

*2<sup>nd</sup> circular*

***Scientific Programme***

*of the*

***International Workshop***

*on*

**“Managing Shared  
Aquifer Resources in Africa”**

**2<sup>nd</sup> to 4<sup>th</sup> of June, 2002  
Tripoli, Libya**

## **Introduction**

In many African countries groundwater is either the main source of freshwater or is vitally needed to supplement surface-water sources, especially in regions affected by recurrent droughts. However, there is a scarcity of regional groundwater information, and the understanding of the role groundwater plays in sustaining the livelihood of the population and related ecosystems. There is a critical need to assess and understand the coupled regional ground – and surface – water systems in order to manage optimally the resource, anticipate and mitigate impacts of droughts, and to reduce the risk of over exploiting the limited resource. There is the need to enhance capabilities and scientific strengths of African countries to address long-term and regional groundwater-resource assessment and management, while addressing immediate societal needs. In this context groundwater would be closely linked with an overall holistic approach to water resources management especially surface water and non-conventional water resources.

On the eve of the 21<sup>st</sup> Century scarcity of water resources in many parts of the world, especially in arid and semi-arid areas, is becoming a problem of growing global concern. This problem is more crucial in many Saharan and Sahelian countries as well as in the Sub-Saharan African countries where the need for an adequate knowledge-base and skilled manpower for groundwater resources management is increasingly becoming an essential requirement for their socio-economic development.

## **ISARM - Shared Groundwater Resources Management – a scientific, socio-economic and institutional concern**

Groundwater systems are often the only source of fresh water in some regions of the world, particularly under arid and semi-arid climatic conditions where demand is rapidly increasing. Water resources may be contained in large shared regional aquifers that represent a substantial and secure supply for many beneficial socio-economic uses and are thus critical for national and regional water security.

The regional importance of groundwater resources as a source of water supply is well known. However, its beneficial use is often constrained by weak social and institutional capacity, and poor legal and policy frameworks. This difficulty may become significant in internationally shared regional aquifer systems because of contrasting capacities and institutional frameworks on each side of a boundary. Because geological formations have no regard to water catchments or national boundaries, resources in many aquifers are shared by adjacent states. Attention has to be given to critical elements such as setting up of an adequate framework for cooperation, capacity building, participation, raising awareness, investment and appropriate technology.

Often due to lack of standard monitoring procedures available data cannot be compared and are inadequate to plan regional action for the sustainable development and use of shared groundwater.

The Ministerial Declaration of the the second World Water Forum held in The Hague in 2000 on Water Security in the 21<sup>st</sup> Century (The Hague 22 March 2000) draws attention to the problems of managing shared water resources to promote peaceful co-operation and develop synergies between different users. This includes co-operation between adjacent states in the case of shared groundwater resources.

The International Association of Hydrogeologists (IAH) established a Commission to improve the existing scientific knowledge on Transboundary

Aquifer Resources Management (TARM) in 1999. A meeting of experts was held in parallel with the International Conference on Regional Aquifer Systems in Arid Zones - Managing non-renewable resources (Tripoli 20-24 November 1999). The results of the consultation indicated the need to create an international network supported by IAH, FAO and the UNESCO's International Hydrological Programme (IHP). Therefore the International Association of Hydrogeologists (IAH), UNESCO, FAO and UN/ECE have launched an initiative on Internationally Shared Aquifer Resources Management (ISARM).

### **International Workshop on "Managing Shared Aquifer Resources in Africa" Tripoli, Libya, 2-4- June 2002**

#### ***Objectives***

The International Workshop on "Managing Shared Aquifer Resources in Africa" is organized by the General Water Authority of the Lybian Arab Jamahiriya. The main objectives of this conference are to evaluate how to:

- Set up an appropriate framework for studying and assessing groundwater resources in African countries with particular focus on Regional Aquifer Systems
- Present and discuss case studies on African Regional Aquifer Systems
- Provide support to the African countries for improving cooperation to study and assess groundwater resources
- Prepare an inventory of the existing African Transboundary Aquifers
- Launch an ISARM Africa Programme

#### ***Organization***

The International Workshop will consist of three days of oral presentations and debates organized in plenary and parallel sessions (2-4 June 2002).

Each of the sessions will be coordinated by a chairman who will be responsible for:

1. Facilitating the presentation of the results of study and research on the aquifer by the experts of different countries sharing the resource. Approximately 30 minutes of presentation time is foreseen for each expert following 10 minutes to answer questions.
2. Stimulating the debate on the following subjects:
  - Requirements and challenges to establish a framework for cooperation among countries sharing a particular aquifer
  - Requirements and challenges to establish a network of African countries for improving cooperation to study and assess groundwater resources
3. Selecting a rapporteur with the aim to present the results of the debate in the Plenary Session of the last day.

### ***Co-Sponsors***

The conference is supported by:

- IAH
- UNESCO
- FAO (AGL)
- UN-WWAP
- UN/ECE
- OSS
- SADC
- Saharan Sahelian Group of African Countries
- IAEA

### ***Scientific Committee***

Mr. S. Puri (IAH)  
Mr. R.E. Enderlein (UN/ECE)  
Mr. S. Burchi (FAO)  
Mr. J. Burke (FAO)  
Mr. S. Puyoô (SADC)  
Mr. C. Fezzani (OSS)  
Mr. M. Madani Elazhari (Saharan and Sahelian Group of African Countries)  
Mr. O.Salem (GWA-Libya)  
Mr. P. Pallas (Italy)  
Mr. B. Appelgren (Norway)  
Mr. A.Dodo (Niger)  
Mr. B. Diagana (Mauritanie)  
Ms. C. Colvin (South Africa –IAH)

### ***UNESCO IHP Secretariat***

Ms. Alice Aureli (UNESCO)  
Mr. A. Naah (UNESCO-Nairobi Office)  
Mr. Mr. R. Al-Weshah (UNESCO-Cairo Office)

**2 June 2002**

**Sunday**

*Morning Session: Chairman:*

*Rapporteur:*

09:00-10:00 Welcome from the Libyan Authorities

10:00 – 13: 00

UN/WWAP G. Young

UNESCO A. Aureli

*11:00 Coffee break*

IAEA B. Wallin

UNECE G. Arnold

FAO S. Burchi

Community of Sahel  
Saharan States M. Al-Madani Al-Azhari

OSS C. Fezzani

SADC “Transboundary Aquifer management in the context of Integrated water resources Management in the SADC region”; *P. Molapo and S. Puyoo*

IAH “Management of transboundary aquifers: contribution to the water needs of Africa”; S. Puri

*13:00-14:30 Lunch break*

*Afternoon Session: Chairman:*

*Rapporteur:*

UNESCO-FAO B. Appelgren  
“ Workshop Objectives and Follow up “

BENIN « Utilisation des Aquifères du Bassin Sédimentaire côtier entre le Bénin et le Togo dans un contexte de variabilité climatique ; problème émergentes » ; *Félix V. Azonsi, Chef du Département des Ressources en Eau- Direction de*

*l'Hydraulique.*

BOTSWANA “Shared knowledge, a key to equitable utilization of trans-boundary Aquifers”; *Mr. C.J. Chilume*

*16 :30 Coffee break*

GHANA “Groundwater Resources of Ghana with focus on Internationally Shared Aquifer Systems”, *Mr W. A. Agyekum*

*18 :00 Closing session*

**3 June 2002**  
**Monday**

*Morning Session: Chairman:*  
*Rapporteur:*

09:00 – 13: 00 (time to be allowed for each paper is 30 min. +10 min. discussion)

IVORY COST “Les ressources en eau souterraine de la Côte d’Ivoire et le cas de l’aquifère transfrontalier de la Côte d’Ivoire et le Ghana » ; *Mr J.P.R Jourda*

KENYA “Groundwater Resources of Kenya”, *Mr. Fred K. Mwangi Deputy Director of Water Development*

NIGER “Caractéristique des Aquifères du Niger”; *Mr A. Dodo*

*11:00 Coffee break*

SENEGAL “ Management of transboundaries aquifers in Africa”; *Mr Abdoulaye FAYE*

MAURITANIA “Aquifères partagées” ; *Mr. B. Diagana*

*13:00-14:30 Lunch break*

*Afternoon Session: Chairman:*  
*Rapporteur:*

UNESCO-FAO P. Pallas

TANZANIA “Transboundary Aquifers of Tanzania”, *Dr Mpanda Samson*

LESOTHO “Aquifer resources in Africa – Lesotho”

*16 :30 Coffee break*

NAMIBIA “The Southeastern Kalahari Karoo Aquifers System”; *Ms NDENGU Swama*

EGYPT

ALGERIA

NIGERIA

*18 :00 Closing session*

***4 June 2002  
Thursday***

*Morning Session: Chairman:  
Rapporteur:*

09:00 – 13: 00 (time to be allowed for each paper is 30 min. +10 min. discussion)

Niger Basin Authority “The impact of climatic change (rainfall pattern) on river Niger in the Sub-Saharan region”;  
*Mr O.Ibraheem Alabi*

World Water Council

IGAD

*11:00 Coffee break*

CEDARE

IME

AFDB

TUNISIA

*13:00-14:30 Lunch break*

Preparation of the Report

Report and Recommendations

***15:00 Closing ceremony***

