

GeoScience of the Water Cycle



Gil Mahé

Institut de Recherche pour le Développement
HydroSciences Montpellier Laboratory
South of France

Highlights from IGCP supported programs in Hydrogeology



United Nations
Educational, Scientific and
Cultural Organization



- **The current reviewing team for the Hydrogeology theme is composed of 10 people from America, Europe, Asia and Africa, including 3 women, (Cameroon, China, Dem. Rep. of Congo, Equator, France, Spain, USA, Vietnam)**
- **The projects supported by IGGP mainly deal with water resources assessment, protection and social services.**
- **They all include activities (workshops, field trips, training courses) to increase the relationships between countries and continents, to reach issues of global scientific interest, and to ensure that the results meet society challenges.**



MAIN TOPICS OF THE IGCP PROJECTS on HYDROGEOLOGY

- **Palaeoclimate and past-recharged groundwater**
 - **618** Mozambique, China, Australia, Baltic area, South America
 - **651** Bangladesh, China, Japan
- **Surface and groundwater assessment of water resources**
 - **643** Ivory Coast, Benin, Cameroon, France
 - **645** Colombia, Argentina, Brazil, Chile, Spain

About 18 countries from all continents



MAIN TOPICS OF THE IGCP PROJECTS on HYDROGEOLOGY

- **Palaeoclimate and past-recharged groundwater**

Palaeoclimate information obtained from past-recharged groundwater

- **618** Mozambique, China, Australia, Baltic area, South America

Interpret links between paleoclimate archives and paleogroundwater observations at continental and intercontinental scales

---→ A synthesis at the global scale is under edition, together with sharing of data base, common tools and methods



MAIN TOPICS OF THE IGCP PROJECTS on HYDROGEOLOGY

- **Palaeoclimate and past-recharged groundwater**

Understanding paleoclimate change and pathways to resilience in changing climate at Cox's Bazar City, Bangladesh

- **651** Bangladesh, China, Japan

A quantitative estimate of the impacts of past climatic variations on the functioning of the natural system, including knowledge of local people.

---→ A first case study in Bangladesh.

Very good initiative. Needs to be developed, for instance by cooperating with the 618 project.



MAIN TOPICS OF THE IGCP PROJECTS on HYDROGEOLOGY

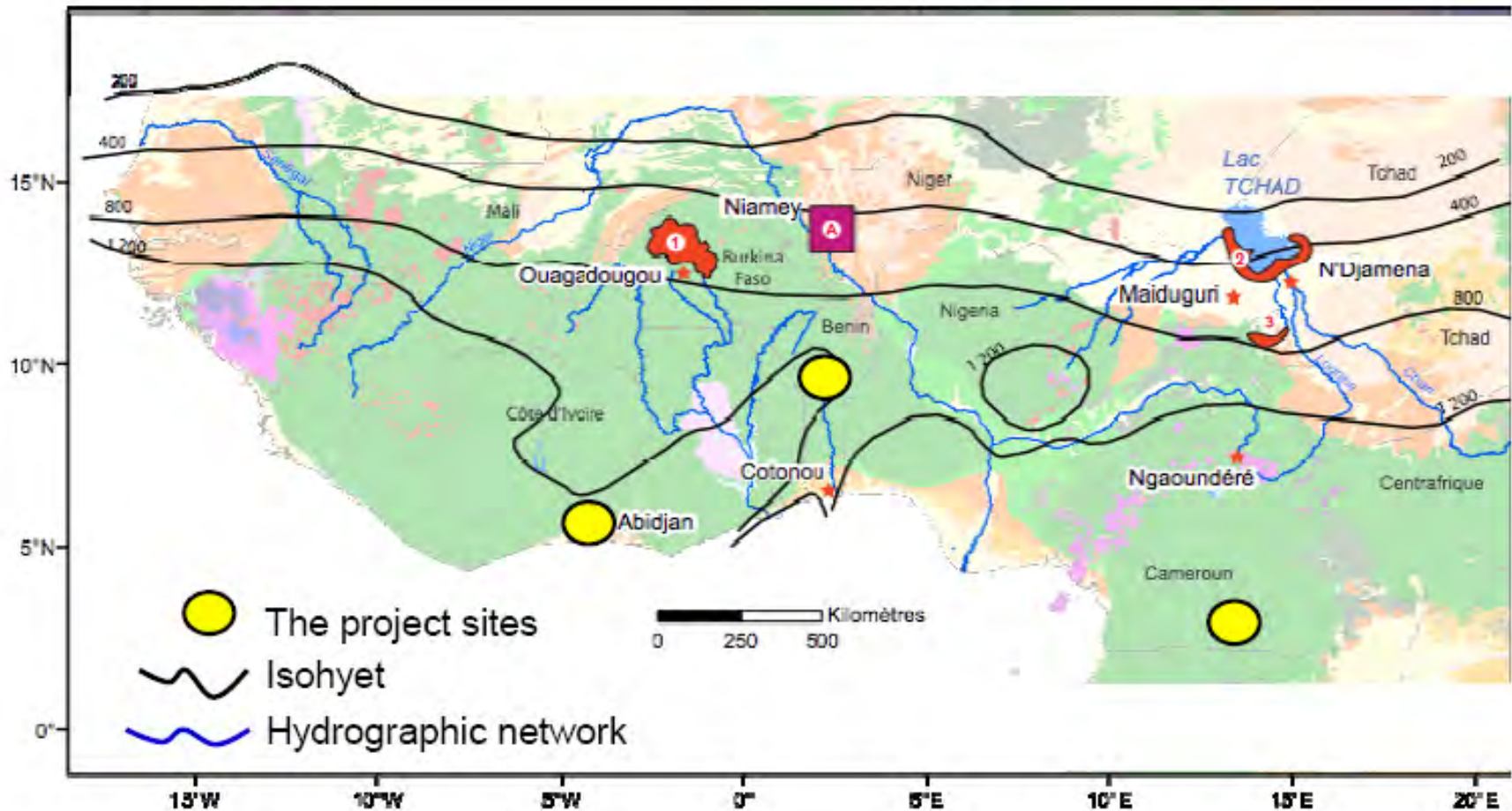
- **Surface and groundwater assessment of water resources**
 - **643** Ivory Coast, Benin, Cameroon, France
 - **645** Colombia, Argentina, Brazil, Chile, Spain



MAIN TOPICS OF THE IGCP PROJECTS on HYDROGEOLOGY

Water Resources in Wet Tropics of West-Central Africa

- 643: Ivory Coast, Benin, Cameroon, France





Water Resources in Wet Tropics of West-Central Africa

643 Ivory Coast, Benin, Cameroon, France

During this year, this project organized the workshop:

“Hydrological and hydrogeological modeling in sub-humid Africa”

The workshop allowed to:

- Put together scientist from different domains (hydrology, hydrogeology and geologists) from different countries: Benin, Cameroon, Côte d’Ivoire, Niger and France.

- Enhance the North-South collaboration

Create a dynamic of cooperation between young researchers

22 out of the 25 participants were coming from Africa developing countries



MAIN TOPICS OF THE IGCP PROJECTS on HYDROGEOLOGY

Aquifer recharge in different climate and hydrogeological environments in ibero-america: effects of climate and global variability and changes

•645 Colombia, Argentina, Brazil, Chile, Spain

This project aims at identifying the state of knowledge on the evaluation of recharge in the involved countries and to assess recharge changes between the present and distant past associated with effects caused by climate variability.

It has been asked to be modified to be resubmitted next year.



• **Projects include:**

- Frequent workshops
- Training sessions
- Field trips
- Dedicated activities for young scientists

• **Projects include also:**

- International cooperation and support
- Sharing material and methods
- Data archiving
- Websites



- **Projects are asked to include more:**

- Society outreaches
- Educational purposes
- Help decision-making by local authorities

- **Projects are always asked to connect with other UNESCO programs:**

- FRIEND
- ISI
- G-WADI
- Etc.



Thank you for attention

MOROCCO: High erosion rates under climatic and anthropogenic changes