

The SASS Bulletin

The Newsletter of the SASS Consultation Mechanism

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A Promising start...

The consultation mechanism (CM) of the North-Western Sahara Aquifer System (Système Aquifère du Sahara Septentrional, SASS), devised and set up by the three countries (Algeria, Libya and Tunisia) with the coordination of the Sahara and Sahel Observatory (OSS), was officially inaugurated on June 1, 2008 with the establishment of its Coordination Unit at the OSS premises in Tunis.

The SASS project

The North-Western Sahara Aquifer System (SASS), shared by Algeria, Libya and Tunisia, has been subject since the 1950s to an intensive exploitation which poses a multitude of threats to the quality and the quantity of the available water resources. Thanks to the support of OSS and several development partners, the three SASS countries have set up, since 1999, a two-phase project in order to improve the collective knowledge of the resources, assess their sustainability and provide, on the basis of prospective scenarios, alternatives for an equitable and sustainable management.

The project accomplished many achievements on the technical and scientific levels, including a significant improvement in the countries' knowledge of the SASS transboundary aquifers (CI and CT), the establishment of a common database and the elaboration of a mathematical model. The models were used to examine different abstraction scenarios, defined by the countries, and their impacts on the water tables in the SASS basin. Modelling was instru-

mental in identifying the areas prone to degradation risks and therefore requiring particular attention.

The national teams in charge of the SASS water resources management acquired experience in cooperation and joint work throughout the various phases of the SASS project. They worked together on a number of studies, which included data collection, models' construction and calibration, aquifer systems characterization, abstractions assessment and scenarios definition.

The three countries pledged to establish a Consultation Mechanism (CM) to maintain and strengthen cooperation and improve the management of the shared Aquifers. Thus, during a meeting held in May 2007 in Algiers, the Ministers in charge of water resources signed the declaration of the establishment of this structure that will be temporarily hosted by OSS in order to benefit from its technical, administrative and financial support. The CM's budget is

entirely provided by the three countries.

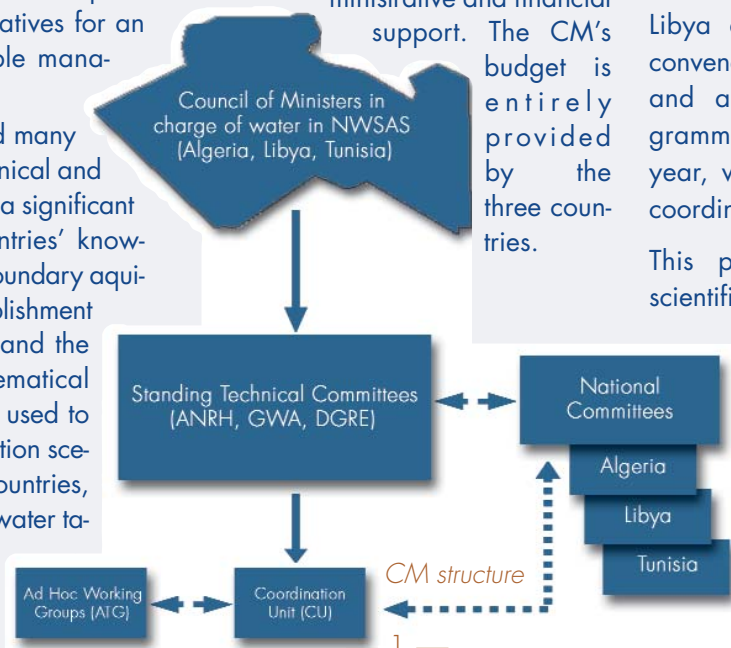
Blazing a trail

This regional institutional achievement, the first of its kind in the world, is the culmination of the firm determination of the three Maghreb countries to make Saharan water a factor of development and well-being for their populations. It is a consultation and cooperation framework to conduct joint studies allowing a planned management of the region's groundwater resources.

The mechanism also reflects the three countries' commitment to base development in the Sahara on sound foundations underpinned by information and concerted efforts. The CM constitutes a model for transboundary water resources management in Africa and beyond.

The permanent technical committee of the CM consists of the directors of the national institutions in charge of water resources management in Algeria, Libya and Tunisia. The committee convened in early June 2008 in Tunis, and adopted the CM work programme and the budget for the first year, which were submitted by the coordinator, Mr. Rachid Khanfir.

This programme includes several scientific and technical activities to be carried out jointly by experts from the three countries. These activities include the updating of the database, the establishment of the monitoring network of groundwater aquifers and the set-up of data exchange protocols.



The activities of the Mechanism

Achievements (since June 2008):

- updating the database (up to 2008): Correction of existing data, integration of new data, data verification and database validation;



Training workshop, May 2009 in Algiers, Algeria.

- organization of four workshops to update the database;

- a training workshop on database management tools;
- updating the SASS mathematical model : calibration on the basis of corrections and new data—spanning the 2000-2008 period— provided by the countries;
- annual Meeting of the Permanent Technical Committee (PTC), February 11 to 12, 2009, in Tozeur (Tunisia).

Current activities:

- simulations 2010-2050;
- development of the Mechanism's website and launch of online common SASS database;
- workshops to update the mathematical model (Quarter four);
- training workshop on modelling, (first quarter, 2010).

The Permanent Technical Committee

The Permanent Technical Committee of the CM, consisting of the directors of the national institutions in charge of water resources management in Algeria, Libya and Tunisia, convened on 11-12 February 2009 in Tozeur, Tunisia.

This inaugural meeting brought together the CM coordinator and the national representatives, OSS experts and the regional directors for agricultural development in the Tunisian governorates of Tozeur, Kébili, Gabès and Tataouine. The meeting provided an opportunity to report on progress achieved in June 2008 and consider further strengthening of the mechanism with other activities to be initiated during 2009. Discussions focused mainly on:

- the progress made in updating the database "Sagesse";
- the situation of the joint surveillance network;
- improving and interconnecting three national databases through the CM;
- activity and financial reports of 2008, the action programme of 2009 and its financial components;
- proposal of two new projects to be

initiated with the German international cooperation services with the support of OSS, oriented towards a better control of the SASS water resources management.

The directors of the Algerian, Tunisian and Libyan water management institutions stressed the importance of this meeting which contributes to entrenching the concerted management of the shared SASS resources. They also expressed their appreciation for the support that OSS is providing to the CM and recommended that OSS continue to provide its technical and administrative backing to the Mechanism.

They expressed their satisfaction with the good guidance provided by the CM, and emphasized their commitment to strengthen the mechanism's activities through the development of new cooperation projects.

They also recommended strengthening the role of national technical

teams in data collection and in monitoring the SASS aquifer management by providing them with technical tools and the required resources.

They also decided:

- to continue updating the databases of SASS, Djeffara (Tunisia) and Biskra (Algeria) considered as priority zones to ensure a good monitoring of the impact of abstractions on the SASS aquifers;



PTC meeting, February 2009, Tozeur

- To continue the update of planned abstraction scenarios in the three

countries in order to ascertain trends in impacts since 2000.

- Take advantage of every opportunity to build the capacity of national experts to use the tools developed within the SASS framework (including databases, GIS, hydrological modeling of water tables and the use of remote-sensing) in order to improve the use of these tools as part of the concerted management of SASS water resources.

The national representatives also stressed the need to consider the launch of the CM website as a priority activity for the mechanism's coordination unit. The website is expected to improve the exchange of information and its availability to users.

They also recommended to:

- ensure the organization of regular meetings of the PTC, preferably in each of the three countries;
- encourage the relevant authorities to provide the CM coordination unit with additional data, including on abstractions, piezometry, water points, and chemical quality, in order to develop a comprehensive analysis of the impact of abstractions during the 2000-2008 period and the updating of the SASS model;
- encourage national teams to ensure the collection of data on the piezometric

reference network in accordance with the agreed protocol;

- entrust the Mechanism's coordination unit with the organization of a dedicated workshop on quality to initiate its monitoring in the three countries;

- strengthen the content of the database through the collection of additional data such as isotopic data and socio-economics;

- develop communication materials (newsletter, posters, flyers ...) focusing mainly on the activities of the CM;

- mobilize the required funds for the development of the CM website and the interconnection of existing databases;

- ensure the implementation of the two projects with the German international cooperation services through the development of comprehensive terms of reference.

The participants also visited water and irrigation facilities in the governorates of Tozeur and Kebili, namely the water cooling systems of the Continental intercalaire and water-saving systems in the oases. They also visited sites affected by soil and water salinization and locations where techniques for geothermal water,

irrigation efficiency and water drainage (collection and reclamation techniques) are being used.

The meeting of the Permanent Technical Committee (PTC) ended on February 13, 2009 with an official call on the Minister of Agriculture and Water resources of Tunisia by the three national representatives and the

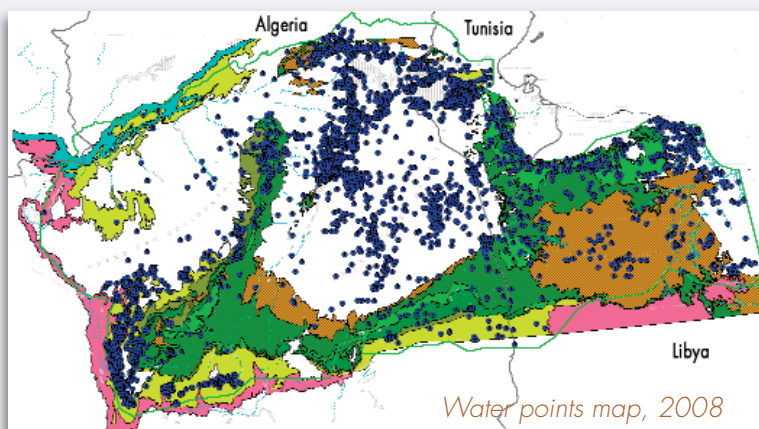


PTC meeting, February 2009, Tozeur

CM coordinator. The delegates were received at the Ministry's headquarters in Tunis. The Minister who was briefed on the CM activities praised the excellent proceedings of the Tozeur meeting and expressed satisfaction with the work accomplished. He renewed Tunisia's support to strengthening and developing the CM, and praised the determination of the three countries to use it as a common tool for the protection and the development of the SASS water resources.

The “Sagesse” Database an effective decision-support-tool

Created in 2000 thanks to the support of OSS and other financial partners, and thanks to the commitment of the three countries involved in the SASS project, the database “Sagesse” allows standardizing the hydrogeological data collected in these countries, so as to meet the needs for the hydrogeological mo-



deling of SASS.

It was initially intended to store data on SASS water resources and organize it according to suitable formats.

The development of the SASS project, however, revealed the need to transform this database into an integrated information system including

the database itself, a suit of mapping tools and the model.

With the introduction of the CM, this system has been oriented towards the monitoring of the concerted

	Algeria	Libya	Tunisia	Total	Gaps
In 2000	6525	1083	1179	8787	82
In 2008	11166	1152	5538	17856	0
Added	4641	69	4359	9069	

Number of water points by country

management, both on the technical and political levels. It is updated by data collected periodically by national technical services from a monitoring network whose composition and operation were determined by a common agreement.

Since its set-up in 2008, the CM established an effective monitoring of SASS water resources. The updated data on these resources provides indicators on their evolution.

Sagesse is hosted by the OSS premises in Tunis. It is accessible to users

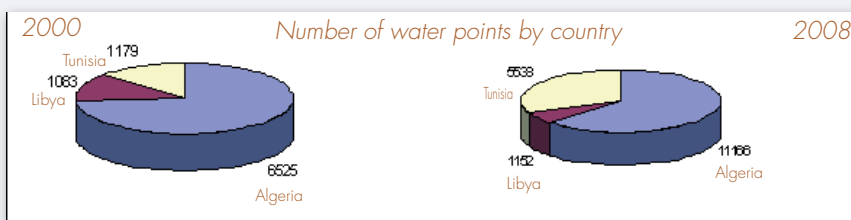
	Points	Operation	Piezometric	Quality
In 2000	8869	53289	5740	2175
In 2008	17856	65028	8098	5296

Number of recordings by table

according to a specific procedure enabling them to introduce new data.

The management of the data is performed by the database administrator based at OSS.

Experts from the three countries are responsible for the collection, processing and editing of data supplied by the SASS common monitoring network, in compliance with the required formats. They are also requested to send new data to the



“Sagesse” database administrator who gathers and harmonizes them. The data sets are subsequently validated through an exchange between the national experts and the central administrator. It is finally up to the

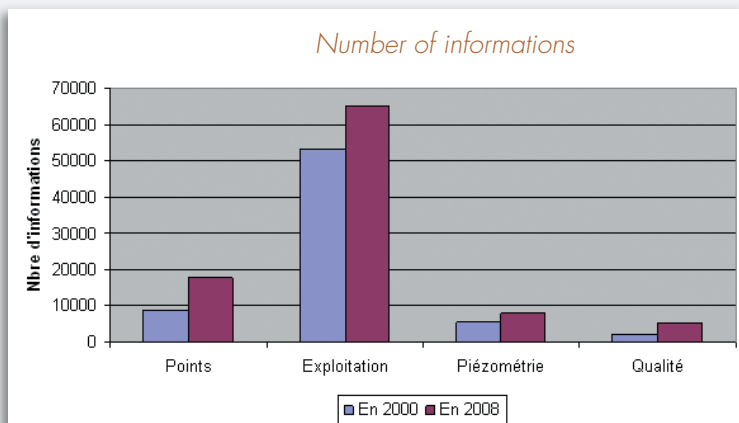
OSS scientific managers to analyze the information and to draw the relevant elements, which will then

be submitted to the decision makers in the three countries.

positioning via GPS, characteristics and evolution of sampling, piezometry and water quality). At present, the database has become more representative and encompasses the characteristics of 17,856 water points and 78,422 pieces of information pertaining to the use of the aquifer system, piezometry and water quality.

The analysis of piezometric measurements performed during the same period revealed that the response of the SASS groundwater to abstractions is in the same order of the pie-

zometric decline recorded in 2000. This situation is reassuring to the extent that the aquifer system is still evolving according to the regime observed in 2000. The same trend has been observed thanks to the water quality monitoring, which reveals an evolution consistent with the trend recorded in 2000.



The comprehensive inventories made in Algeria and Tunisia between 2005 and 2008 helped integrate 8,987 new water points (accurate

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