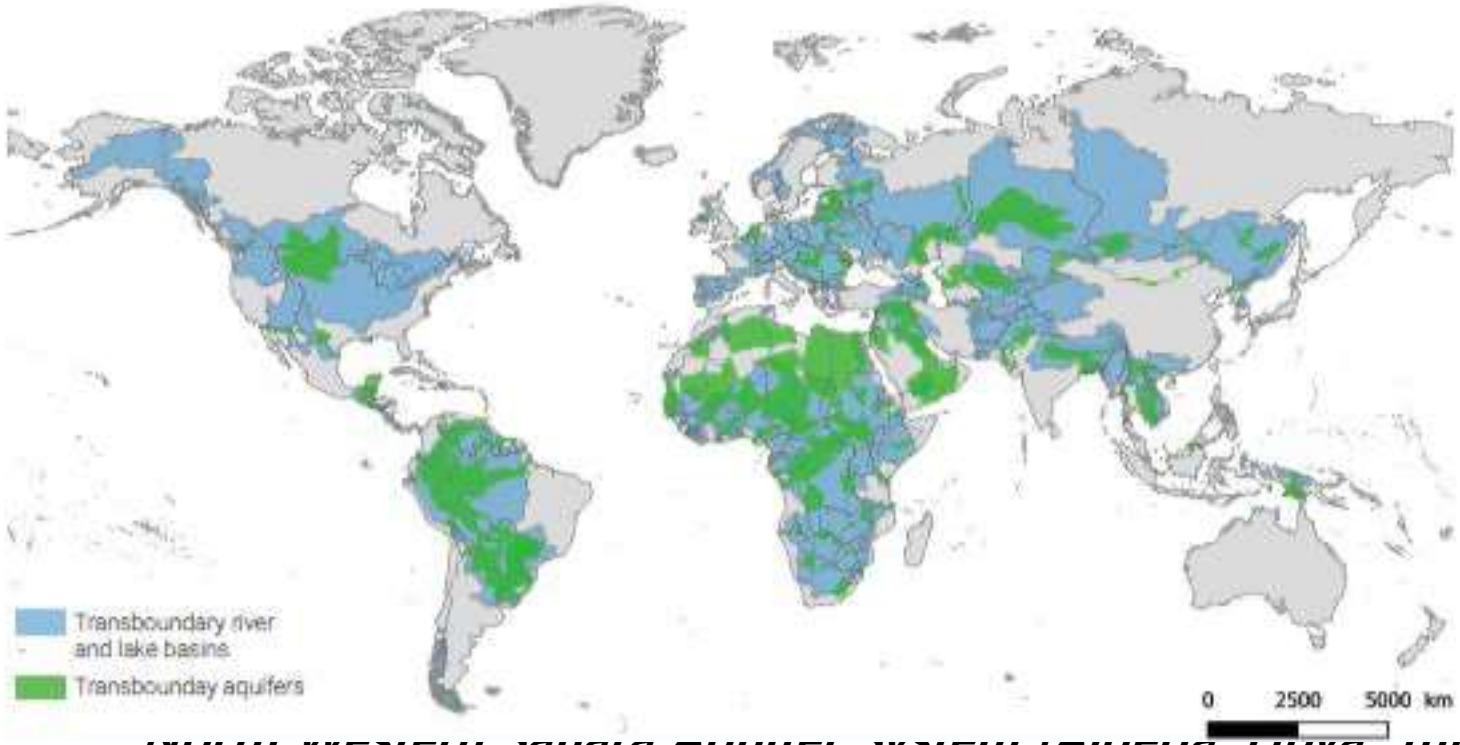
What guidance from IWL instruments on joint institutions?

UN Convention on the law of non-navigational uses of international watercourses (1997):
➜ establishment of joint mechanisms or commissions, as deemed necessary by the States *(under general obligation of cooperation)*
➜ management of an international watercourse may include the establishment of a joint management mechanism.

Draft Articles on the Law of Transboundary Aquifers (2008):
➜ Aquifer States should establish joint mechanisms of cooperation *(under general obligation of cooperation)* .
➜ A joint management mechanism shall be established, wherever appropriate *(under Management)*

UNECE Convention on the protection and use of transboundary watercourses and international lakes (1992) ➜ more details: Establishment of joint bodies with the following tasks : collect data, joint monitoring, elaborate water quality objectives, warning and alarm procedures …(non-exhaustive list)



selected cases

Sudan) (1992)

North Western Sahara Aquifer System (Algeria, Libya, Tunisia) (2008)

Guarani Aquifer System (Argentina, Brazil, Paraguay, Uruguay) (2010)

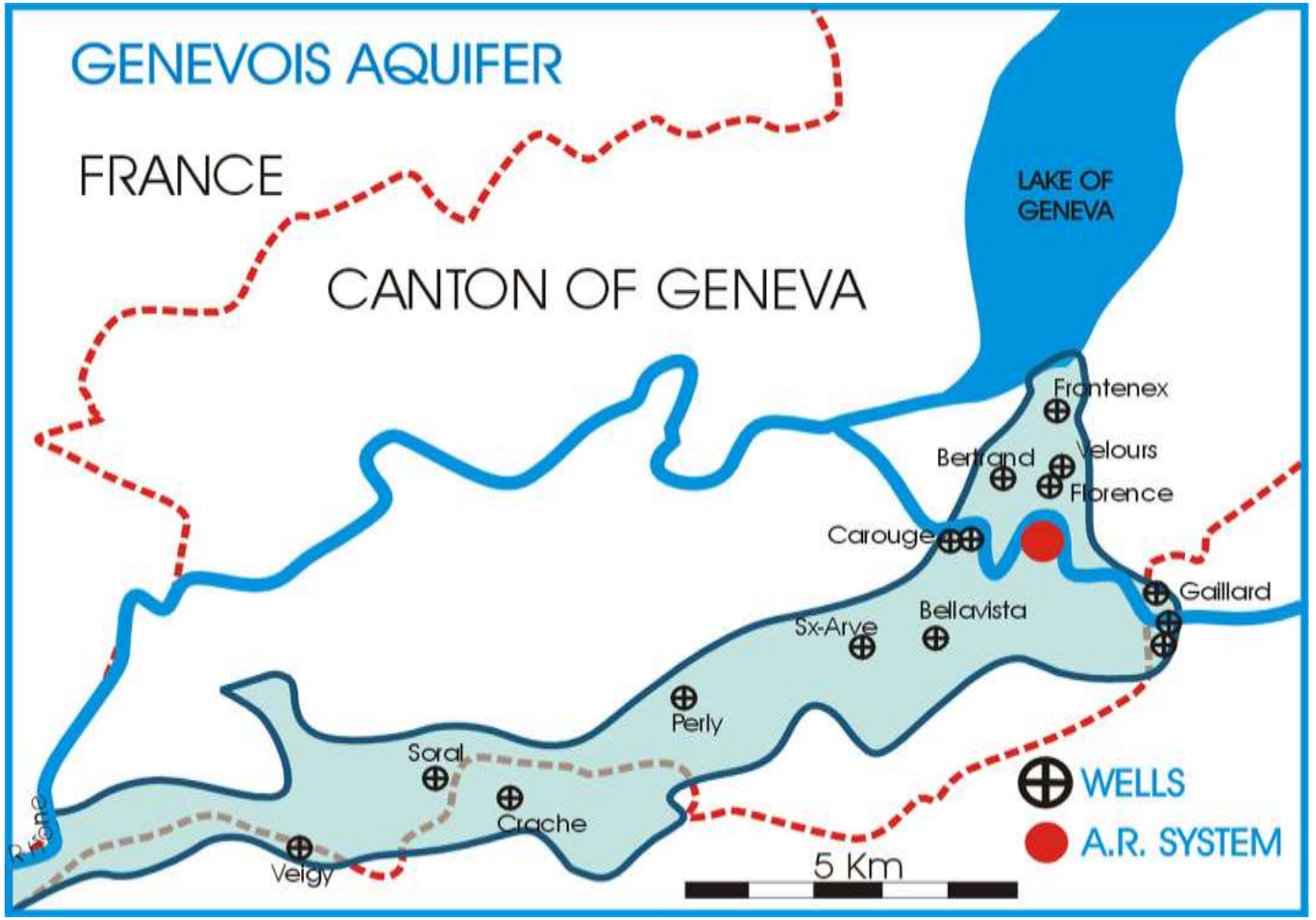
Al-Saq/Disi (2015) (Jordan, Saudi-Arabia)

Calcaires Carbonifères (2017)(Belgium, France)

The Genevese aquifer

Between the canton of Geneva in Switzerland and the French department of Haute-Savoie (Upper Savoy)

About 90% of the Genevese groundwater is located in the canton of Geneva and the remaining 10% in France
10 wells on the Swiss side and five across the French border



Between 1960 and 1970 the aquifer was overpumped:

- ➢uncontrolled water abstraction
- ➢lack of coordination among distributing and beneficiary entities

➔groundwater level dropped by more than 7 m in 20 years ➔ Warning bell

Decision : to set up an artificial aquifer recharge plant

➔to recover use of the wells

➔to take advantage of the large volumes of water that could be stocked

1st agreement signed in 1978 between the Canton of Geneva and the French department of Haute Savoie (duration 30 years)

2nd agreement: relating to the use, recharge and monitoring of Franco-Swiss Genevese groundwater (18 Dec 2007, in force 1st Jan 2008)

➔ between, the communes of the greater Annemasse region, the Genevese communes and the commune of Viry and, on the other hand, the State Council of the Republic and the canton of Geneva,

The political will to develop a cross-border project emerged naturally in parallel with the studies and tests that were carried out on the experimental plant.

Establishment of a Commission for the Genevese aquifer

- Composed of 3 members from each side
- Each delegation nominates a member to co-chair
- Possible to invite experts on specific issues (consultative voice)
- Co-chaired by 2 members (one from each side)
- Representative of the State of France participates (consultative voice)
- Commission meets at least once a year, and at the request of one of the delegations
- Each party covers its own expenses
- Minutes are prepared after each meeting. Secretariat is ensured by:
  - State of Geneva, GW service
  - French side: Community of Annemasse region

Missions of the Commission

➔ Proposes the annual utilization plan

➔ Proposes mesures to protect the groundwater and remedies to any pollution

➔ Gives its technical advice on the construction of new exploitation equipments or any modification of existing equipments, and on any withdrawal from the aquifer

➔ Checks the investments expenses and exploitation costs

Initially a purely advisory role ➔ progressively more involved in groundwater management

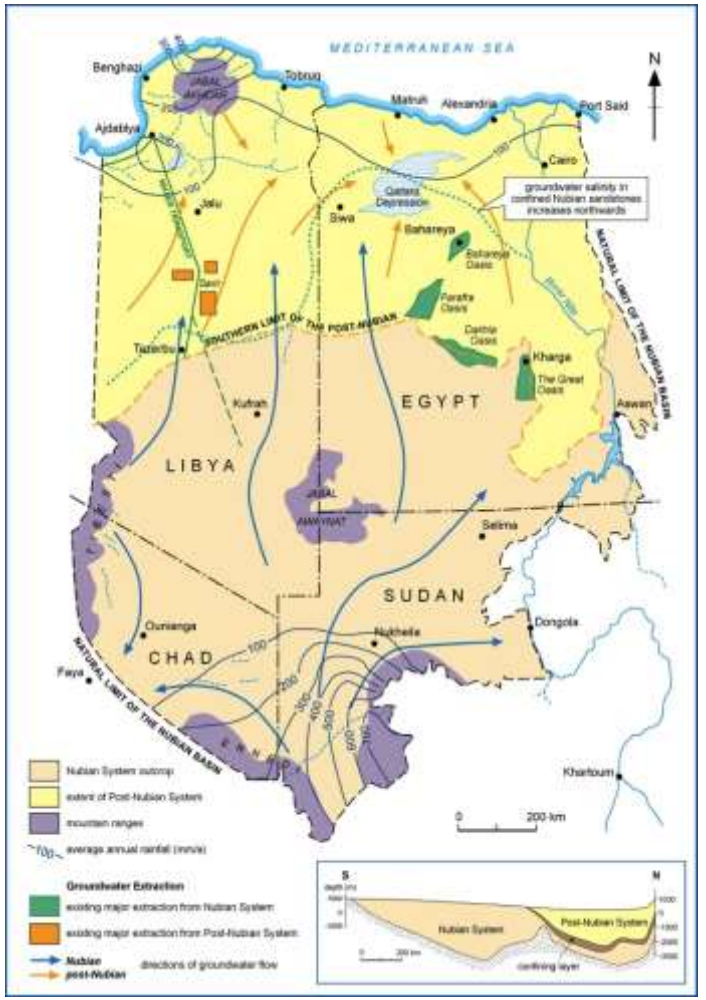
- At the centre of the success of the agreement
- Another key element : management at the local level of a transbounday issue

The Nubian Sandstone Aquifer System (NSAS)

- Four countries : Chad, Egypt, Libya and Sudan
- One of the largest aquifer systems in the world
- Non-renewable groundwater

- Extends over 2,000,000 km^2, contains about 540,000 km^3 of water, out of which 15,340 km^3 are exploitable

- Population dependent on the NSAS waters 2.1 million in Libya and 5 million for Egypt



Joint Authority for the Study and Development of the Nubian Sandstone Aquifer System

➢ "Constitution of the Joint Authority for the Study and Development of the Nubian Sandstone Aquifer Waters" (1992)

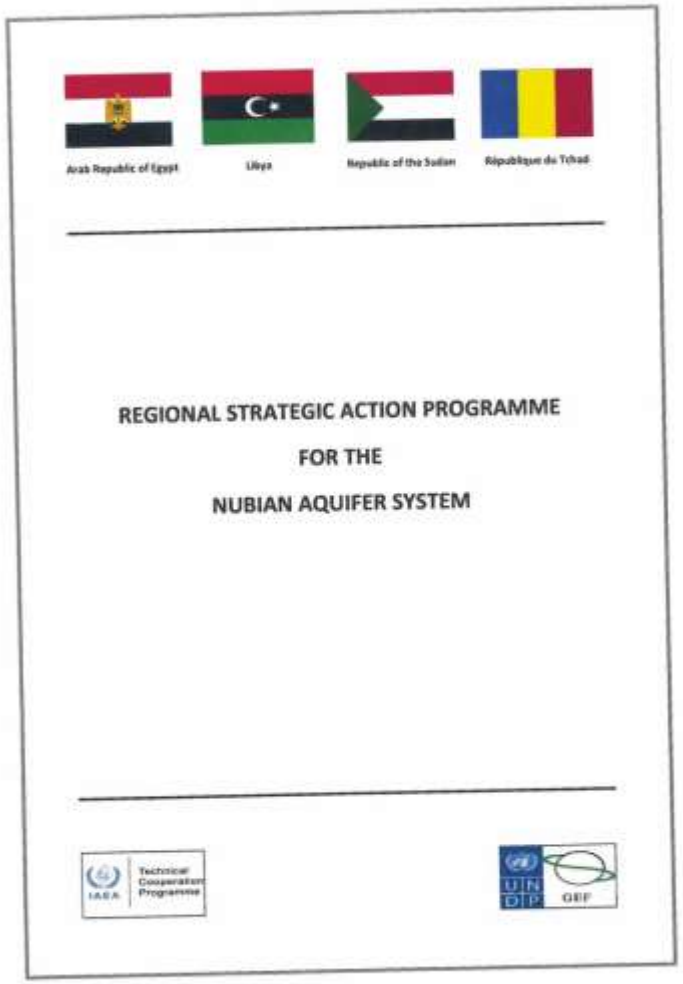
Institutional agreement providing the basic rules for the structure, administration and functioning of the JA:

- the role of the board of directors (three from each country),
- the nomination of the chair,
- the nomination and the role of the executive director,
- financial provisions: budget of the Authority paid on equal shares by the member countries (can include donations from international organizations)
- Administrative body: personnel from the member countries, costs covered by the Authority
- HQ : Tripoli, Libya + branches in the 4 countries (Director, SG, coordinator)

It also includes a provision on the responsibilities of the JA, rather wide, which are related to :

- Scientific
- Management and policy
- Training and dissemination

Establishment of JA came after the project Transnational Project on the Major Regional Aquifer in North-East Africa (1984-1988): objective : improve the knowledge on the NSAS and achieve regional cooperation.
➜ provided an impetus to cooperation between Egypt, Libya and Sudan in understanding the NSAS



<u>JA mainly active during projects :</u>
"Regional Strategy for the Utilization of the Nubian Sandstone Aquifer System » (IFAD/CEDARE) (1998-2002)
"Formulation of an action programme for the integrated management of the shared Nubian aquifer" (2006-2011) (GEF-UNDP/IAEA-UNESCO-IHP)

Irregular meetings of the board

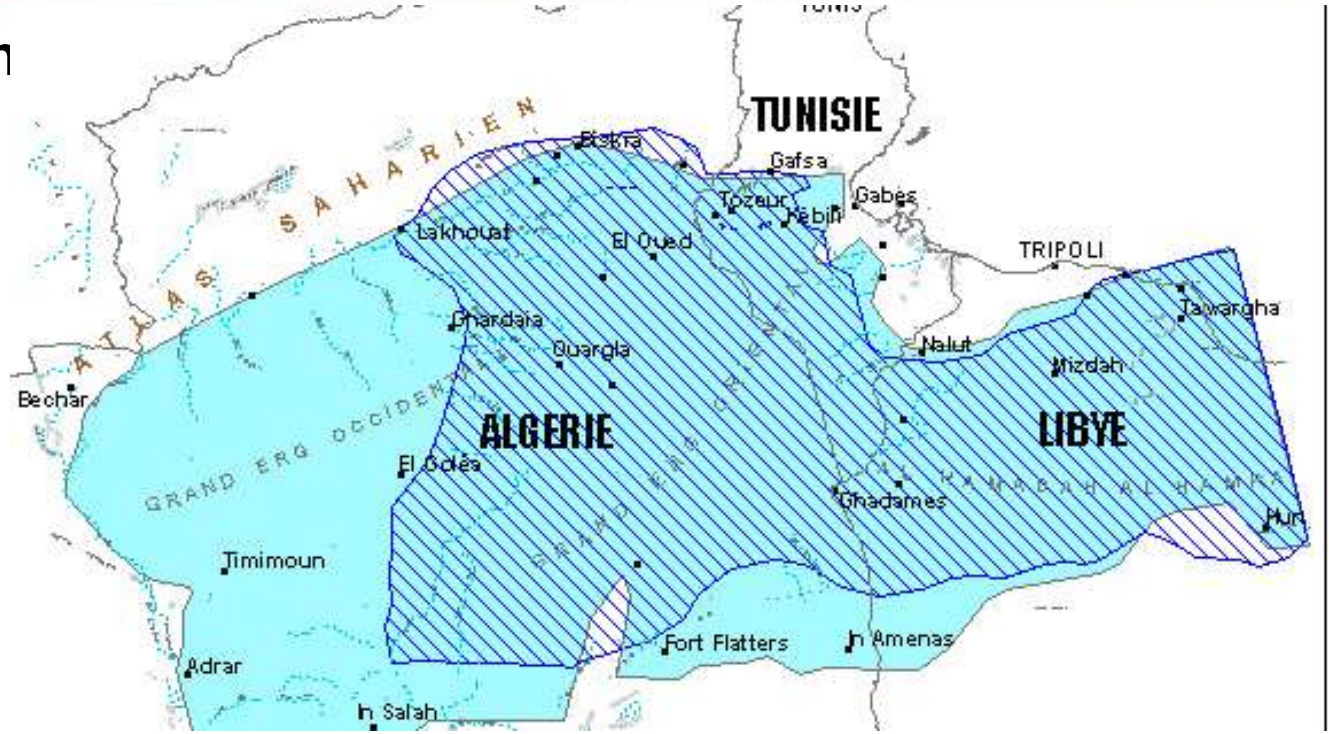
Strategic Action Program (2011) : *designed to support the role of the Joint Authority and strengthen it through various actions*

The North Western Sahara Aquifer System

Surface 1 million km2

Total storage: 40 000 billions m3

Developed resources: 3 billions m3/year

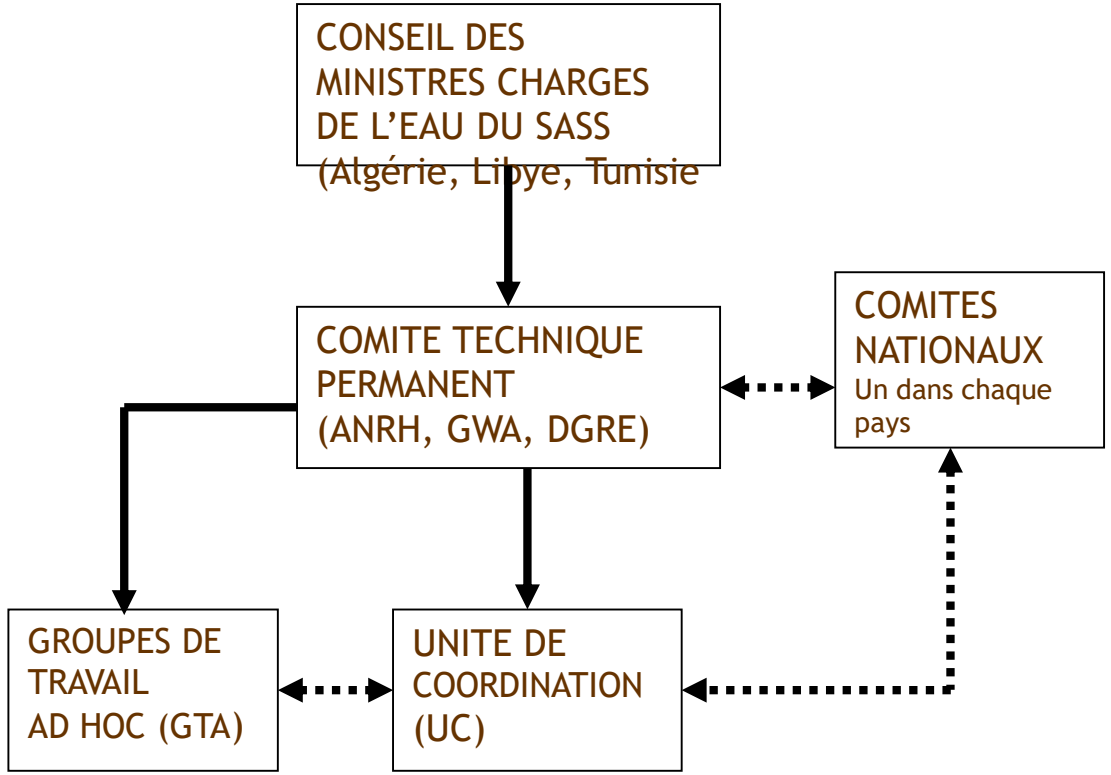


	2000	2020	2030
Population dependent on the NW SAS	**5 M**	**7 M**	**9 M**
Irrigated surfaces (ha)	**250 000**	**400 000**	**500 000**

Ministerial declaration « Permanent consultation mechanism for the North Western Sahara Aquifer System» (2006)

Consultation Mechanism established in 2008

Hosted by OSS



Overall goals:

- "Enhance the means & the capacity in the countries to produce decision-making tools in view of of ensuring ***jointly*** the ***sustainable management*** of the shared water resources of the NWSAS, in a spirit of ***equity***"
- "Consolidating the results of the NWSAS project, mainly in terms of ***cooperation"***

➢Objectives:

- Production of indicators on the resource and water demand
- Elaboration of management scenarios
- Enhancement and up-dating the data base
- Development and management of joint monitoring networks

➢Missions of the CM (non exhaustive list)

- Joint studies and research
- Define exchange of data protocols
- Update the models and developing their utilization
- Spread the monitoring indicators on the resources and its uses
- Identify risk and vulnerable zones
- Propose action plans on the most critical zones
- Organize training, information and awareness actions
- Publish an annual report on the state of the NWSAS

Assessment on the CM:

➔Considered as a success:

➢Countries have regularly met despite difficulties

➢Joint database and model:

- available instrument for the countries
- Updated

➔Limits

➢CM has not achieved the missions initially foreseen

➢Irregular financial contributions from the countries

Discussion

3 cases of cooperation on a transboundary aquifer with different levels:

- Full cooperation : Genevese aquifer
- Limited cooperation: exchange of data and update of the model : NWSAS
- Intermittent cooperation: NSAS

❖ **Genevese aquifer: keys of success:**

Local management
Commission: evolution of its role from consultative to engaged, simple functioning, minimized costs
Studies and tests and political will to develop a cross-border project in parallel

❖ **NWSAS: keys of the success (even if limited):**

Awareness of the need to sustain the results from the project (database and the model) ➜ establi
Good will of the water directors to exchange the data and information
Simple structure of the mechanism, with limited cost

❖ **NSAS:**

Impetus of a regional project: after the development of knowledge on the NSAS, countries understood need to cooperate ➜ establishment of the JA
JA : heavy & costly structure with little achievements (limited activity outside international projects)
Countries aware of its limitations: adoption of the SAP
Remains a framework for the dialogue between the countries: intermittent meetings of the board

Conclusion

- Institutions play important role in the cooperation among riparian countries on shared waters

- SDG 6.5.2 criteria for an operational arrangement:

There is a ***joint body or mechanism*** for transboundary cooperation in place.
There are at least annual meetings between riparian countries.
A joint or coordinated water management plan or joint objectives have been established.
At least annual exchanges of data and information take place.

- No guidance on their form from IWL

- Scientific basis: develops the knowledge →creates and enhances the awareness to cooperate

- Step-by-step approach: create the basis (exchange of data, consultative voice…), and then progress building on the consolidated foundations once they are well established

- Pragmatic approach: simple and flexible structure, limited costs and towards efficiency, involving the decision makers and the technicians/scientists

Thank you for your attention