

THE HYDROLOGICAL OBSERVATORIES

WHYCOS

World HYdrological Cycle Observing System

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THE HYDROLOGICAL OBSERVATORIES

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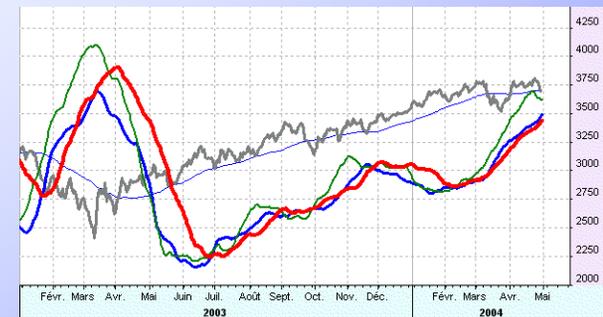
THE FINANCIAL OBSERVATORIES

THE HYDROLOGICAL OBSERVATORIES

The hydrologist looks at
the ... flow variations

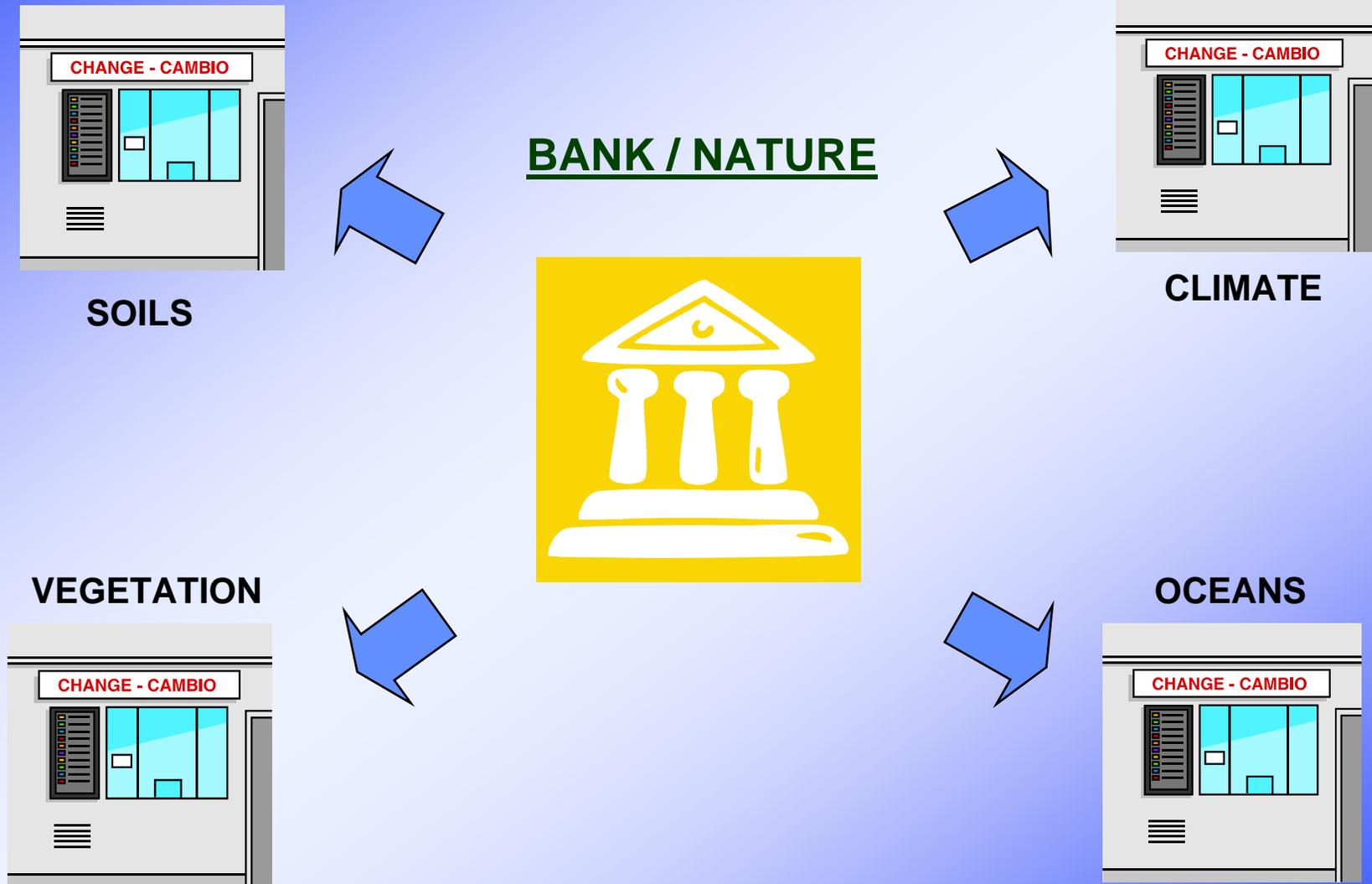


The banker looks at
the ... Stock Exchange variations

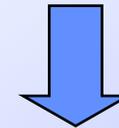
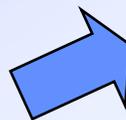
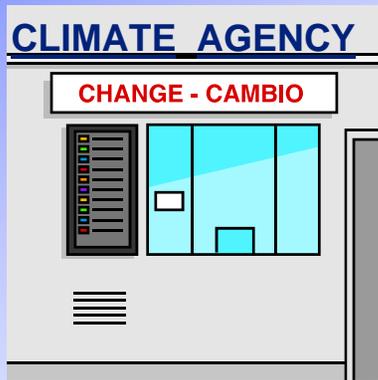


Paris (CAC 40) : ACHAT 23.05.03 A 2897

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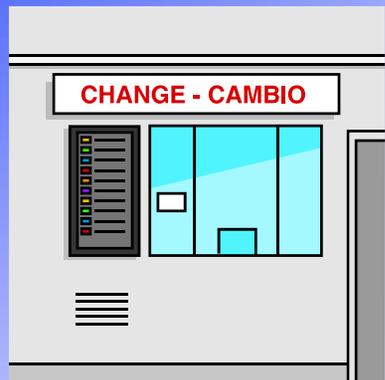


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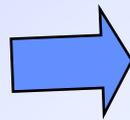
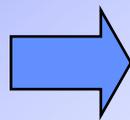


RESOURCE / WATER POTENTIAL

THE HYDROLOGICAL OBSERVATORIES



CLIMATE AGENCY

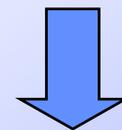


RESOURCE / WATER POTENTIAL



STOCK (SAVINGS)

**LAKES, DAMS, ICE
GROUNDWATER, Etc.**



RESOURCE (SALARY)

RIVERS

THE HYDROLOGICAL OBSERVATORIES

RESOURCE / WATER POTENTIAL



**(RISKS)
CLIMATE
CHANGES**

ABUNDANCE →



SHORTAGE →



THE HYDROLOGICAL OBSERVATORIES

OBSERVATION NETWORKS ARE VERY EXPENSIVE

//

INSURANCE IS EXPENSIVE ...

EXPENSIVE BEFORE OR AFTER ACCIDENT?

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**EXPENSIVE BEFORE OR AFTER FLOODING,
CASUALTIES, EQUIPMENT LOSSES, DROUGHT AND
ITS IMPACTS FOR AGRICULTURE ...??**

THE HYDROLOGICAL OBSERVATORIES

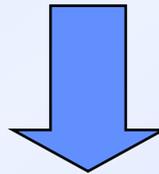
FEW KEY NUMBERS

- **France (estimation report «Cour des Comptes») :**
 - **Mean annual cost of floods :**
 - **230 Millions Euro (1980's)**
 - **500 Millions Euro (1990's)**
 - **1.5 Billion Euro in 2002 and 2003**
 - **Cost of floods prevention :**
 - **150 Millions Euro / Year**
- **Haïti :**
 - **Hurricane Yvan – Tropical Storm Jane (May & Sept. 2004)**
 - **About 5 000 dead**
 - **Billions of US \$ for material losses**

THE HYDROLOGICAL OBSERVATORIES



WE WELL MANAGE ONLY WHAT WE WELL KNOW !!!



**GREAT IMPORTANCE OF HYDROLOGICAL
OBSERVATORIES**

(FINANCIAL FOLLOW UP – STOCK EXCHANGE)

THE HYDROLOGICAL OBSERVATORIES

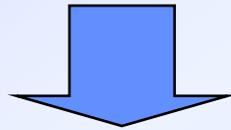
A SCOURING STATEMENT :

- **WATER ASSESSMENT (World Bank – 1992)**
- **UNCED (1992)**
- **UNCSD (1994)**
- **KYOTO (SHIGA – 1998)**
- **JOHANNESBURG (2002)**

**HIGH DETERIORATION OF OBSERVATION
NETWORKS AND HYDROMETEOROLOGICAL
DATABASES SINCE THE 80'S**

THE HYDROLOGICAL OBSERVATORIES

**HIGH DETERIORATION OF OBSERVATION
NETWORKS AND HYDROMETEOROLOGICAL DATABASES
SINCE THE 80'S**

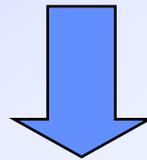


**IMPORTANT LOSSES OF KNOWLEDGE FOR
WATER RESOURCES ASSESSMENT AND MONITORING**

**THE DATA ACQUIRED TODAY WILL BE
THE FORMER DATA TOMORROW !!!**

THE HYDROLOGICAL OBSERVATORIES

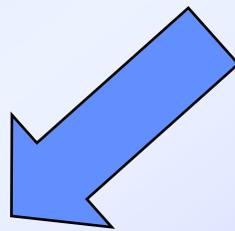
OBSERVATORIES NETWORKS



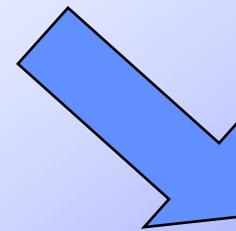
LONG TERM

=

COST



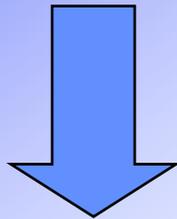
INVESTMENT



RUNNING

THE HYDROLOGICAL OBSERVATORIES

INVESTMENT

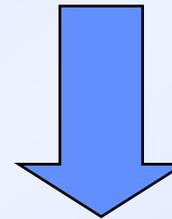


Ded. C: PUBLIC BUDGET

Ding.C: BI-LATERAL

MULTI-LATERAL

RUNNING



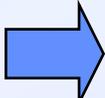
NATIONAL



Ded. C: PUBLIC BUDGET - Ding. C: HOW ?

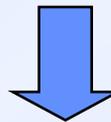
THE HYDROLOGICAL OBSERVATORIES

RUNNING COST:

CAPACITY OF NHSs FOR SELF FUNDING  **ILLUSION?**



PRODUCTION OF «HYDROLOGICAL PRODUCTS»



TO INCREASE INTEREST



OF «GOVERNMENTS»



OF «PRIVATE SECTOR»

THE HYDROLOGICAL OBSERVATORIES

RUNNING COST:

GOVERNMENTS: In case of crisis (economic crisis, political crisis, etc.) maybe it will not be possible or sufficient?

PRIVATE SECTOR: Contribution (low percentage of turnover) of water and/or Hydro-power companies, improvement of land or rural development projects, etc.

BI-LATERAL OR MULTI-LATERAL AID??

THE HYDROLOGICAL OBSERVATORIES

« ... In fact it means that we have to **conceive, to promote and to set up a real sustainable development policy** for which measurement, monitoring and assessment systems are essential:

- measurement networks,
- achievement indicators,
- national, regional and worldwide observatories,
- ...

In any case, we **need a political willpower sufficiently strong, consensual and persistent** »....

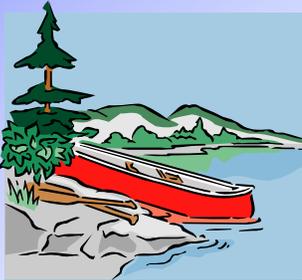
Conférence Euro-Africaine « Eaux et Territoires » Paris 22 – 23 mars 2005
Euro-African conference on “Water & Territories” Paris 22 – 23 of March 2005

THE HYDROLOGICAL OBSERVATORIES

DATA ON WATER

DATA ARE THE BASIS OF ANY KNOWLEDGE ON WATER SECTOR and are related to a specific field:

Surface water



Ground water



Water supply



Rainfall



Sanitation



THE HYDROLOGICAL OBSERVATORIES

DATA ON WATER

Why data management,

- To improve its production and accessibility
- To insure its quality and perennality
- To reduce its production & exploitation costs
- By the means of specifics services
- By the means of computerization



THE HYDROLOGICAL OBSERVATORIES

DATA ON WATER

THE DATA LIFE CYCLE



BIRTH

*Who is the producer?
Who is in charge?
Where? When? How?*



LIFE

*Use specifications
Quality of data
Updating of data*



DEATH

*Archiving / Destruction
Who decide?
Which procedure?*



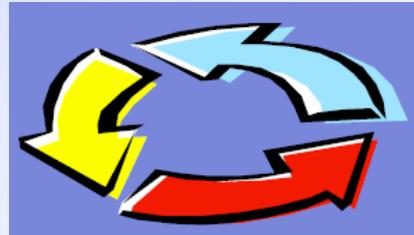
THE HYDROLOGICAL OBSERVATORIES

DATA ON WATER

THE ACTORS

Laboratories

Consumers



Producers (NHSs, ...)

Databases

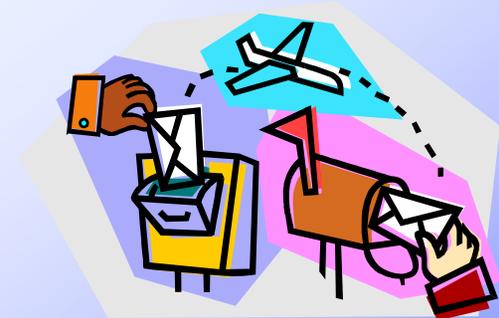
Users



THE HYDROLOGICAL OBSERVATORIES

DATA ON WATER

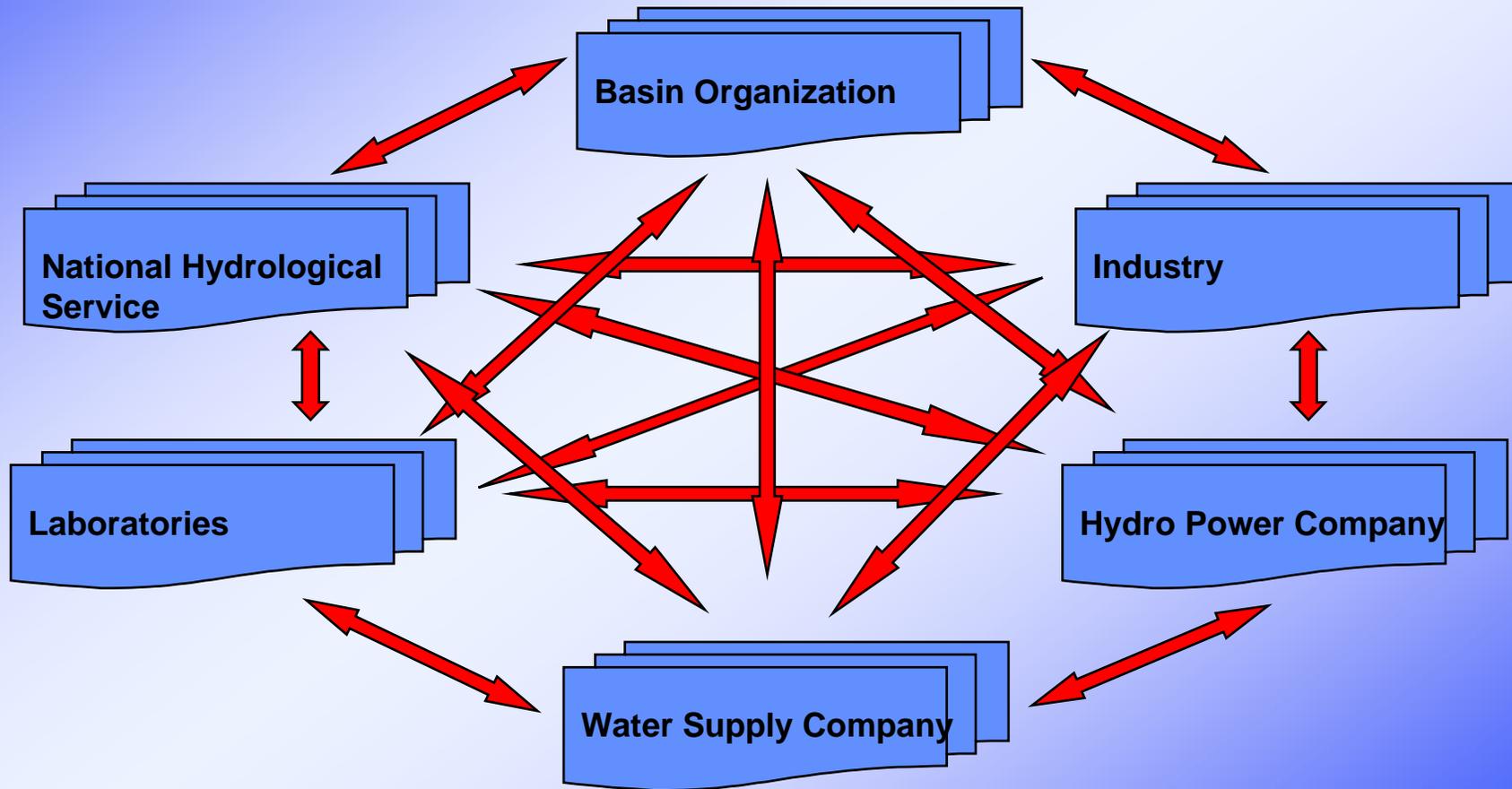
DATA EXCHANGE



THE HYDROLOGICAL OBSERVATORIES

DATA ON WATER

DATA EXCHANGE... DIFFICULTIES

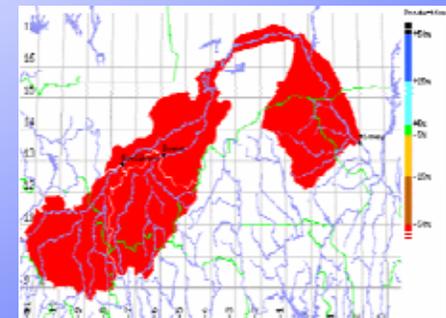


THE HYDROLOGICAL OBSERVATORIES

DATA ON WATER

DATA EXCHANGE... NEEDS

- To establish a common language on data (standards, referential, format, data dictionary, etc.)
- To standardize databases management tools
- To improve the computerized exchange of data on water sector
- To standardize Hydrological Information System tools
- To help stakeholders to build Information systems opened to exchange



WHYCOS

World Hydrological Cycle Observing System

What is Whycos ?

Why Whycos ?

Where is Whycos ?



WHAT IS WHYCOS ?

The objectives:

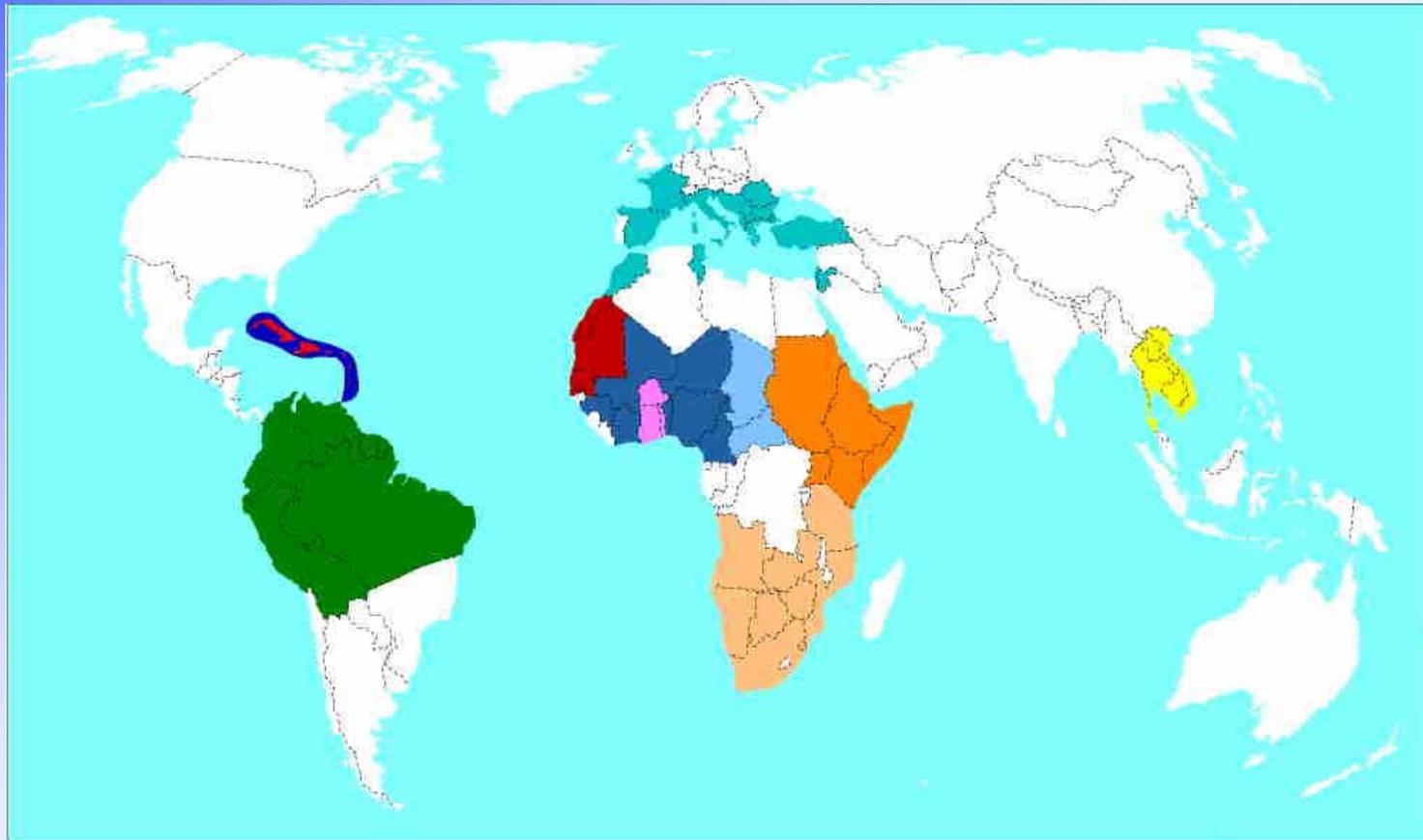
- Establish a **global network of key national stations** for water resources assessment,
- **Strengthen technical and institutional capabilities of Hydrological Services,**
- Promote and facilitate **dissemination and use of water-related information.**

WHY WHYCOS ?

The **need** was recognized for a system which could provide **accurate and reliable hydrological data** :

- To support national and **river basin water resources development projects,**
- To support **regional and global studies** requiring water resources information.
- To assess **effect of climate changes on water resources**

WHERE IS WHYCOS ?



Carib - HYCOS

Amazone - HYCOS

Niger - HYCOS

Volta - HYCOS

Tchad - HYCOS

Med - HYCOS

Sénégal - HYCOS

SADC - HYCOS

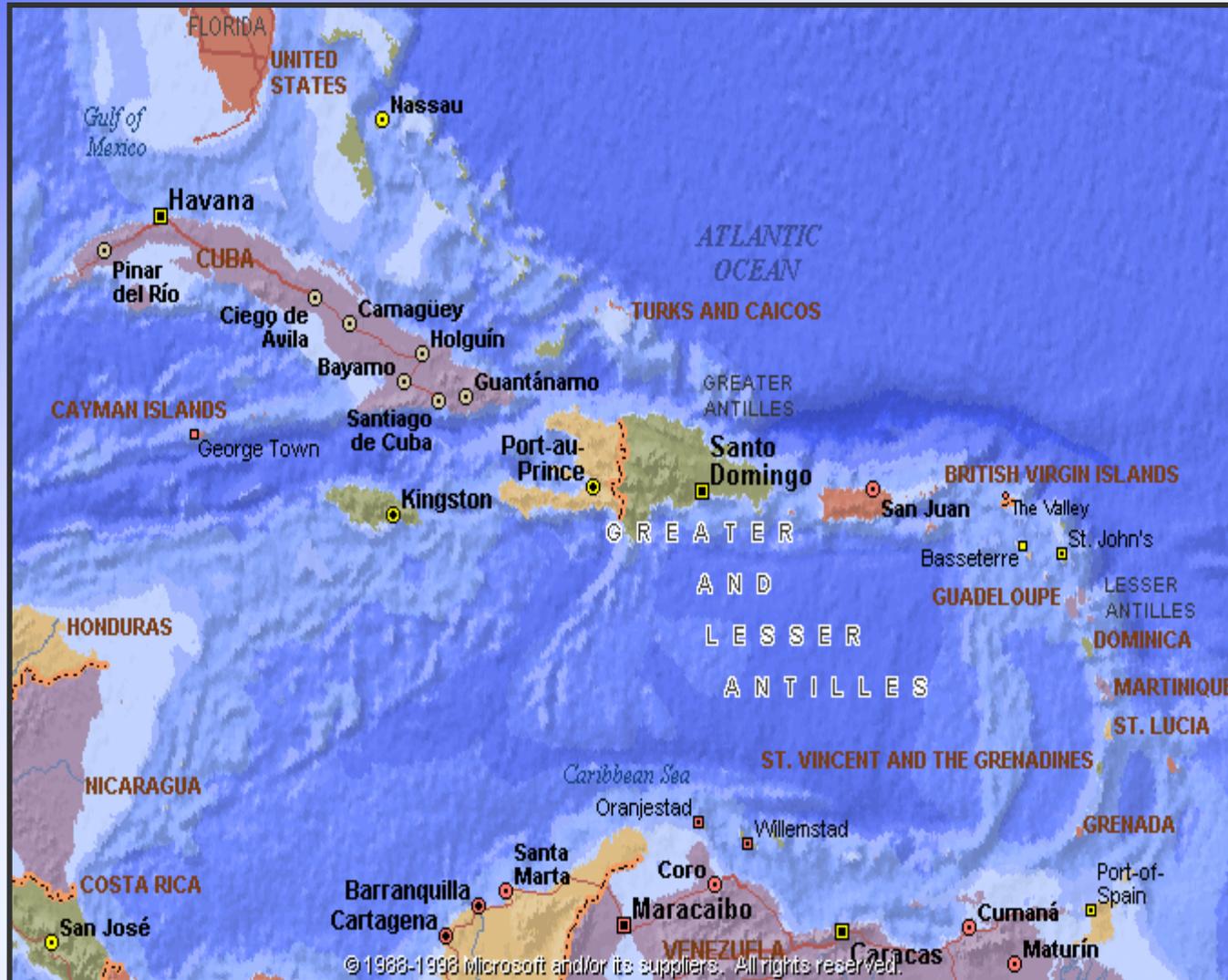
Mékong - HYCOS

IGAD - HYCOS

Cartographie US CBH Jean-Pierre Dubouché

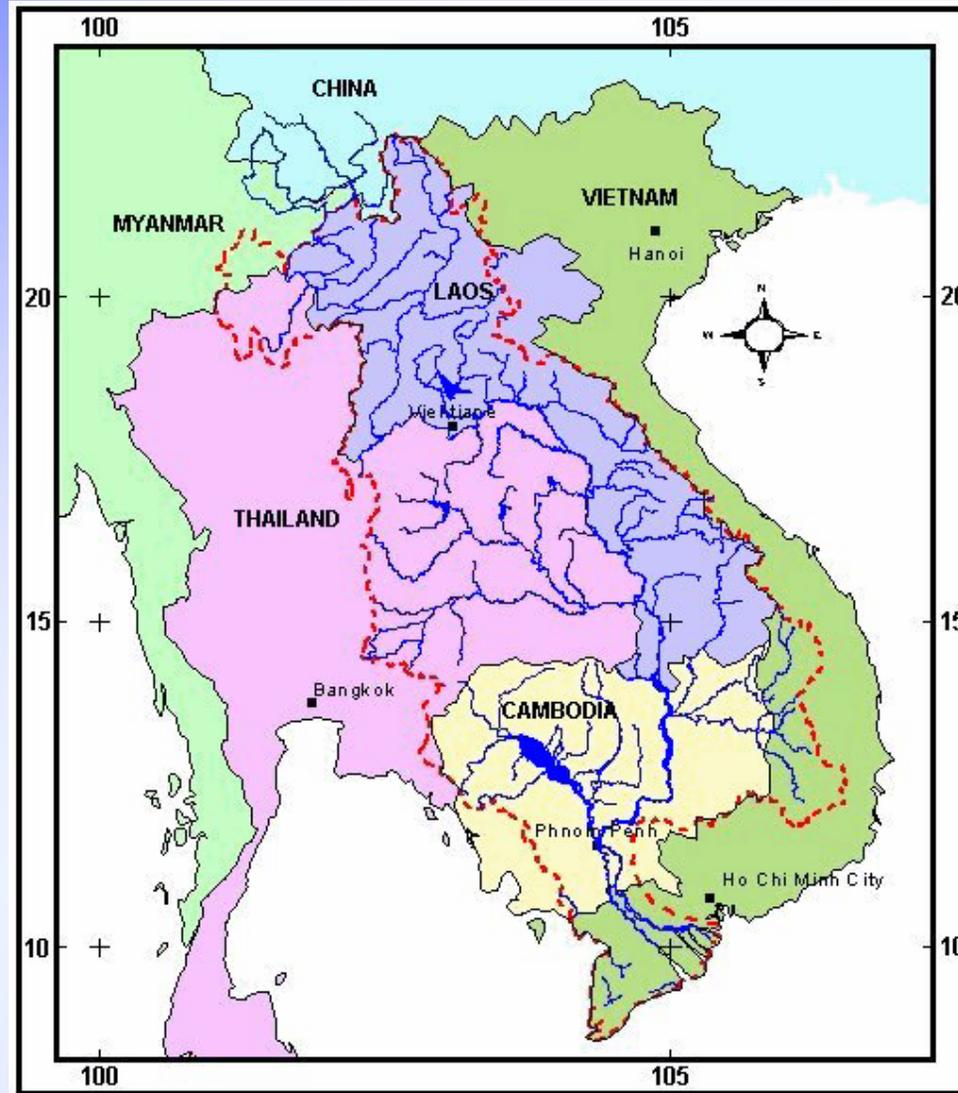
INBO - 7th General Assembly - DEBRECEN 7th to 9th June 2007

Carib – HYCOS Project



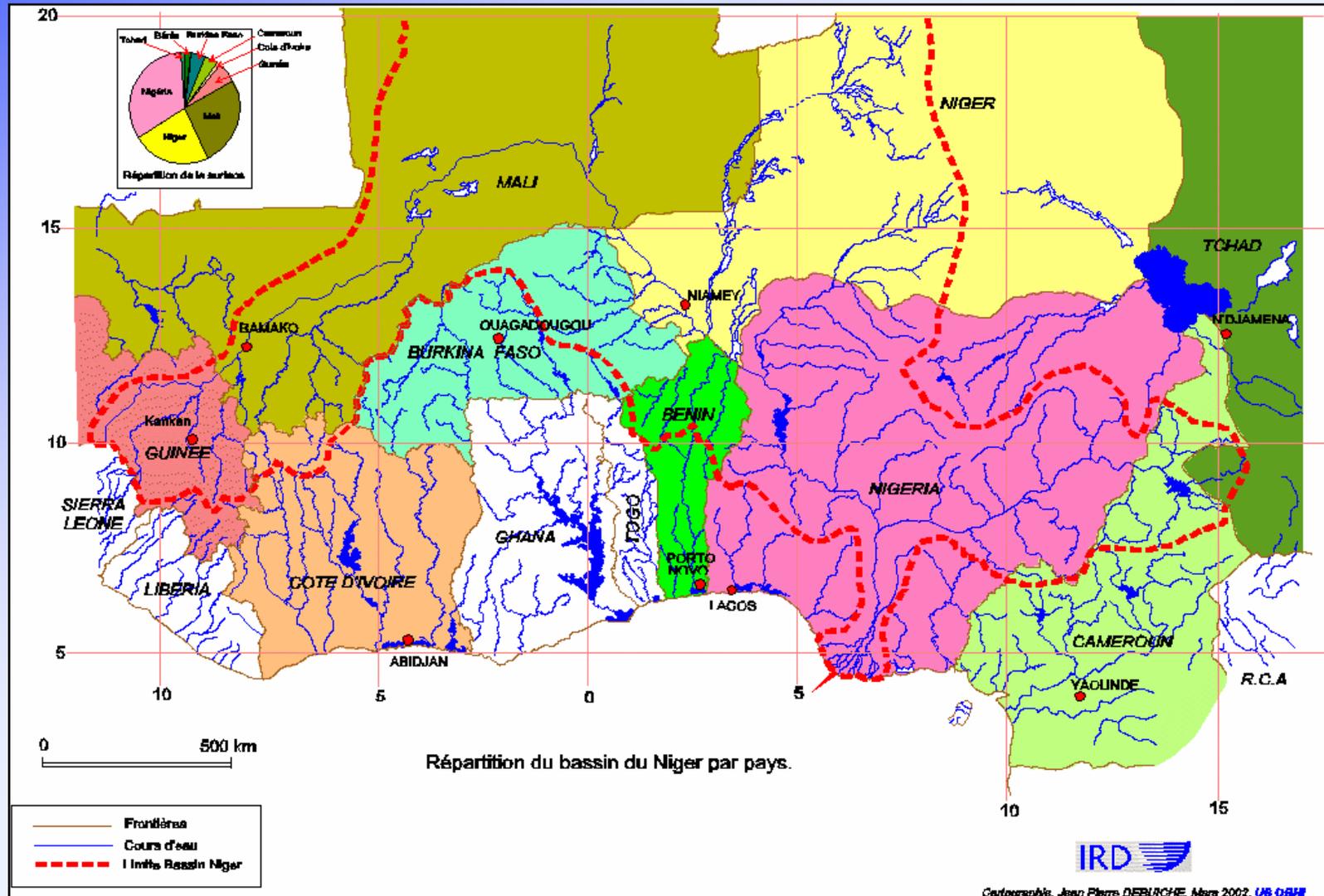
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Mekong – HYCOS Project



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Niger – HYCOS Project

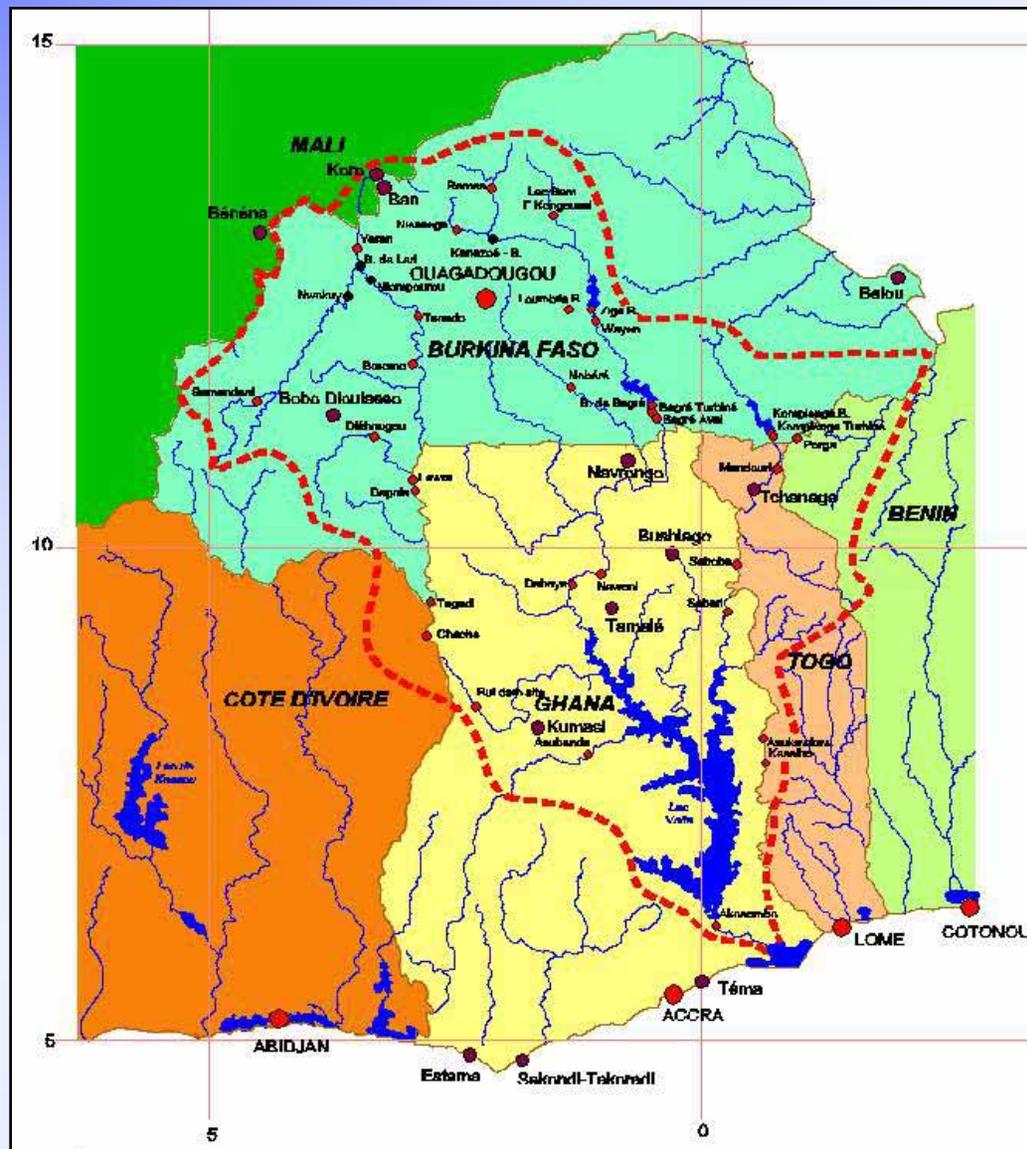


SADC – HYCOS Project



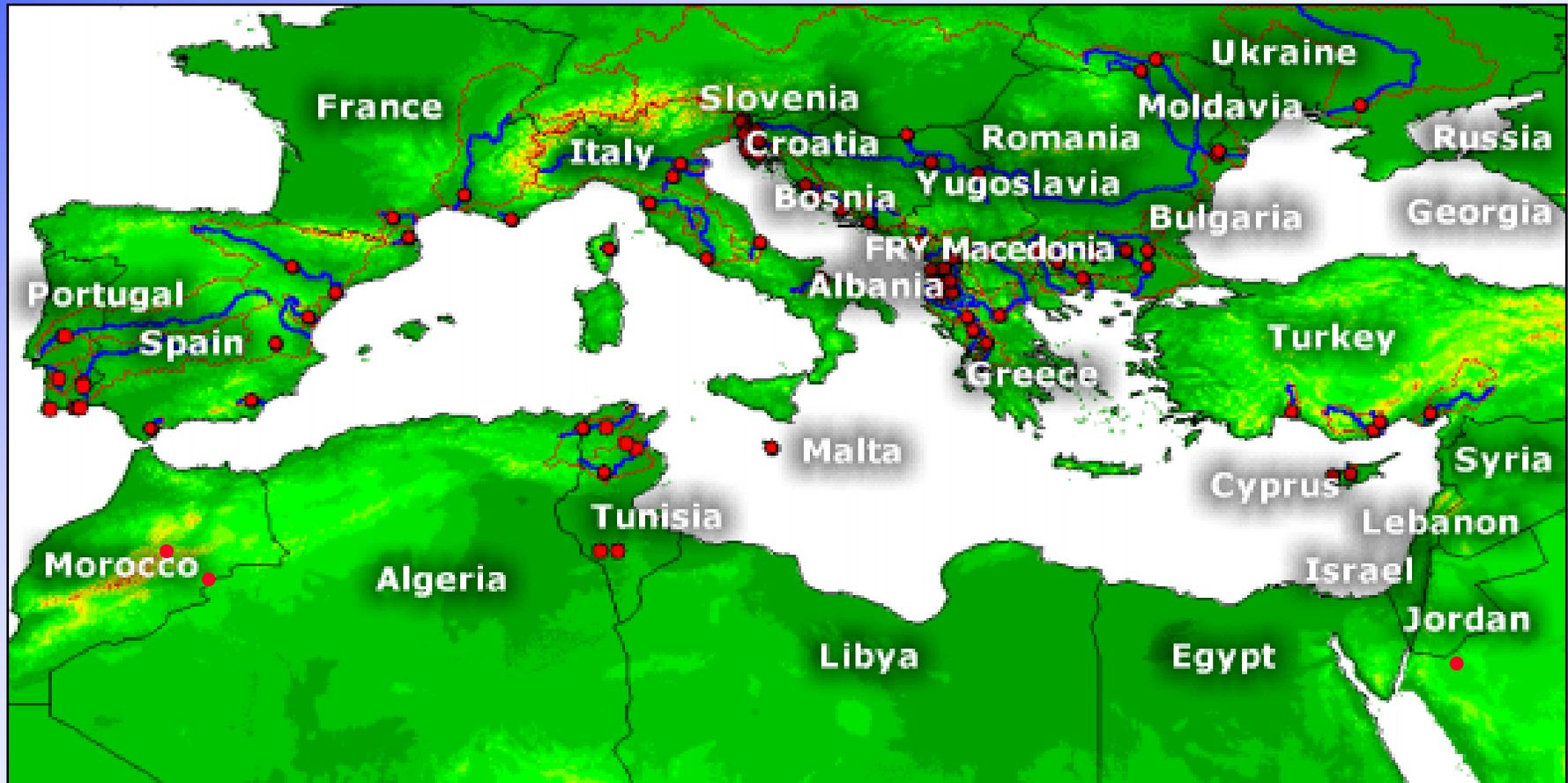
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Volta – HYCOS Project



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MED-HYCOS Project



<http://medhycos.com>

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Thank you for your attention

Contact: <http://www.usobhi.net>

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