



INTERNATIONAL NETWORK  
OF BASIN ORGANIZATIONS



RESEAU INTERNATIONAL  
DES ORGANISMES DE BASSIN



RED INTERNACIONAL  
DE ORGANISMOS DE CUENCA

4<sup>th</sup> QUARTER OF 2001 N° 10

# The network newsletter

## 2002 A STRATEGIC YEAR

Owing to its new statutes, approved during the General Assembly held in Zakopane (Poland) in October 2000, the **International Network of Basin Organizations (INBO)** has taken the opportunity, in 2001, to get the resources needed to promote worldwide the principles, organizations and methods required for **“integrated water resource management at the level of river basins” (IWRM)** in close cooperation with the **Global Water Partnership (GWP)**:

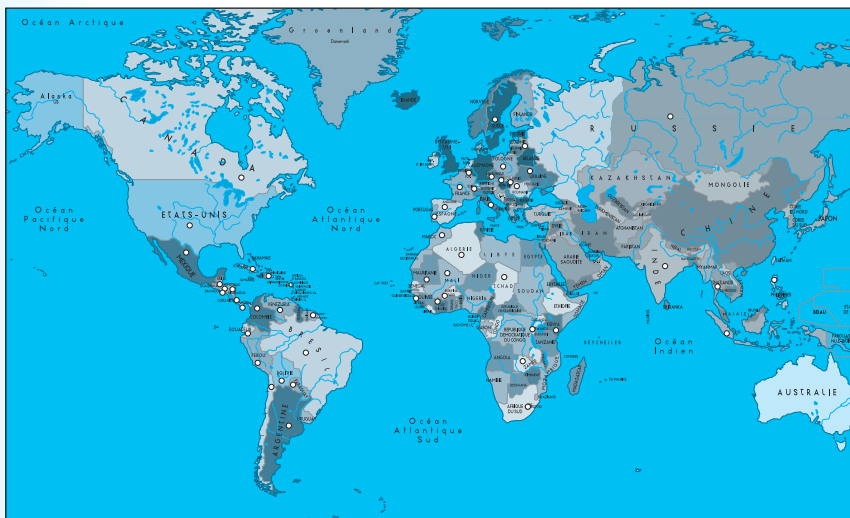
- **firstly, by creating and strengthening its Regional Networks:** **LANBO** (Latin-American Network of Basin Organizations), but also **CEENBO** (Central and Eastern European Network of Basin Organizations), the first General Assembly of which will take place in Sinaia (Romania) on next 1 and 2 February; other projects are being studied for **Africa** and the **Mediterranean**,

- **secondly, by launching the Associated Program “Strengthening and development of basin organizations over the world”** jointly prepared with the **GWP** and for which a bid to projects is being sent to all interested institutions.

A progress report on the first tangible actions will be made during **next INBO General Assembly to be held in Quebec** (Quebec Province - Canada) from 28 to 30 May 2002.

In the meantime, the dynamic participation of INBO in the **3<sup>rd</sup> World Water Forum** will have been prepared (**Kyoto, Japan, March 2003**) in which it is essential that we promote our concept of **“Integrated and Participatory Management of Water at the level of its natural watershed”** by emphasizing the unquestionable success of such an approach.

Please get mobilized on the Internet  
<http://www.iowater.org/inbo>



**INBO : 134 member organizations  
and permanent observers in 51 countries**

# INBO TOGETHER FOR INTEGRATED WATER RESOURCE MANAGEMENT OVER THE WORLD

## THE NETWORK OBJECTIVES

The International Network of Basin Organizations (INBO) has the following objectives:

- to develop lasting relations between the organizations interested in comprehensive water resource management at the river basin level, and favor exchanges of experiences and expertise among them,
- to promote the principles and means of sound water management in cooperation programs to reach sustainable development,
- to facilitate the implementation of tools suitable for institutional and financial management, programming, organization of data banks, and for models adapted to the needs,
- to promote information and training programs for local elected officials, for users' representatives and for the different stakeholders involved in water management as well as for the executives and staff of the member basin organizations,
- to encourage education of the population, the young in particular,
- to evaluate ongoing actions and disseminate their results.

## DECLARATION OF MEMBERSHIP

Sound and balanced management of water resources is a prerequisite to ensure quality of life on our planet and the sustainable socio-economic development of our societies.

The issues raised are complex and the solutions must, at the same time, allow:

- the contending with natural disasters and risks of erosion, floods or drought, taking into account land and water management,
- the reliable meeting of urban and rural populations' requirements in terms of good quality drinking water, in order to improve hygiene and health and to prevent important outbreaks of disease,
- the reclamation of farmlands and the development

of appropriate irrigation systems to reach food self-sufficiency,

- the harmonious development of industry, energy production, recreational activities and, in some areas, tourism and waterways navigation,
- the prevention and control of pollution of all kinds and origins; in order to preserve aquatic ecosystems and, more especially, to protect fauna and optimize fish farming for human consumption, while meeting the requirements of various uses and more generally, preserving the biodiversity of the aquatic environment.

All these issues can no longer be approached by sector or localization, nor approached separately.

Looking for solutions, whose objective is sustainable water use, must associate the national and local authorities together with the users in integrated water resource management which respects the natural environment, and is organized on the scale of river basins.

It is recommended that agreements, strategies, programs, funding and controls be designed for river basins. Cooperation agreements should be signed and formalized between riparian countries regarding large shared rivers, lakes and seas.

## THE NETWORK MEMBERS

■ "Basin Organizations", this means organizations which have been entrusted by relevant public administrations with integrated water resource management at the level of important river basins, either national, federal or transboundary, as well as the cooperation structures they have developed among them.

These organizations must be entrusted with a mission of public interest, have legal existence and their own budget, in accordance with national or federal legislation or international agreements in force.

■ the governmental administrations in charge of water in each country, using or interested in using integrated and sustainable water resource management:

- organized at the level of river basins,
- associating administrations and local authorities, as well as users from the various sectors,
- having specific budgetary resources at their disposal, obtained by applying the "user-polluter-pays" principle.

May be members of INBO :

■ bi and multilateral cooperation agencies supporting activities related to integrated and sustainable water resource management at the level of river basins.

Candidates become members as soon as they have applied to enter the Network by signing the "DECLARATION OF MEMBERSHIP" and paid their subscription fee.

## REGIONAL NETWORKS

INBO member organizations, belonging to the same geographic region, may create a "Regional Network" if they wish so in order to:

- strengthen relations between member organizations from neighboring countries,
- develop INBO joint activities in the region,
- organize joint activities of regional interest.

The regional network is made up, on a voluntary basis, of INBO member organizations and observers located in the region.

The Liaison Bureau submits the creation and draft statutes of a Regional Network to INBO General Assembly as well as subsequent changes.

All activities carried out by the regional networks are:

- in conformity with INBO objectives and statutes,
- consistent with INBO general program,
- implemented in partnership with INBO members of other geographic regions.

INBO assists the regional networks whenever possible, according to its means and their requirements.

It favors exchanges of information and experiences among the regional networks.

In Latin America, the Latin-American Network of Basin Organizations (LANBO) was created in 1997 during its Assembly in Bogota (Colombia). In Europe, the Central and Eastern European Network of Basin Organizations (CEENBO) was set up during its Constitutive Assembly, held in Warsaw (Poland) in June 2001.

# STATUTES AND ORGANIZATION

*The Network relies on its members' willingness to work together.*

*This non-profit association has legal existence and new statutes approved during its General Assembly held in Zakopane (Poland) - October 2000.*

## THE GENERAL ASSEMBLY

### Composition

The General Assembly is made up of all INBO members.

It is chaired by INBO President.

It holds at least a meeting every 2 years in a different geographic region, whenever possible.

### Role

On proposal of the Liaison Bureau, the General Assembly approves:

- ❖ the admission of new members and permanent observers,
- ❖ the orientations of INBO activities,
- ❖ joint projects and, whenever necessary, designates the member organization(s) entrusted with their implementation,

- ❖ the association's accounts prepared by the Liaison Bureau.

It ensures that INBO is promoted to the national authorities in the countries and to the bi and multilateral cooperation agencies concerned.

It decides of the yearly subscription fee proposed by the Liaison Bureau.

It elects the President and the members of the Liaison Bureau among its members.

In addition, on proposal of the Bureau, the General Assembly approves:

- ▲ the statutes of the Network and their amendments,
- ▲ the contents of the "Declaration of Membership" and its modifications,
- ▲ the creation of Regional Networks, their statutes and amendments.

### Decisions

The decisions made by the General Assembly are adopted by consensus between the attending members. When a consensus cannot be reached, the President may request a vote as a last resort.

The permanent observers are invited to attend the Ordinary General Assemblies. They cannot vote or be elected as Bureau members.

Qualified personalities or interested organizations may be invited by the host-member(s) to attend in the same way as the permanent observers.

## THE NETWORK PRESIDENT

The President is elected by the General Assembly. He represents INBO. He ascertains that the General Assembly's recommendations are carried out with the support of the Bureau and the Permanent Technical Secretariat, whose work he organizes. He also ensures that the decisions of the Bureau are taken into account.

## THE LIAISON BUREAU

### Composition

INBO is managed by the "Liaison Bureau", made up of:

- the serving President of the Network,
- the last two former Presidents,
- together with 15 incumbent or substitute members chosen among INBO member organizations according to their geographic origin (Africa, America, Asia, Europe).

Its composition may be revised during each General Assembly

depending on the new coming members of each geographic region.

The President, the Secretary of each Regional Network and the Permanent Technical Secretary participate in the Liaison Bureau meetings.

The Bureau members are elected during each General Assembly.

### Role and Functioning

The Bureau:

- is chaired by INBO President,

- holds at least 2 meetings between two General Assemblies,

- prepares the General Assembly meetings and approves the agendas,

- carries out the decisions made by the General Assemblies,

- coordinates joint projects,

- after examining the applications of new INBO members and permanent observers, it proposes their admission to the General Assembly,

- prepares the accounts of the association and proposes them to the General Assembly for approval,

- examines the association progress report for approval by the General Assembly,

- defines INBO communication policy and means, submits them to the General Assembly for approval and ensures implementation by the Permanent Technical Secretariat.

## THE NETWORK SECRETARIAT

### The Permanent Technical Secretariat

It is designated by the General Assembly for four years on proposal of the Liaison Bureau.

Under the President's authority, it is responsible for:

- preparing the documents needed for the Liaison Bureau and General Assembly meetings, especially the agendas, provisional budgets and draft recommendations,

- writing the reports of the statutory meetings,

- directing INBO and following up the implementation of joint projects in close cooperation with the members designated by the Bureau or the General Assembly to this effect, whenever necessary,

- implementing the Network communication policy.

The Head of the Permanent Technical Secretariat participates in the General Assembly and Liaison Bureau meetings.

**Contact :**  
[stp-riob@oieau.fr](mailto:stp-riob@oieau.fr)  
[www.iowater.org/inbo](http://www.iowater.org/inbo)

## THE PERMANENT OBSERVERS

The other public organizations, interested in INBO, can apply to participate in its activities as permanent observers. Provided that they are accepted by the General Assembly on proposal from the Bureau.

They can attend the General Assembly without vote.

# For developing and strengthening river basin organizations: INBO / GWP ASSOCIATED PROGRAM

## FOUR MAIN OUTPUTS ARE EXPECTED

### ➔ Output 1

**Mobilization of professional support capacities in existing basin organizations.**

#### **Purpose**

To promote the setting-up and development of new basin organizations and assist with their management options.

To help, on request, making progress in this long process of discussion, reflection, dialogue and decision-making undertaken at the level of river basins, or at the national or regional level.

These teams may be broadened to experts from international organizations.

#### **Proposed services**

- Assistance with the implementation of institutional reforms,
- Initiation of pilot projects,

- Support to several countries sharing a transboundary river basin,
- Design of monitoring networks and databases,
- Training of personnel from basin organizations,
- Assisting new basin organizations with the setting-up of technical teams,
- Formation of partnerships and establishment of institutional mechanisms allowing an equitable citizens' participation in decision-making and activities of basin organizations.

### ➔ Output 2

**Synthesis of available knowledge and know-how.**

#### **Purpose**

To collect and analyze actual practices in order to generate ideas and recommendations,

and to promote practical guidelines for putting integrated river basin management into practice.

To promote the initiation of pilot projects and implementation of institutional reforms in interested countries.

#### **Proposed services**

- Evaluating the performance of the different systems,
- Contributing to the improvement of knowledge and know-how in the area of basin organizations and IWRM,
- Making available a set of common, easily accessible and measurable performance indicators, in a typological form,
- Training on good practices.

### ➔ Output 3

**Twinning between existing, future or pilot basin organizations.**

#### **Purpose**

To allow direct cooperation for stimulating and supporting water management at river basin level.

#### **Proposed services**

- Direct exchanges of experiences between twin basin organizations,
- Regional and international promotion,
- Exchange of decision-makers and technicians.

### ➔ Output 4

**aque doc INTER:**

**The networking of water documentation systems (see page 7)**

## PROGRAM IMPLEMENTATION

**The International Network of Basin Organizations (INBO) and the Global Water Partnership (GWP) have initiated an "ASSOCIATED PROGRAM" (AP) for the creation and development of Basin Organizations.**

This "ASSOCIATED PROGRAM" must contribute to "Integrated Water Resource Management" which GWP is promoting in all regions of the world through its network of "Regional Technical Advisory Committees" (RTACs).

At global level, the "ASSOCIATED PROGRAM" is steered by the Coordination Committee.

For each large region, a specific steering is jointly carried out by the Latin American Network of Basin Organizations (LANBO) or the Central and Eastern European Network of Basin Organizations (CEENBO) and by the corresponding GWP RTACs.

As regards technical aspects, the Permanent Technical Secretariats of INBO in Paris, of LANBO in Mexico (for Latin America) and of CEENBO in Romania and the GWP Secretariat in Stockholm will provide assistance.

The Brazilian Network of Basin Organizations (REBOB) will play a particular role in directing and assisting the Brazilian members.

**Today, all organizations interested in integrated water resource management at the river basin level have to mobilize themselves to propose their projects, should those correspond to the four objectives of the "ASSOCIATED PROGRAM".**

The objective is to examine the proposals during next INBO Liaison Bureau, which will take place in Seville (Spain) in February 2002. This in order to present an operational program to be approved by INBO General Assembly to be held in Quebec (Quebec Province - Canada) from 28 to 30 May 2002.

It is well specified that:

- the "ASSOCIATED PROGRAM" has no credits by itself but projects included in this program may be easier to present for possible financing to the interested bi and multilateral cooperation agencies;
- the "ASSOCIATED PROGRAM" is selective. It does not aim to deal with all as-

pects of water resource management but only with the organization of basins and is limited to the projects corresponding to the four above objectives.

There might be a lot of other ways to deal efficiently with water management, but, in this case, the corresponding projects will then depend on other cooperation programs that may be also supported by GWP.

In particular, projects dealing with research on river basins or environmental training addressing the population will only be eligible in so far as they can be integrated as a component of more global projects or action plans.

The "ASSOCIATED PROGRAM" is also open to all. Although it primarily addresses the member organizations or observers of INBO, LANBO or CEENBO, any other organization may present projects, when these projects deal with our four objectives ... with the hope that this organization will think about joining our networks within the liberal framework defined by our new statutes.

It is obvious that there is no typical project model to be promoted. To the contrary, the "ASSOCIATED PROGRAM" aims to foster all initiatives adapted to the widely different local, national or regional situations observed in the field.

At first, it might be only possible to identify the organizations that can be project executors and define the main lines of their future action plans. It should be kept in mind that the "ASSOCIATED PROGRAM" is a priori a three-year plan and that effective actions could be gradually defined.

It is recommended that projects or action plans should not be too specific, but, on the contrary, they should be strongly representative with a multi-year prospect while contributing to regional integration in which they could serve as an example and be the basis for mobilization purpose.

## PROGRAM COORDINATION AND MANAGEMENT

The goal of the "ASSOCIATED PROGRAM" is to support all initiatives for the organization of Integrated Water Resource Management at the river basin, lake and aquifer level, whether national or shared. It also aims to develop many experiments to reconcile economic growth, social equity, environmental conservation, water protection and participation of the Civil Society.



The International Network of Basin Organizations (INBO) is responsible for coordinating and managing the "ASSOCIATED PROGRAM". The program overall management is entrusted to:

➤ **A Coordination Committee**, made up of the members of INBO Liaison Bureau and GWP representatives (in particular the Presidents of the Regional Technical Advisory Councils - RTACs concerned), of representatives of bi and



multilateral cooperation agencies, funding all or part of the actions, and of those of large international organizations supporting initiatives focusing on **Integrated Water Resource Management at the level of river basins**.

➤ **A Technical Unit** which gathers INBO, LANBO and CEENBO Permanent Technical Secretariats, specialists from GWP RTACs and experts from different countries or organizations inte-

rested in supporting the "ASSOCIATED PROGRAM".

All GWP initiatives rely on a close interaction between GWP's regional TACS and future Regional Water Partnerships to ensure adequacy between the services provided by the Associated Programs and the real needs observed. The Associated Program relies on a strong dialogue.

Any additional information can be found on INBO website:  
<http://www.iowater.org/inbo>

### INBO NEXT MEETINGS

<b>JAN - FEB 2002</b> 31 - 2	<b>CONSTITUTIVE GENERAL ASSEMBLY OF CEENBO</b> Sinaia (Romania) Contact : APELE ROMANE S.A. E-mail: danielar@ape.rowater.ro
<b>FEBRUARY 2002</b> 25 - 26	<b>INBO LIAISON BUREAU</b> Seville (Spain) Contact : José Maria SANTAFE MARTINEZ E-mail : jose.santafe@sgph.mma.es / jsantafe@mma.sdgh.es
<b>MAY 2002</b> 28 - 30	<b>INBO GENERAL ASSEMBLY</b> Quebec, Quebec Province (Canada) Contact : Françoise MOUGEAT - Ministry of the Environment E-mail : francoise.mougeat@menv.gouv.qc.ca
<b>AUGUST 2002</b> 12 - 16	<b>GLOBAL WATER PARTNERSHIP - GENERAL ASSEMBLY</b> Stockholm (Sweden) Contact : Mr Khalid MOHTADULLAH E-mail : khalid.mohtadullah@sida.se
<b>SEPTEMBER 2002</b> 5 - 7	<b>INTERNATIONAL YEAR FOR MOUNTAINS</b> International Conference on the Management of Upper Basins Megeve (France) Contact : Mr. Pierre LACHENAL E-mail : sea74@echoalp.com Christiane RUNEL E-mail: stp-rion@oieau.fr
<b>NOVEMBER 2002</b> 4 - 8	<b>INTERNATIONAL CONFERENCE</b> "Water Management at the level of River Basins" Madrid (Spain) Contact : Jésus Miguel DE LA FUENTE GONZALEZ E-mail : jmfuente@ciccp.es
<b>JANUARY 2003</b> (to be confirmed)	<b>INBO LIAISON BUREAU</b> La Martinique (France) Contact : Mrs. Madeleine JOUY DE GRANDMAISON E-mail : martinique.environnement.gouv@wanadoo.fr cr972.3@wanadoo.fr / marie-france.bertome@diren-martinique.fr
<b>MARCH 2003</b> 16 - 23	<b>WORLD WATER FORUM</b> Kyoto (Japan) Contact : Hideaki ODA E-mail : oda@water-forum3.com / office@water-forum3.com

# INBO GENERAL ASSEMBLY OF 2002 - QUEBEC - 28 / 30 MAY 2002

INBO Liaison Bureau met on last 4 September in Foz do Iguacu (Brazil) and adopted the draft program of the next INBO General Assembly which will take place, at the invitation of the Quebec Authorities, from 28 to 30 May 2002 in Quebec - Quebec Province (Canada).

The Liaison Bureau also selected three topics which will be dealt with in **Specialized Workshops** during the Assembly.

They are:

- **The relations between basin organizations and administrations** at various levels (international, national, federal, state,

provincial, regional, municipal, etc.),

- **The prevention and management of natural hazards** (floods, drought, erosion) and accidental pollution,
- **The management and protection of groundwater and wetlands in the basins.**

Of course, this Quebec General Assembly will be the occasion to evaluate the progress of the "Associated Program: strengthening and development of basin organizations", launched with the **Global Water Partnership**. The Bureau wished that all INBO members and regional networks, espe-

cially the Latin American Network of Basin Organizations (LANBO) and the Central and Eastern European Network of Basin Organizations (CEENBO) strongly involve themselves in this program.

In order to facilitate the organization of the General Assembly, the registration form should be returned as soon as possible and indicate if you wish to present a paper in one of the three Specialized Workshops.

These papers should be short (as you will have 10 minutes maximum to present it) and addressed to the Permanent Technical Secretariat before **28 February 2002**, only by e-mail (stp-riob@oieau.fr) or on

floppy disk, together with your transparencies on Powerpoint.

**Only the papers received before this date will be presented during the General Assembly.**

All these papers will be presented on INBO website: [www.iowater.org/inbo](http://www.iowater.org/inbo) and will be discussed in the "Virtual Water Forum": [www.worldwaterforum.org](http://www.worldwaterforum.org), preparing the 3rd World Water Forum to be held in March 2003 in Kyoto, to which INBO is associated.

**The confirmation form should be sent to the Ministry of the Environment of Quebec (Mrs. Françoise MOUGEAT) as soon as possible.**

## DRAFT PROGRAM

### Monday, 27 May 2002

- Afternoon and evening: Arrival of participants at Quebec City airport  
Transfer to the hotel
- 18:00 – 20:00: **Meeting of the Liaison Bureau**
- 20:00: Welcoming buffet

### Tuesday, 28 May 2002 1<sup>st</sup> Day

- 8:30: **Opening ceremony**
- Official welcome from the Quebec Authorities
- Speech of the Minister of the Environment of Quebec Government
- Transfer of INBO Chairmanship from Mr. T. WALCZYKIEWICZ to Mr. JM. LATULIPPE
- Introduction to the water policy in Quebec by Mr. JM. LATULIPPE
- Round Table: New events in water policy in the countries having organized the previous General Assemblies (Brazil, France, Mexico, Poland, Spain).
- 10:30: Break
- 11:00: **Ordinary General Assembly (1<sup>st</sup> session)**
  - > Progress report for 2000-2002
  - > Financial report for 2001 and Budget estimate for 2002
  - > Candidates for the new Liaison Bureau
  - > Applications from countries willing to organize the next General Assembly in 2004
  - > Calendar for the Liaison Bureau meetings in 2002 and 2003 (one during the 3<sup>rd</sup> WWF in Japan in March 2003)

> Coordination with the meetings of the GWP RTACs, and those of LANBO and CEENBO.

> Next international conferences: Megève - France : September 2002 and Madrid - Spain : November 2002)

> Procedure for the participation of INBO in the 3<sup>rd</sup> - World Water Forum - 16-23 May 2003 - JAPAN – and in the virtual water forum (Call for water voice messenger),

> Possible participation in the United Nations Conference in Johannesburg (August 2002)

• 12:30: LUNCH BREAK (Buffet)

• 14:00: **1<sup>st</sup> Specialized Workshop: "Relations between basin organizations and administrations"**

Chairman : T. WALCZYKIEWICZ (Poland)

• 16:00: BREAK

• 16:15: **II<sup>nd</sup> Specialized Workshop: "Prevention and management of natural hazards and accidental pollution"**

Chairman : R. GARRIDO (Brazil)

• 18:15: END OF WORK

• 18:30: **Meeting of the Liaison Bureau (continuation)**

• 20:00: OFFICIAL DINNER

### Wednesday, 29 May 2002 2<sup>nd</sup> Day

- 8:30: Meetings of Regional Networks LANBO, CEENBO, PROJECTS : AFRICA / ASIA / THE MEDITERRANEAN
- 10:30: BREAK
- 10:45: **Ordinary General Assembly (2<sup>nd</sup> session)**  
**GWP/INBO Associated Program**
  - Progress report for 2000-2002
  - Reinforcement of the Regional Networks
  - Priority actions to be lead
  - Call for local initiatives / Project forum
  - Financial arrangements – steps to be taken
- 12:00: LUNCH BREAK (Quick Buffet)
- 13:00: **Departure for the field trip**
  - ❖ Cruise on the Saint Lawrence river: Quebec, Grondines, Orleans island, etc.
  - ❖ Resource persons on the boat: ZIP Committees, River Basin Committees, etc.
  - ❖ Video on the river...(to be completed)
- 19:00: TYPICAL QUEBEC DINNER (ON BOAT) in Beauport Bay
- 22:00: RETURN TO THE HOTEL

### Thursday, 30 May 2002 3<sup>rd</sup> Day

- 8:30: **III<sup>rd</sup> Specialized Workshop: "Management and protection of groundwater and wetlands"**  
Chairman : JM. ARAGONEZ BELTRAN (Spain)
- 10:30: BREAK
- 10:45: **Ordinary General Assembly (3<sup>rd</sup> session)**
  - ★ Election of the new members of the Liaison Bureau
  - ★ Choice of the organizing country for the 6<sup>th</sup> INBO General Assembly in 2004
  - ★ New orientations for INBO/GWP Associated Program
  - ★ Approval of a priority action program for 2002-2004
  - ★ Budget estimate for 2003
  - ★ Conclusions of the Regional Networks' meetings: LANBO, CEENBO, Africa / Asia / the Mediterranean
- 13:15: LUNCH BREAK (Buffet)
- 14:30: **Presentation of the studies carried out with partners:**
  - ▶ Shared rivers (Water Academy) + Case study on the St. Lawrence (IJC)
  - ▶ Development of "Upper basins" / Upstream/downstream Relations (European Union)
  - ▶ Types of basin organization (World Bank)
- 16:30: First departures to Quebec Airport

#### Information:

<http://www.iowater.org/inbo>  
[stp-riob@oieau.fr](mailto:stp-riob@oieau.fr) / [riob-quebec@menv.gouv.qc.ca](mailto:riob-quebec@menv.gouv.qc.ca)  
<http://www.quebecregion.com> (tourism)

<http://www.aquadocinter.org>

The **aqu@docINTER** project consists in building a global network of national water information centers, offering easy, unified and multilingual access (in French, English, Spanish, Portuguese, Eastern European languages, etc.), through a common portal on the Internet, to the documentation, experiences and experts' knowledge available in all the partner countries, especially those participating in the International Network of Basin Organizations (INBO).

## A NETWORK OF PARTNERS

The Internet enables to depart from usual centralized documentation bases, now replaced by open information systems, supplied by partner networks. Thus **Aqu@docINTER** relies, in each country, on national focal points, called **National Relay Documentation Centers - NRDCs**.

These **NRDCs** gather information in their respective country. They check, organize and make this information available according to the project specifications and an organizational framework. This enables access to this information by all the users of each country and of the world through a common server on the Internet.

The Central Technical Unit defines the information contents in agreement with the **NRDCs**. It also develops the **Aqu@docINTER** server and assists the **NRDCs** with their organization, the choice of their computerized tools and training of their documentation specialists.

The Management Committee gathers representatives of all the **NRDCs** and defines the project orientations. The Central Technical Unit is in charge of its secretariat.

## A GLOBAL INFORMATION SYSTEM

The **Aqu@docINTER** server provides access to inventoried and selected information on Integrated Water Resource Management in each partner country. This information focuses on:

- Institutional organization, legal and regulatory texts,
- Water economics (investments, price and costs of services, fiscal aspects, users-polluters-pay principle, ...),
- Technologies for resource protection and use, organization of monitoring systems, ...
- References on the administrations and organizations involved in the sector,
- Lists of experts, of information and documentation centers, of specialized training institutes, etc.

## A WORLD-WIDE FOCUS

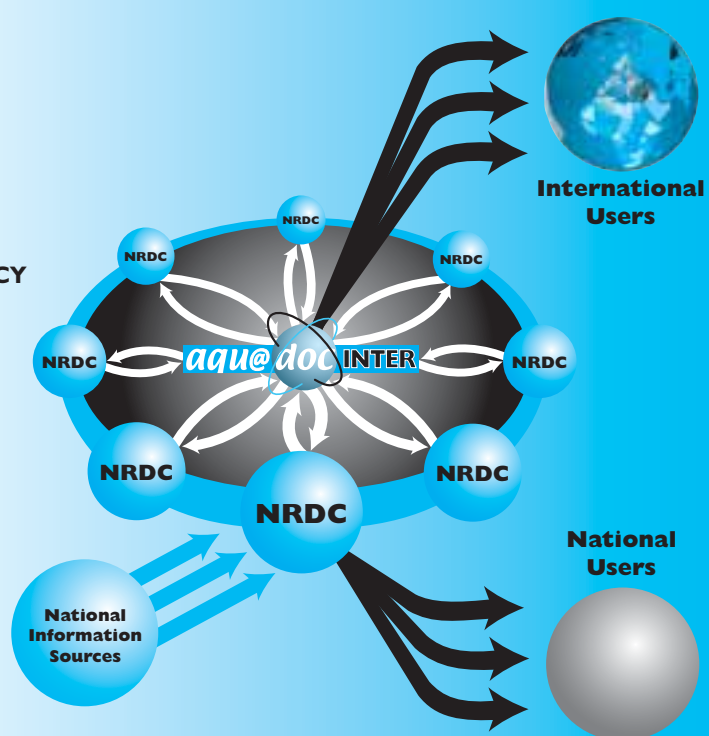
The project is gradually developing by:

- Configuring the Central Technical Unit
- Designing the Network architecture
- Implementing technical tools for the **International Portal** and each **National Relay Documentation Center (NRDC)**.
- Identifying and organizing pilot **NRDCs**:
- **In Europe** (France, Hungary, Poland, Czech Republic, Romania, etc.)
- **In Latin America** (Brazil, Colombia, Mexico, etc.)
- **In the Mediterranean**, its development is achieved through the **Euro-Mediterranean Water Information System (EMWIS)**. The latter was launched during the Marseilles Euro-Mediterranean Water Conference (November 1996). It involves the 15 countries of the European Union and the 12 Mediterranean partner countries, signatory of Barcelona convention.

**Aqu@docINTER** is one of the components of the **INBO/GWP Associated Program**.

## THE PILOT COUNTRIES

**HUNGARY:**  
VITUKI  
**POLAND:**  
IMGW  
**ROMANIA:**  
APELE ROMANE  
**CZECH REPUBLIC:**  
MINISTRY OF AGRICULTURE  
POVODI-MORAVY AGENCY  
**FRANCE:**  
INTERNATIONAL OFFICE FOR WATER  
**BRAZIL:**  
NATIONAL WATER AGENCY - ANA  
**MEXICO:**  
NATIONAL WATER COMMISSION  
**COLOMBIA:**  
CAR OF CUNDINAMARCA  
**THE MEDITERRANEAN:**  
EMWIS



# 3<sup>rd</sup> World Water Forum

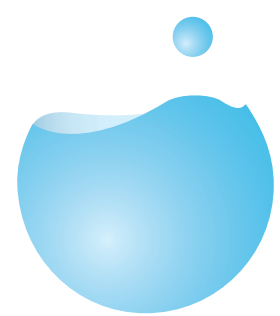
## Kyoto - Japan - 16-23 March 2003

### ACTIVATION OF A "CONFERENCE ROOM" AND OF A WORKSHOP PARTICIPATION IN THE "CALL FOR WATER VOICE MESSENGER"

#### "Integrated River Basin Management of Water Resources - Creation of Basin Organizations"

On the Website : [www.worldwaterforum.org](http://www.worldwaterforum.org)

- **Date** : to be specified by the Japanese organizers, from 16 to 23 March 2003
- **Place** : to be specified by the Japanese organizers.
- **Proposed format**: 2,5 hour session
  - introduction / presentation (15 mins)
  - eight presentations + questions/answers of 15 mins. each :
    - Africa
    - North America
    - Central America
    - South America
    - Asia - Pacific
    - Western Europe
    - Central and Eastern Europe
    - Mediterranean
- **Debates** - recommendations- conclusions (15 mins)
- **Organizing Committee**: INBO Liaison Bureau
- **Bureau for the session**:
  - *Chairman* : JM. Latullipe (CN-Q)
  - *Vice Chairmen*:
    - T. Walczykiewicz (P)
    - R. Garrido (B)
    - JM. Aragones (S)
    - Future president of INBO 2004
  - *Resource persons*:
    - M. Ballestero "Catac"
    - E. Mestre (Secretariat of LANBO)
    - Secretariat of CEENBO (to be nominated)
- **Call for communications**:
  - on the INBO website:
    - [www.oieau.org/riob](http://www.oieau.org/riob)
    - [www.iowater.org/inbo](http://www.iowater.org/inbo)
    - [www.oigagua.org/rioc](http://www.oigagua.org/rioc)
  - on the 3<sup>rd</sup> WWF website [www.worldwaterforum.org](http://www.worldwaterforum.org)
  - PTS/INBO circular letter (to all the member-organizations and observers).
  - all communications received will be published in INBO Newsletter n° 12 and on INBO website.
- **J.F. DONZIER** (Secretariat of INBO)



### Conference: Water in mountains

Integrated management of upper river basins  
Megève - France - 5-6 September 2002

This conference will presents the problems encountered in the area of "water in the mountains" and especially in the management of upper river basins.

It will take place on 5 and 6 September 2002 in Mégève (France).


The proposed workshops and topics are as follows:

- Protection of the resource and control of natural hazards,
- Degradation of upper basins, water quality and ecosystems,
- Specific water management problems in tourist resorts,

- Water development for tourism in the mountains: water-related sports in mountains (rafting, canyoning, etc.), angling,
  - Water and animal husbandry in mountains,
  - Approach to integrated management of upper basins: modeling and tools.
- This event is part of the official program "International Year for Mountains"
- Contacts:**  
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### International Conference on Basin Organizations

Madrid - Spain - 4-8 November 2002



The Spanish Government is organizing an International Conference on "Water Management at the level of River Basins" in Madrid from 4 to 8 November 2002. This conference will review the ongoing experiments and the needs for institutional reforms to develop integrated water resource management.

This conference will be one event of the Spanish Hydrographic Confederations' 75<sup>th</sup> birthday celebration.

- The program will include three workshops on:
- River basin institutions,
  - Masterplans,
  - Technical tools for river basin management
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Jésus Miguel **DE LA FUENTE GONZALEZ**  
[jmfuente@ciccp.es](mailto:jmfuente@ciccp.es)

### CEENBO: First General Assembly

Sinaia - Romania - 1-2 February 2002

The first General Assembly of the Central and Eastern European Network of Basin Organizations (CEENBO) will take place in Sinaia (Romania) on 1 and 2 February 2002, at the invitation of Mr. Florin STADIU; Secretary of State for Water Resources at the Romanian

Ministry of the Environment. It will especially be the occasion of officially approving the Network's new statutes, based on the draft drawn up during the Warsaw Constitutive Meeting in June 2001.

The Assembly will also designate the Permanent Technical Secretariat of the Regional Network and will examine the process for implementing the European Framework Directive and the INBO/GWP Associated Program in Central and Eastern Europe.

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# INTERNATIONAL EVENTS

## UNITED NATIONS

### THE WORLD WATER ASSESSMENT PROGRAM

## WWAP



**The World Water Assessment Program (WWAP)** is a joint effort by 23 United Nations agencies to develop the tools and skills needed to achieve a better understanding of those basic processes, management practices and policies that will help improve the supply and quality of global freshwater resources. It was established in 2000 with a small secretariat housed in the Division of Water Sciences of UNESCO in Paris.

WWAP is one of the many initiatives being taken in the follow-up to the Rio Earth Summit (UNCED), held in 1992. An integrated approach to management, respect for river basins

and watersheds as the natural hydrological unit, and policies designed to take account of full-cost pricing and stakeholder needs and expectations are all important components.

The first priority of the WWAP is to evaluate the state of freshwater resources and ecosystems in the world. This evaluation exercise should be seen within the context of Progress in implementation of Chapter 18 of Agenda 21. The introductory section of the Report will examine human water stewardship, defined as "that complex aggregation of policies, legislation, social programs, economic approaches and management strategies by which society seeks to achieve the goals of water sustainability". A section will present the methodologies, modeling tools and data sources being used to develop indicators of water-related stress. At last, a series of pilot case studies will be presented (the Seine-Normandy basin in France, Tokyo

Area -Japan, Bangkok -Thailand, Sri Lanka and San Francisco Bay in the United States), with many others being considered.

Also part of WWAP's mandate is the responsibility to measure progress, ten years after Rio, towards achieving specific targets, to identify gaps in meeting these challenges, and to assist countries in developing local capacity to evaluate and improve their own water management policies and practices. As the primary beneficiaries of the process, many governments have already indicated their eagerness to participate in the assessment process and have designated national focal points to coordinate activities.

The results of the assessment will be presented in the **World Water Development Report (WWDR)**, to be published at regular intervals as part of an ongoing process. The first edition will review developments since the

Earth Summit of 1992 and assess progress towards meeting targets in the following ten areas: Meeting basic needs; Securing the food supply; Protecting ecosystems; Valuing water; Managing risk; Sharing water resources; Providing water for energy; Providing water for industry; Ensuring the knowledge base; Managing water wisely.

The first World Water Development Report will be released during the Third World Water Forum, to be held in Kyoto, Japan, in March 2003. A WWAP website may be consulted at:

[www.unesco.org/water/wwap](http://www.unesco.org/water/wwap)

The INBO Permanent Technical Secretariat was involved in the writing of the chapter "Sharing water resources" of the report.

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# GLOBAL PROGRAM OF ACTION

## POLLUTION OF SEAS BY LAND-BASED ACTIVITIES

**On 26 to 30 November 2001, the First Intergovernmental Review Meeting of Progress on Implementation of the Global Program of Action for the Protection of the Marine Environment from Land-based Activities (GPA) took place in Montreal, Canada.** All international river-basin organizations were invited to share their experiences in reducing pollution from activities on land, and express their views on what action should be taken at the national, regional and global level. National river basin organizations also participated through the national delegations to the intergovernmental meeting.

The GPA was adopted by 108 Governments and the European Commission in November 1995 at an Intergovernmental Conference in Washington DC, USA. UNEP was requested to provide the secretariat for the GPA. The GPA targets major threats to

the health, productivity and biodiversity of the marine and coastal environment resulting from human activities on land. It proposes an integrated, multi-sectoral approach, premised on serious commitment for action at all levels. Governments are first and foremost responsible for the implementation of the GPA through river basin organizations and regional seas programs and conventions.

Discussions focused on how governments could address land-based activities in a regional context, and how that might facilitate obtaining additional resources, including from public-private partnerships and international partners.

More than 500 participants attended.

**Five topics were dealt with:**

**Session 1: Sharing of experiences** in addressing land-based pollution with examples of best practices and approaches, building on national and regio-

nal preparatory activities. All experiences and reports can be consulted on the GPA clearing-house:

<http://www.gpa.unep.org/>

**Session 2: GPA Strategic Action Plan on Municipal Wastewater**

**Session 3: Improving coastal and ocean governance.**

This session considered (i) how to provide multi-stakeholder platforms for generating action and better coordination; (ii) how to improve cooperation and delivery between global and regional environmental Conventions; (iii) intra-regional cooperation among UN and other organizations; (iv) the role of civil society and local governments; and (v) river basin commissions/efforts and coastal zone management.

**Session 4: Costed GPA work programs 2002-2006.**

**Session 5: Building partnerships and financing the implementation of the GPA.**

Recommendations were developed on how to enhance the public sector capabilities for working with the private sector and NGOs, and on how to engage and commit the international financial institutions and other stakeholders to addressing degradation of the water environment due to activities on land.

Commitments and concrete steps on how to forward the implementation of the GPA were summarized in a Ministerial Declaration.

All outputs from the Meeting will be submitted to the UNEP Governing Council, with a request to consider how the report and the deliberations of the Meeting might be used by the 2002 World Summit on Sustainable Development.

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# DAMS AND DEVELOPMENT

## A NEW FRAMEWORK FOR DECISION-MAKING

The World Commission on Dams (WCD) has launched its final report “**Dams And Development: A New Framework for Decision-Making**” which will have a profound impact not only on the future role of the \$42 billion dam industry, but on how to develop and manage water and energy resources in the new millennium.

In developing the report, the World Commission on Dams, made up of 12 very diverse commissioners from engineering company executives to anti-dam activists, received 947 submissions and conducted detailed reviews of eight large dams and country reviews in India and China. A survey of 125 large dams was also undertaken, along with thematic reviews on social, environmental and economic issues; on alternatives to dams; and on governance and institutional processes.

### Key Findings of the Report

Based on this extensive knowledge, the Commission found that:

- Dams have made an important and significant contribution to human development, and the benefits derived from them have been considerable.
- Large dams have, however, demonstrated a marked tendency towards schedule delays and cost overruns, as well as often falling short of physical and economic targets, such as predicted water and electricity services.
- They have led to the loss of forests and wildlife habitat and the loss of aquatic biodiversity of upstream and downstream fisheries.

The Commission found that efforts to counter the ecosystem impact of large dams had met with limited success.

- They have also resulted in negative social impacts, which reflect a failure to assess and account for displaced and resettled people as well as downstream communities. Mitigation, compensation or resettlement programs were often inadequate.

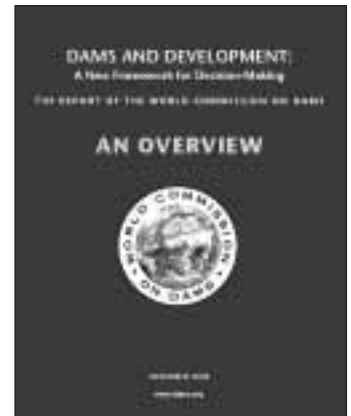
### Recommendations

The Commission recommended:

- A set of five core values for future decision-making – Equity; Sustainability; Efficiency; Participatory decision-making and Accountability.
- A rights and risks approach for identifying all legitimate stakeholders in negotiating development choices and agreements.
- Seven Strategy Priorities for water and energy resources development: Gaining Public Acceptance; Comprehensive Options

Assessment; Addressing Existing Dams; Sustaining Rivers and Livelihoods; Recognizing Entitlements and Sharing Benefits; Ensuring Compliance; and Sharing Rivers for Peace, Development and Security.

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## AFRICA GUINEA - MALI

### HYDROECOLOGICAL MANAGEMENT OF THE UPPER NIGER

**The GHENIS “Hydrological and Ecological Management of the Upper Niger” project was initiated, thanks to the will of Guinea and Mali to improve their knowledge of the river system for protecting and sustainably using the resources of the upper river basin.**

This led to a feasibility study of a hydrological and ecological monitoring system for the upper Niger basin. This study was carried out from June 1995 to October 1996, with the technical and financial assistance of the Netherlands.

The current phase of the project started on 1 January 1999 for a 4-year duration.

The project area covers the whole upper basin of the Niger from its spring in Guinea up to its inland delta at Ké-Macina in Mali (i.e. a surface area of 140,000 km<sup>2</sup> of which 100,000 are located in Guinea and 40,000 in Mali).

A workshop for consulting the users of the Niger basin resources in Guinea took place in Dabola from 4 to 7 April 2001.

This workshop gathered 60 participants, representing all users of the basin resource (mining companies and industries, farmers, fishermen, hunters, craftsmen, governmental project teams), the NGOs, the technical, administrative and political decision-makers, cooperatives, decentralized local authorities, the civil society (religious groups, women and youth associations), the media, the development partners, the members of the Guinean and Malian project teams.

The workshop dealt with the following:

- Raising the awareness of the users and other stakeholders on river issues and on the dangers related to the qualitative and quantitative degradation of the resources.

- The validation of the assessment report which outlines the responsibilities and role of each stakeholder to face the problems encountered in the Niger river and its tributaries.

- The validation of the strategy while specifying the actions to be undertaken to protect the ecosystems and ensuring that the populations have access to the resources.

- A dialogue with the field partners (NGOs, project and program teams, local authorities) to identify the area where actions might be harmonized to enable better efficiency.

- The estimation of a budget and the thinking about a way to finance the strategy implementation.

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on INBO  
is available



on the WEB  
[www.iowater.org/inbo](http://www.iowater.org/inbo)

# CENTRAL ASIA

## KAZAKHSTAN AND RUSSIA

### TRANSBOUNDARY MANAGEMENT OF THE IRTYSH RIVER BASIN

## SIC-ICWC

### OPENING OF A TRAINING CENTER

The main activity of the Training Center of SIC-ICWC (Scientific Information Center – Interstate Coordination Water Commission) is the professional training of high and medium level specialists in water and land resource management, irrigation and drainage, and environmental protection. Along with education, it facilitates interstate collaboration for the development of common approaches among specialists and decision-makers.

A first orientation workshop took place on September 18-25, 2000. The participants were chosen among high officials from the water sector of the region.

The training program includes 2 study tours to USA and Canada for directors of ministries and water and agricultural departments with the objective of exchanging opinions on transboundary water resource management and agriculture improvement.

Workshops took place on the topic "Integrated water resource management" in November and December 2000, in January and February 2001.

The "Management of transboundary water resources" topic was dealt with in March and April 2001 for representatives from other sectors (power engineering, drinking water supply, environment).

It is planned to annually arrange two training courses outside of Tashkent: in Karakalpakstan and Khorezm oblasts (Uzbekistan), in Tashauz and Chardjou oblasts (Turkmenistan), under the supervision of the Amu Darya BWO; in Fergana valley (Uzbekistan), Osh oblast (Kyrgyzstan) and Leninabad oblast (Tajikistan), in Kzylorda oblast (Kazakhstan) and Syr Darya oblast (Uzbekistan) under the supervision of the Syr Darya BWO.

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After the Ministry of Natural Resources of the Russian Federation, the Ministry of Natural Resources and Environmental Protection of Kazakhstan and the French Development Agency signed, last year, an agreement protocol, dealing with the transboundary management of the Irtysh river basin, a group (gathering the International Office for Water, SAFEGE and ANTEA) was entrusted with the implementation of the French part of this project, financed by the French Fund for Global Environment (FFEM), for about 1 M euros.

The national Russian and Kazakh specialists, who will compose the project steering committee and the Irtysh sub-commission, and the "focal points" of each country were designa-

ted during a tripartite meeting, held in Pavlodar (Kazakhstan) on last 13 April.

This enabled the project to start. Owing to the climate characteristics of this region, this project will last three years with six to seven-month periods.

This is the logical continuation of the "study program for the improvement of water quality in the Irtysh river basin in Kazakhstan", implemented in 1999-2000 and financed by the French Ministry of Economy. In this project, the IOWater - ANTEA - SAFEGE group assists both States with the design and implementation of tools for water resource management in the international basin, of a basin integrated information system, com-

plemented by the development of a hydrological model. It will allow the formulation and follow-up of a joint policy and of programs for improving the Irtysh water quality and the management of available resources.

The expected results will be particularly useful for many other transboundary rivers flowing between Russia and Kazakhstan (Ural, Tobol, Ishim), and between Russia and China (Amur).

Each Party also plans to make efforts for convincing China to become involved in the project as soon as possible, as the upper Irtysh river basin also concerns this country.

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### "HYCOS-ARAL"

Unfortunately, in many parts of the world, the systems for collecting and managing water-related information are inadequate, and often are deteriorating. Particular difficulties include a lack of resources to maintain observing stations, differing procedures for collecting data, variations in quality assurance procedures and standards between different agencies and countries, unreliable telecommunication systems, and outdated systems for information management. Adequate information is essential for wise management of water resources.

For all these reasons, the **World Hydrological Cycle Observing System (WHY-COS)** is implemented by the **World Meteorological Organization (WMO)** in close collaboration with National Hydrometeorological Services.

The MED-HYCOS was the first regional project to be implemented. It is based on cooperation among the 25 countries of the Mediterranean Region and is funded under a World Bank grant. The central office of MED-HYCOS is located in Montpellier, France.

Everyone knows about the Aral Sea problems. The main problem is a water resource deficit. **From 18 to 22 September 2000, the Second Regional Workshop for the implementation of ARAL-HYCOS project was held in Tashkent (Uzbekistan).** The WMO Secretariat prepared the ARAL-HYCOS project formulation report with the participation of the Central Asian Republics: Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan. This document includes a detailed description of the present condition of the Hydrometeorological Basin Observing System

and a project proposal, including a detailed implementation plan with monitoring and evaluation methods.

The project has three main purposes in order to develop the national and regional capacity in water resource management:

- development of an information system which is one of the main operational tools for the assessment and integrated management of the basin water resources;
- assistance to the participating countries in developing their own national capacity;
- collaboration with other national, regional and international projects and programs.

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# ASIA INDIA

## INTEGRATED MANAGEMENT OF THE SABARMATI RIVER BASIN

This pilot project is in line with the objective of the Government of India to develop a new water management model suited to the local situation and based on a River Basin approach.

The Governments of India and France have been cooperating about this issue for the last ten years. The seminar, held in New Delhi in December 1994, defined the bases of the project.

The Federal Government of India and the interested State Governments proposed some Pilot River Basins, but the Sabarmati River was selected because of its great economic dynamism in the various industrial and agricultural sectors, which should facilitate an active users' participation, and of its quantitative and qualitative water issues, generating competition among the various uses and justifying the development of water committees.

The International Office for Water (as representative of the French Ministry of the Environment) and the Narmada Water Resources & Water Supply Department held several meetings to present the French experience and discuss the basic principles of integrated water resource management. A first "Integrated Plan for the Sabarmati River Basin" was formulated in 1996.

In 1998, IOWater and the Narmada Water Resources Department signed a Memorandum of Understanding, identifying various cooperation activities to undertake.

This program, financed by the French Ministry of Economy and Finance (FASEP), was initiated at the end of 1999 and developed in 2000 – 2001. It mainly consisted in:

- **setting up a River Basin Information System** to develop an accurate and updated knowledge of water resources, uses and pollution in order to monitor the impact of the new programs to be implemented;
- **formulating proposals for institutional, economic and legal evolution;**
- **preparing a priority action program**, based on a technical and economic feasibility study.

Above all, it concerned the identification of all the public institutions and other stakeholders (such as NGOs, private companies, etc.) involved in water management and evaluate their different projects and activities. This coordination effort was a prerequisite to the building of an integrated water management system for the Sabarmati River Basin.

### Outcome

The project included three phases:

- 1 **Structuring of the pilot River Basin Information System:** organization of the gathering of existing data, information and studies, identification of existing data sources and databases, data exchange procedures, a geographic information system, the identification of

the main problems and existing projects. The various topics scrutinized were: water resources (surface water, groundwater; quantity and quality issues) and irrigation (infrastructures, policies).

- 2 **Creation of a River Basin Committee**, the definition of its role and mission, the development of the first tools of the River Basin Information System, the analysis of gaps and a proposal for appropriate measures. Different kinds of field visits were organized (Municipalities, industries, etc.) and completed by appropriate data collection in order to design a comprehensive picture of water supply and sanitation in the basin.

- 3 **Preparation of the long-term master plan** and organization of meetings with the different stakeholders to discuss the various scenarios and the choice of a Priority Action Program.

Institutional and financial reforms are clearly felt as being key challenges for the development of the Indian water sector. The means required are significant.

The Project outcome and findings were submitted to the people in charge of the water sector in the Gujarat and Central Governments. This report is being studied to determine the future actions to undertake (preparation of a new water law using the existing texts, the development of drinking water supply and sewerage systems, water saving in agriculture, protection of the environment and of groundwater in particular, etc.). The Gujarat authorities have expressed their wish of a second phase of the project.

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# VIETNAM

## INSTITUTIONAL REFORM

The Vietnamese National Assembly passed a Law on Water Resources in May 1998 to improve the water sector. This law, in force since 1 January 1999, enabled the creation of a National Committee for Water Resources in 2000 and the preparation of a strategic action plan.

The purpose of the National Committee for Water Resources (NCWR) is to solve conflicts arising between various sectors and to improve coordination between them. Basin Organizations will be created, with decentralization in mind. The law also provides for a water allocation system through licenses and permits for the discharges of wastewater, with a process for monitoring the safety of dikes and other hydraulic infrastructures. Finally, the law emphasizes the need to have water paid at its "economic" price (enabling the recovery of costs, not only to make the users responsible but also to reach the profitability level required by foreign investors).

A decision of the Ministry of Agriculture and Rural Development (MARD) of April 2000 created the Council for the Planning and Management of the Red and Thai Binh river basins. The Council objectives are to prepare basin plans, submit them for approval and monitor their implementation while ensuring coordination between the administrations of this sector (agencies, ministries, sectors and provinces concerned) and recommending solutions to the conflicts on water resources.

In March 2001, it was agreed that the NCWR would supervise the various basin agencies which are being set up, including the Red River Basin Agency.

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## MEKONG RIVER COMMISSION

[www.mrcmekong.org](http://www.mrcmekong.org)

The Mekong River Commission which promotes and coordinates sustainable management and development of water resources for its member countries by implementing strategic programs and activities and providing scientific information and policy advice, has included a link to INBO on its website: <http://www.mrcmekong.org>. INBO has done the same.

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# NORTH AMERICA QUEBEC - CANADA

## WORKING TOWARDS A NATIONAL WATER POLICY

Quebec is home to vast quantities of surface and underground water, resources of great social and economic significance. The Quebec government is well aware of the importance of these resources and the related issues, and has correspondingly initiated a process for adopting a national water policy. One of the main objectives of the policy is to ensure integrated water resource management on the scale of river basins.

### A process based on public consultation

The Quebec government began the process in 1997 with a conference bringing together experts to review the water situation in Quebec and to determine the population's growing needs for water. Full-scale public consultations followed in order to gather the opinions of citizens on the main issues related to water management.

### A policy framework for meeting the public's expectations

In keeping with the commitments made through the above consultations, Quebec's Ministry of the Environment defined the basic principles for supporting the development of a national water policy, in

terms of the following issues: protection of public health and aquatic ecosystems, research on the sustainability of water resources, long-term social and economic viability of water resources, and harmonization of water-related activities.

The policy seeks to establish, among other things, integrated water resource management on the scale of hydrographic units, an approach that is not yet being applied globally throughout Quebec. Upon joining the International Network of Basin Organizations (INBO), Quebec mandated a committee with representatives from the Chaudière River basin to design and propose a strategy for implementing a draft master plan. Alongside this governmental process are local and regional initiatives that have led to the creation of individual river basin organizations.

### The St. Lawrence River: A territorial reference point

Measures taken under the policy will give Quebec greater responsibility for the St. Lawrence River. This ecosystem, which makes many activities possible, also serves as the source of drinking water for most of the population. Indeed, 60% of Quebec's inhabitants live on the St. Lawrence and take 2 billion

liters of its water daily for drinking water. Through the policy, this immense territory of close to 700,000 km<sup>2</sup> has been given special status as the principal territorial reference point for the implementation of integrated water resource management in Quebec.

### Concrete steps for action

An interdepartmental committee has been formed to implement the national water policy. This work will foster the integration of governmental actions involved in the management of the St. Lawrence River. The Quebec Ministry of the Environment has created a team to define policies for the integrated management of the St. Lawrence.

### Cooperative action since 1988

Since 1988, the Quebec government has carried out various clean-up, protection and development projects for the St. Lawrence River, in cooperation with the Canadian federal government through five-year agreements. The latest of these agreements, signed in 1998, will run until 2003. This power-sharing process between different government levels has given Quebec full authority for managing freshwater resources on its territory. The federal

government, for its part, has authority over international boundary waters. Thanks to these agreements, various measures for integrated water management, including that of the St. Lawrence River basin, have been implemented in the past several years.

Quebec plans to intensify its representation in international organizations. A strong example of this intention is seen in its commitment to INBO, which is promoting water management on the scale of river basins, a rational approach indispensable to sustainable development.

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**Next INBO  
General Assembly  
will be held  
in Quebec from  
28 to 30 May 2002**

## RIVER BASINS: NATURAL TERRITORIES

This interesting educational document is available on the Web sites of INBO and the Quebec and France Ministries of the Environment:

What is a river basin? How is a river created and what forces shape the direction of its flow? What activities use the river water and can threaten its quality? How do we assess the level of pollution in rivers and aquatic environments? What activities are acceptable when the water quality is satisfactory?

**This document seeks to answer all the above questions.** It includes many illustrations (one set for France and one set for Quebec). It is intended for persons working on environmental issues, indeed, for every adult and teenager who wants to find out more

about river basins and the environment.

This document is the result of a cooperative exchange program for civil servants from Quebec and France established by the French Ministry for Foreign Affairs and Quebec's Ministry of International Relations. It has proved to be an ideal opportunity for combining approaches and know-how on both sides of the Atlantic. It also reviews specific assessment methods, such as the "Water Quality Assessment System" (SEQeau) recently implemented by France and the "Bacterial and Physicochemical Quality Index" (IQBP) implemented by Quebec in 1996.

The document was published for the INBO Liaison Bureau meeting which took place in Quebec.

**Muriel Lefresne**  
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[www.environnement.gouv.fr/dossiers/eau/bassin](http://www.environnement.gouv.fr/dossiers/eau/bassin)  
[www.menv.gouv.qc.ca/jeunesse/bassin\\_index.htm](http://www.menv.gouv.qc.ca/jeunesse/bassin_index.htm)

# USA

## TWO WATER STUDIES ON THE SUSQUEHANNA AND SWATARA CREEK BASINS

The Pennsylvania Capital Region Water Board (CRWB) has initiated Phase I of a Comprehensive Water Management Plan.

The Lower Susquehanna River Basin is in danger of losing water by diversion to other basins, particularly for the City of Baltimore. In addition water quality concerns exist throughout the watershed.

The Board has also initiated a Comprehensive Water Resources Study for the Swatara Creek Watershed.

The proposed Study will determine reasonable alternatives for water supply that would be examined using generally agreed upon criteria. Public participation will be a key element of the Study particularly in connection with

study design, scope and selection of alternatives as well as criteria for evaluating them.

The Project will be conducted in seven distinct tasks: ① Data Inventory and Planning, ② Institutional Landscape, ③ Public Participation, ④ Analyze Information, ⑤ Plan Formulation, ⑥ Evaluate Alternatives, and ⑦ CRWB Participation.

Both Studies are being coordinated by the CRWB in cooperation with the Pennsylvania Department of Environmental Protection and the Baltimore Office of the U.S. Army Corps of Engineers.

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# LATIN AMERICA

## RIO DE LA PLATA

### THIRD INTERNATIONAL WORKSHOP (9-17 MARCH 2001) ON THE DEVELOPMENT OF THE RIO DE LA PLATA BASIN

This Third International Workshop recommended regional approaches to the development and management of the reservoirs in the Rio de la Plata basin. It was followed by training courses on water quality and on the environmental modeling of lakes and reservoirs.

The participants admitted that it was essential to progress towards the sustainable development of the huge potential represented by the resources of the whole basin, taking account of the technical, economic, social and environmental aspects of water.

They agreed that dams were a valuable option, due to their capacity to meet various water uses at the same time.

Therefore, it is essential to ensure that the decision-making process, concerning these kinds of infrastructures, takes into account the participatory planning and integrated management criteria with an ecosystemic approach in each country of the Rio de la Plata basin.

The International Commission on Dams report enables to define the best way to assess the impact of existing or planned dams.

The participants recommended, among other things:

- Relevant planning,
- Access to the information,

- The assessment of data quality,
- The standardization of sampling methods,
- The use of tools for systematic environmental impacts assessment of dams, within the basin context, using surveys of present reservoirs and of their use and the EIA new project,
- The definition of quality standards for water and sediments,
- Integration of basic information at basin level and the use and optimization of models,
- The set-up of mechanisms for international coordination to allow the development of emergency plans at basin level,
- The participation of all involved stakeholders of the society and the passing of regulatory frameworks to this purpose.

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## ECLAC - PUBLICATION

### RIVER BASIN MANAGEMENT IN LATIN AMERICA

The sustainability of development remains an academic concept unless it is linked to clear objectives that must be attained in given territories and to the management processes needed to achieve this. Management of the natural resources located within the area of a river basin is a valuable option for guiding and coordinating processes for development in the light of environmental variables.

In order to turn environmental policies into concrete actions, it is necessary to have suitable management bodies, which are normally very complex. The establishment of such bodies means generating a public/private system which is not only financially independent, socially oriented and sensitive to environmental aspects, but must also act in a democratic and participative manner.

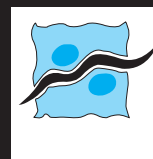
In the past, the idea of establishing bodies to guide the management of the natural resources of a river basin (espe-

cially water, of course) has aroused the interest of the countries of the region, with varying results. This interest has now become an urgent necessity, in view of the greater competition for multiple water use and the need to check pollution and manage the environment correctly.

This ECLAC article considers some of the essential elements which must be taken into account when proposing to set up such bodies, puts forward some concepts, identifies various ways in which the subject can be approached, and offers some recommendations for improving policy formulation and the functioning of integrated systems for the management of water resources and river basins.

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# LANBO

## LATIN-AMERICAN NETWORK OF BASIN ORGANIZATIONS

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# BRAZIL

## BASIN MANAGEMENT AND SUSTAINABLE DEVELOPMENT

Abundant experience from environmental management practices in Brazil, serves as evidence for our reasoning regarding the many advantages of river basin management, water resource and wastewater taxation.

The systemic approach employed in the River basin Councils and Committees have shown to represent better governance systems for the development of more equal and inspired communities via the motivation of citizens.

The improvement of social and environmental performances in most river basins has shown to be modernized ways of local governance, by means of more dynamic alliances, maintaining diversity, with a global interdependence, complementing the traditional roles of stakeholders: government, industry and NGOs.

By means of better "ownership" and accountability, of

better education and assessments, the outcomes show clear improvements in the first two years after the basin programs are put into action, thanks to the joint development and copying of better industrial, urban and agricultural practices.

Traditionally an economical externality, water resource management must be highly internalized, to have an economic value and fight against scarcity. The inclusion of environmental responsibility in strategic policies by government, industry and NGO representatives participating in basin management is needed to search for cleaner and cheaper technologies.

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## "REBOB": BRAZILIAN NETWORK OF BASIN ORGANIZATIONS

The Brazilian Network of Basin Organizations (REBOB) was created in 1998. It gathers all the Brazilian intermunicipal basin consortiums. The main activities of its new 2001-2002 action program are:

- increasing the number of members,
- encouraging the creation of basin organizations in the States and river basin districts of Brazil,
- joint action with the National Forum of Basin Committees, activities with other basin networks and technical cooperation to strengthen REBOB basin organizations.

The last REBOB General Assembly took place on 31 August 2001 during the 4<sup>th</sup> Inter-American Dialogue on Water Management, organized in Foz do Iguaçu. This assembly appointed a new executive team

and decided to strengthen Brazil's technical cooperation with INBO. One of the first initiatives had been to organize a seminar on the strengthening of basin organizations in Campo Grande (Mato Grosso do Sul) on 6 and 7 December 2001, with the support of CIDEMA, the National Forum of Basin Committees, LANBO, the Secretariat of Water Resources (SRH), the National Water Agency (ANA) and Campo Grande Municipality.

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## NATIONAL COUNCIL ON WATER RESOURCES

The Federal Law n° 9.433/97 regulates the execution of the Water Resources National Management System.

The National Council on Water Resources (CNRH) is the main body of this System.

It has the following attributions:

- to promote water resources planning with national, regional and state plans;
- to deliberate on projects;
- to follow up the execution of the national plan;
- to establish general criteria for the granting of water use rights and also to establish charges for its use.

The National Council on Water Resources is in charge of solving conflicts of use and of creating Basin Committees for federal rivers. The Council has elaborated minimal rules for the creation of a committee representative of public and private entities in each river basin.

According to the Law, the National Council on Water Resources is composed by:

- representatives of Ministries and Secretariats of the Brazilian Republic,
- representatives nominated by Water Resources State Councils;
- representatives from water users and the civil society.

The number of the federal government representatives should not exceed half of the total members of the CNRH.

Users' representation is composed of the following sectors: irrigation, industry, hydroelectric generation; fishermen, users of leisure areas and public water supply and sanitation utilities.

The following civil organizations are also represented in the CNRH: inter-municipal consortiums and associations; regional or local associations; technical, training and research organizations; and non governmental organizations.

The CNRH has created seven boards which have regular monthly meetings, congregating about 90 technicians.

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## MINAS GERAIS THE RIO MOSQUITO BASIN COMMITTEE

In the Rio Mosquito River Basin, State of Minas Gerais, a Real Estate Agency is rehabilitating the bed, banks and forests.

This project is part of the Federal Government's PRO-AGUA program, financed by the World Bank, the Japanese Development Agency, the Overseas Economic Cooperation Fund (OECEF) and the federal and state governments.

The institution in charge of this project is the Technical Assistance and Rural Development

Company of Minas Gerais (EMATER – MG) that is looking for financial resources.

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# BRAZIL NATIONAL WATER-RELATED INFORMATION SYSTEM - SNIRH

After being a forerunner in quantitative management, mainly focusing on hydropower generation (water law of 1934), Brazil formulated an environmental policy at the beginning of the 1990s, which included water quality monitoring and management.

The 1997 law defined the last trends of the Brazilian policy on water resources, focusing on an **“integrated river basin management”** approach, while a law, passed in July 2000, enabled the creation of a new federal body in charge of water resource management at the national level: **the ANA - National Water Agency**.

Another core characteristic of water resource management in Brazil is linked to the distribution of administrative responsibilities, as defined in the “Federal Constitution of

October 1988” which differentiates State watercourses, thus managed by the States (this concerns the watercourses or tributaries which start and end in the same State) from federal watercourses (international watercourses or rivers crossing several Brazilian States). A state watercourse may flow into a federal watercourse, and vice versa. This leads to the overlapping of management responsibilities between the Federal and State administrations.

Owing to this overlapping of responsibilities in water resource management, **a good organization of the exchanges of data and information, needed for integrated water resource management, between the various organizations concerned, is necessary.**

The 1997 law, established the SNIRH - National Water Resource Information System, as being one of the main tools for implementing the new policy. In accordance with a resolution, passed by the National Water Resource Council in September 2000, ANA is now in charge of organizing this information system.

Within the bilateral French-Brazilian cooperation program, implemented in 2000, the French Ministry for Foreign Affairs entrusted IOWater with the study of the current situation. Four States were visited: Bahia, Ceara, Goias, Minas-Gerais, together with the Federal District of Brasilia.

In addition to the analysis of the legislative and institutional aspects which have an impact on data management, the findings of this study emphasized the following:

- 1 There are a lot of organizations involved, at various levels, in data gathering and management. Each of these organizations develops its own management tools (databases/geographic information systems/web server).
- 2 There is not yet any common language or any standard format for exchanging data adopted by the various administrations.
- 3 There is a high demand for common data exchange procedures, especially at the level of the States and of the many local utilities which are now setting up their own water information system.

## SÃO PAULO

### THE CONSORTIUM OF PIRACICABA, CAPIVARI AND JUNDAI

#### Levying of taxes on the use of water

Municipalities had paid a contribution to the Rio Piracicaba Consortium up to 1993.

After being suspended, this contribution returned in 1997 with a value of R\$ 0.01/m<sup>3</sup>, billed by the municipal water and sanitation utilities or by the concession companies.

The adherence to this Program is voluntary. It is a rehearsal of what will be the collection of taxes for the use of water and the decentralized and participatory management of these financial resources.

This Program is applied to sub-basins with a control of the tax collection.

This participatory process started with the creation of a “Management Program Unit (MPU)”, made up of representatives from the municipalities and water and sanitation utilities involved.

MPU chooses the priorities for the use of these resources, either for sanitation works, education and awareness raising on the environment, leak control and detection in water supply systems, or for solid wastes, reforestation, etc.

The Rio Piracicaba Consortium implements the Program in three sub-basins and the accumulated experience and the applied methodology will prove its viability.

With the participation of a large number of municipal districts and companies, the Program will become (in a larger regional configuration) an exercise of tax recovery and of financial solidarity for the rehabilitation of water resources.

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### STATE FUND FOR WATER RESOURCES (FEHIDRO)

The “SOS Mata Atlantica” (SOS Atlantic Forests) Foundation, one of the main Brazilian NGOs, is evaluating 7 years of the São Paulo State water resource system operation and especially the results of the State Fund for Water Resources (FEHIDRO).

The São Paulo State represents 37% of the Brazilian GDP and has 20 operational basin committees. Although the law plans the levying of taxes on water use by basin agencies, this is far from being the case.

Up to 2000, FEHIDRO granted loans and subsidies, amounting to 50 million US\$, to 20 river basins. About half of this amount has been used to finance short-term environmental protection infrastructures, such as wastewater treatment plants, plants for waste recovery and treatment, erosion control and reforestation work for protecting springs. Fifteen million US\$ were spent by prefectures for short-term infrastructures, as counterpart contribution. The remaining 50% was used for works, projects, studies, educational and planning activities with medium and long-term outcomes.

However, the FEHIDRO resources are not sufficient to rehabilitate and control the various basins encountering critical situation in the State. The establishment of new financial mechanisms (the levying of taxes on water use) is the only means to avoid the degradation of the systems supplying water to the big towns of the State, such as the São Paulo Metropolitan Area (Upper Tietê Basin) and Campinas (Rio Piracicaba Basin) which host 20 million inhabitants.

The Piracicaba Basin alone needs 100 million US\$ on a short-term basis to avoid degradation of public and water supply systems.

The creation of basin agencies and the levying of taxes currently rely on an agreement between federal and state authorities. The “SOS Mata Atlantica” Foundation organized a round table on 28 August 2001 which convened the authorities in order to assess the current situation and propose a priority program.

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# PARANA

## STATE WATER RESOURCE MANAGEMENT SYSTEM (SEGRH)

The National Water Resource Management System has established a new institutional model centered on River Basin Committees, ensuring the participation of federal, state and municipal governments, organized civil society and water resource users.

These Basin Committees are supported in decision-making by Water Agencies, which act as executive secretaries.

The National Water Resource Council is involved in seeking broader strategic concerns and possible settlement of dispute between adjoining river basins.

The institutional model proposed to Parana keeps the National System main lines.

**The State Water Resource Management System (SEGRH) plans the creation of a State Water Resource Council, River Basin Committees and Decentralized Executive Units, promoting the establishment of user associations and inter-municipal river basin consortiums to perform functions and competences proper to Water Agencies.**

This SEGRH institutional model will operate through objectives, leaving the river basins responsible for the establishment of management bodies (committees and decentralized executive units).

The SEGRH will focus on issues considered of "Common interest" to several municipalities or which are strategically important to the State: water availability and water resource protection, flood control, joint disposal of domestic or industrial solid or liquid waste, among others. Issues will be solved at the regional level thanks to joint efforts of the State Government, municipalities and other public and private enterprises intervening in the water resource sector.

As the Parana State Government has a strong position in the State Water Resource Council (CERH) and in the River Basin Committees (CBHs), its role is that of defining the general dispositions and strategic planning criteria for regional plans, regulation and contracts in SEGRH's ambit, and partnerships for solving the problems.

Therefore, we can notice that the proposed SEGRH is based on three different institutional levels having different identities and performance tools:

1 **The Decentralized Executive Units**, based on agreements between public and private interests (among them the municipalities) on the right of using water. They accompany the Basin Action Plans, partially financed by the funds collected by charging adequate amounts for the right of using water.

2 **The River Basin Committees** are regional and responsible for reconciling private and public interests to prepare the Action Plans.

3 **The State Water Resources Council** is the highest jurisdiction for making decisions and recourse, concentrating on strategic planning and on the policy to be implemented.

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# BAHIA

## RIO JQUIRIÇÁ VALLEY

**The Bahia Authority of Water Resources intends to start levying taxes on water abstractions and pollution, applied to raw water in a first step.**

This will require the creation of a **State Fund for Water Resources** and a **Bahia Water Resource Company (mixed enterprise)**, responsible for managing the funds and allocating aid. The funds will be centralized at State level and 85% of them redistributed among the basins, to help the underprivileged basins in particular, for studies and investments, 15% being devoted to operating costs.

It was difficult to estimate the budget available for Jiquiriçá Valley in such a context. The International Office for Water was thus requested to design an original model to quickly progress towards integrated water resource management with financial simulations taking as an assumption that the

Intermunicipal Consortium of the Jiquiriçá Valley (CIVJ) could have some own resources by applying the user-pays principle.

The objective would be to guarantee the sustainability of CIVJ present and future actions, through the development of an action plan at the river basin level, the coordination of water management and the mobilization of a user association, etc., while integrating them into the Bahia legal and institutional context and in the ongoing reform process. A support from the State Authorities would obviously be essential to develop such a scenario.

The potential financing sources would be the municipalities and the users; citizens, agro-food industries and farms, EM-BASA (Bahia water and sanitation utility), although knowing that all these funds could not all be mobilized at the same time.

**A first approach allowed the estimating of a total tax amount next to 900,000 R\$.** This amount cannot directly finance sanitation facilities, but would nevertheless enable:

- the change of the Intermunicipal Consortium of the Jiquiriçá Valley into a permanent organization which could coordinate policy on water resource management in the valley and become the preferred contact for the State administration;
- joint work with city halls and users (citizens, farmers, the civil society, etc.);
- the creation of a user association to strengthen collective decision-making with a possible basin committee in the medium term of which the CIVJ would be the secretariat;

• the updating of the basin management plan, strategic tool which provides an overall vision of resources and uses and which seeks balance by involving all the users;

• the undertaking of technical and strategic studies to develop tools supporting decision-making (an information system for instance, etc.).

Above all, this would increase the credibility of the Jiquiriçá Valley Consortium and would facilitate aid from the State, federal and international organizations that will have to support its activities.

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# BRAZIL

## MATO GROSSO

### “WATER IS A LIMITED RESOURCE”

Mato Grosso hosts the main rivers of the Amazon, Prata and Araguaia-Tocantins basins. It also has large groundwater reserves. This State is situated in the Central-Western region of Brazil and is the third federal unit, due to its surface area (906,806 km<sup>2</sup>). It is divided into 126 municipalities and 51 native territories, with a population of 2.3 million inhabitants. This territory includes three different ecosystems: Amazonian rain forest (52.16% of the territory), savanna (cerrado—40.80%) and the Pantanal (huge wetlands—7.04%).

For years, the exploitation of natural resources for economic purposes has caused serious damage to the environment and especially to water resources.

During the last six years, the State Government set up a legal structure and created the Special Secretariat for the Environment to ensure the sustainable use of natural resources.

The Law on Water Resources, n° 6945, was passed on 5 November 1997 in such a con-

text. This law complies with the principles established in the Brazilian Federal Law, in particular: river basin management, allocation of water use permits and levying of taxes.

The Department of Water Resources/Special Secretariat for the Environment (DGRH / FEMA-MT) was created in July 1998 to implement this policy. It is responsible for planning, and in the immediate future, for the granting of permits for the use of surface and ground water belonging to the State.

A new Water Management System was organized. It includes:

- the monitoring of surface and ground water quality;
- the development of mathematical models on water quality;
- the set-up of a network for collecting hydrometeorological data, transmitted by satellite. Mathematical models simulate the flow of small river basins;
- the definition of aquifers, of the exploitation and recharge flow rates, and the

installation of mathematical models to simulate water quality and aquifer capacity;

- the use of geographic information systems which integrate the available information into digital cartographic bases;
- various hydrological models for planning and granting permits for the use of water resources,
- the recording of permits for deep bore-holes.

Mato Grosso State has used this management model since 1998 with the support of the World Bank, the Global Environment Facility (GEF) and of the PPG7 pilot program. The Pantanal Program of the Inter-American Development Bank, amounting to 400 million US\$, is in its approval phase.

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# COSTA RICA

## UPPER RIO REVENTAZON BASIN

Costa Rica has undertaken a reform of the legal framework of its public administration. It includes a draft law on the regulation of planning, the control of activities and the conservation of water (in quantity and quality) and the other natural resources of the upper Rio Reventazon basin. Its objective is to take the measures necessary for solving the main problems encountered and for developing sustainable projects involving the civil society, in order to improve the population's standard of living.

The main tasks are as follows:

- a basin development and management plan, including the protection, rehabilitation and development of natural resources,
- a physico-biological assessment to identify the problems,
- a socioeconomic analysis to solve existing conflicts,
- priority short-term actions.

**This law creates the Commission for the Development and Management of the Upper Reventazon River Basin.** Its overall objective is to define, execute and control the basin development and management plan with the help of a consultative committee, an executive unit and of a regional committee.

This Commission is made up of representatives from the Ministries of the Environment and Energy, of Agriculture and Animal Husbandry, of the Electricity Company and water and sanitation utilities, of the National Emergency Commission; of the Institute of Technology of Costa Rica, of the municipalities and user associations. It will also be responsible for promoting the participation and coordination of the institutions involved in the plan implementation, for analyzing and approving management initiatives to receive funds from interested international co-operation agencies.

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## MATO GROSSO DO SUL

### CIDEMA IS NOW INVOLVED IN TRANSBOUNDARY MANAGEMENT

**The Inter-Municipal Consortium for Integrated Development of Miranda and Apa River Basins (CIDEMA)**, created in 1998 and grouping 18 municipalities, started the transboundary management of the Apa River basin, shared by Brazil and Paraguay. This basin is located in the Upper Paraguay Basin (600,000 Km<sup>2</sup>).

Within the framework of a project dealing with water resource assessment in the transboundary river basin, the CIDEMA team showed that it was impossible to undertake studies without any overall view of the basin. Thus, technical meetings, gathering the main stakeholders involved in river management, were organized with Paraguayan technical institutions. These actions were jointly carried out with AlterVida – Center of Studies

and Training for the Environmental Development of Asuncion.

The Apa river basin, with a surface area of 15,000 km<sup>2</sup>, includes 7 towns (Antonio João, Ponta Porã, Bela Vista, Caracol, Porto Murtinho, Bonito and Jardim) in the State of Mato Grosso do Sul, 2 Departments (Amambay and Concepcion) and 5 towns (Pedro Juan Caballero, Bella Vista, San Lazaro, San Carlos and Concepcion) in Paraguay together with the Paso Bravo Reserve Park.

The key issues which require transboundary management are sport fishing, deforestation, the extinction of ecosystems and sedimentation in the river beds.

The basin supplies drinking water to two neighboring towns: Bela Vista in Brazil and Bella Vista in Paraguay.

The purpose of this process is to propose conditions for harmonizing criteria and working methods and changes in the legal framework required by sound river basin management. It is also necessary to jointly assess water resources and develop sustainable economic activities.

This basin project may be a prototype of transboundary management for the entire La Plata basin.

CIDEMA is looking for contacts and exchanges with institutions experimented in transboundary river basin management.

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# COLOMBIA

## CAR OF CUNDINAMARCA TRIENNIAL PLAN 2001-2003



The "Corporación Autónoma Regional de Cundinamarca (CAR)", one of the main environmental authorities of Colombia, prepared its Triennial Action Plan for 2001-2003 during the first semester of 2001.

This plan defines all the environmental actions and investments to be implemented in this region which has a surface area of 1,800,000 hectares and a population of 8 million inhabitants. It includes 98 municipalities in Cundinamarca, six municipalities in Boyaca, Bogota (the capital of the Republic), and an important part of the industrial sector of the country.

This CAR Action Plan is consistent with the "Collective Environmental National Project", which is the national environmental plan, and with the different territorial and city development plans. It has also taken into account another tool that the CAR wishes to formalize before the end of the year: **the Regional Plan for long-term Environmental Management (2001-2010)**.

The programs and projects of the triennial plan were designed to solve environmental problems and develop the different environmental possibilities of the natural resources and environmental heritage of

the region. Special emphasis will be applied on the control and regulation of the water supply. Also major projects will be established to environmentally regulate, monitor and develop projects on the Bogota, Negro, Minero, Ubate-Suarez, Gualiva, Macheta, Sumapaz and Central Magdalena river basins.

As the river basin is the geographical unit integrating environmental actions, other important natural resources and aspects such as land, soil, flora, fauna, air and invaluable biodiversity are also taken into account in the plan with different and interesting development projects and programs. Joint management will be carried out with the departments, towns and public administrations, with the productive sectors and especially with the population, as it is already the case with the Regional System of protected Areas. Its main purpose is the protection of endangered species and the preservation of strategic ecosystems.

Considering the magnitude of the environmental tasks described above, CAR has undertaken a wide information campaign to obtain the financial resources still needed to cover operating and investment costs.

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## PROTECTION OF THE RIO AMAINE

The Amaine River Basin is situated in the upper Cauca river basin. Its territory includes two towns: Palmira and Cerrieto. The springs of the river and tributaries are 3,800 m high on the Las Hermosas and Las Dominguez plateaus with 300 glacier lagoons, beautiful bodies of clear water, surrounded by many plants which can resist to temperatures below 0°C and which are natural filters. Orchids, creepers, algae, lichens are plentiful and reduce the impact of rainfall on the soil and regulate river flows.

The Nima river, Palmira main supply, is the main tributary of the Amaine river. Its catchment area of 12,136 ha supplies the water necessary for the Palmira urban aqueduct which is managed by ACUAVIVA S.A. Company, with LYSA International and the Palmira Municipality as main shareholders.

The Amaine river basin was colonized in the 1930s by settlers from Antioquia, Caldas and Nariño. They destroyed the protecting rain forests to replace them with market garden crops on the high slopes.

The opening of pasture lands in areas with more than 60% slopes caused high erosion, great inputs of sediments and landslides. The building of the Palmira - Ataco road in fragile and crumbly geological layers has disturbed the ecological balance of the Nima and Amaine river basins, leading to significant move of run-off materials. Nowadays, deforestation exceeds 30,000 ha. This seriously affects regularity and flows.

**The Committee for the Basin Protection is trying to create reserve and preservation areas for flora and fauna on more than 6,000 ha.**

Indeed, there are many conflicts on the use of woodlands by cattle breeders. During heavy rainfall periods, the slopes are saturated and big landslides affect the entire Amaine river basin. On 24 December 1999, a rainfall of 103 mm in one hour and ten minutes caused avalanches of materials which affected bridges, roads and caused damage to the water intakes of the Barrancas aqueduct.

The Committee for Protection has started building reserve areas on the Las Dominguez plateau and wetlands. Unfortunately, the Colombian armed conflict undermines implementation of in-depth actions in the basin.

An agreement was signed with the private sector for "Clean Production" in the lower Cauca river basin to reduce agricultural burnt lands and the use of weed killers. The development plan for Palmira area also allows the protection of the river banks up to its confluence with the Cauca river.

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# PANAMA

## A DRAFT WATER LAW

Panama has no water law but only a water decree dating from the 60s which is now totally obsolete. There is no legal document which regulates the use, exploitation and management of river basins. **The legislative Assembly is now debating on a draft law "which would establish a specific administrative rule for the management, protection and conservation of the priority river basins of the country"**.

In addition to the use of pesticides, deforestation, sedimentation and finally pollution, another concern has arisen: the operating of Panama Canal, as the same source is also supplying the population of the Capital.

We have now to start educating our children on saving water when they brush their teeth, take a bath, are cooking, doing laundry and cleaning house as we already alarmingly observe an increase in the sale

of bottled water, the cost of which is high for low income populations.

**Rogelio Sanchez Tack**  
Commission on Population,  
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[www.iowater.org/inbo](http://www.iowater.org/inbo)

All information  
on INBO  
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# MEXICO

## RIO GRANDE/RIO BRAVO

### “ALL TOGETHER FOR THE RIVER BASIN”

The Rio Bravo basin, also called Rio Grande or Cheenah, is the main source of water supply in a region where this resource is scarce due to geographical and climatic reasons.

Its water balance is endangered by fast demographic growth, increasing industrialization and by changes linked to unbalanced management which threatens the whole ecosystem, mainly due to insufficient sanitation.

This basin, with a surface area of 850,000 km<sup>2</sup>, is equally shared by Mexico and the United States. It springs from the San Juan mountains in the south of Colorado State near the border with New Mexico. The river runs on more than 3,000 km before flowing out into the Gulf of Mexico. Millions of human beings depend on this river for drinking water supplies and irrigation.

More than seven million inhabitants live in the border zone on the Mexican side. In this region, water enables the irrigation of 600,000 ha and supplies more than 20 towns and 9,400 industries. The major part of surface water is used for irrigation, urban use only representing 11% of surface water and 21% of groundwater, but fourteen aquifers are already over-exploited. Competition is fierce between the users and the sources of supply are markedly polluted.

The first congress “All together for the basin” took place in 1994 and led to the Multinational Rio Bravo Coalition two years later.

The Coalition’s efforts were recognized in 1998 by the United States President’s Council for Sustainable Development and various foundations (Ford, Meadows, Houston Endowment, Hewlett and recently Turner) support its programs and activities.

This Coalition aims to work for regional water management at the river basin level, which is based on various principles:

- water has no administrative border: its only limits are the river basin,

- an integrated approach must enable the meeting of the various users’ demands without endangering ecosystem sustainability,
- it is necessary to organize the representation of users in committees or councils for decision-making on long term planning,
- a regional and autonomous financial system must use the “user-pays” and “polluter-pays” principles within a decentralization process and real federalism,
- a wide consensus is needed regarding the important decisions which require the participation and information of the population concerned.

The Coalition gathers binational stakeholders such as the National Water Commission, the International Commission on Limits and Waters, the Federal and State environmental agencies, the Commission for Transboundary Environmental Cooperation, the North American Development Bank and various municipalities and settlements, and the civil society and NGOs in particular.

The last biannual congress was held from 9 to 11 November 2000 in Ciudad Juarez, Chihuahua. It admitted that water was scarce in the basin while having to supply a region in which population was hugely increasing due to fast growing economy, and that suited mechanisms were needed.

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## GUANAJUATO - QUERETARO

### “MANAGEMENT OF SHARED AQUIFERS”

Groundwater has no municipal, state or federal limits.

Various problems are encountered in the Queretaro and Guanajuato States: fast growth of the population and production activities which has direct impact on water demand; pollution of surface water, soil and sub-soil, caused by agricultural and industrial activities; low availability of surface and ground waters (in quality and quantity) and fast lowering of the aquifer levels (3 m/year, and 8 m/year in some areas); sinking of lands, etc.

A joint management by both States is thus required, based on the following: shared regulations for aquifers; the establishment of rules on any

change in or prohibition of water use; joint development actions; better sale of treated water; strict regulations for protection areas (the land sinking in the Apaseo el Grande next to Queretaro State is an example); a joint study of the vulnerability of aquifers and of the relations between them; better efficiency of irrigation systems and use of less water-consuming crops; continuous monitoring of the Queretaro - Apaseos rivers, and their cleaning.

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## CICAs: WATER INFORMATION CENTERS

The Government wants to develop the direct participation of the various stakeholders, intervening in water resource development and management, by involving them in the decision-making processes which affect water quality, availability and conservation.

Therefore, the Mexican National Water Commission (CNA) undertook to widely reform this sector. Among other things, this implies the creation and development of Councils and Commissions for river basins, sub-basins and aquifers.

This decentralized participation implies that these river basin organizations have rapidly access to the information needed to make appropriate decisions.

In order to meet these needs, **the Rules of Organization and Operation of these river basin councils plan that they can rely on Water Information and Dialogue Centers (CICAs).**

Following an introduction to the French experience in water data management, a cooperation program was launched,

thanks to a joint financing from the French Ministry for Foreign Affairs and CNA, with funds from WMO (World Meteorological Organization). The purpose of this program is to assist with the coordination of the River Basin Councils (RBCs) and with the Rural Program Unit (RPU) of CNA, for the organization and setting-up of a **Pilot Water Information and Dialogue Center.**

The actions deal with 4 main aspects:

- 1 A reflection on the status of the various information systems as compared to the CICAs;
- 2 Coordination between the CNA and the State and Municipality departments;
- 3 The preparation of a methodological guide for the setting-up of these information centers;
- 4 The preparation of a first two-year action plan for launching a pilot information system in one of the priority river basins.

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# ECUADOR

## RIO MACHANGARA: EROSION CONTROL

In 1989, an important landslide occurred in the Soroche torrent.

The study carried out for the Water and Land Management Program (PROMAS), upon the request of ELECAUSTRO company (Electro Generadora del Austro), shows a process of widespread erosion.

Continuous mud inflows, forming an alluvial cone, can be observed in the reservoirs, located between the landslide and the outflow of the Soroche torrent into the Machangara river.

This phenomenon of mass movement is alarming, due to the volumes of solids involved, and endangers 15% of the supply of drinking water to Cuenca city and 40% of the area's agricultural production. The suspended solids have deteriorated the irrigation systems used for green house crops and affect the arable land layer. The turbines of the Saucay and Saymirin hydropower stations show abrasion levels 5 to 10% higher than usual. In view of such a situation **the area has been declared in a state of emergency.**

The actions planned in the Machangara basin require long-term vision and strategy (at least 20 years). All the partners are involved, thus ELECAUSTRO, ETAPA, the Irrigation User Association, CREA, CNRH, Cuenca University and the Provincial Council of Azuay have integrated the conservation and sustainable development of natural resources.

These guidelines are now recognized and integrated into the yearly action plan of the **Machangara Technical Committee which has initiated its first actions.**

This agreement of joint management of natural resources led us to go further and plan an agreement between the partners for the management of this basin, using technologies and methods that are also applicable to the community forest development.

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# NICARAGUA

## TOWARDS WATER MANAGEMENT AT THE RIVER BASIN LEVEL?

A national workshop on river basin management, took place in Managua, Nicaragua, within **the Local Capacity Building Program for the management of river basins and the prevention of natural disasters (FOCUENCAS)**, financed by SIDA and executed by CATIE. It gathered the main stakeholders involved in natural resource management.

The outputs were significant. Nicaragua belongs to the Latin-American countries which have plenty of natural resources and development potentials but have very limited possibilities, due to social and economic problems. Population and poverty growth is the main cause of the degradation of natural resources in the river basins. This includes deforestation, water pollution and use of unsuited farming practices, mainly in terrace agricultural areas where are the poorest farmers. The effects are felt: floods, landslides and low water availability.

Following the Mitch hurricane on the north-west part of the country, where degradation of river basins has aggravated damage, many initiatives were taken, but with small scope.

The Matagalpa basin project, the Sandino foundation, the ADESUR project, the APRODESA project and the PRO-DEMUJER foundation can be mentioned among the most recent projects. They are involving actions such as soil

and water conservation, training and technical assistance, reforestation, organization of communities, producers or traders; farm management, the use of alternative technologies and, in some cases, credit systems.

Some centers of higher education, such as the National Agrarian University (UNA) and the Rivas Agricultural School, have included research on the characterization and assessment of river basins in their curricula. The departments of the Central American University use the river basin as geographical reference in their work.

The three institutions most involved in river basin management are: the Ministry of the Environment and Natural Resources (MARENA), the Ministry of Agriculture and Forestry (MAGFOR) and the Ministry of Development, Industry and Trade. However, the set-up of an institution in charge of policy-making for planning, development and management of river basins is becoming necessary.

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# EL SALVADOR

## WATER RESOURCE QUALITY AND QUANTITY

El Salvador has urgently to prioritize a best use of its water resources.

### Quantity

The Country has 360 rivers, regrouped in 10 river basin districts, the largest being the Rio Lempa basin (18,240 km<sup>2</sup>) shared by El Salvador, Guatemala and Honduras. Its water is used for hydropower generation, irrigation, animal husbandry and the supply of drinking and industrial water.

The best known aquifers are the Quezaltepeque-Opico and San Salvador which are over-exploited. This required the conveying of water from the Lempa to the San Salvador Metropolitan Area.

Although our country has plenty of water resources thanks to rainfalls, water is nevertheless scarce for drinking water supply purposes.

Paradoxically, we are facing water scarcity but also flooding in coastal areas, mainly due to the overflowing of the Lempa, Grande de San Miguel, Paz and Jiboa rivers. Poor management of the river basins is the main cause of these floods: widely spread deforestation, inadequate soil uses and wrong agricultural practices.

### Quality

All the rivers crossing towns, industrial and agricultural areas are usually polluted, although wastewater is treated in some cases.

Pollution is also caused by soil erosion, by the sediments transported and/or deposited during the rainy season in the various water bodies. This leads to accelerated eutrophication in lakes, lagoons and rivers and prevents the use of their water for drinking water supply purpose. Sediments are also clogging the reservoir of the "5 November" hydropower station and also starting to clog that of the Cerron Grande station.

Aquifers are polluted by coffee production, landfills, fertilizers in agriculture, domestic wastewater and acid rains.

Natural pollution by iron and excessive arsenic and boron contents in hot springs and in the Llopango lake should also be mentioned.

Sanitation in urban areas is covered at 86,4% by sewer systems and latrines and in rural areas at 49,6% (latrines), but only 2% of wastewater is treated.

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# EUROPE TWINNING: FRANCE - ROMANIA

**NATIONAL COMPANY "APELE ROMANE"  
(WATER DIRECTORATE OF SOMES-TISA) -  
LOIRE-BRITTANY WATER AGENCY**



**INBO, of which the Loire-Brittany Water Agency and the National Company "Apele Romane" are founder members, and the Global Water Partnership (GWP) initiated an "Associated Program" for water management at the river basin level.** This program follows the Declaration of Intent on the formulation of twinning agreements between Basin Organizations, signed in the Hague on 20 March 2000 during the World Water Forum.

### Background

Within the process of accession to the European Union, Romania is committed to transpose and implement the European Directives relative to water management. This implies gradual changes in the Romanian legal and regulatory texts to comply with them with the prospect of implementing the Framework Directive 60/2000.

In addition, the country has already committed itself to deeply reform the management of its water resources by launching a voluntary policy of decentralization and involvement of water users and elec-

ted representatives in the decision-making process, thanks to the creation of Basin Committees.

In such a context, it was deemed necessary to sign a twinning agreement with a French Water Agency.

### Project identification

The agreement was signed by the National Company "Apele Romane", represented by its Director General, Mr. Costica Sofronie and the Somes Tisa Water Manager, Mr. Ioan Rosu, on one hand, and the Loire-Brittany Water Agency, represented by its Director General, Mr. Jean-Louis Beseme, on the other.

The topics to be dealt with by the specialists and representatives of both organizations are the following:

- improvement of the integrated water monitoring system,
  - presentation of the Water Management Plan approach and assistance with its implementation,
  - exchange of experiences related to the management of hydrological crises,
  - collection and treatment of domestic wastewaters,
  - control of the pollution caused by industrial and agricultural sources,
  - use of the "polluter-pays" and "user-pays" principles,
  - methods for financial simulation,
  - economic analysis.
- initiation of information and education programs,
  - formulation of a Water Management Plan for the Somes river basin in compliance with the EU Framework Directive,
  - organization and operation of the Somes River Basin Committee,

This agreement will include in particular:

- exchanges of information and documentation,
- access to the website of each organization,
- the possible organization of information meetings, of workshops or conferences,
- exchanges between stakeholders in water management of each basin (such as elected representatives, users, technicians, civil servants, young people, etc.).

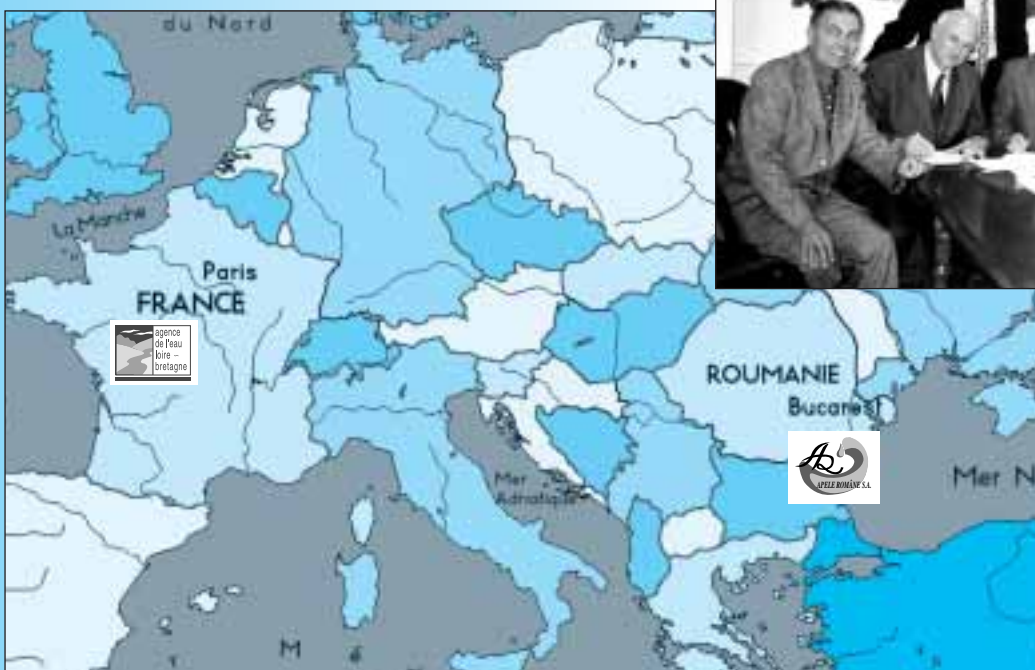
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Both organizations are responsible for implementing this twinning agreement according to their respective contribution possibilities.



**Next CEENBO  
General Assembly  
will take place  
in Sinaia (Romania)  
from 1 to 2 February  
2002**

# SPAIN

## GUADALQUIVIR HYDROGRAPHIC CONFEDERATION



**The Guadalquivir Hydrographic Confederation, like the other basin organizations which cover a large part of the Iberian Peninsula, was entrusted, among other things, with the management of state water resources by the Spanish water act.**

Its mandate started in 1926 and the 75th birthday of its creation will be held next year. Its territory covers the Guadalquivir, Guadalete and Barbate rivers which outflow into the Atlantic Ocean.

The surface area of the basin is 63,822 km<sup>2</sup>. 941 towns are located in the basin: Seville, Cordoba, Granada, Jaen, Cadiz and Jerez among others. Its population exceeds five million inhabitants.

52 dams are exploited in the basin.

These dams supply all the big towns and the irrigated areas cover 600,000 ha.

**The Hydrological Plan was approved by the Basin Water Council in April 1995 and afterwards by the Spanish Government in 1998.** The Water Council is made up of representatives from central and autonomous local governments, from users, farmers, drinking water supply utilities and industry.

The Hydrological Plan deals with integrated management of surface and ground water. It promotes irrigation users' associations for the farmers having collective intakes, and other users' associations.

Any request made to the Hydrographic Confederation, relating to the use of water, is firstly examined by the "Planning Bureau", which decides whether this request is compatible or not with the provisions and uses stipulated in the approved Plan. When this request is compatible, the concession process continues with the "Water Commissary" up to the final decision of the "Presidency". When compatibility is not ensured, the requester is informed that his/her request is not possible.

The Hydrological Plan establishes priorities of use, which are usually the following: drinking water supply, ecological flow of rivers, irrigation, industry, recreational activities, etc.

It should be emphasized that the "Commission on Dam Water Releases", is the one in which the users' participation is the most significant (95%). It decides of the filling up and water releases in dam-reservoirs for water supply purposes.

Over the last few years, the Hydrographic Confederation has limited, with the users' cooperation, water allocations for irrigation, even in periods of abundant water resources, in order **to promote water savings for future irrigation campaigns.**

Consumption has reduced from 7,000 m<sup>3</sup> to 4,500 m<sup>3</sup>/ha/year. It should be reminded that potential evapotranspiration exceeds 1,000 mm/year in the southern part of Spain.

It should also be mentioned that the "Water Quality Unit", which has its own laboratories, is one of the most active of the Confederation.

**The basin has a Hydrological Information System (SAIH)** which transmits, in real time, the impact of rainfall by measuring its intensity, run-off into the river beds, to regulate the water flow and level of the reservoirs. Its efficiency has been proven over the last six years on three occasions of heavy rainfalls.

Another network, which concerns water quality (ICA), is parallel to this system. It trans-

mits, also in real time, the most significant parameters of water quality in rivers and reservoirs.

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**Next INBO  
Liaison Bureau  
will take place in Seville  
(Spain) on 25 and 26  
February 2002**



## EUROPEAN UNION

### THE EUROPEAN WATER FRAMEWORK DIRECTIVE

The Directive "establishing a framework for community action in the field of water policy" came into force at the end of 2000. This text is of prime importance for water management. Its objective is to strengthen the consistency of the European policy in this field: it provides a set of regulations which were previously scattered and only sectoral.

Some points are emerging from this text:

- **Need for river basin management**, balanced between all the users and respectful of the aquatic ecosystems.
- **Priority is given to environmental protection**: the member States must implement monitoring programs to achieve good status of all kinds of water (surface water, groundwater and coastal water) within fifteen years. Six to twelve-year delays may be possible under some circumstances. In addition, some water masses, which were heavily modified, may be subject to less stringent obligations.

- **The prevention of further deterioration** and improvement of the quality of "priority" ecosystems in all their aspects, and suppression in the long-term (twenty years or more) of the discharge of priority dangerous substances.

- **Prime importance is given to economic instruments and pricing**: the principles of recovery of the water management and decontamination costs from the water users and from those who deteriorate water, and the "polluter-pays" principle.

- **Involvement of the general public in management**: the public must be informed and consulted in each river basin district.

- **Strengthening of the groundwater protection policy** (a draft directive is expected regarding this issue).

# FRANCE

## SEINE-NORMANDY WATER AGENCY

### 36 YEARS TO RECOVER AQUATIC ECOSYSTEMS



#### THE SEINE-NORMANDY BASIN

##### Main basin characteristics

- 97,000 km<sup>2</sup>
- 17 million inhabitants
- 60% live in the agglomeration of Paris
- 8,715 municipalities
- 37 million tourists/year
- 60% of the national car industry
- 79% of the national sugar production

##### Main challenges

###### Environment:

To improve the:

- abatement of non-point agricultural pollution
- treatment of domestic nitrogen and phosphorus
- urban stormwater pollution control
- wetlands and reedbeds restoration
- assessment of environmental performances

###### Economy

- economic water accounts (including damage valuation)
- prospective scenarios for 2015
- cost-effective analysis of programs

###### Governance

To reinforce the:

- legitimacy of decision-making
- public's participation
- equity
- solidarity

Scientists considered that the Seine River was nearly dead at the beginning of the sixties. As a matter of fact, out of the 32 endemic species of fishes, hardly 3 of them could occasionally be spotted in Paris during this period.

In this context, the creation of the French Water Agencies by the **1964 water law** marked the beginning of the recovery of the water ecosystems.

Starting in 1968, the Seine-Normandie Water Agency's first tasks were to:

- Implement at the scale of the basin, involving all water stakeholders, sustainable and integrated water resource management,
- Ensure water supply security,
- Protect the natural heritage,
- Reduce repeated accidental pollution,
- Improve the efficiency of the water works.

The Agency's financial resources come from the enforcement of the "consumer-pays" principle, for quantitative management, and of the "polluter-pays" principle, for qualitative management. They are budgeted through five-year programs, proposed by the Basin Committee ("Water Parliament") which gathers all stakeholders, and approved by the Board of Directors, whose chairman is the Prefect of the Ile de France region.

From the 1992 Water Act came a new tool for more appropriate water planning: the master plan called "SDAGE". It will be reinforced by smaller plans (SAGEs), drawn by **Local Water Commissions**, at each sub-basin level.

At the same period, the six Water Agencies joined their water databases to those of the **National Water Data Network (RNDE)** and developed **Quality Assessment Systems (SEQs)**.

The Seine-Normandie Water Agency still operates its own monitoring network and developed from 1995 a yearly reporting instrument, based on

performance indicators (Management chart for assessing the SDAGE orientations). This reporting system aims at assessing and improving the effectiveness of the environmental, economic, social and administrative actions undertaken in implementing the master plan. It includes 45 indicators of various natures, corresponding to the specific targets of the SDAGE, and gathered along 5 indices linked to its respective chapters. The report has been produced every year since 1997.

##### Results

From 1991 to 2001, the VI<sup>th</sup> and VII<sup>th</sup> programs invested some Euro 5.6 billions supporting some Euro 10 billion waterworks in the basin.

More than 500 new wastewater treatment plants were thus built, increasing the previous municipal treatment efficiency by about 20% for organic pollution control, and by more than 50% for nitrogen and phosphorus. The treatment of industrial discharges has increased by more than 30%.

As a result, reports show a continuous improvement of the quality of rivers - particularly inside Paris, where the Seine hosts today more than 24 endemic species of fishes - and bathing waters, except on nitrogen, which, for more than two thirds, comes from farming practices.

On the other hand, groundwater shows an overall increase of its nutrients and pesticides contents. Obviously farmers were the missing taxpayers when it comes to pollution. Moreover, intense drainage

had ruined 50% of the basin wetlands, which play a key role in nutrients removal.

Another major source of pollution comes from uncontrolled stormwater running down urban areas. Recent studies concluded that the suspended solid load of annual rain waters of Paris alone, is equivalent to the load of all the municipal discharges of the entire basin.

From 1997, the agency started buying or restoring wetlands. In 2001, a permanent "wetland and river unit" was created.

The agency also entered into education and job creation. Within the basin, some 900 weekly water-classes are now supported every year, and 2,000 new jobs for young people will have been created by the end of 2001.

Technical assistance to emerging basin organizations is also considered by the agency and a small fund has allowed to support 77 micro-water projects in 28 developing countries.

##### Prospective

The Agency will address with a strong optimism those new environmental challenges defined from the above mentioned experiences.

It will benefit from the legal improvements brought by the draft water bill adopted by the Council of Ministers and of the new European Water Framework Directive.





# FRANCE - POLAND

## TWINNING: SEINE-NORMANDY AGENCY / GLIWICE RZGW

The new law should also reinforce legitimacy of decision-making, public participation, and promote more equitable water pricing and more efficient solidarity.

**The VII<sup>th</sup> program of the Agency, which will start from 2002, has already been prepared along with these ambitious targets,** and with the guidance of a permanent research program (PIREN/Seine), and of the "SDAGE" indicator system.

It notably foresees a major project of stormwater pollution control for the agglomeration of Paris which should also remove some 75% of the domestic nitrogen and phosphorus presently discharged into the Seine by the agglomeration (8.8 million population-equivalent). This program is therefore expected to launch a new era for the recovery of the basin aquatic ecosystem.

**The fresh new UN World Water Assessment Program will use the Seine-Normandy Basin as one of its case studies.**

The Water Agency is therefore expecting from these programs improvement in its work accuracy and hopes to improve its efficiency, for both the public and the natural environment in a way that leads to sustainable development.

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On 11 July 2001, the Seine-Normandy Water Agency hosted a large Polish delegation from the Ministry of the Environment, the National Water Authority and from the 7 Water Agencies (RZGWs).

Mr. Tomasz WALCZYKIEWICZ, President of the International Network of Basin Organizations, accompanied this delegation.

This visit was part of the study tour organized under the auspices of the European Commission, within the pre-accession

twinning agreement with the French Ministry of Regional Planning and the Environment, financed out of the community budget (PHARE) for the Polish water sector.

**The key topic of this study tour was the implementation in Poland of the new European Water Framework Directive.**

Following this study tour, the Seine Normandy Water Agency and the Gliwice RZGW (Silesia basin) signed on 9 August 2001 a twinning agreement, whose purpose is a co-operation program with high technical contents focusing on

the solving of the constraints relative to the implementation of the framework directive in the two basins.

This agreement is in line with the Associated Program on inter-basin twinning agreements initiated by the International Network of Basin Organizations and supported by the Global Water Partnership (GWP).



## THE WATER ACADEMY STRATEGY FOR TRANSBOUNDARY WATER MANAGEMENT

The Paris Conference on Sustainable Development of March 1998 had emphasized the need for joint management of transboundary rivers and aquifers.

In 1997, the Water Academy had started an in-depth analysis of five transboundary river basins (the Rhine, Lake Geneva, the rivers of the Iberian Peninsula, the Oder and Senegal). It had also reviewed the 145 existing international basins to extract the rules and principles used in order to draw up "Advisory Guidelines" for the creation and

operation of an International Basin Commission. They were presented to the INBO General Assembly of Bahia in 1998.

Owing to the interest shown by INBO General Assembly and by the second World Water Forum, the Water Academy started, in 2000, about ten monographs of international river basins: the Danube, the Nile, Lake Chad, the Zambeze, the American Great Lakes and the Saint-Lawrence, the Rio Grande, the Parana, the Tigris and Euphrates, the Aral Sea, the

Ganges, the Mekong, together with an updating of the five former studies.

It is now planned to introduce the INBO Assembly of Quebec (May 2002) to a significantly improved version of the "Advisory Guidelines" addressing the countries which wish to create an Inter-State Commission for their shared waters.

At the same time, the Academy will start reviewing the African and North African river basins within the "Africa Focus". Its purpose is to carry out studies of these basins to

have them participate in the United Nations "World Water Assessment Program" in collaboration with the Arab World Institute and the UNCHS center of Nairobi.

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# FRANCE

## FRENCH COOPERATION

### AN INTER-MINISTRY STRATEGY IN THE WATER SECTOR

On 22 March 2001, during the 8th World Water Day, the Minister in charge of Cooperation and the French Speaking World, Mr. Charles Josselin, presented a new French strategy for cooperation in the water sector.

France, which allocates each year 1.2 billion French francs - intended for water - to Official Aid to Development, has **three main objectives in mind:**

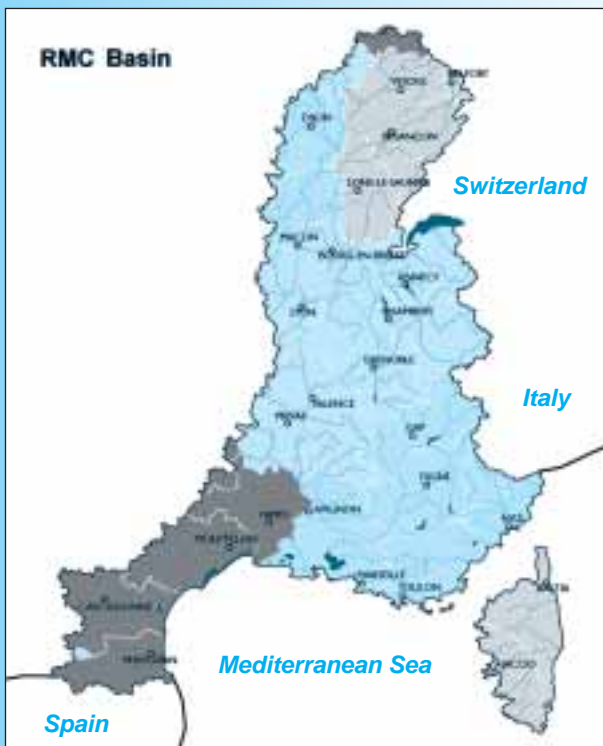
- 1 **the continuation of the financial efforts undertaken,**
- 2 **better consistency** between the different ministries involved in water management, thanks to the creation of an inter-ministry water unit, in charge of designing, coordinating and evaluating French actions in the water sector,
- 3 **strengthening public-private-partnership** to define a common strategy, which takes account of the drinking water supply needs of large towns or of the development of large rivers.

A huge communication campaign was undertaken to raise the population's awareness on water issues. It included:

- ◆ a kit, entitled **"sharing water"**, which contained a CD-ROM in French, German, English, Arabic and Spanish and a leaflet presenting the worldwide water challenges;
- ◆ a collection of 42 documentary films, entitled **"water, life and the environment"**;
- ◆ a **water exhibition**, proposing a summary of knowledge about this resource and its related stakes;
- ◆ a technical document, entitled **"water and health"**, addressing any operator intervening in the supply of drinking water to the populations of developing countries.

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## RHONE-MEDITERRANEAN-CORSICA WATER AGENCY INTERNATIONAL CONFERENCE ON "RIVERS IN 2001"

**The international conference, organized by the Water Agency, with the assistance of the Rhone-Alps Region, gathered more than 400 people on the Rhone Riverside from 6 to 8 June 2001.**

What are the inputs of scientific knowledge in the management of large rivers? What questions do the managers of these large rivers ask the scientific world? These important issues were the heart of the matter of the various papers and debates: the purpose of this meeting was indeed to enable the scientists and decision-makers' viewpoints to be discussed in order to formulate and enrich the action strategies for the sustainable management of large rivers.

As Lyons was the host town, the Rhone was particularly dealt with, but other large "sister" European rivers were also concerned: the Rhine, the Danube, the Pô, the Ebro, etc. They illustrated the different topical approaches which constituted the core of these three days:

- "High flows and uses of the river space",
- "Shared management of the resource",
- "Uses of the river and physical rehabilitation of the environment",
- "Activities in the river basin and water quality".

Some key ideas sprung from it and it was possible to imagine some significant changes in the way to comprehend our large (and small) river systems in the future:

- **significance of knowledge:** of the need to know and understand, foresee and efficiently act;

- **the integration of human sciences is to be reinforced:** looking back on "history" is essential as well as the use of a sociological approach which will help establish dialogue and concertation with the riverside inhabitants, especially regarding flood management;
- **communication between scientists, decision-makers and managers is to be improved** in order to enable the expression of needs and knowledge to be "adapted", to facilitate consistency between sectoral policies, etc.

The fact, satisfactory indeed, that some "revolutionary" ideas of yesterday, such as the spatial concept of freedom of water courses, are now integrated into operational management, should be emphasized.

The Framework Directive, adopted last September at the European level, which aims to achieve, within fifteen years, a general objective of good status of the different kinds of aquatic environments in the European territory, undoubtedly constitutes a challenge and an opportunity to progress.

The conference proceedings will be available on CD-ROM or accessible on the Water Agency website.



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# CENTRAL AND EASTERN EUROPE

**“CEENBO”** CONSTITUTIVE MEETING OF THE CENTRAL AND EASTERN EUROPEAN NETWORK OF BASIN ORGANIZATIONS - WARSAW, 22 AND 23 JUNE 2001

## Final resolutions

Representatives of organizations and administrations in charge of water management in their country and of basin organizations (established or being set up in Central and Eastern European countries with the support of interested bi- and multilateral cooperation agencies) gathered in Warsaw on 22 and 23 June 2001, within the framework of the International Network of Basin Organizations (INBO).

The delegates emphasized the need for the creation of a **Central and Eastern European Network of Basin Organizations (CEENBO)**.

The delegates discussed, within their limits of responsibility, CEENBO draft statutes.

The delegates thanked the Polish Government, the GWP and the GWP-Poland as well as the INBO President, Tomasz Walczykiewicz, for their warm welcome and the perfect organization of their Constitutive meeting.

The delegates gratefully received the invitation from the Romanian Authorities to host the 1st General Assembly of CEENBO on 1 and 2 February 2002 before the Vth General Assembly of INBO in Quebec.

## DECLARATION OF WARSAW

The delegates declared that they already apply or intend to apply the following common principles:

- **the implementation, on the scale of large river basins, of an integrated water resource management**, which aims at preventing natural and dangerous hazards and disasters and also at rationally and equitably meeting the various uses, to achieve sustainable economic development and to protect and restore the aquatic environment;
- **the creation of financing systems for water management** (based on the “user-polluter-pays” principle and the “public interest” concept) for multiyear development, equipment and protection programs;
- **the setting up of partnerships** to associate national Authorities, and possibly competent international institutions, with local authorities, water users and concerned non-governmental organiza-

tions in the planning and management of river basin organizations;

- **the developing of information capacities** of these partners’ representatives to enable them to fully assume the responsibilities and missions assigned to them within the framework of the basin policy.

They agreed, within the limits of their mandate, to adhere to INBO, to pursue INBO objectives and to participate in its joint projects and, in addition, to keep the Network regularly informed of their activities in order to develop a wider cooperation among its members.

Furthermore, through this participation, they agreed to promote the benefits of integrated river basin management, thus contributing to the development of this approach in the Central and Eastern Europe (especially for implementing the Water Framework Directive of the European Union).

In accordance with the INBO statutes approved during the Zakopane General Assembly (Poland, October 2000), and in particular with article 11 of the statutes, the delegates emphasized the need for the creation of a Central and Eastern European Network of Basin Organizations (CEENBO).

They wished that such an initiative be developed in the region in cooperation with the regional GWP CEETAC.

Especially, the representatives declared, that CEENBO will be:

- created in conformity with INBO objectives and statutes,
- consistent with INBO general program, approved in 2000 (especially to implement the INBO/GWP Associated Program in the region).
- implemented in partnership with the INBO members of other geographic regions.

The representatives empowered INBO President, Tomasz Walczykiewicz, as well as the GWP CEETAC and the GWP-Poland, to prepare CEENBO draft statutes and to organize, with the INBO and GWP support, the first General Assembly of CEENBO before the next INBO General Assembly.

The delegates requested the INBO President and the Permanent Technical Secretariat to ensure the widest possible dissemination of this “Declaration of Warsaw”.



**The next General Assembly of CEENBO will take place in Sinaia (Romania) on 1 and 2 Feb. 2002**

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# HUNGARY

## EUROPEAN FRAMEWORK DIRECTIVE

Hungary and the Netherlands have a long relationship in the field of water management. Both countries are indeed dominated by large international rivers, such as the Danube and Tisza in Central Europe, or the Rhine and Meuse in Western Europe. One of the topics of this cooperation is integrated water management with special regard to basin planning.

The Dutch Government has provided assistance to Hungary, within the framework of the MATRA program, with regard to the project: "Implementation of the EU Water Framework Directive in Hungary".

The project started in April 2001 and will be completed by the end of 2002. It will be implemented in cooperation with the Hungarian Ministry of Transport and Water Management, the National Water Authority, the Ministry of the Environment, the interested local water and environmental organizations in the North Transdanubian Region of Hungary and the Budapest University of Technology and Economics. Technical assistance will be provided by the consulting firm DHV which has an office in Budapest, the Netherlands Institute for Inland Water Management (RIZA) and the Water Board Uitwaterende Sluizen from the Dutch side.

The project will lead to the following results:

- 1 Definition of "river basin units" in Hungary according to the requirements of

the Directive, and identification and remediation of shortcomings in Hungarian legislation and the organization of institutional structures, which hamper the smooth implementation of the directive;

- 2 A methodology for developing a monitoring and assessment strategy;
- 3 Improved knowledge of EU legislation in general and its implementation by the institutions dealing with integrated river basin management, including public participation;
- 4 A management plan for the Altal-er river catchment area which can be used as an example on a wider scale in the whole country.



## THE ALTAL-ER CATCHMENT AREA

The length of the Altal-er river is 53 km. Its average flow about 500 l/s. It starts south of Oroszlány and discharges into the Danube at Dunaalmas. The total catchment area is 521 km<sup>2</sup>. The area was one of the most industrialized areas of Hungary with brown coal mining and power production as well as heavy industry (aluminum and steel production) in the upper catchment area and fish farming and agriculture in the lower catchment area. Most of the mining activities and heavy industry have ceased since the 1990s.

The deep karstic groundwater is a major source of drinking water for most of the population. With the abandoned mines being filled up with water again, the future water quality of these water wells remains uncertain.

The past mining activities (brown coal mining) affected considerably the groundwater table in the catchment area. Most wells have dried up downstream, but it is observed that the groundwater is again steadily rising after closure of all of the mines.

Many lakes exist in the Altal-er river basin. Most of them have been artificially constructed in the past

30 years for water use by the power plants (cooling water). The Tata Lake is much older and has considerable importance (the lake is a designated RAMSAR site and a medieval royal hunting lodge is situated in the center of the lake. The lake is used for swimming and fishing).

The largest city is Tatabánya (about 70,000 inhab.) followed by Tata and Oroszlány (about 20,000 inhab. each). In total, about 130,000 people live in the catchment area.

In June 2001, a series of workshops gathering the stakeholders concerned were organized in Budapest and Tata to provide the best possible input for the project.

In particular, the project aims to develop a basin plan for the Altal-er region near the old city of Tata. The Tata Lake is currently heavily polluted and faces some serious ecological threats. The pilot plan will be made through the Open Planning Process in which the public will be asked to participate. The water users and NGOs will be involved in the discussions. This process should lead to an increased acceptance of the proposed measures and to methods for their implementation.

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# HUNGARY AND ROMANIA

## "TRANSBOUNDARY POLLUTION"

Recent accidental pollution occurrences, that affected a transboundary river between Romania and Hungary, have emphasized the need to strengthen cooperation between the two countries as regards all river basin management aspects.

The project, financed by the European Commission and the French Ministries for Foreign Affairs and the Environment, consists in exchanging experiences between France, Romania and Hungary. It deals with the Crisuri river, for which an experimental Basin

Committee was created in 1999 for the Romanian part, within the PHARE-Partnership program.

Its objective is to formulate a joint work program for the bodies of both countries in charge of water management at the level of this pilot river basin. This program mainly deals with the following:

- **Reinforcement of the warning systems for accidental pollution** and the improvement of policies for the prevention against industrial pollution;

- Study of the existing tools for integrated water resource management and procedures for the formulation of a **management plan for the transboundary pilot basin**, within the implementation of the European Framework Directive;

- **Organization of data exchanges** and standardization of analytical methods;

- **Information of executives of local authorities** on their role in the basin management;

- **Access of the general public to the information.**

This international project includes French experts' assignments and different tripartite meetings in the three countries, in order to assess the situation and exchange experiences.

Beyond this first stage, an international project has been planned, based on the terms of references under preparation.

# RUSSIA

## THE VOLGA - A PILOT BASIN

Regrouped in a consortium, BCEOM - project leader, VERSeau and IOWater have been executing for a year now a project financed by the European Commission (TACIS). This project aims to provide the bases for the institutional reforms required to implement integrated water resource management, directly inspired from the European models. Its test area is the Volga, and more particularly its tributary the Oka (sub-basin on which the supply and effluents of Moscow depend).

The setting-up of a planning unit and of a dialogue structure for this sub-basin is now imminent.

The creation of an information system for the Basin Water Management Units (BVUs) has been particularly studied during this project.

The tasks of the Russian "BVUs" are changing. This or-

ganization is becoming, among other things, the executive agency which will have to produce the information to facilitate decision-making by new river basin Councils.

The "BVU" Planning Entity department will particularly be in charge of organizing the information system for integrated water management at the basin level.

In order to organize the production of useful information, the "BVU" will have to combine, on the one hand, information related to the pressure on water resources with, on the other hand, information related to the status of water resources.

Thus, in a first step, the "BVU" information system will have to deal with the following main data:

- Water bodies and hydraulic installation characteristics

- Surface water (quantity / quality) and meteorological data

- Groundwater (quantity / quality) data

- Water users' and water polluters' characteristics

- Abstractions, uses and discharges in the river basin

In Russia, like in most countries of the world, the collection and management of this information is scattered through various organizations, which themselves depend on various state bodies (federal executive bodies in the case of Russia), each one having its own procedures for data collection and management.

Within the framework of the TACIS project, the support to the development of the "BVU" information system began with a "Data flow institutional analysis". It aimed to study the existing information flows and the possibilities of their use and up-grading with the pur-

pose of providing the "BVU" Planning Entity with a guaranteed access to the necessary information.

At first, the existing situation (the legislative, institutional and organizational environment) was analyzed.

In the light of the data flow schemes produced, it was shown that the "BVUs" have presently no access to a lot of data that they will need for correctly fulfilling their water planning tasks.

The study report thus concluded with recommendations to enable the necessary exchange of information between institutions and with proposals for the drawing up of decrees needed to strengthen the "BVUs" capacities.

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# POLAND

## THE PILOT NAREW RIVER BASIN

This pilot Narew river basin, the longest Vistula tributary, whose spring is located in Belarus, covers a surface area of about 27,000 km<sup>2</sup> in the Polish territory which ends at the confluence with its main tributary (the Bug river) at the Ukrainian border.

An action plan included the following steps (carried out within the "pre-accession twinning" with France):

- **The nomination of the Polish team in charge of the project:** under the supervision of the Ministry of the Environment, the Warsaw RZGW was entrusted with the management of this experiment, especially its Deputy Manager, Mr. Jurek Zielinski, with a team of 5 part-time specialists;
- **The creation of various commissions for dialogue and decision-making, especially the "Narew Commission",** composed of 45 representatives coming (in equal number) from local authorities, users and the administration, an Arbitration Commission, composed of 5 representatives of the Narew Commission, and a Techni-

cal Steering Committee at the national level;

- **The writing of an inventory document, outlining the challenges and priority problems at the level of the pilot basin:** this study was submitted to the Technical Steering Committee for validation,

- **The organization of 3 "Narew Commission" meetings.** The inventory of the basin was then presented and a debate took place on the challenges, priority problems and the methods of consulting the general public. The Arbitration Commission then wrote the documents, formulated and defined the priority issues to be studied;

- **The formulation of a monitoring program:** Due to the time constraints, the proposal only dealt with one of the priority issues: the limiting of discharges in areas with significant groundwater pollution;

- **Cost estimate of the proposed measures and financial mechanisms**

**to be considered for investments:** its conclusions were submitted to the 2<sup>nd</sup> Narew Commission meeting at the end of June 2001;

- **Training activities** were carried out. They were intended for elected representatives from the local authorities and technical executives in charge of sanitation utilities in the pilot basin. Their organization was entrusted to the Gdansk Water Foundation, which has now 5 years of

experience in training on water professions in Poland.

The objective of this experiment was to test the methods and processes needed for formulating the future river basin management plans in compliance with the European Framework Directive.

The French Adour-Garonne Water Agency provided a precious support in the implementation of this experiment by participating in the meeting work and discussions and in the result analysis.

## USE OF WATER IN THE REGA RIVER BASIN

The Rega river basin covers the northern coastal areas on the Baltic sea (2,860 km<sup>2</sup>).

According to the new Water Law, the Regional Water Management Board of Szczecin is under the obligation to elaborate regulations including conditions for the use of water in this river basin.

This document enables the limitation of water uses and provides guidelines for the investments required.

It has to take into account the water resource balance, the environmental protection requirements from voidvoidships and regions, provisions of spa-

tial management plans, hydrogeological documents, binding water permits and the physico-spatial and economic characteristics of the basin.

It is a formal document of law. Once approved by the local administration, and after consultation with local parliaments, it is confirmed by the Ministry of the Environment by means of a decree.

It will also include a water resource assessment relying on the creation of necessary databases.

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# KOSOVO

## ESTABLISHING AN INTEGRATED WATER POLICY

The Department of Agriculture, Forestry and Rural Development (DAFRD) of Kosovo has prepared, in liaison with the other Departments concerned: Local Administrations, Environmental Protection, Health, Reconstruction and Public Utilities, Trade and Industry, an analysis of a concerted and integrated water management policy in Kosovo. The bilateral and multilateral donors were also involved in the preparation of this document.

The Interdepartmental Group has identified the problems and drawn up a proposal for the setting-up of suited institutions.

A two-day workshop, entitled **“Use of water resources and development of a water strategy in Kosovo”**, took place in Pristina on 30 and 31 August 2001. It dealt with five significant topics (data, demand and availability, quality and environmental protection, institutional aspects, laws and regulations). It allowed the definition of orientations and recommendations to support and clarify the current trends and face priority needs.

The conclusions included, in particular, the implementing of an institutional framework providing for the creation of a **“Water Resources Department”** at central level and two basin organizations.

The intermediate level between the central and local levels (local authorities, associations and farmers, etc) will have to be particularly taken care of.

The following points will be especially reviewed:

- Role and tasks of a basin organization,
- Its integration into the overall institutional framework of Kosovo,
- Its organization: representatives and participation of municipalities, of the different groups of users, of the administrations,

- Processes used to implement a management plan, in accordance with the European Water Framework Directive; possible specific provisions for sub-basins will be studied,
- Methods for financing and operation.

France, in liaison with the DAFRD, the Interdepartmental Group and Finland which will analyze the institutional framework, will make tangible proposals for the organization and structure of two basin organizations adapted to the Kosovar context.

**A system for managing data and information on the water sector is also to be rebuilt.**

Efficient decision-making in water resource management requires available access to relevant and reliable information to meet the decision-makers' needs.

In the case of Kosovo, either at the level of provinces or river basins, the information needed (description of monitoring networks, data on the quantitative and qualitative status of available resources, characteristics

of the “polluters/users”, of their water discharges and abstractions, etc.), is dispersed, non homogeneous and some times lacking.

It is thus necessary to study the opportunities for establishing a suited organizational and technical framework to produce and disseminate the information expected by decision-makers and users.

The French expertise will deal with the identification of:

- legislative texts related to water data management;
- the main institutions concerned in the current system and in the planned institutional framework and the analysis of their tasks in water data management;
- the main data producers and managers of water information systems;

As well as the analysis of:

- the main data flows between operators;
- the main results expected from the water information systems to be developed;
- priority equipment.

The French experts' reflection on these priority topics will be carried out in close collaboration with the Kosovar Authorities, the UNMIK (United Nations Mission in Kosovo) and with the teams of the European Reconstruction Agency and of the World Bank.

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# THE MEDITERRANEAN JORDAN

## A REGULATION SYSTEM FOR THE KING ABDULLAH CANAL

The Jordan Valley Authority, under the Ministry of Water and Irrigation, has recently completed the installation of a dynamic regulation system to manage and control the operation of the 110 km long King Abdullah Canal (KAC).

The canal is the backbone of the water conveyance and distribution system in the Jordan Valley. It is fed mainly by the Yarmouk and Zarqa Rivers and other small wadis, and used to supply water for irrigation and domestic purposes.

The dynamic regulation system performs the following three associated actions at 28 out of the 38 check gates of KAC: anticipation (feed forward), correction (feedback) and coordi-

nation (cumulative carry forward). Accordingly, the discharge at each check gate and at each regulation time step is calculated.

The system predicts the volume which will be stored in KAC at the end of the day, the flow for each outlet and inlet for the next hour and the target volume for each reach of the canal. These forecasts are updated every 15 minutes.

The operator at the control center is able to display, for each reach, the curve of the target volume, the curve of the measured volume and the upstream discharge evolution.

The dynamic regulation system automatically checks that the adjustments are made properly. If an error is observed, a signal is activated and a message is issued on printer together with an audible alarm displayed on the supervisor's screen. The supervisor can over-ride the system and adjust the check gates remotely. The check gates can also be locally controlled by the KAC operators.

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# ALGERIA

## RIVER BASIN AGENCIES:

### ALGIERS-HODNA-SOUMMAM

During the three years since the creation of the **Basin Agency**, activity focused mainly on:

- An inventory of the three large basins, which are: Algiers region, the Hodna and the Soummam
- Assessment of pollution in the basins and their environmental status, the protection of water resources in particular.
- The gathering of data on resources and pollution.
- The creation of a water database.
- The continuation of the training programs, initiated by the Algerian-French cooperation. These programs will spread over the 2001-2003 period.

Due to the current impossibility of adequately managing water, which is an acute problem facing almost all Algerian towns, the Government decided to create, by decree, two new public organizations, essential for implementing the new policy started in 1994.

**They are the “Algérienne des Eaux” (Algerian Water Company) and the National Sanitation Board.**

These organizations will have to cope with problems to protect surface and ground water resources and to start a process for wastewater reuse, especially in the industry and agriculture.

These two establishments will rely on five regional agencies which correspond to the limits of the River Basin Agencies.

In addition, the Ministry in charge of the Environment invited the Basin Agency to take part in discussions on the status and future of the environment at national and local levels. These debates started on 8 May and will end on 31 December 2001. They associate local authorities, associations, the university, schools, development agencies and the economic and social partners.

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### CHELIF-ZAHREZ ASSISTANCE TO LOCAL AUTHORITIES

The new water policy adopted by Algeria implies that the classical approach of administrative management per sector of water use, which has no relation with the natural hydrological cycle, is replaced by integrated management at the level of the natural hydrogeological units to ensure, on one side, the rational and planned use of this scarce property of the national community and, on the other side, its protection against pollution, wastage and overexploitation.

**Five River Basin Agencies were created in 1996 to implement this policy and to put the principle of integrated management into use. They are regional tools for the planning, management and protection of water resources and rely on 5 Basin Committees, participation and concertation bodies.**

The Cheliff-Zahrez Basin Agency is mobilizing its means and competences and focuses its efforts to apply this new approach and, beyond this, is trying to create a dynamics in a planned framework in which converge the actions of the different people intervening and partners in the water sector.

Its field of action involves 254 townships in 12 provinces on a surface area of 56,227 km<sup>2</sup>, (i.e. 22% of Northern Algeria).

In the framework of its statutory tasks and of the national water resource plan, the agency has focused its activities on two main areas:

- ① Preparation of the hydraulic cadastre,
- ② Participation in the monitoring of water resource pollution.

#### Preparation of the hydraulic cadastre

The hydraulic cadastre springs from the inventory of the basin data relative to water resources, their use and to existing hydraulic installations. In order to build a database, the agency has designed a computerized tool for processing the collected statistics and cartographic data.

Knowledge of the resource status is a prerequisite to planning.

#### Monitoring of water resource pollution

In order to fight against pollution of water resources and to preserve their quality, the Agency has undertaken two studies:

- The first study, carried out with the NEE department, dealt with the protection of the Cheliff wadi against urban and industrial pollution on the Harbil wadi-Sly wadi section. Analysis campaigns were undertaken on the tributaries and dam-reservoirs of this region together with a sampling program at the discharge points of the polluting industries. The results have shown a high degree of pollution of the Cheliff wadi.
- The second study, concerning the mapping of aquifer vulnerability in the sub-basins of the Cheliff, the coastal sub-basin, the Sersou and the Mina plain, is carried out in partnership with the HYDROG office.

The first part is now completed and dealt with the aquifers of the middle and lower Cheliff, of the western Sersou and of the Mina Plain. It used the DRASTIC method.

The Agency has prepared some web pages, now available on its intranet server:

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**Population : 461 municipalities**  
**9.922.558 inhab**

**Surface area : 47.000 km<sup>2</sup>**

**Surface water resources : 4300 hm<sup>3</sup>**

**Groundwater resources : 475 hm<sup>3</sup>**

**Bore holes : 1284**

**Exploited dam-reservoirs: 10 i.e. 424,7 hm<sup>3</sup>**

**Dams under construction : 4 i.e. 581 hm<sup>3</sup>**

**Dams under study : 12**

**Geographic location of the five Algerian Basin Agencies**



## A NEW ACTION PLAN FOR 2002-2005

The European Commission's representative and the General Managers for Water or their representatives from Algeria, Austria, Cyprus, Egypt, Germany, France, Israel, Italy, Jordan, Lebanon, Luxembourg, Malta, Morocco, the Netherlands, Portugal, Spain, Sweden, Tunisia, Turkey and the Palestinian Authority participated in the meeting of the Euro-Mediterranean Information System on the Knowledge in the Water Sector - EMWIS - in Madrid on 12 and 13 November 2001. They especially emphasized that water had been considered a priority in the declaration adopted in Barcelona in November 1995 and was confirmed as being one of the six priority topics of the economic cooperation in the Euro-Mediterranean region during the conference gathering the Ministers for Foreign Affairs in Stuttgart in April 1999.

Owing to the declarations of the Ministerial Conferences of

Marseilles (November 1996) and Turin (October 1999) which emphasized the importance of EMWIS as a strategic tool for exchanging information in support of the Priority Action Plan for water, and account taken of EMWIS mid-progress report on its first phase (planned for 1999 - 2002) and of the viability study in the medium and long terms, the participants agreed to the following:

1 EMWIS progress report after two years (1999-2001) is highly positive and shows that this tool meets a real need and a strong demand of all partners in compliance with the decisions made during the ministerial conferences of Marseilles (1996) and Turin (1999). The Managers reaffirmed the sustainability of EMWIS which should have the means necessary to continue its action in the long-term.

2 Approval of a new four-year program for 2002-2005 to continue the first phase. It would include the following terms:

➤ **Continuing the operational implementation and the strengthening of the National Focal Points and of the Technical Unit and the development of the following new activities:**

- Strengthening of the NFPs by way of technical support and assistance with the finding of additional financial resources,
- Directing and operating the information systems to maintain and improve the services offered by EMWIS according to the present events and technological advances,
- Extension of new services based on the users' expectations and on an analysis of their interests,
- Development of means for promoting the system,
- Development of topical activities which will lead to the organization of events and electronic forums based on syntheses.
- Dissemination of specific information on the MEDA-Water program of the European Union to act as a reference and dialogue system addressing the stakeholders concerned of the Euro-Mediterranean partnership,

• Continuing having contacts with the other international initiatives, especially with INBO, in order to coordinate activities and the development of joint actions;

➤ **Defining the conditions for financing this four-year program 2002-2005, presently estimated at about 5,200 MEuro, to continue the current arrangements and structure:**

- The activities of EMWIS-TU, especially regarding regional coordination, support and technical assistance to the NFPs,
- Assistance to the Euro-Mediterranean countries with the activities of their National Focal Points.
- ③ The General Managers or their representatives proposed to renew EMWIS steering bodies for a new 4-year period, starting from July 2002:
- ◆ The following countries: Algeria, Cyprus, France, Italy, Jordan, Malta, Morocco, Spain and the Palestinian Authority will compose the Steering Committee. Spain will fulfil the task of chairmanship and Cyprus the vice-chairmanship.
- ◆ Morocco will be Chairman of the Coordination Committee and Malta the vice-chairman.



[www.emwis.org](http://www.emwis.org)

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