

ALL TOGETHER FOR DEVELOPING INTEGRATED WATER RESOURCE MANAGEMENT WORLDWIDE

"TEN COMMANDMENTS" FOR BETTER GOVERNANCE

- I** *Freshwater is a common good.*
- II** *Integrated Water Resource Management should aim at meeting, in a sustainable and inter-sectoral manner, all essential and legitimate needs, at protecting against risk and at preserving and rehabilitating ecosystems,*
- III** *The basins of rivers, lakes and aquifers are the territories suited for organizing the integrated management of water resources and ecosystems.*
- IV** *In each country, a clear legal framework must specify the rights and obligations, institutional responsibilities, the processes and means needed for good water governance.*
- V** *The representatives of populations, local Authorities, water users and of organizations representing collective interest, should participate in this management, especially in Basin Councils or Committees.*
- VI** *Information, awareness and education of populations and of their representatives are required.*
- VII** *Master plans or basin management plans should be prepared, through dialogue and transparency, to set the objectives to be achieved on the medium term.*
- VIII** *Reliable, representative, harmonized and easily accessible integrated information and monitoring systems and specific research programs should be set up in each basin.*
- IX** *The establishment of financing systems, based on the consumers and polluters' contribution and common cause, is required in each basin to ensure the implementation of successive priority action plans and the smooth operation of community utilities. These contributions, defined by consensus in Basin Committees, should be managed at the level of the basin by a specialized, technical and financial "Agency".*
- X** *As regards large transboundary rivers, lakes or aquifers, cooperation agreements should be signed by riparian countries and the Management Plans designed at the level of the basins, especially in international or transboundary Basin Commissions, Authorities or Organizations.*

**WE MUST SUPPORT
THE CREATION AND STRENGTHENING
OF BASIN ORGANIZATIONS
ALL OVER THE WORLD!**

Come and meet us in Kyoto
on 18, 19, 20 and 21 March 2003
Get the program (p. 40)

INBO GENERAL ASSEMBLY ADOPTED



1994 – 2004 : all our Presidents are gathered

186 representatives of governmental administrations in charge of water management, of basin organizations, already existing or being created, coming from 57 countries, and from interested bi- and multi-lateral cooperation agencies, met in Quebec (Canada), from 28 to 30 May 2002, during the **fifth General Assembly of the International Network of Basin Organizations (INBO)**, to study all together the most suitable means for achieving the sound, balanced, integrated and participatory governance of inland surface and ground water resources.

The delegates outlined that all problems can no longer be tackled on a sectoral or local basis, or indeed separately. In fact, the search for solutions must pass through an integrated and holistic approach, organized at the relevant level of river basins, and respecting the resources and natural environments.

Indeed, river basins are the natural territories in which water runs on the soil or in the sub soil, whatever are the national or administrative boundaries or limits crossed.

For preparing the United Nations Conference of Johannesburg (Rio + 10) of August 2002 and the 3rd World Water Forum of Kyoto (March 2003), the delegates recommended that, in order to achieve these objectives, the following procedures should be used all over the world:

- **Water resource policy must be a long-term one:** passing legislation and applying it, modernizing structures, studying, financing and implementing projects, all this often requires one or even several decades to achieve tangible results, others than punctual ones;

- **The part and responsibilities of each stakeholder, as well as his rights and obligations, the methods used for his participation and dialogue with counterparts, must be strictly defined in a modernized and consistent legal framework.** The Public Authorities must have the means to control the implementation of this legislation in the field;

- In addition to the relevant governmental Administrations, **the representatives of the local Authorities concerned, of the different categories of users of water and aquatic ecosystems, and associations of collective interest of the civil society must participate in river basin committees or councils;**

The building of the information capacity of these partners' representatives is required for them to fully assume their responsibilities and assignments within the framework of the basin policy.

- **Laws, regulations and standards must precisely define:**

- ◆ the conditions under which all the users of resources and ecosystems of a basin may withdraw raw water, discharge wastewater, implement developments or works that may change run off or the natural environments,

- ◆ the means for conformity control, available to the Public Authorities,

- ◆ prosecutions and convictions that the offenders can incur.

- **Masterplans, prepared with dialogue and transparency, must set the objectives to be achieved in the long and medium term in each large river basin;**

- **Reliable, representative and easily accessible integrated information and monitoring systems must be organized in each river basin** to get information on the status of the resources and environments and on the uses and pollution, and to monitor their evolution over time in order to evaluate the efficiency of the programs implemented and their conformity with the objectives set by the masterplans.

3RD WORLD WATER FORUM KYOTO (Japan) -2003

INBO Workshop – 20 March 2003 - SHIGA



The Organization Committee of the 3rd World Water Forum of Kyoto has retained INBO's proposal to convene a workshop on:

"Progress in water management at the river basin level over the world"

on Thursday 20 March 2003, from 12:30 to 15:15, in Shiga Ohtu Prince Hotel – Ohmi room.

This INBO workshop will contribute to the great topic "Integrated Water Resource and Basin Management". It will take place during two days (20 and 21 March 2003) and is jointly organized by GWP, INBO, UNEP, Shiga Prefecture and the International Lake Environment Committee (ILEC).

All our partners are, of course, invited to attend the entire workshop and the plenary sessions on the main topic on 20 March, from 10:00 to 11:30, at the Biwako Hall, and on 21 March, from 16:30 to 18:00, at the Prince Hall of Ohtu Hotel in Shiga.

INBO enables debates on the "Virtual Water Forum" website:

www.worldwaterforum.org/for/en/fshow.1333

then use the topical keywords:

"Integrated water resource management" or

"Rivers/river basin management" or

"Transboundary water issues".

Any information on Shiga workshop and other activities of our Network and Regional Networks is available on: **www.inbo-news.org**

'DECLARATION OF QUEBEC'

These systems must be standardized to allow syntheses and comparisons between basins, at the national level in each country and at the international level.

The studies and documents relative to each river basin must be inventoried, gathered and accessible to all.

- **The setting-up of specific financing systems, at least partly based on the participation and solidarity of the users and polluters, is needed to implement the successive priority action plans, required to achieve the objectives set by the masterplans of each basin.**

INBO delegates recommend the use of basin water charges (based on the "user-pays" and "polluter-pays" principles), which have shown their high efficiency everywhere they have been really applied.

Such basin water charges enable the mobilization of significant funds to finance the sector, while ensuring solidarity between the upstream and downstream parts of basins and between the categories of users, with an incentive effect on consumption reduction and pollution control.



Quebec General Assembly

INBO recommends that basin water charges be progressive in order to adapt these modern financing systems to the proper situation of each country.

It is advisable that these water charges be set by consensus in river basin committees and managed at the level of the basin by a specialized organization (i.e. Water Agency).

- **Agreements and strategies, programs, financial support and monitoring should be designed at river basin level and cooperation agreements should be signed between the riparian countries of large transboundary or shared rivers, lakes or aquifers.**

The creation of **international commissions**, meeting regularly and which would involve all the administrations con-

cerned, local authorities and users of the riparian countries in integrated and sustainable management should allow better dialogue, the exchange of useful information and the strengthening of transboundary cooperation.

Official bi- and multilateral development aid should be especially mobilized to support projects for creating basin organizations.

INBO-EMWIS PARTNERSHIP

During the last INBO General Assembly, held in Quebec in May 2002, INBO and EMWIS (Euro-Mediterranean Water Information System) signed an agreement to cooperate with a view to improve the gathering and dissemination of information and documentation on integrated water resource management inside their respective partnerships. INBO will, in particular, support EMWIS in the creation of a section on water management at the level of river basins in the Mediterranean riparian countries and will mobilize its partners for this purpose.

This section will promote the concepts and experiences developed by INBO members in particular the members of the new Regional Mediterranean Network of Basin Organizations, created in Madrid on last 3 November.

Each network will favor the joint dissemination of the collected information.

INBO/GWP: STRONG MOBILIZATION FOR THE ASSOCIATED PROGRAM

The General Assembly was pleased with the outstanding mobilization of INBO members to achieve the objectives of the Associated Program "**assistance with the creation and development of basin organizations over the world**" jointly prepared by GWP and INBO.

61 projects, meeting the conditions set by the Associated Program and coming from all the regions of the world, were studied after the call for proposals sent by INBO Permanent Technical Secretariat, in close collaboration with the LANBO and CEENBO secretariats and with the regional TACs of GWP.

INBO next General Assembly will take place in the Martinique in Spring 2004 at the invitation of the Basin Committee and Local Authorities of the Martinique, in liaison with the French Loire-Brittany Water Agency.

www.inbo-news.org

A Virtual Discussion Forum

- *Participate in the discussions,*
- *Exchange your ideas,*
- *Disseminate your experience,*
- *Propose your projects,*
- *Ask your questions !*

Eight topics to be enhanced

- Management of transboundary rivers
- Relations between basin organizations and administrations
- Users' participation and populations' involvement
- Economy and the financing of water
- Formulation of masterplans and river basin planning
- Integrated systems for monitoring resources, uses and the environments
- Prevention of natural and accidental hazards
- Protection of wetlands and groundwater

Visit the "Virtual Forum", You will find there :

- ➔ summary notes of INBO meetings
- ➔ papers on the experiments of member-organizations
- ➔ up-to-date information
- ➔ a "room for public debate"

INBO Virtual Forum has to prepare the Network's participation in the 3rd World Water Forum of Kyoto in March 2003.

www.inbo-news.org

AFRICAN NETWORK OF BASIN ORGANIZATIONS (ANBO)

DAKAR DECLARATION

The Constitutive General Assembly of the African Network of Basin Organizations (ANBO) took place in Dakar (Senegal) on 10 and 11 July 2002.

This assembly was initiated by the group of basin organizations of West Africa and Lake Chad with the support of the Regional Water Partnership of West Africa (GWP/WAWP) and the International Network of Basin Organizations (INBO).

It gathered delegates from the Administrations in charge of water management and the Basin Organizations of the Region.

The delegates approved the statutes of the African Network of Basin Organizations, according to the rules of the International Network of Basin Organizations (INBO), with the legal statute of an association under the legislation of Senegal.

According to the new statutes, the delegates elected Mr. Oumar OULD-ALY, as President of the Network for a 2-year mandate and appointed the other members of the Bureau. The General Assembly has chosen the Organization for the Development of the Senegal River (OMVS) to be in charge of the Permanent Technical Secretariat for a renewable 4-year term.

The delegates, gathered in Dakar, appealed to all the Ministries in charge of water and to all the existing (or being created) basin organizations, in Africa, to join this new continental Network with an open mind for strengthening cooperation at the level of the Region.

They wished that a coordinated multi-year program be established to support the creation and reinforcement of basin organizations in Africa, based on the principles of integrated water resource management organized at the level of basins of rivers and aquifers of the continent, either national or transboundary with the participation of all categories of water users.

The delegates strongly reminded that freshwater is a regional public good at the scale of each basin and that its good governance is essential to fight against poverty and improve health and hygiene and to the sustainable socioeconomic development of mankind.

They stressed the importance of sharing African information and documentation on water inside an African Water Information and Documentation System ("AWIS") whose preliminary studies have proven its feasibility.

The delegates wished that the initiatives of bi and multilateral cooperation institutions and of non governmental organizations be coordinated with the projects of the member organizations of the Network within a multi-year program of the African Network. This coordination on a continental scale would aim at supporting the creation and strengthening of basin organizations in Africa. This objective is itself included in the Associated Program jointly initiated by INBO and GWP and in the European Initiative on the management of transboundary rivers in Africa.

They also appealed to the bi and multilateral donors to prioritize the financing of projects initiated and approved within the framework of this Associated Program.

They mandated the Network President and the Permanent Technical Secretary to present this "Dakar Declaration" to the World Summit on Sustainable Development of Johannesburg and to the 3rd World Water Forum of Tokyo.

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INBO IN THE MEDITERRANEAN

The Mediterranean Network of Basin Organizations (MED-INBO) was created in Madrid on 3 November 2002, according to Clause eleven of the statutes of INBO (International Network of Basin Organizations).

Its main objective is to promote the undertaking of any Mediterranean initiative towards the implementation of Integrated Water Resource Management (IWRM) at the level of basins of national or shared rivers, lakes or aquifers, while reconciling economic growth, social equity, environmental and water resource protection and the participation of the Civil Society.

This Regional Network aims to:

- develop lasting relations between the organizations in charge of such an integrated management in the Mediterranean Region and promote exchanges of experiences and expertise among them;
- facilitate the design of adapted instruments for institutional and financial management, tools for information and follow up of water resources, for the organization of databases, the concerted preparation of masterplans and of medium and long-term action plans;
- develop the information and training of local elected officials, of the

representatives of users and various stakeholders involved in water management, and the executives and staff of basin organizations;

- encourage the education of populations on these issues;
- promote these river basin management principles in international cooperation programs;
- evaluate the actions initiated by member organizations and disseminate their results.

The Jucar Hydrographic Confederation of Valencia (Spain) is in charge of the secretariat of this new Regional Network.

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CENTRAL AND EASTERN EUROPEAN NETWORK OF BASIN ORGANIZATIONS - "CEENBO"

FIRST GENERAL ASSEMBLY



Delegates of organizations and administrations of Central and Eastern European countries gathered in Sinaia - Romania - on 1 and 2 February 2002, within the framework of the International Network of Basin Organizations (INBO).

In accordance with the INBO statutes approved during the Zakopane General Assembly (Poland, October 2000), and in particular with clause 11 of the statutes and the provision of

the **Warsaw Declaration (22 - 23 June, 2001)**, the delegates approved the creation of the **Central and Eastern European Network of Basin Organizations (CEENBO)**.

Mr. Costica SOFRONIE was elected as President of CEENBO.

According to the provisions in the Clause 4 of CEENBO Statutes, **the National Company "Apele Romane" - Romania - offered to host**

the Association's Head Office in Bucharest.

The participants expressed their interest to the following main activities of CEENBO:

- ❖ to strengthen the relations between INBO members from neighboring countries of the Central and Eastern European Region;
- ❖ to facilitate the implementation of the GWP/INBO Associated Program;
- ❖ to organize technical seminars on the "Stage and

problems on the implementation of the EU Water Framework-Directive (WFD)";

- ❖ to exchange information regarding the organizational structure in each CEENBO country in order to implement the EU WFD;
- ❖ to develop information and training programs for raising public awareness and for local elected officials.

A technical seminar was held during the General Assembly.

It focused on the following issues:

- the progress made by GWP/INBO Associated Program in Central and Eastern Europe;
- implementation of the EU Water Framework-Directive;
- water pricing policies;
- the information and documentation system : **"AQUADOC-INTER"**.

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IMPLEMENTATION OF THE FRAMEWORK-DIRECTIVE IN CENTRAL AND EASTERN EUROPE

The participants of the Sinaia Assembly had included the organization of workshops on the implementation of the Framework-Directive in the EU pre-accession countries, among the priority activities of CEENBO.

The implementation of the Framework-Directive has generated a lot of work at the level of the Community and at the level of each Member Country. This included topical groups and coordination meetings for the European water managers, to which the water managers of the candidate Countries were associated.

A first workshop took place in Warsaw (Poland) on 4 and 5 July 2002. Mr. Tomasz Walczykiewicz, Water Manager at the Polish Ministry of the Environment, opened and chaired the workshop.

Ms. Daniela Radulescu, CEENBO secretary, and Mrs. Josiane Mongellaz, in charge of the project at IOWater, were the facilitators.

This workshop was intended for the executives of the ministries, national and local boards and basin organizations of the candidate Countries, in charge of preparing the implementation of the Framework-Directive in their respective countries. It dealt with the **"analysis of significant anthropogenic pressures and their impacts"**. This analysis will be included in the situation report of each basin district to be presented in 2004.

The French participants were representatives of the Water Agencies (Delegation in Brussels, Loire-Brittany Water Agency), IFEN (French Environment Institute), the European Topical Center on Water, members of the working

groups on the analysis of pressures and impacts, and of IOWater.

The workshop allowed:

- Promoting the dissemination to the candidate Countries of updated information on the questions arising when implementing the Directive; presenting ongoing works at Community level so that the countries have the same view on the Directive requirements and preparing implementation guidelines.
- Presenting the outputs of the French Group: assessment of the current situation at the level of the basins and changes required to match the Directive, development of common implementation methods, case studies, etc.

➤ Enabling the basin organizations of the candidate Countries to exchange their experiences and make known their analysis of the problems encountered, regarding this topic, when implementing the Directive in Central and Eastern Europe.

A second workshop was organized in Calimanesti, Romania on 14 and 15 November at the same time as the yearly meeting of CEENBO Bureau. It dealt with the **"stages of the Framework-Directive implementation and especially the preparation of the initial inventory and characterizations of water masses"**.

More than twenty delegates from 6 Central and Eastern European Countries participated. The papers of these two workshops were gathered on CD-ROMs and disseminated.

THONON-LES-BAINS (FRANCE) - 25 / 26 NOVEMBER 2002

FINAL RESOLUTIONS

"FOR RIVERS WITHOUT BORDERS"

123 delegates of governmental administrations responsible for managing water resources, and of the basin organizations coming from Algeria, Belgium (Walloon and Brussels-Capital Regions), Botswana, Brazil, Burkina Faso, Canada, Chad, Congo, Denmark, France, Greece, Hungary, Israel, Italy, Japan, Kenya, Lesotho, Mali, Mauritania, Mexico, Namibia, the Netherlands, Niger, Panama, Romania, Senegal, Serbia, South Africa, Spain, United States and Venezuela, and from the International Commissions or Transboundary Organizations for the Danube, Lake Chad, "Léman Lake", Mekong, Niger, Orange, Rhine, Scheldt, Senegal, and the International Joint Commission, met in Thonon-les-Bains, on 25 and 26 November 2002, under the auspices of the International Network of Basin Organizations (INBO) and at the invitation of the International Commission for the Protection of the "Léman" lake ("CIPEL"), of the Rhone-Mediterranean-Corsica Water Agency, and the Water Academy, and in the presence of the main bi and multilateral cooperation organizations and large Non Governmental Organizations involved.

PREAMBLE

There are 261 transboundary rivers over the world, the basins of which are shared by at least two countries and cover an area of about two-thirds of the continents and host two-fifths of the world population.

15% of the Countries depend on more than 50% of the water resources of upstream countries.

For instance, Iraq, Sudan, Syria, Egypt, Paraguay, Niger, Congo, Gambia, Botswana or Mauritania, Luxembourg, Romania, the Netherlands, Bulgaria or Hungary have more than 2/3 of their resources coming from bordering countries.

It is estimated that 48% of the world population will live in highly degraded river basins in 2025.

Although many agreements have been signed between riparian countries to ensure free navigation on transboundary rivers in the past centuries, and, since the end of the 19th century, to build hydropower dams, today, there are still too few agreements, conventions or treaties dealing with pollution control, aquifer management and a fortiori the integrated management of shared river basins.

But water has no boundary!

Appropriate integrated management of rivers, lakes or aquifers, shared by several riparian countries, is now of strategic significance.

For these large transboundary rivers and aquifers, inland or international seas, cooperation agreements between the riparian countries should thus be considered.

In cooperation with international organizations and programs, several countries have however already established a real basin organization and a large number are considering doing so.

An exchange and cooperation network is still lacking at the level of transbound-

ary river basins and aquifers, involving the managers, decision-makers and the main users' organizations concerned with sustainable water resource use.

It is the reason why the 5th General Assembly of INBO, which took place in Quebec in May 2002, proposed, in liaison with all the institutions concerned, **the creation of a specialized Network of International Commissions or Transboundary Basin Organizations to enrich this approach.**

BASIC PRINCIPLES

To ensure the quality of life on our planet, and the sustainable socioeconomic development of our societies, **water resource management needs now to be both sound and balanced.**

The questions raised by these problems are complex.

The answers must at one and the same time make it possible:

- to reliably and equitably meet the current and future needs of urban and rural populations for good quality drinking water, in order to improve hygiene and health, and to prevent large-scale epidemics,
- to ensure sufficient food by improving agricultural land use and irrigation while respecting the sustainable

management of water resources, soils and ecosystems,

- to enable an harmonious use of water for industry, energy production, recreational activities and, in some sectors, the development of tourism and waterways transport,
- to prevent and control pollution of all kinds and origins in order to preserve health and the aquatic ecosystems,
- to protect fauna and flora and optimize fish farming,
- to meet the requirements of different uses and ensure appropriate land use planning of river basins,
- to prevent and manage, in an integrated manner, the risks of erosion, flooding or drought.

Integrated water resource management is needed.

From now on, agreements and strategies, programs, financing and control should be designed at the river basin level.

www.inbo-news.org



The African panel chaired by Mr. OULD MERZOUG ("OMVS")

OF TRANSBOUNDARY BASIN ORGANIZATIONS

123 Delegates
coming from 41 countries



OBJECTIVES OF THE NETWORK

The objectives of this Network are **to assist with the creation and strengthening of basin organizations over the world, and in particular:**

- ▶ to strengthen cooperation between the countries bordering transboundary rivers, lakes and aquifers;
- ▶ to participate in the local, national and international discussions on integrated management of water resources and sound and sustainable development of river basins and aquifers and to make a concerted effort towards international cooperation in these areas,
- ▶ to develop exchanges of information, experiences and expertise between the Countries, Provinces or Regions and Organizations interested in the integrated management of a transboundary river basin or aquifer,
- ▶ to evaluate the activities undertaken and to disseminate their results, especially through publications and appropriate training programs,
- ▶ to design and promote programs for achieving these objectives,
- ▶ to facilitate the development of tools for institutional and financial management, program planning, database organization and of models for integrated management of water re-

sources, river basins and aquifers,

- ▶ to promote the exchange of information and data essential for knowledge of the resources, uses and pollution and required for forecasting natural hazards and accidents, for defining multi-year plans for joint and consistent actions and for evaluating the common policies implemented,
- ▶ to assist with the establishment of systems, based on the "user-polluter-pays" principles and on common cause in the basin, for financing their implementation,
- ▶ to promote training programs for the managers, executives and technicians of the member organizations and, more generally, for all stakeholders in water management,
- ▶ to promote the participation of the populations concerned in planning processes and sustainable water resource management.

THE NETWORK PARTNERS

The Network is open to:

- **International Commissions and to organizations responsible** for promoting and implementing integrated management of transboundary river basins and aquifers,
- **Governmental administrations** in charge of integrated water resource management in the countries involved in transboundary basins and aquifers and in-

terested in setting up basin organizations,

- **Bi or multilateral cooperation organizations** supporting activities to establish institutional structures at the level of large transboundary river basin or aquifer.

Non Governmental Organizations may participate in the Network activities as Observers.

PROCEDURES FOR CREATING THE NETWORK

All the interested partner organizations agreed to meet again within 18 months.

Romania and the Organization for the Development of the Senegal River proposed to host the next two plenary meetings and will jointly choose the places and dates during the first meeting of the Provisional Liaison Committee in March 2003.

Up to then, this Provisional Liaison Committee will make, under the transitory chairmanship of the representative of the International Commission for the Protection of the "Léman" Lake (CIPEL) and vice chairmanship of the Right Honorable E. GRAY (International Joint Commission - Canada/USA) and of Messrs. OULD MERZOUG (Organization for the Development of the Senegal River) and STADIU (Romanian Ministry of the Environment), all the contacts necessary to define the procedures for the constitution and running of the Network and to

examine all the new membership applications from partners not represented in the Thonon-les-Bains Assembly.

INBO Permanent Technical Secretariat will handle the secretariat of the Provisional Liaison Committee.

The delegates expressed their interest in **international cooperation programs relative to the management of transboundary river basins**, either ongoing or being elaborated, and affirmed their willingness in becoming stakeholders and partners, whenever possible, especially in the **INBO/GWP Associated Program** for the "Creation and strengthening of basin organizations over the world", in the **European Initiative on Water Management, especially in Africa and the New Independent States**, and in the other parts of the world where it could be extended, in the projects of GEF or United Nations Agencies, such as IW-LEARN, HELP, PCCP, HYCOS, etc., as well as in the projects initiated by the Water Academy or NGOs, such as Green Cross International, the WWF or the "River Initiative" for instance.

The participants of the Thonon-les-Bains meeting wished that their resolutions be presented at the next World Water Forum of Kyoto in March 2003.

INBO Workshop Kyoto WWF 3

**On Friday 21 March
in Shiga**

OTSU Prince Hotel
Suzuka Room: 15:30 - 18:15

Topic "Integrated Water Resource and River Basin Management"

Official session: "And now what ambitions for Basin Organizations?" with the members of INBO Liaison Bureau and GWP.

IS THERE AN INTERNATIONAL LAW ON WATER?

The 286 treaties currently in force only concern 61 out of about 260 international basins.

Overall conventions, either universally or regionally applicable, must be distinguished from specific conventions and bi or multilateral agreements. Among the first ones, one could mention the Treaty of Vienna (9 June 1815), which has internationalized some rivers in Europe or the Barcelona Convention (20 April 1921), which defines rules for navigable waterways of international interest.

International practice enabled the definition of some principles:

- the obligation of cooperation and negotiation with the intent of reaching an agreement;
- the prohibition of carrying out developments which may have significant and lasting damaging consequences in other States;
- the obligation of previous dialogue;
- the fair use of shared resources, including groundwater.

However, it must be recognized that there cannot be any reci-

procity between downstream and upstream as water always flows in the same direction...

Navigation was the first area of action in the treaties: between 1648 (Westphalia Treaty), and 1800, many bilateral treaties were signed stipulating freedom of navigation for the contracting parties.

In 1966, The International Law Association adopted, in Helsinki, "Rules" which propose some concepts among which is **the uniqueness of the water resource.**

It defines the notion of "international drainage basin" as being a "geographic area covering two or several States, whose limits are those of the catchment area of the river system, including surface and groundwater, flowing towards the same mouth": **a geographic unit corresponds to common interests and requires common cause.**

About twenty years ago, the International Law Commission started **the drawing up of a draft convention for the use of international watercourses for purposes other than navigation.**

It was finally passed by the General Assembly of the United Nations on 24 May 1997.

The riparian States of a basin have the right of using water on their territory, under optimal, "reasonable and equitable" conditions, taking into consideration all the "relevant factors and circumstances": the natural factors, the socio-economic needs, the impacts of the watercourse utilization on other States, the conservation, protection, development and savings in their use of the river water resources and the costs of measures taken to this effect. (clauses 5 and 6).

The use of a watercourse by a State must not cause any significant damage to other States (clause 7).

Finally, the States must consult each other and exchange information on the possible effects of the planned measures on the status of an international watercourse.

Indeed, it is necessary to "find a balance between independence of the riparian States and their sovereignty on natural resources and the right of the downstream States for the different water uses".

Water is a shared natural resource (Res communis) in so far as its use in a State has effects on its use in another State.

A Convention on the protection and use of transboundary watercourses and international lakes was adopted on 17 March 1992 in Helsinki, within the United Nations Economic Commission for Europe, and signed by 26 States.

The adoption by the European Parliament and Council of the **Directive of 23 October 2000, establishing a framework for common policy in the water field**, is a significant qualitative advance towards integrated and sustainable water management, especially transboundary. Indeed, for the first time in the European Union, all waters, – either surface, ground or coastal waters – are legally integrated into river basin districts, international ones inclusive, requiring the implementation of quality and quantity objectives and the necessary coordination.

The draft "Bellagio" Treaty applies the "Helsinki Rules", to transboundary groundwater.

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INTERNATIONAL CONFERENCE ON BASIN ORGANIZATIONS Madrid (Spain), 4, 5 and 6 November 2002

The Conference was intended to support the steps needed for Integrated Water Resource Management and, more specifically, those applicable to basins and to the required national institutional frameworks for the development of basin organizations.

Recommendations

These recommendations aim at supporting the outcome of the World Summit on Sustainable Development (Johannesburg 2002). They are recommended for implementation by governments, the United Nations system, international organizations, NGOs, the private sector and other stakeholders:

- 1 Supporting policy initiatives aimed to set-up, develop and strengthen basin organizations, within national water resource management systems;
- 2 Establishing and maintaining a database of all basin organizations all over the world;
- 3 Establishing, in basin organizations, accessible systems for monitoring, centers for analysis, research and dissemination of information programs;
- 4 Promoting the exchange of experiences between the basin organizations and developing tools for participa-

tory decision-making and support systems;

- 5 Encouraging the twinning of basin organizations.

These recommendations will be submitted to the 3rd World Water Forum in Japan.

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Aqu@docINTER is a project for 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).

The first National Focal Points in Central Europe

As an experiment, AQUA-DOC-INTER is networking the water information centers of Hungary, Poland, Czech Republic and Romania in Central and Eastern Europe with IOWater in France.

Following the technical steps of feasibility studies, the selection of architecture and installation of tools, which took place in 2000 and 2001, the project is

now starting its operational phase in the English, French, Hungarian, Polish, Romanian and Czech languages. In each National Relay Documentation Center, i.e. the Focal Point, the

team, made up of 4 to 5 persons with varied skill profiles, must acquire all the means required for the good operation of the network with respect to the constraints and defined common international objectives.

A training cycle started in 2002 in which the managers of the information bases and servers, the webmasters and project managers of each country attended specialized and useful courses.

The implementation of specific products (periodic newsletters, directory of addresses regarding the organization of



The webmasters of the Central European focal points in Prague (April 2002)

water management and operators, etc.) will be included in phase 3, a step dealing with the starting of the effective network operation from October 2002 to July 2003, based on common processes and on tests run in the French IOWater National Information Center.

Tests are also under way to develop the prototype in the Spanish, Portuguese and Arabic languages.



<http://www.aquadocinter.org>

**WATER FOR THE AMERICAS IN THE 21ST CENTURY
Mexico - 9, 10 and 11 October 2002**

The Ministers and Heads of Delegations of 23 countries and more than 500 specialists met in Mexico, from 9 to 11 October 2002, to improve integrated water management in the Americas, especially within the reference framework of micro or macro basins.

They agreed to:

- Strengthen and clearly define the responsibilities and competencies of the different institutions regarding river basin management, including aquifers and coastal zones and to promote the active participation of all stakeholders and beneficiaries,
- Intensify poverty abatement in all its forms,
- Adopt integrated water management as the basic

tool for balancing needs with water availability,

- Advance towards a new water culture which contributes to integrated water management, development and governance, based on the historical roots and values of each country,
- Work to the implementation of programs for reducing by half, before 2015, the number of people deprived of access to good quality water and to appropriate sanitation services, taking into account the native populations,
- Explore financial mechanisms and proposals which will allow progress in the achievement of the objectives given in Johannesburg,

- Promote actions for mitigating the effects of climate change and managing the risks related to extreme hydro-meteorological phenomena.
- Develop initiatives on integrated management of transboundary basins, by strengthening international cooperation,
- Improve information quality and public access, to establish management indicators and strengthen public and private institutions which increase knowledge and participation,
- Develop sciences and appropriate technologies,
- Initiate capacity building and to improve education, human resource develop-

ment and technical cooperation,

- Analyze the possibility of reinforcing cooperation at the level of the continent, which would facilitate exchanges of experiences and training.

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WATER IN THE MOUNTAINS

Integrated Management of Upper River Basins

MEGEVE (FRANCE) - 5 - 6 SEPTEMBER 2002



Starting with the findings that mountains are the "water towers of the planet" and that specific development and management actions should be carried out there, 450 delegates, coming from 20 countries, met in MEGEVE, Upper-Savoy, France, from 4 to 6 September 2002, within the "International Year for Mountains", (with the participation of FAO, UNESCO, UNEP, the Global Water Partnership and the International Network of Basin Organizations), to assess the situation and formulate proposals which will be presented to the World Water Forum in KYOTO, Japan, in March 2003.

Indeed, mountains encounter specific situations:

- **They are hazard-prone areas;**

With their slopes and relief, combined with scarce and fragile vegetation caused by their hard climate, mountains encounter high erosion and fast water concentration, which generate high water levels and floods that may cause disasters in the low lands of the river basins and plains.

- **Water quality is deteriorating;**

Pollution of upstream torrents and rivers deteriorates water quality downstream.

- **Competition among water uses is high;**

The strategies of populations, even of countries, are more and more competing and **"upstream-downstream common cause" is insufficient!**

In dry mountains, traditional irrigation is the main water consumer and demand is increasing.

The "snow blowers" - used by ski resorts at the beginning and at the end of the seasons - consume a lot of water during the low water level winter periods in the mountains when water requirement for tourists is the highest!

Further to the risk run by the populations over centuries because of **mountain water**, the latter is also a **"source" of wealth and development.**

Better use of this potential should contribute to the land use planning and economy of mountainous areas.

Most often, there are technological solutions although progress is always advisable. **The main hindrances are mainly institutional and financial.**

Good management of mountain water means better water management in the plains. The participants formulated the following recommendations:

- 1 River basins are natural territories in which water runs. Concerted actions have to be organized at this level.
- 2 An effective policy of water resource management must be designed in the long-term.
- 3 The role and responsibilities of the stakeholders, as well as their rights and obligations, and the arrangements for their participation and dialogue must be specified in a modernized and consistent legal context.
- 4 River basin committees or councils must associate the relevant governmental administrations and the representatives of the concerned local Authorities, with the different categories of users of water and aquatic ecosystems together with associations of collective interest from the civil society.
- 5 Masterplans, jointly formulated with dialogue, transparency, consensus and shared responsibility, must set out the objectives to achieve in the medium term in each large river basin.
- 6 It is necessary to set up reliable and representative integrated information and monitoring systems, complete and easily accessible databases as well as specific research programs.

- 7 The setting up of specific financing systems, based on the participation and common cause of users and polluters, is necessary to enable the implementation of the priority action programs required to achieve the objectives set out in the master plans of each river basin.

- 8 Community utilities in charge of drinking water supply, sanitation or irrigation would gain by using industrial and corporate management, especially within public/private partnership arrangements, and to bill their service providing to the users, at real cost, with all useful equalization to make these services available to the low income populations.

Among all these proposals, some can also be quoted:

- the experimentation, with some municipalities, of a certification approach, which can lead to a **quality label for water management**,
- the creation of a **network of pilot basins**, an initiative of FAO and the European Information System on Forests and Mountains,
- the importance of developing **international water information systems** such as the Euro-Mediterranean Water Information System (EMWIS).

Megeve, whose initiative was underlined by all the participants, has been approached to become a "focal point" for the reflections and real actions initiated on water in the mountains and to organize a new conference in five year time in order to draw conclusions on the evolutions and outcomes.

A PANEL FOR FINANCING HYDRAULIC INFRASTRUCTURES ALL OVER THE WORLD

More money, credit, trust, guarantees must be found to go from general ideas to tangible actions and avoid a more serious degradation of water resources.

This explains why the Secretariat of the Third World Water Forum of Kyoto, the Global Water Partnership and the World Water Council have created a panel, chaired by Michel CAMDESSUS, which gathers about fifteen senior financial executives: Presidents of regional development banks, of private banks, Ministers of finance, but also Managers of Non Governmental Organizations specialized in the water sector.

They hope that, further to the analysis, enough trust will be gained to allow shared actions between public finance, private finance and field teams.

Six meetings took place in all the regions of the world to gain this trust, make credits available, initiate actions to meet the world's needs, in addition to projects which are exemplary but isolated.

This initiative is supported by the United Nations Secretary-General and by the twenty three Agencies, Institutions and Programs of the United Nations, concerned with water.

The practical and financial conclusions of the panel will be presented to the Ministerial Conference, which will be held at the end of the Kyoto World Water Forum.

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INTERNATIONAL SECRETARIAT FOR WATER

FOR BETTER TRANSBOUNDARY WATER MANAGEMENT

Countless documents, reports, committees and meetings have tackled water issues from all angles. This whole mobilizing effort will eventually have a positive impact but for the time being, concrete action has yet to be seen.

This is even more true in the case of surface and ground waters shared by several countries.

A lot of energy would be expended on discussions about wording an international convention rather than on the signature of multilateral agreements which would immediately become effective.

There is a multiplicity of international river basin organizations, some of them dating back to the beginning of 20th century. The wide diversity of experiences is quite rich and

the time is right to define a set of principles that will guide action in the field of sustainable management of shared water resources.

- 1 **Water is part of a natural system of which it is one of the components.** We cannot isolate water management from other natural resources within the same territory. Human communities living in the same area depend on these well-functioning natural systems.
- 2 **A resource without boundaries:** Water does not recognize national human frontiers in its travel to the sea. Water is both a barrier and a link between people and the effects of human activities upstream will inevitably have an impact downstream.

3 **An efficient management framework:** The management of an international basin requires an appropriate legal and institutional framework.

4 **Decision making based on knowledge:** Given the diversity of human activities and the complexity of the natural systems, basin management requires a solid knowledge base.

5 **The essential participation of local communities:** Finally, the sustainable management of natural resources depends, above all, on local community involvement and active participation of the population. This is now well recognized and decentralized approaches are emerging everywhere.

ISW IS PREPARING KYOTO: THE CITIZEN'S HOUSE OF WATER

Based on the success obtained in The Hague, ISW and its partners will coordinate the "2nd Citizen's House of Water" in Kyoto.

This "Citizen's House of Water", designed as an Agora, will be used for the following activities:

- **A place for debates and consensus building** regarding principles and practices in water management with a view to promoting equitable access for all, while respecting traditions, culture and sustainable development. **Its main concern will be the role played by the citizens, the populations and the civil society in the various partnerships related to water management;**
- **A venue to host the first "World Assembly of Water Wisdom"** including representatives of various groups: 1) elected officials, 2) stakeholders from the civil society (NGOs, unions, consumers), 3) private providers

of service, 4) opinion leaders (scientists, journalists, artists, etc.), 5) financial sponsors, 6) representatives of local, national and international levels of governments, 7) public and para-public sector service providers, 8) children and youth;

- **A venue for receptions and official ceremonies.**

The "Garden of Governance" will be designed in harmony with Japanese culture, traditions and rituals and will introduce water approaches. The Garden will provide space for exhibitions, artistic and spiritual creation and expression.

The "World Youth Parliament for Water" will also take place in the "Citizen's House of Water".

This will give a hundred young people, coming from all regions of the world, a meeting opportunity to think about water management-related issues and propose tangible actions.

Within a context of a structured democratic debate, which involves the youths of about

thirty countries, the "World Youth Parliament for Water" has the following objectives:

- formulating a vision on water management and the part that could be played by young people,
- proposing alternative approaches for common cause.

A first Parliamentary Week took place last November at the Duchesnay Ecotourist Station, located near Quebec City.

KYOTO :

INBO and ISW are organizing a debate on the topic "Participation of the Civil Society in Basin Committees" on Tuesday 18 March 2003, from 10:00 to 12:00 at the Agora of the "Citizen's House".

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GEF

INTERNATIONAL WATERS LEARNING EXCHANGE & RESOURCE NETWORK

The Global Environment Facility (GEF), and its international water focal point, was created in response to the world community's recognition of the serious degradation of transboundary freshwater and marine systems. The GEF strategy emphasizes sustainable development.

Collective processes are necessary for countries to work together in establishing priorities and adopting policy, legal and institutional reforms.

In agreeing to share responsibility, basin countries also share a **vision of mutual and sustainable benefits**.

A focus on shared benefits, including reductions in poverty and resource degradation, is the best way to address conflicts arising over water.

Transboundary diagnostic analysis is particularly useful in developing collective Strategic Action Plans. These are roadmaps for "learning by doing". This is a process of confidence and consensus-building, consultation and cooperation, and multi-stakeholder participation.

To maximize return on investment, the GEF encourages networking and knowledge-sharing across the international water community, so that project teams and populations can continually learn from and teach each other.

The GEF International Waters Learning Exchange and Resource Network, more familiarly known as the IW:LEARN project, strengthens the architecture of a global knowledge-sharing community.

www.iwlearn.org the website, makes information, knowledge, and resources freely accessible.

Working closely with 3 implementing agencies: UNDP, UNEP and the World Bank, IW:LEARN promotes means to identify, disseminate, discuss and learn from "best" or "wise" practices as well as those "lessons" gained from water project experience.

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IFNet

AN INTERNATIONAL NETWORK ON FLOODS

Following the conclusions of the working group on water in rivers which met during the 2nd World Water Forum of The Hague, decision was made in May 2002 to create a Network on Floods (IFNet) to promote international cooperation for reducing human losses and damage, abating poverty and environmental hazards.

The virtual forum was opened on the website:

www.worldwaterforum.org/eng/index.html

to discuss about the international experiences on high water and flood management.

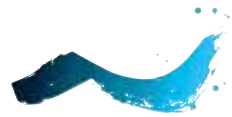
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GWP

AWARENESS CAMPAIGNS FOR THE GENERAL PUBLIC



GWP has published a book on Water Awareness Campaigns. The book discusses advocacy for youth activities, education and awareness, working with media and organizing public events. It is written in a light manner, and primarily intends to give ideas on what/how to

do. It concludes with a long list of references. The book can be ordered (free of charge) from :

gwp@sida.se

and can be downloaded from the GWP website :

www.gwpforum.org

NEW STATUTES

On 1st July 2002, the **"Global Water Partnership"** became **"GWPO"** i.e. the **"Global Water Partnership Organization"**. Therefore, GWP, which had no proper statutes, has become an entirely separate unit. This solution will not change the GWP philosophy, nor its assignments or its operating mode, but will clarify its situation for some countries and this will perhaps stimulate their participation.

The "facilitator" function of GWP, a new concept, is well received by the international organizations.

The 2nd World Summit on Sustainable Development in August 2002 and the 3rd World Water Forum of Kyoto in March 2003 remind the International Community that much remains to be done in the water sector and that more and more urgent emergencies are appearing. This means that social and political pressures will increase to have things done.

granted its support for the first time in 2002; Australia and New Zealand want to develop a RWP (Regional Water Partnership) for the Pacific, and the Caribbean and Central Africa want to do the same.

INBO/GWP Associated Program to assist with the Development of Basin Organizations over the world is now in its operational phase.

The **"Toolbox"** is becoming a reference for many developing countries. It is a collection of experiments, tools and specialisms, with examples of integrated water resource management addressing basin managers, decision-makers, administrations and NGOs.



GWP is obviously well perceived. France has seconded a permanent expert; Denmark wants to become a CWP (Country Water Partnership); Austria wishes that the countries of the Danube basin create an AWP (Area Water Partnership); Spain has proposed a new specialized resource center on Latin America; the World Bank, in its projects for financing investments, frequently requests GWP validation; the European Union has

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FAO

DEVELOPMENT OF RIVER BASINS

Just before the international conference on "Water in Mountains – Integrated management of upper river basins", which took place in Megève on 5 and 6 September 2002, the FAO (Food and Agriculture Organization) organized a workshop entitled "Let's prepare a new generation of river basin development programs".

Gathering specialists from all over Europe, this Megève workshop mainly aimed to share, exchange and disseminate information on river basin development.

Relying on the study of past experiments and in-depth analysis of case studies, the FAO intends to:

- identify the nature and significance of the obtained results and existing gaps;
- learn from the lessons drawn from experiences in this field;
- draw up directives for the implementation of future programs, while paying special attention to the part that integrated river basin management should play in sustainable conservation and use of water resources.

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UNEP

22 SECTORAL REPORTS FOR SUSTAINABLE DEVELOPMENT

For the World Summit on Sustainable Development, the United Nations Environment Program (UNEP) directed the drawing up of 22 sectoral reports gathered under the title "Industry: a partner for sustainable development".

Each of these reports analyzes progress made in a specific industrial sector regarding the implementation of Rio Agenda 21's recommendations. Reports were written by relevant industrial organizations, in close cooperation with the Secretariat of the United Nations Commission on Sustainable Development. These documents are available on the Internet site:

www.uneptie.org/wssd

In order to complete these reports, UNEP has published a summary, "10 years after

Rio: UNEP evaluation", which analyzes progress made by the business and industrial world, briefly presents future great trends and challenges and proposes recommendations.

More than 200 people contributed to these sectoral reports, including 130 members of the business and industrial world and more than 70 representatives of the working world, of non governmental and international organizations and universities. It is the first multi-actor effort on the international scale.

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CAP-NET

INTEGRATED MANAGEMENT OF THE RESOURCE



The CAP-NET Network was created in 2001, on the initiative of UNDP and with the support of the Dutch Government.

Associated with the Global Water Partnership, CAP-NET is acting as a promoter of national and regional programs for education and training on integrated water resource management.

The CAP-NET administrators have identified a number of organizations all over the world with experience in this field, willing to start a multidisciplinary approach to the problem, to accept a participatory action and aware of the role of women in resource management.

As CAP-NET partners, these organizations benefit from its technical assistance (remote training, translation, etc.) to train professionals and decision-makers on the methods used for integrated management.

INBO is a CAP-NET partner.

www.capnet.org

WORLD WATER ACTIONS

The World Water Actions will be one of the main reports presented during the 3rd World Water Forum of Kyoto.

Following the World Water Vision and the Framework for Action, issued during the 2nd Forum of The Hague, the "World Water Actions" gather the tangible actions initiated all over the world since 2000.

In July, the World Water Council entrusted six international specialists with the col-

lection of different information in order to constitute:

- a database (Action Inventory) on the various actions undertaken all over the world (innovative projects, particularly significant campaigns, institutional or political reforms, etc),
- a follow-up of the commitments made in The Hague,
- a series of recommendations to be presented in Kyoto.

This report is available on the site:

www.worldwatercouncil.org/wau_actions.shtml

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www.inbo-news.org
All information on INBO is available

on the WEB
www.inbo-news.org

An international conference entitled "From conflict to cooperation on international water resource management: challenges and opportunities" took place in Delft from 20 to 22 November 2002, on the initiative of UNESCO -International Hydrological Program (IHP)-, in cooperation with Green Cross International.

It was the opportunity for the various participants to exchange experiences and know-how on:

- ◆ the institutionalization of cooperation mechanisms;
- ◆ public-private partnerships;
- ◆ benefits from water sharing;
- ◆ impacts of political, climate, social and technological changes.

The first results of the program, namely "PCCP : Water for Peace (from Potential Conflict to Cooperation Potential)", were also presented.

This program, initiated in March 2000, aims to assist the Authorities in charge of water resource management with the promoting of cooperation actions, thus avoiding conflicts.

The PCCP is a significant contribution to the "World Water Assessment Program (WWAP)", supported by 23 agencies of the United Nations, allowing the drawing up of a continuous mapping of progress made in sustainable use of water resources.

The "Report on the world-wide development of water resources" (WWDR), regularly updated and published, will present the main trends and results of this process.

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PCCP: WATER FOR PEACE

More than 300 people (practitioners, administrators, academicians, representatives of the civil society and other diplomats and educators) met to discuss, analyze and better understand the multiple aspects of cooperation and its mechanisms as well as the causes of the water-related conflicts arising in varied political and socioeconomic contexts and explain their research, problems and initiatives.

UNESCO and Green Cross International are planning to present the first results of the "PCCP : Water for Peace" project in Kyoto, where they will present the topic on "Water for Peace".

In its first phase, the project makes an inventory of the tools available for the management of international water resources. The lessons learned from past experiences and a high number of case studies are being written, together with educational modules and guides. They will be available to the educational institutions which would wish so.



HELP

Launched in Geneva in February 1999 by UNESCO and the World Meteorological Organization to combine experimental hydrology and policies on water resource management, "HELP" (Hydrology for the Environment, Life and Policy) is integrated into the IHP (International Hydrological Program), whose 6th phase will be executed from 2002 to 2007.

By creating a network of river basins (25 in 2001), "HELP" aims to draw up a critical progress report on the water management policies used.

A Conference, entitled "For integrated river basin management: let's accelerate dialogue between scientists, politicians and decision-makers", was held in Kalmar (Sweden) from 18 to 22 August 2002.

By exchanging experiences, HELP aims to establish guidelines which could be applied under various climatic and socio-cultural conditions.

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THE INTERNATIONAL WATER ACADEMY

The International Water Academy, created after the International Conference on Water and Sustainable Development held in Paris in 1998, with a head office in Oslo, has just published its first Newsletter, presenting its actions and projects.

Firstly, a pilot training program deals with integrated resource management and with the solving of conflicts. Seven students from Egypt, Ethiopia, Sudan, and Uganda attended this training which started with courses at the National Water Research Center of Cairo. This will be followed by practical courses on water quality monitoring in various organizations in

Norway and Jordan during the Spring of 2003.

The Academy is involved, together with the Norwegian Church Aid, in a program for the rehabilitation of water supply and sanitation infrastructures in Afghanistan.

A trial-version of a digital atlas of water-related conflicts the world over was developed.

In 2001, a study was carried out in East Africa on one of the warning systems for floods and droughts, with a view to preventing conflicts.

The International Water Academy
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THE MEDITERRANEAN

ALGERIA

ALGIERS-HODNA-SOUMMAM BASIN AGENCY:

A well-filled program in 2002

The "Water-culture"

"Open" days on water savings and quality were organized by the Ministry of Water Resources on the occasion of the World Water Day celebrated on 22 March.

The Algiers-Hodna-Soummam Basin Agency invited Mr. Claude Salvetti of the French Seine-Normandie Water Agency to lead a technical day on "water classes".

"Water classes" took place in three high schools of Algiers.

A national drawing contest

In cooperation with the Ministry of National Education, the Agency organized a national drawing contest on the topic "Water savings and quality" in which 9 people won prizes.

Fight against water wastage

Spots, drawn up by a very popular actress, are regularly shown on the television at prime time.

Educational leaflets and posters were designed on the topic: "How save water, how fight against wastage" to raise the awareness of all the water users and stakeholders especially at school.

The masterplan of M'Sila "wilaya"

In 2002, the Agency chose the M'Sila "wilaya" to study a Masterplan.

This plan deals with the assessment of water resources and needs in 2005-2010-2020, the possibilities for mobilizing new conventional and non conventional water resources and propose the programming of developments.

French Algerian cooperation

The French Algerian cooperation has provided assistance to the Algerian River Basin Agencies since 1999.

The 2002-2004 program, financed by the French Embassy and led by the International Office for Water, deals with:

- ❖ a methodological support to the study of the Mazafran pilot basin,
- ❖ training courses on the work of a data administrator and communication.
- ❖ Immersions in French Water Agencies.

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THE WADEX: INFORMATION SYSTEM OF THE CHELIFF-ZAHREZ RBA

The Cheliff-Zahrez River Basin Agency has designed and developed a software for water resource management, namely Water Data Extension (WADEX).

This tool allows:

- A geographic representation with the use of a GIS;
- A tabular representation where the information is localized by its textual data.

It is a unique information system which integrates all the data on the water cycle in the basin.

In particular, the hydraulic register is an inventory of the basic data on water resources and existing hydraulic infrastructures.

Quality and quantity

The WADEX processes rainfall inputs, run-off, evaporation and infiltration, using the data provided by the "ANRH" monitoring network, made up of 177 rainfall gauging stations, 50 hydrometric stations, 14 sta-

tions for evaporation, piezometry and geographic sounding, and of 12 dams and 300 earth dams encountered in the basin.

It records all the physical and chemical analyses and the changes in water quality in the water courses and in the 19 large aquifers existing in the basin.

The WADEX enables the identification of the normal water contents of an aquifer and the detection of a degradation by external pollution, the automatic classification of groundwater by facieses. It also checks that water is drinkable.

Infrastructures

An inventory is made of the hydraulic works of the river basin. In addition to the storage of data, the GIS enables their localization.

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MOROCCO

WATER LINKS IN THE MEDITERRANEAN"

From 8 to 11 July 2002, the **UNESCO's interdisciplinary unit for sustainable water management**, in cooperation with the Maghreb-Machrek Alliance for Water and the International Secretariat for Water, organized, in Fez (Morocco), a "first meeting for water in the Mediterranean" on the topic "**Governance and social management of water**". This event was attended by representatives of the organizations involved but also by representatives of the public and private sectors and associations, by politicians and representatives of the political world and by national and international specialists.

While furthering debates and exchanges of experiences, it was designed to combine topics such as knowledge, ethics and social fairness, health and the environment, cooperation and conflicts, costs and financial sources for social water

management, role of the media and training.

A World Petition for an International Framework Agreement on Water and for an awareness campaign on "Water, hygiene and health" were launched.

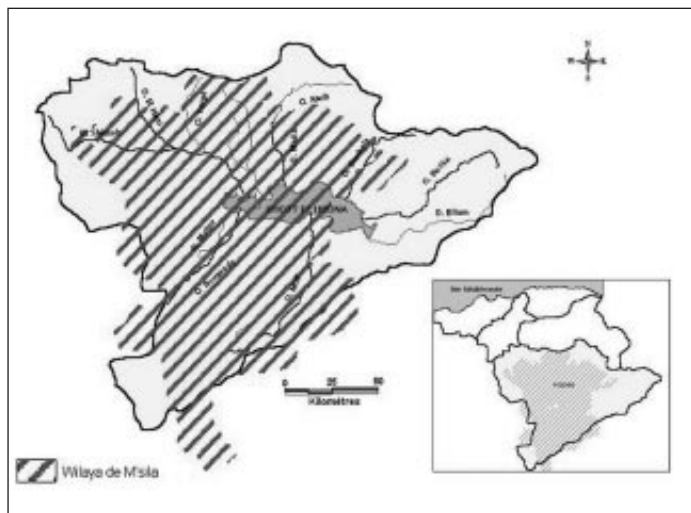
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SEMIDE
EMWIS

The Euro-Mediterranean
Water Information
and Documentation
System

www.emwis.org



AFRICA

"OMVS"

THE WATER CHARTER FOR THE SENEGAL RIVER



Created in 1972 by Mali, Mauritania and Senegal, the **Organization for the Development of the Senegal River (OMVS)** is now a reference in Africa as regards shared multipurpose river infrastructures.

The operating of the two Diama and Manantali dams opened new prospects for the socio-economic development of the Member States.

All the structuring developments built up to now enabled the consolidation and significant increase in knowledge of the Valley system operation: the water resources (regime, flow rates), their conservation and their sound use.

The management and optimal allocation of water resources required the preparation of a reference legal framework.

It is in such a context that the Organization prepared, in cooperation with its partners, the World Bank in particular, a Water Charter which was adopted by all the Member States on 18 May 2002.

The Water Charter is a legal document of international scale in keeping with the founding documents of the "OMVS".

The agreement is based on four basic components:

- 1 A lasting and structured cooperation between the Member States which guarantees equity and fairness in the access to the resources for the users and navigation freedom;
- 2 Whole common property of infrastructures;
- 3 Equity in the sharing of costs and charges;

4 The international character of the river, a fragile resource which is threatened by pressure, growth and the diversification of the human and economic needs.

The drawing up process was based on a wide, free and fair dialogue, mutual trust and good faith.

The Charter includes five strategic stakes:

- Efficient, sustainable and profitable management of infrastructures;
- Satisfaction for all the users;
- Determination of rules and compromises necessary for sound management;
- Creation of a common action framework for all stakeholders;
- Integration of all national efforts into a regional framework.

An innovative act, our Water Charter provides the conditions for rational and economic use of water and guarantees long-term financial viability for our programs using stringent and transparent mechanisms for allocating the resources and solving conflicts while preserving the environment.

"OMVS" will start a wide dissemination of this charter so that all the countries and basin organizations of the African region can benefit from it.

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WEST AFRICA

A DATABASE ON THE ENVIRONMENT

Within the project "**Development of an institutional framework and of a data network for integrated management and drawing up of reports on the environmental status in West Africa**", initiated by the United Nations Environment Program (UNEP) and REDDA (Network on the Environment and Sustainable Development in Africa), and following the meeting of a group of experts, held in Niamey (Niger) from 19 to 21 November 2001 at the AGRHYMET Regional Center, the architecture of a database for managing the information on the environment in the West-African sub-region was approved.

Once improved, this base should become a tool for the management of natural resources and the environment, for policy formulation and decision-making in West Africa

and for the drawing up of a sub-regional report on the environment as a help to the GEO (Global Environment Outlook) process.

A training seminar on databases took place on 4 and 5 March 2002 in Abidjan, at the head office of the African Development Bank. It addressed the personnel of the Project Coordination Unit and the people involved in the management of databases on sustainable development in West Africa.

The next activities of the project will include the set-up of the database in the countries, the development of indicators, the organization of regional workshops and meetings of experts, especially for political decision-makers, the reviewing of the sub-regional report on the status of the environment.

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www.nesda.kabissa.org/

NSAS

THE NUBIAN SANDSTONE AQUIFER SYSTEM

The Nubian Aquifer System is a transboundary groundwater basin in the North Eastern Sahara. The waters of this regional aquifer are non-renewable and shared between Chad, Egypt, Libya and Sudan. The area occupied by the Aquifer System is 2.2 million km² and extends between Latitude 14° and 33° and longitude 19° and 34° to cover 828,000 km² in Egypt, 760,000 km² in Libya, 376,000 km² in Sudan, and 235,000 km² in Northern Chad. The volume in storage represents the largest freshwater mass in the whole world.

The Center for Environment and Development for the Arab Region and Europe (CEDARE) has joined forces with the International Fund for Agriculture Development (IFAD), the Islamic Development Bank (IDB) and the riparian countries for initiating a **Regional Program for the Development of the Nubian Sandstone Aquifer System**. This initiative was a phased program. The first phase aimed at the development of a Regional Utilization Strategy of the

NSAS. The second phase aimed at the integration of the socioeconomic aspects with a vision for development.

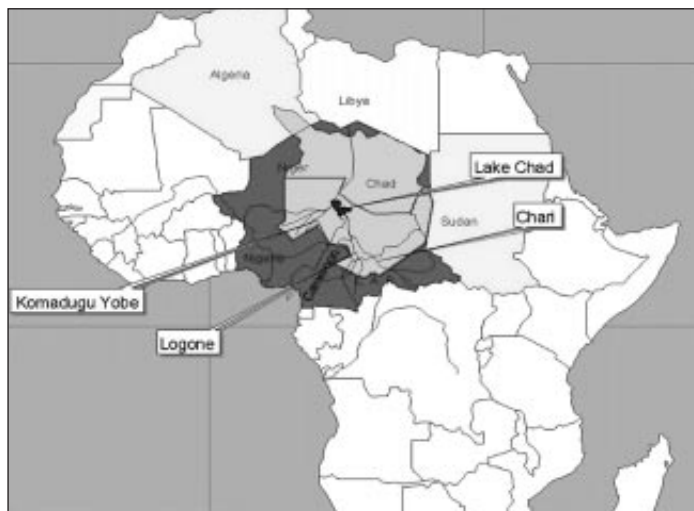
Within the regional program, which started in 1998, agreements were signed between the four countries for regular monitoring and continuous exchange of information. The capacity of the four countries was empowered for better management of the aquifer. Thematic maps, a mathematical model and an information system were developed at the regional level. The role of the Joint Authority for the Study and Development of the NSAS was revitalized.

This program which provides a model for management of transboundary water resources in general and shared aquifers in particular, paves the way for the utilization of the aquifer within principles of rationality and wisdom.

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THE LAKE CHAD BASIN COMMISSION



The Lake Chad Basin covers 2,381,636 km² at the heart of the Sudanese-Sahelian Africa on the southern border of the Sahara desert.

For thousands of years, the Lake Chad region has been a development center for trade and cultural exchanges between the populations of the North and South of the Sahara.

Nowadays the population of the region is estimated at about 30,000,000 inhabitants.

The main economic activities are fishing, animal husbandry, agriculture and trade.

The Commission was created on 24 May 1964 at Fort Lamy (N'Djamena) by the willing Heads of the States bordering Lake Chad (Cameroon, Chad, Niger, Nigeria). The Central African Republic became the fifth Member State in 1994.

The Member States asserted their will of intensifying their cooperation and efforts for developing the resources of the Lake Chad Basin.

The Commission has a mandate to achieve this objective by, among other things:

- Preparing common regulations;
- Gathering and disseminating information on the projects prepared by the States;
- Recommending the planning of joint ventures and joint research programs;

- Maintaining a liaison between the highest contracting parties with a view to using water in the most efficient way;
- Following up the execution of studies and work in the basin;
- Examining complaints and contributing to the solving of disputes;
- Promoting regional cooperation.

The Commission is managed by:

- ➔ A Summit of Head of States which meets once a year;
- ➔ A session of the Commissioners once a year;
- ➔ An Executive Secretariat.

The "CBLT" has carried out many national and regional projects to meet the regional population's needs and above all to complete and increase knowledge of the available water resources:

- ◆ Drilling of wells and boreholes,
- ◆ Inventory of the natural resources,
- ◆ Study of environmental degradation,
- ◆ Planning of water resources,
- ◆ Follow up and management of groundwater resources.

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CAW

CENTER FOR AFRICAN WETLANDS

Wetlands constitute a resource of great economic, cultural, scientific and recreational value. They have fundamental ecological functions as regulators of water regimes and habitats supporting a rich biodiversity. Promotion of wetlands research and training is crucial for their sustainability.

The idea of a **Center for African Wetlands (CAW)** was endorsed at a meeting of wetlands experts in Accra in November 1997. The implementation of the project is planned over a 15-year period, after which the center is expected to be self-sustaining.

Phase I, which covers an initial 5-year period, was planned in three stages:

- 1 **Stage I (1 year)** establishment of the Center in December 1999, following the release of funds by the Dutch Government;
- 2 **Stage II (2 years)** first activities, development of long term strategy and financing mechanisms for the Center;
- 3 **Stage III (2 years)** implementation of CAW program and definition of programs of activities for Phase II.

The activities of the Center seek to maintain the biodiversity and enhance the general

ecological integrity of wetlands and improve the quality of life for people living within and around these areas.

CAW presently focuses on twelve West African countries, namely Benin, Burkina Faso, Cameroon, Cape Verde, Ghana, Guinea-Bissau, Ivory Coast, Liberia, Mali, Mauritania, Nigeria and Senegal, for development of partnership and establishment of the Center's network and focal points.

So far, a team of consultants have visited all the countries concerned with the view to identifying the existing wetland types, relevant agencies, wetland research, human resource and training needs, and relevant regulatory mechanisms; the team was also identified potential partners.

CAW hosts the African regional center of Global Mangrove Database and Information system (GLOMIS):

<http://www.glovis.com>

The building was inaugurated in November 2001. The Center is currently recruiting a team of high calibre staff of scientists and administrators from the West African sub-region to run its activities.

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"CREPA"

REGIONAL CENTER FOR LOW COST DRINKING WATER SUPPLY AND SANITATION

The "CREPA", Ouagadougou (Burkina Faso), organizes courses according to specific needs:

- ◆ Facilitating water supply and sanitation programs;
- ◆ Storm water drainage: participatory management of floods;
- ◆ Strategies for waste management;
- ◆ Decentralization, community and participatory management of the environment;
- ◆ Hygiene in schools;
- ◆ Drinking water supply and sanitation;
- ◆ Lasting cost recovery regarding water supply to settlements.

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INBO Workshop Kyoto WWF 3

**On Thursday 20 March
in Shiga**

OTSU Prince Hotel
Ohmi Room – River Stream 2
12:30 - 15:15

Topic "Integrated Water Resource and River Basin Management"

Official session: "Progress in water management at the level of river basins over the world"
with the participation of all the attending members of INBO.

ASIA - PACIFIC SOUTH-EAST ASIA

WATER-SCARCE RIVER BASINS: A BETTER UNDERSTANDING OF PROBLEMS

In five river basins in Asia, IWMI is studying how institutions can effectively deal with the growing problems of water scarcity and the intersectoral competition for water.

Each basin represents a different dimension of the scarcity problem.

This three-year collaborative research is being done by a team composed of IWMI scientists and researchers from national research centers in the selected countries.

We want to encourage water policy makers and planners in these basins to see their irrigation needs in a broader context of the river basin. Our research looks at the hydrological, social, and economic interactions that affect the use and availability of water particularly in irrigated agriculture.

In water-scarce river basins, the increased competition for a finite water supply inevitably hits the poorest members of society the hardest, especially women and children.

Institutional options

There is now widespread recognition that the river basin is the most appropriate unit of analysis for planning and managing water resources. Although there is a fairly good knowledge base on hydrology, there is much uncertainty about the institutional options for the effective management of river basins. The investigations of five basins and the lessons learned from three case studies of the Brantas River (Indonesia) Omungawa basin (Japan), Murray-Darling river (Australia) are attempts made to fill this gap in knowledge.

This project is funded by the Asian Development Bank.

Basin profiles

● Philippines

The Pampanga River: two seasons-dry (November to April) and wet (May to October).

Research focus

Study variability of water supply and how it can best be managed.

● Sri Lanka

Deduru Oya is a relatively water-short basin for irrigation purposes.

Research focus

Find effective institutional mechanisms to better manage water in a basin where there is spatial and temporal scarcity of water.

● Indonesia

The Lembang, Sumpur, Ombilin (Rivers) and Lake Singkarak in Padang, West Sumatra.

Research focus

Managing agricultural water supply under variable river flow conditions, intersectoral competition and pollution control.

● China

The Fuyang basin in Hebei Province is an agricultural and industrial region.

Research focus

Institutional arrangements for groundwater management, to effectively deal with intersectoral competition and pollution control.

● Nepal

The East Rapti basin: small-scale irrigation systems, groundwater extraction, and substantial demand of water for environmental purposes.

Research focus

Managing water in a transnational river, where some parts of the basin experience seasonal water scarcity, and also for environmental purposes without adversely affecting agriculture.

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THE MEKONG RIVER COMMISSION (MRC)



The Mekong flows for approximately 4,800 km from its spring on the Tibetan Plateau, in China, through Myanmar and Lao PDR, Thailand, Cambodia, and into Vietnam's delta, where it empties into the Sea.

The Mekong potential for development is far from utilized. However, considerable challenge lies ahead:

- To manage the pressure caused by a growing population's needs for water and energy supplies to support economic development, wi-

thout causing serious damage to the environment and ecological system.

- To achieve reasonable sharing of available resources to satisfy the requirements of the riparian countries.
- To ensure that funds are used effectively and that programs are being implemented with good coordination.

MRC launched a program in 2001 in order to direct all the energies towards achieving sustainable development in the basin.

The structure of the MRC Secretariat was changed in June 2000 and is based on cross-cutting functions. While sectoral programs remain important in the short and medium term, in the longer term, however, the focus of the MRC will shift from project execution to basin-wide planning, monitoring and management of the Mekong River Basin. It also develops databases and information, as well as planning tools to use in achieving the Vision: "An economically prosperous, socially just and environmentally sound Mekong River Basin".

This requires a transboundary approach to development, a commitment to information exchange and permanent dialogue.

Collaboration with Upper-stream Countries

China and Myanmar – the two upper-stream countries – are not MRC members yet, but are major partners. During the ne-

gotiations which led to the signing of the 1995 Agreement on the Cooperation for the Sustainable Development of the Mekong River Basin, the four countries of the Lower Mekong River sincerely expressed their genuine aspiration to improve their relationship and develop closer cooperation with the two upper-stream countries.

Since 1996, the MRC meets regularly with China and Myanmar to seek ways and means of informing each other and to search for a practical framework of cooperation for all six Mekong riparian countries.

On 1 April 2002, an Agreement was signed with the Ministry of Water Resources of the People's Republic of China on the Provision of Hydrological Information on Lancang/Mekong River.

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PHILIPPINES

LAGUNA DE BAY: INTEGRATED WATER RESOURCE MANAGEMENT (IWRM)

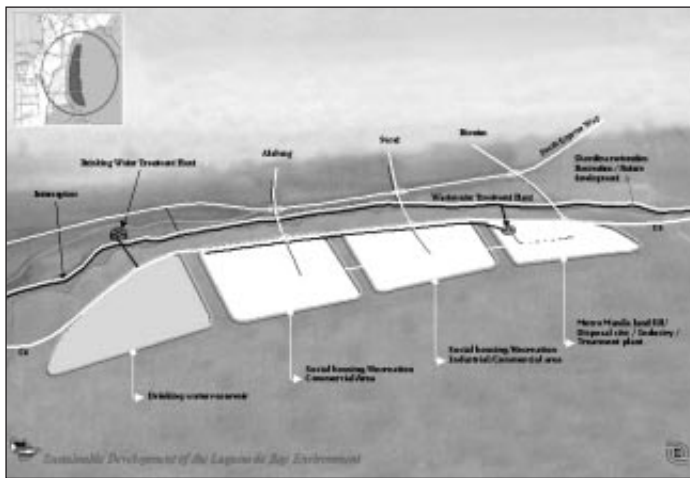
The Sustainable Development of the Laguna de Bay Project includes: training focusing on the development of technical tools for the IWRM division, the set-up of a GIS and of a Decision Support System (LLDA-DSS).

This Support System integrates the state-of-the-art software tools to provide an adequate scientific description of the Laguna de Bay. The DSS is an important tool to:

- increase the understanding of the relations between lake users and the water system,

- integrate research efforts and translate the results to the LLDA management level,
- provide a common and user-friendly framework for the analysis and comparison of management options and measures.

The application of the DSS and the accompanying collection and analysis studies have already led to an impressive update on many facts and figures.



THE POLDER ISLAND DEVELOPMENT PLAN

The Polder Island Development Plan (PIDP) is a technical, economic, and environmental pre-feasibility study that aims to present a vision on sustainable development addressing the problems and needs in the most populated, intensely used and polluted part of the Laguna de Bay catchment area. It includes the creation of four polder islands (3000 ha).

The southern-most portion covering 800 hectares will become a drinking water reservoir that will provide a continuous water supply of 400 million liters per day for domestic and industrial use.

The northern-most polder island covering 500 hectares may contain a new sanitary landfill that, when coupled with improved garbage collection schemes, segregation and recycling, can solve the solid waste related problems besetting

Metro Manila and the nearby towns for the next 50 years.

A wastewater treatment plant, that may be constructed in the polder, will control whatever leachate that will emanate from the landfill.

The inner two islands, that will occupy a total area of 1,700 hectares, will be dedicated to social housing that will alleviate the congestion related problems of the adjacent densely populated coastal area.

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NEPAL

MAHAKALI RIVER: A BILATERAL TREATY BETWEEN NEPAL AND INDIA

The integrated development of the Mahakali River including Sarada Barrage, Tanakpur Barrage and Pancheshwor Project is an agreement between India and Nepal. It was ratified by the Nepalese Parliament.

Sharing of water and benefits

The Mahakali treaty sets principles for the Pancheshwor Multipurpose Project which is to be built on a reach of the River where it forms the boundary between the two countries. Both parties agree that they have equal entitlement to the utilization of the waters, without prejudice to their existing consumptive uses, and to all benefits accruing from the development of the project in the form of power, irrigation, flood control. In particular, the two power stations shall be operated in an integrated manner and the total energy shall be shared equally between the two parties.

Regional cooperation

Other treaties between Nepal and India already deal with the Kosi and Gandak Rivers. Similarly, there is a bilateral agreement between India and Ban-

gladesh on the sharing of the Ganges waters at Faraka and augmentation of its flow.

The use of energy is increasing rapidly in the agricultural sectors in India, Bangladesh and Southern Tarai of Nepal. Bangladesh suffers heavily from floods every year. Northern India needs water for irrigation whereas hydropower would be the most exploitable ingredients of Himalayan rivers for Nepal and Bhutan.

So India, Nepal, Bangladesh, Bhutan and China could sit together and form a network of Ganga-Brahmaputra basin organizations for regional cooperation to exploit the vast Himalayan water resources. Each basin country has sufficient grounds for compromising on conflicts for sharing the benefits from water resource development on the regional scale.

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THE SIWALIK, A REGION WITH PROBLEMS

All major rivers of Nepal flow through the Siwalik region. Most of the tributary streams in this region are non-perennial. The hydrological characteristics and the impact of human activities and natural phenomena on basins in the region are not well understood. About 45 percent of annual rainfall drains as surface runoff, about 30 percent evaporates, and 25 percent infiltrates into the ground. High Monsoon rainfall is one of the environmental degrading natural agents in the region.

Since at least 1785, serious floods have caused damages to lives and properties. About 2300 sq. km area was seriously affected and more than 1,000 houses were destroyed during the flood of 1883. In the twentieth century, floods also caused appreciable damage.

Migrating people are settling on torrent banks due to their ignorance of the risks. When

landslides occur due to intense rain, the torrents wash out all houses and lives. Communities in smaller river basins face threats of flash floods which cause high erosion and landslides.

People participate in drawing up risk and hazard maps to help the local Authorities to take the mitigation measures needed.

Awareness to communities is found to be more effective in minimizing loss of human lives and conserving the natural environments.

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CENTRAL ASIA

KAZAKHSTAN



The Irtysh at Semipalatinsk

PRIORITY TO RIVER BASIN MANAGEMENT

The Republic of Kazakhstan has an enormous potential for economic development, but water scarcity is one of the limiting factors.

Half of the water volume comes from the bordering States: China, Uzbekistan, Kyrgyzstan and Russia.

Considering the amount of river flows, Kazakhstan is among the least water supplied countries in the world. Water supply is one of the lowest in comparison with the Countries of the former Soviet Union.

Nearly 90% of river flow comes in Spring. The distribution of water resources is quite uneven, and is very changeable in different years and seasons. All this causes instability of water supply for regions and economic activities.

The river basins are considered as the basis of water resource management. This principle is based on the unity of these resources and the multisectoral character of their use.

There are eight basin administrations: Balhash-Alakolskoye, Ural-Kaspian, Cshu-Talasskoye, Aral-Syrdarinskoye, Tobol-Torgaiskoye, Irtyshskoye, Nupa-Saryusskoye and Ishimskoye.

One of the Kazakhstan's priorities is solving water sector issues. The Government approved a priority Water Policy until 2010 to solve the issues related to the availability and access to safe water resources

and sanitation services. The implementation of the "Drinking Water" program started in 2002, the Committee for Water Resources being the Executive Body.

International projects are also being implemented:

- Transboundary management of the Irtysh river water resources;
- Development of a water resource management system for Nura-Ishim river basins;
- Regulation of the Syrdarya and management of water resources and environment in the Aral Sea Region;
- Pilot "Water quality monitoring and assessment of the Tobol transboundary river water" project.

International cooperation is carried out within the framework of the Russian-Kazakhstan Commission on Transboundary Rivers and of the Interstate Coordination Basin Commission for Central Asia. Relations are being established with China.

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TRANSBOUNDARY MANAGEMENT OF THE IRTYSH RIVER BASIN

The aim of this project is to assist Kazakhstan and Russia in the design and implementation of integrated and transboundary water resource management of the Irtysh River to achieve sustainable development of activities which rely on these resources.

The expected benefits are:

- ❖ **Socioeconomic: at the national level:** improvement of knowledge of the national capabilities for designing and implementing resource management tools ; **at the local level:** improvement of drinking water quality and optimization of fishing, agricultural and industrial activities.
- ❖ **Ecological: at the regional level:** improvement of joint management of polluted water; **at the local level:** a more regular flow and better water quality will have positive impacts on fauna and flora.
- ❖ **Institutional: at binational level:** regular dialogue between the two countries on Irtysh water management ; **at the national level:** implementation of the Irtysh river basin management in each country.

Following the signing in 1999 of an agreement on the transboundary management of the Irtysh river basin by the Russian Federation, the Republic of Kazakhstan and the French Development Agency, a consortium, gathering the International Office for Water, SAFEGE and ANTEA, was entrusted with technical assistance for the implementation of the French part of this project, financed up to 1,000,000 € by the French Fund for Global Environment (FFEM).

The project includes:

- The part-time secondment of experts from the consortium to provide technical assistance to the parties involved in the project through working groups (monitoring, modeling, information system, institutional aspects);
- Point measurement campaigns and the provision of light equipment;

- The organization of dialogue and follow-up meetings;
- Capacity building for the institutions involved.

Three international meetings were organized in October 2001 (Omsk), April 2002 (Ust Kamenogorsk) and October 2002 (Pavlodar). The work progress achieved, the new orientations and activities were discussed and the equipment needs required for developing the project were defined and approved in each meeting.

Draft statutes for the Irtysh Sub-Commission were drawn up and presented during the plenary session of the Russian-Kazakh International Commission on transboundary water management during its anniversary meeting (10 years) which took place in Petropavlosk on 3 and 4 October.

A delegation of 12 Russian and Kazakh representatives participated in a study tour organized in France from 15 to 26 October 2002. They met the main French and European water stakeholders (Ministry of Ecology and Sustainable Development, the Water Agencies, the DIRENS, the Rhine Navigation Service, the Rhine Commission, BRGM, SAFEGE and finally IOWater).

The next international meeting of the Sub-Commission is planned in April 2003, to which will be presented a progress report on the work of the institutional, monitoring, basin information system and hydraulic modeling groups.

www.inbo-news.org
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on INBO
is available



on the WEB
www.inbo-news.org

THE AMU-DARYA AND SYR-DARYA AUSTRALIA AND NEW ZEALAND

The biggest rivers of Central Asia are the Amudarya and Syrdarya, which are the main sources of freshwater. They directly flow into the Aral Sea. The water regime of the Amudarya river depends on the melt of the snow cover, glaciers and on rainfall, and it is characterized by a high Summer flow and a low Winter one. The highest values are recorded in July-August, and the lowest ones in January-February.

About 80% of the Syrdarya river flow passes through from March up to September.

Irrigation consumes more than 90% of all available water resources in the region. At present about 3,6 mln. ha. are irrigated. The amount of the abstracted water during the high-water years is 10 km³/year,

while the non-productive water losses in the basin raise up to 30 km³/year.

The natural flow regime is significantly distorted by water intake for irrigation, by wastewater discharges and by water storage which break their hydrodynamic regimes.

The common features for the basins are the occurrence of a very substantial low-water period since 1969: the flow continuously decreased during 22 years up to 1991 in the Amudarya and for 17 years up to 1986 in the Syrdarya river basin.

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INTERESTING EXPERIMENTS IN THE SOUTHERN HEMISPHERE

The Murrumbidgee - Murray-Darling (Australia) and Motueka (New Zealand) river basins are involved in the "HELP" program (Hydrology for the Environment, Life and Policy) of UNESCO :

□ **As concerns the Murrumbidgee**, the river basin commission is the executive branch of the Ministerial Council of the Murray-Darling basin and is responsible for managing the Murray watercourse and Menindee lake system in the downstream part of the river. It gives advice on issues related to the use of water, lands and other environmental resources.

The Commission is an independent organization in terms of responsibility as the Ministerial Council is.

□ **The Motueka is managed by the Tasman District Council (TDC)** which is the only management and regulation organization in the region. The TDC is most unusual in New Zealand, as operating is based on a "unit", while elsewhere municipalities, districts and regional councils share the management and planning of land use and infrastructures, the TDC acts alone and this makes decision-making easier.

These southern experiments could soon complete the profile map made by INBO on integrated water resource management.

NORTH AMERICA QUEBEC - CANADA

LAKE CHAMPLAIN BASIN: A MODEL FOR INTERNATIONAL COOPERATION

Lake Champlain has a surface area of 1,127 km², i.e. more than twice that of Lake Geneva (584 km²). The territory of its basin (21,326 km²) covers part of Quebec (7%) and of the States of New York (37%) and Vermont (56%). There is a resident population of more than 571,000 people. 193 km long, it is crossed by the Canadian-American border in its northern part, only a small part of the lake is located in Canada. However, its natural outlet, the Richelieu River, runs on 124 km in Quebec towards the North and the Saint Lawrence River.

Canals and locks, built in the 19th century for trading purposes, link Montreal to New York City by crossing the Richelieu river (Chambly canal), Lake Champlain, Lake George and the Hudson river (Champlain Canal).

Now only used by yachtsmen, this navigable waterway is at the core of the development of

an international corridor whose peak will be the celebrations of the 400th anniversary of the lake discovery, in 1609, by Samuel de Champlain.

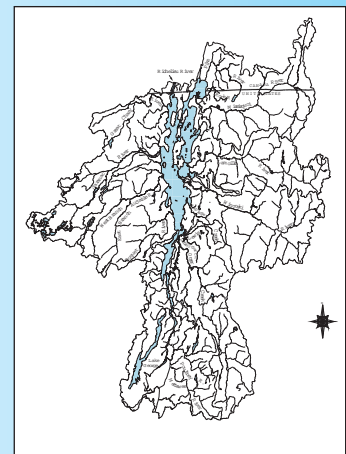
In addition to being a source of drinking water supply for about thirty riparian towns and settlements, Lake Champlain is a major leisure and tourist destination with economic impacts, estimated at more than 4 billions \$ US/year. The beauty of its landscape, the quality of the lake waters and ecosystems make that lovers of nature, sailing and sport fishing privilege this destination.

Non-point pollution with phosphorus, coming from agriculture at more than 80%, and the recent introduction of invading outside species threaten the lake health.

Acknowledging that concerted action was needed to protect this outstanding lake, reduce pollution, fight against exotic species and rehabilitate its ecosystems, the Government of

Quebec signed, in 1988, a first cooperation agreement on Lake Champlain management with the New York and Vermont States. This agreement was renewed in 1992, 1996 and 2000.

In addition, the Government of the United States passed the Lake Champlain Special Designation Act in 1990. This Act gives access to federal financing paid to the Lake Champlain Basin Program (LCBP) founded in 1991 and whose offices are located at Grand Isle in Vermont. An action plan was developed and adopted in 1996, by LCBP and the Lake Champlain Steering Committee, chaired by the Governments of Quebec, Vermont and New York State, in which also participate representatives of the American federal Government and of riparian communities and citizen committees such as the River Basin Corporation of Missisquoi Bay from the Quebec side.



As outstanding example of integrated management of an international basin and of exceptional partnership, the tripartite agreement of Lake Champlain is an original model of cooperation between the federated States of two countries.

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GREAT LAKES - SAINT-LAWRENCE BASIN: A MAJOR NEGOTIATION

The Great Lakes-Saint Lawrence Basin, as defined in 1985 in the Great Lakes Charter, covers a territory which includes the five Great Lakes (Ontario, Erie, Huron, Michigan and Superior) as well as the Saint-Lawrence river up to the Trois-Rivières town in Quebec (tide limit). This huge basin has 18% of the world freshwater reserves and about 40 million inhabitants and is the industrial heart of the American Midwest, from Ontario to Quebec, and offers a waterway of 3,700 kilometers long.

On 18 June 2001, the Prime Minister of Quebec, Mr. Bernard Landry, signed an annex to the Great Lakes Charter with his counterpart of Ontario and with the eight Governors of the American States bordering the Great lakes (New-York, Pennsylvania, Ohio, Michigan, Indiana, Illinois, Wisconsin, Minnesota).

It concerns the establishment of common standards which will deal with all water abstractions from the Great Lakes and Saint Lawrence, in terms of quantity and quality. All types of abstraction (agriculture, urban, industries etc..) and all the waters of the basin (lakes, tributaries, groundwater) are concerned by this negotiation.

This great work originated from the increasing pressures on the basin, especially the increasing demands of the megapolis and irrigation as well as the threats of all kinds to the lake ecosystems.



But the most determining factor was the fear of some major diversions or export of water outside the basin as other parts of America "are thirsty". Climatic phenomena reinforce the trend: there are two drought "arcs" surrounding the basin and economic and political pressures towards major abstractions can only worsen. The States and Provinces concerned concluded that their water management had

to be reexamined. It was also necessary to keep the decision-making center near the Great Lakes and to build a system without any gap, especially regarding agreements of a commercial type.

Quebec, located downstream of the Basin is directly involved and concerned by any progress made upstream. Montreal "drinks" the water of the Saint Lawrence and its port plays a major role in the trade exchanges between Europe and America.

In addition to the hugeness of the basin and the very wide spectrum of the areas concerned by the Annex of 2001, the central role played by the States and Provinces is a specificity. Indeed, the American and Canadian federal Governments are not directly involved in the Annex work, their jurisdiction only applying to "transboundary" waters which are the responsibility of the Canadian-American organization, the Mixed International Commission (MIC).

In spite of its immensity, the basin is indeed fragile: it is only supplied by a major river and only 1% of the Great Lakes volume is renewed each year by rainfall and run-off.

The ten jurisdictions must agree with each other before June 2004. The work is well advanced under the auspices of the Council of the Great Lakes Governors, based in Chicago.

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QUEBEC

A NEW WATER POLICY

Quebec launched a new water policy in November 2002.

As last output of the thinking, started in the Quebec society for examining and reviewing our relations with water and the aquatic ecosystems, the Policy incorporates the thoughts and recommendations issued from the public survey of the Commission for Water Management of Quebec which published its report in May 2000.

Thus, Quebec is adopting a National Water Policy (NWP) to have a more complete strategy for the use of water, as essential element to maintain life in all its forms, and for the

sustainable development of Quebec society.

The main components of this policy are related to the use of water for consumption and various economic activities, to the control of non-point, point and toxic pollution, the cleaning up of water and to the sustainability of infrastructures, drinking water treatment, the effective use of a water governance at the river basin level, the improvement in knowledge of water and aquatic ecosystems and finally, to the establishment of economic tools to complete the existing instruments.

Therefore, the national water policy of Quebec focuses on three main stakes:

- 1 acknowledging water as an essential component of the collective heritage of the Quebec society,
- 2 ensuring the protection of public health and aquatic ecosystems,
- 3 finally managing water in an integrated manner with all water stakeholders.

Five orientations resulted from these stakes: reform of water governance, integrated management of the Saint Lawrence river, protection of the quality

of water and aquatic ecosystems, control and cleaning up of water and finally enabling water-related recreational and tourist activities.

As regards the international context of Quebec, the Government has started a negotiation process for transboundary basins, those of Great Lakes and Lake Champlain.

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LATIN AMERICA

GWP- CENTRAL AMERICA

THE TOOLBOX AND INTEGRATED RIVER BASIN MANAGEMENT

The "ToolBox", created by the Global Water Partnership (GWP), is gathering various tools deemed necessary for Integrated Water Resource Management (IWRM) and provided in a logical order of implementation.

The Toolbox is a means of putting forward practical experiences in the form of case studies, drawing conclusions from the lessons learned.

It seems that the IWRM approach should be implemented in the drainage area of the river basin.

The Toolbox considers the agencies or river basin units as organizational bodies for water resource management. They can be transboundary. The basin organizations play a very important part in the implementation of IWRM at local level. They fulfill various functions, from the definition of policies and local control to the solving of conflicts and search for consensus. They may also fulfill technical tasks such as distribution of water, resource planning and management, education of populations, development of strategies or programs.

Planning, high involvement of the civil society and local authorities, good demand management, compliance with commitments made, appropriate financials and human resources are needed for the sustainable management of river basins.

The local authorities can play a significant part in the financing and implementation of activities for IWRM within their political limits or those of the basins. In addition, they may be regulators and services providers and play a part in the allocation of funds.

In Central America, the "Toolbox" includes the case studies of Lake Atitlán basin in Guatemala and Lake Arenal, Costa Rica.

The "toolbox" is available on the Internet:

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CHILE

THE BIO BIO RIVER BASIN: ADVANCES IN WATER MANAGEMENT

Water management in Chile is regulated by the Water Code, in force in the country since 1981.

The Chilean Water Code is a legislation based on the free market economic theory, because of its marked emphasis on private property, water user rights, the dominance of the law of the market and the subsidiary role of the State. After two decades of operation and coinciding with the advent of a democratic régime, **a series of omissions and imperfections were recognized, among others, the absence**

of integral management of water by hydrological basin, which limited and still seriously limits, the development of the country.

In this context, the Authorities of the Country, starting in 1992, have attempted to carry forward a project of modifications to the Water Code, that, in its first version, contemplated the incorporation of the concept of integral management of water through basin, by creating organizations, defined as **Basin Administration Corporations.**

At the end of 1993, the Government of Chile (Directorate General of Water at the Ministry of Public Works), managed to obtain a donation from the Japanese Government, for the development of a **Pilot Study in the Bio Bio Basin**, for one million dollars, administered by the World Bank and with Technical Assistance from the French Cooperation.

The Study was executed by "Coyne et Bellier" during the years 1994-1995.

Unfortunately in 1995, the modification of the Water Code, referring to the creation of Basin Corporations, was withdrawn from the original project which was finally approved by the Parliament.

The Authorities of that time were not convinced of its use. Thanks to the continuing of the Bio Bio Basin Corporation, the Directorate General of Water decided to pursue the experience.

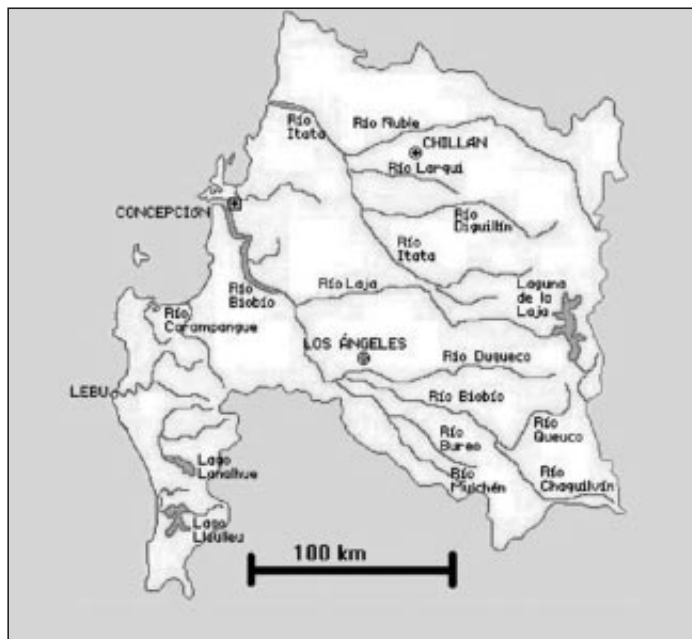
In recent years, it has been working and promoting Master Plans in some regions of the country. These plans are only indicative and do not aim at orienting and influencing public and private decisions, but at maximizing the use of the hydrological resource and counting on a base of technical analysis for the management of water.

The Directorate General of Water has also started a modernization program of water measurement networks that utilizes satellite technology – DCP stations – that permit data gathering in real time, indispensable to support modern water management in normal periods, in periods of scarcity and in periods of abundance – flood alerts.

Basin management has advanced in the Bio Bio region thanks to volunteers, with such actions as :

- The formulation of a Regional Irrigation Strategy, with public-private democratic participation.
- The creation, in December 2001, of a Regional Council, to coordinate all activities relative to irrigation in the region.
- The constitution of a working group, presided over by the Regional Water Director and composed of users organizations and representatives of the Bio Bio Region, namely "**The Voice of Water in the Bio Bio region**", to coordinate all the interactions between water users.

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BRAZIL

"ANA"

TOWARDS RIVER BASIN MANAGEMENT

The huge volume of water resources found in Brazil, where 13% of surface water of the planet is concentrated, has given a false feeling of abundance. This delayed the raising of awareness on water scarcity and resulted in misuse of the resources. The relative shortage of water resources and their high pollution, especially in the large urban and industrial concentrations, generated the first attempts of integrated water management at the level of river basins, at the end of the 1970s.

Since 1997, a modern legal framework has included the principle of shared and integrated water resource management, using the river basin as management unit.

In such a context, the National Water Agency (ANA) was created to implement the National Water Resource System. The first step was the creation of the first Basin Committees, thus establishing an institutional basis for promoting sustainable use and regulation of water resources and taxes for their use.

ANA's task is to support the creation of Basin Committees and ensure the imple-

mentation of programs for mobilizing the society and leading to a democratic, participatory and representative process for the composition of these committees.

The River Basin Committees or "water parliaments" are made up of representatives of the public sector at the federal, State and municipal levels and of representatives of the Civil Society and users. Their tasks are to promote debates on water-related topics, coordinate the actions of the participants, arbitrate (as first administrative conciliation board) conflicts on water, approve the Plan on the Basin Water Resources, establish mechanisms for resource use and propose measures to be taken.

The Water Agencies are the technical bodies of the Basin Committees and carry out the task of secretariat for these committees.

There is also a Program for the decontamination of river basins (PRODES), an innovative program for economic incentive to decontamination.

Currently, there are 5 Basin Committees for the Brazilian Federation's waters.

PARAÍBA DO SUL BASIN

THE FIRST TAXES

The Rio Paraíba do Sul basin covers a surface area of 55,500 km², 25% of which belongs to the São Paulo State (13,900 km²), including a region known as the Paraíba Paulista Valley, 37,3% to the Minas Gerais State (20,700 km²), including the "Mata Mineira Area", and 37,7% to the Rio de Janeiro State (20,900 km²).

The catchment area includes 180 municipalities with a population of 5.3 million inhabitants, 87% being in urban areas. The Paraíba do Sul waters supply a population of 14 million people in the Rio de Janeiro Metropolitan Area.

The National Water Agency has selected the Paraíba do Sul basin for establishing an experimental process of taxing the use of water resources.

The ANA, in collaboration with the Authorities of São Paulo, Minas Gerais, Rio de Janeiro and with the Committee for the Integration of the Paraíba do Sul Basin (CEIVAP), initiated an innovative program for the regulation of water resource uses by making the users declare their water uses.

This declaration enables the initiation of a process of tax recovery. It includes 5 steps: a computerized and online system which enables the users to enter their declaration on the Internet, creation of a register of the users, information on this process and time limits, help to the users and the issuing of taxes.

Following a long negotiation process, the "CEIVAP" approved these taxes in December 2001.

These taxes are based on the "polluter-pays" principle. However, the first phase was simplified for facilitating the users' commitment by only metering abstractions and BOD, the only parameter used for measuring pollution.

The Paraíba do Sul Basin Agency, technical body of the Committee with the legal status of a non-profit making association, will levy these taxes.

According to the Water Law, the funds thus collected will be invested in the basin and benefit the population. This is the basis for the sustainability of these taxes.



PIRACICABA, CAPIVARI AND JUNDIAÍ BASIN

The basins of the Piracicaba, Capivari and Jundiá rivers, with a surface area of about 15,320 km², include the territories of 74 municipalities, 69 of them being located in the São Paulo State and 5 in the Minas Gerais State. The region is highly developed – it corresponds to 7% of the Brazilian GNP – and constitutes the second industrial center of the country.

The Piracicaba, Capivari and Jundiá Basin Committee was established for solving conflicts as the rivers, supplying 55% of the population of the São Paulo metropolitan area, flow from Minas.

The "ANA", in partnership with the two States, is working on the setting-up of this committee as the process for mobilizing the society differs from the others, due to the Paulista State Committee which has been operating for a decade. The Committee should become effective at the end of the first quarter of 2003.



CHRONOLOGY OF WATER RESOURCE MANAGEMENT IN BRAZIL

- 1934** Water Code
- 1977** Mar del Plata, United Nations Conference
- 1978** Creation of the special Committee for integrated studies of river basins (CEEIBH)
- 1991** Law 7663/91 of São Paulo State, defining the State Policy on Water Resources
- 1996** Decree n° 1.842 of 03/22/1996, creating the Committee for the integration of the Paraíba do Sul Basin
- 1997** Law 9.433 on the National Policy on Water Resources
- 2000** Law 9.984 creating the National Water Agency (ANA)
- 2001** Decree of 06/05/2001, creating the São Francisco Basin Committee
- 2002** Decree of 01/25/2002, creating the Rio Doce Basin Committee
- 2002** Decree of 01/25/2002, creating the Basin Committee of the Piracicaba, Capivari and Jundiaí rivers
- 2002** Decree of 07/16/2002, creating the Paranaíba Basin Committee

SÃO FRANCISCO BASIN

The Rio São Francisco basin covers a surface area of 645,000 Km² and represents 8% of the national territory. It hosts a population of more than 13 million inhabitants, distributed in 503 municipalities in the States of Minas Gerais, Bahia, Pernambuco, Alagoas, Sergipe, Goiás and the Federal District of Brasília.

The São Francisco Basin Committee (CBH-SF), has 60 members designated and elected: 24 representatives of users, 16 representatives of the civil society, including a representative of the native populations of the basin, and 20 representatives of the Public Authorities.

RIO DOCE BASIN

The Rio Doce basin has a population of about 3.1 million inhabitants. Its territory covers about 83,400 km², 86% being in Minas Gerais State and the remainder in the Espírito Santo State. It comprises 223 municipalities, 202 of which are in Minas Gerais.

The urgency of finding solutions to the various conflicts on uses in the basin, in which

water quantity and quality have considerably lowered these last years, has caused the creation of the Rio Doce Basin Committee.

This committee was set up through a wide process of mobilization of the society to define the composition and election of its members.

RIO PARANAÍBA BASIN

The "ANA", in partnership with the Federal District and the Goiás, Mato Grosso do Sul and Minas Gerais States, will have to define, in 2003, the mobilization program for setting up this fifth committee of a Federation river.

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THE PIRACICABA-CAPIVARI-JUNDIAÍ CONSORTIUM

The PCJ Consortium is an association of private and public users of water, fighting for recovering their water resources.

The Consortium is developing, with municipalities and enterprises, programs for environmental education, fighting against water losses, spring protection, river basin management, solid waste treatment, technological development, river rehabilitation and conservation.

Fighting against water losses

The "Plan for fighting against water losses in public water supply systems" was initiated in 1997, with the support of the São Paulo State Fund for Water Resources (FEHIDRO), in the pilot municipalities of Atibaia, Amparo, Indaiatuba, Rafard and Rio Claro, for local demonstration purposes. In the pilot area of Amparo, the rate of losses decreased from 47% to 19%.

In view of the excellent results obtained, the Consortium published a document entitled "Combate às Perdas das Águas - Uma tomada de decisão", (Fighting against water losses - Making a Decision) in 1999, and established the Regional

Group to Fight against Water Losses.

In 1999, the project was extended to the cities of Americana and Sumaré and, in 2001, to four more cities: Analândia, Bom Jesus dos Perdões, Holambra, and Saltinho.

With the use of water meters, there was an increase between 16% and 21% on the average in the water volumes measured, and the amount of revenues increased by 15%.

In 2002, the Program included various other cities: Corumbataí, Ipeúna, Jaguariúna, Louveira, Nova Odessa, Santa Gertrudes and São Pedro.

Both from an economic and ecological view point, controlling water losses is one of the most important aspects in managing public water supply, and is a very valuable tool to offer to the municipal water and sanitation utilities.

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NEW PROJECTS FOR GEF

The National Water Resources Secretariat has initiated three great projects on the Guarani Aquifer, the São Francisco River Basin and the Upper Paraguay River Basin in the context of the International River Basin Studies, of the Prata, on one hand, and of the Amazon Basin, on the other, in compliance with the Treaty signed by the countries of that region.

Such projects will be transferred to the National Water Agency at the implementation phase.

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"RIVER BASIN ORGANIZATIONS"

Workshop of Rio de Janeiro February 2002.

This workshop took place, thanks to the support of the GTZ - PLANAGUA SEMADS project (Germany-Brazil Cooperation).

The minutes, legislation and 18 papers from five States and eight basin organizations of Brazil are available in the website:

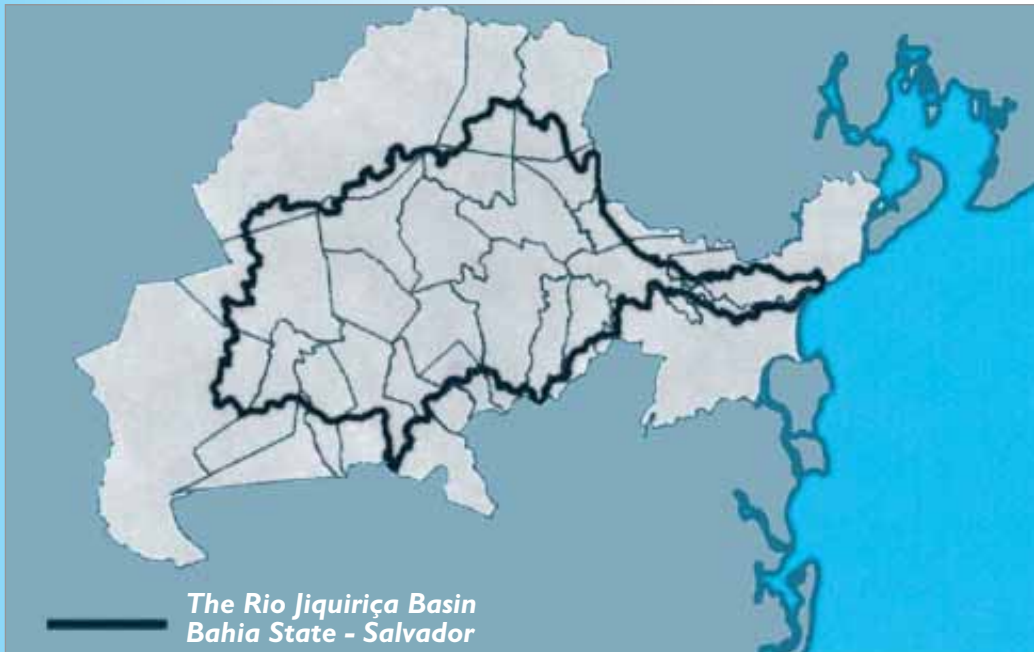
www.serla.rj.gov.br

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BRAZIL

JQUIRIÇA

A BAHIAN RIVER FOR AN INNOVATIVE EXPERIMENT



The Rio Jiquiriça Basin
Bahia State - Salvador

The project "Participatory management of water resources in the Jiquiriça river basin" (Bahia – Brazil) has raised more and more interest. Selected by the "Caixa Economica Federal" as one of the 10 best Brazilian projects, it was chosen among the 100 best world projects at the Dubai 2002 International Prize regarding the "Best Practices for Local Management".

The Legal and institutional context

The Brazilian Water Law 9.433 of January 1997 is very interesting and proposes a modern framework for water resource management in the country.

However two major problems arise:

- 1 **Transcription and implementation in the States of the Federation is uneven**

Large projects have been implemented at the national level and in various States focusing on more integrated, decentralized and participatory management. But the situations vary greatly, especially regarding the users' participation in management.

- 2 **Some stakeholders tend to consider the creation of Basin Committees as an end in itself**

Thus, many Committees were created during the last 10 years on most of the territory, but it happens that these committees have no:

- **suited legal framework:** have they a deliberative role or only a consultative one?
- **decision-making supporting tools:** what is the assessment of the basin water resources and what could be the future scenarios?
- **associated technical body:** who prepares the Committee meetings, looks for a preliminary consensus among the stakeholders, executes the decisions made?
- **financial resources:** until now there is no tax in Brazil. Who will finance the decisions made and how to define, under these conditions, an action plan for the basin?

Planning is also a weak point in so far as few States, few basins have real "Water Resource Management Plans".

Development of a methodology

In order to prevent these problems, while remaining consistent with the Bahia State legal framework (Basin Committees are not planned yet), the decision was made to start an innovative "bottom-up" process in a pilot basin, that of the Rio Jiquiriça.

An Intermunicipal Consortium

Created in 1993, the **Intermunicipal Consortium of the Jiquiriça Valley**, originated from the will of the representatives of the civil society and Mayors, aims to improve the quality of life of populations. It is a facilitator between political and technical sectors and between the governmental administrations, private initiatives, financial institutions and the different social categories by directly acting as a technical orientation instrument for the Municipalities.

The mobilization and awareness raising of the institutional stakeholders and individuals required much effort to avoid overlaps or non-focus in actions by seeking partnerships, above political and sectarian ideologies, while keeping a structure enabling effective participation of the population.

The actions related to the participation of the population aim at stimulating the different social categories towards a thinking and action process regarding the issues which affect the quality of the natural environments.

The involvement of the Consortium was based on five topics: economic, political and institutional aspects, infrastructures and natural environments.

A participatory process

For participation in water management to become effective, it was decided to gradually set up **Forums for Water Users and Development** in the various municipalities of the basin.

It involves organizing local groups in each of the 25 municipalities. This implies a permanent and dynamic participation of the population for analyzing its problems, needs and interests, for finding solutions and making decisions on integrated management of the basin.

The Local Forums further a dynamic and cooperative environment, offering opportunities of social consensus, which will contribute to critical knowledge, the creation of new standards for understanding and apprehending social powers. The main criteria to participate in these forums is social and political representativeness, the basic condition to ensure the legitimacy of actions included in their objective.



The method chosen for setting up these forums included the organization of a 2-day seminar. Free discussions developed around the problems considered critical by the population. This included three ideas: your expectations, your knowledge, your actions which define a work timetable for the 12 coming months.

A Regional Action Plan

It is planned to gradually:

- Facilitate these Forums to carry out participatory surveys in the municipalities;
- Train, raise awareness, identify the leaders, to enable the creation of a legitimate and viable Basin Committee. The local forums represent the basic unit for socioeconomically and politically supporting the implementation of the Basin Committee which will be the facilitator in conflicts on water quality and quantity;
- And regionally integrate the municipal surveys in a basin action plan.



The Committee, the core of a system

While creating this Committee, 2 basic problems will have to be incorporated:

This committee will need technical support for its decision-making.

In addition to the institutional process, it seems greatly advisable to answer, from a technical viewpoint, the following questions:

◆ What are the current uses in the basin?

A register of users and rural landlords is needed;

◆ How to monitor and have information on the basin and its evolution over time (quantity, quality)?

The monitoring network requires to be reinforced for surface and groundwater;

◆ What are the major problems? Where is the pollution found, or are we outside the standard limits? Where do the quality problems hinder drinking water supply and/or other uses? Where are the conflicts of use? Between which uses? What is their main cause?

In-depth technical studies on the characteristics of the basin are required;

◆ Which could be the (ambitious but realistic) medium-term quality objectives for the basin?

A participatory policy with quality objectives is needed;

◆ How to obtain decision-making supporting tools for the future Committee?

An Information System, compatible with the State tools already developed, is needed.

Regarding these aspects, the Intermunicipal Consortium of the Jiquiriçá Valley should play an essential role, supported by the State and Federal Authorities.

This Committee should have an operating budget.

The financial mechanisms have still to be defined. It is obvious that the French model which plans for a financially independent Water Agency at the level of the basin, thanks to the levy of taxes ("cobrança") for water use, is not suited to the case of Jiquiriçá, because the basin does not include sufficient economic activities to collect the level of taxes required.

Although there are tourist and agricultural potentialities in this partly semi-arid zone, the level of economic activity is now too limited. Cross-financing should be relied on (sectoral, regional, etc.) to obtain a sufficient level of investment to guarantee sustainable water management in the region.

Duplication possibilities

The Consortium is a practical and real example of adopting a river basin as a unit for planning and participatory management which is entirely in keeping with the current policies on national and international water resources.

The characteristics of the Jiquiriçá basin, with 17 out of its 25 municipalities located in the semi-arid part of the Basin, are very similar to those of the other basins located in the Brazilian Nordeste.

There are still few operating Basin Committees or having real responsibilities in decision-making. Thus, the ongoing process in the Jiquiriçá is very promising and goes further than the planned reforms of the sector, while achieving most of the identified objectives.

Therefore, its dissemination will enable other people involved (Governments, Society, etc.) to improve themselves or learn from this experiment. The practice developed in the Jiquiriçá region meets the conditions to be successfully reproduced in basins with similar characteristics, while respecting local specificity.

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RIO BRAVO

COMMISSION FOR TRANSBOUNDARY ENVIRONMENTAL COOPERATION



The Board of Directors of the Commission for Transboundary Environmental Cooperation (COCEF), meeting in an extraordinary session, unanimously adopted the project for the modernization of the irrigated scheme of Delicias, Chihuahua, which represents an investment of 140 million dollars and which will benefit about 100,000 inhabitants.

This project will allow progress towards sustainable management of the surface water of Rio Conchos, the largest Mexican tributary of the Rio Bravo/Grande. **It is the first project dealing with water resource conservation which allows better availability of water for the users of the Rio Bravo basin.**

This scheme is situated south to the capital of Chihuahua State and is the largest of the three irrigated schemes located in the Conchos sub-basin.

Due to the extreme drought from which this region suffered these last ten years, the cultivated area was reduced from 87,205 ha to less than 46,000 ha.

The irrigation infrastructures are much degraded and water losses reach about 7 liters out of 10.

This project will increase the efficiency of the scheme from 33% to 56% by reducing water loss by half.

This project will use canal surfacing, the leveling of 32,500 ha, a system of high-pressure networks on 20,000 ha and pumping stations and low-pressure irrigation.

The benefits of this project should be: water saving and resource conservation, increase of flows and water quality improvement in the Rio Conchos and Rio Bravo, a guarantee in case of drought, better crop yield, higher net income for the irrigation users.

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MEXICO

"CENTROS DE INFORMACIÓN Y CONSULTA SOBRE EL AGUA"

Several years ago, the Mexican National Water Commission (CNA) undertook a wide reform of the water sector which includes, among other things, **the creation and development of Basin Councils and Commissions** at the level of the main basins, sub-basins and aquifers of the Country.

These basin organizations, made up of representatives from federal, State and municipal authorities and of the various water users, enable dialogue on water resource planning and management at the level of river basins.

In order to get the information needed for decision-making and public information, the "Rules of Organization and Operation of these Basin Councils" had planned the creation of **"Water Information and Dialogue Centers"**, entitled **"CICAs (Centros de Información y Consulta sobre el Agua)"**.

In the preliminary phase of the creation of these information centers, the "CNA" had wanted to take into consideration the French know-how and experience in the management of water data and information.

Therefore, during these two last years (2001/2002), various experts of IOWater carried out assignments in Mexico, financed by the French Ministry for Foreign Affairs and WMO (World Meteorological Organization) to assist "CNA" with

the "conceptualization" of these centers **which will have the following three main tasks:**

- 1 **Management of the Information System for integrated water management at the level of river basins (SIGIAC)**, with the creation of databases, a geographic information system, a documentary information system and Website;
- 2 **The technical secretariat of the Basin Council** with, on one hand, the organization of the production of information needed for decision-making, and, on the other, a logistics support for organizing meetings;
- 3 **The organization of communication and education activities on the topic of water at the river basin level**, with, among other things, the creation of information and dialogue centers including libraries, showrooms and awareness raising facilities, etc.

A first 3-year work program was under study at the end of this phase to effectively implement these "CICAs" in various Mexican basins, with priority given to a **pilot project for the "CICA" of the Mexico Valley Basin Council, which will be launched in 2003.**

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CREATION OF BASIN ORGANIZATIONS

ECLAC'S GUIDELINES

The river basin is the most recommended land unit for integrated water resource management. The basin land use policies utilized for water management have different aspects and an uneven evolution in the Latin American and Caribbean countries.

In spite of the obstacles encountered, there is an increasing interest in creating basin organizations to coordinate environmental management actions.

The intent of reinforcing and completing the management

capacity of the water Authorities is appearing for the first time, either in recently approved water laws or in numerous draft laws or in the amendments of existing laws, by creating participatory and multidisciplinary bodies for coordination and concertation at the level of basins.

In almost all countries of the Region, various activities related to water resource management and development are implemented by bodies which operate at the level of many basins. However, this institutionalization process has not

been simple and sometimes remains at the intent stage.

The main objectives of ECLAC's guidelines are:

- 1 **phasing, describing and analyzing recent experiments** carried out in Latin America and the Caribbean, emphasizing the strategy used by the "Comisión Nacional del Agua" (CNA) of Mexico to set up Basin Councils and their auxiliary bodies;

- 2 **gathering and summarizing recommendations** which would be useful to the countries interested in creating appropriate basin bodies.

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EUROPE

HELCOM

THE BALTIC PROTECTION COMMISSION

HELCOM is the governing body of the "Convention on the Protection of the Marine Environment of the Baltic Sea Area" – which organizes inter-governmental cooperation between Denmark, Estonia, the European Community, Finland, Germany, Latvia, Lithuania, Poland, Russia and Sweden. This area covers the whole catchment area of the Baltic Sea, including the basins of over 200 rivers.

The 1974 Helsinki Convention

For the first time ever, all the sources of pollution around an entire sea were made subject to a single convention, signed by the seven Baltic coastal States. It entered into force on 3 May 1980.

The 1992 Convention

This new convention was signed in 1992 by all the States, bordering on the Baltic Sea, and the European Community. It entered into force on 17 January 2000 and covers the whole of the Baltic Sea area including inland waters and the sea-bed. Measures are also taken in the whole catchment area to reduce land-based pollution and to conserve natural habitats and biological diversity and to protect ecological processes.

Principles

➔ **Responsibility:** The Contracting Parties shall individually or jointly take all appropriate legislative, administrative or other measures to prevent and eliminate pollution.

➔ **The Precautionary Principle:** Preventive measures must be taken to avoid that substances are introduced into the marine environment and harm human health, living resources or marine ecosystems.

➔ **The "Polluter Pays Principle":** it should serve as the economic basis for the control of environmentally harmful activities, emphasizing the importance of responsibility by forcing polluters to pay the true costs of their activities.

➔ **Avoiding risks:** Any measures taken must not lead to unacceptable environmental strains on the atmosphere, water bodies, the soil or groundwater or affect regions outside the Baltic Sea area.

➔ **Monitoring:** Emissions from both point and diffuse sources into water and the air should be measured and calculated in a scientifically appropriate manner by the Contracting Parties, especially regarding eutrophication, hazardous substances, land transport, maritime transport, fishery management and practices, marine and coastal biodiversity and the implementation of the Joint Comprehensive Environmental Action Program.

The Internet Portal offers news about the Baltic marine environment and environmental policy issues.

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EUROPEAN COMMISSION

THE WATER FRAMEWORK DIRECTIVE/ "TAP INTO IT!"

This is the title of a publication of the Environment Directorate General of the European Commission. It provides an overview of the objectives and clauses of the European Water Framework Directive (WFD), adopted in October 2000.

It aims at ensuring "good status" of water and its viable application. The WFD implies a common implementation strategy.

The following timetable was retained:

● **December 2003:** The national and regional laws on water are to be adapted to the WFD. River basin cooperation is to be made operational.

● **December 2004:** An analysis of pressures and impacts of human activities on water has to be completed including an economic analysis.

● **December 2006:** Monitoring programs are to be operational as a basis for water management.

● **December 2008:** River basin management plans are to be presented to the public.

● **December 2009:** Publishing of the first river basin management plans.

● **December 2015:** Waters will have to meet "good status".

<http://europa-eu.int/comm/environnement/water>

"CIPEL"

THE INTERNATIONAL COMMISSION FOR THE PROTECTION OF "LEMAN" LAKE

Tasks and organization

The "CIPEL" is a French-Swiss official organization in charge of monitoring water quality in "Leman" Lake and its catchment area, of coordination and cooperation in water policy and management, of specific studies, of giving recommendations to the Governments and of information and awareness raising on the stakes of water protection.

It includes an equal number of French and Swiss representatives. The Commission Presidency alternates between the Heads of Delegations.

Its Action Plan aims to maintain and actively continue the ecological rehabilitation of the lake, aquatic environments and the catchment area.

An Operational Committee takes care of the Action Plan

implementation, prepares a Management Chart, follows up the activities in the "CIPEL" areas of responsibility and proposes action priorities or studies in cooperation with the Scientific Council and working groups.

The Scientific Council develops, follows up and coordinates the study and research programs. It participates in the drafting of the Management Chart and Action Plan. It follows up the status of the lake and water courses and carries out a scientific watch and writes the yearly scientific reports.

The working groups deal with urban, agricultural and industrial pollution, with methodology and public relations.

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SPAIN

EBRO HYDROGRAPHIC CONFEDERATION

A NETWORK OF ENVIRONMENTAL VARIABLES

The Ebro river basin, with a surface area of 85,500 km² and a main river of 910 km long, includes about 400 streams with a cumulated length of 12,000 km. Annual runoff is 18,000 hm³/year, while the average flow at the mouth was 13,000 hm³/year during the 20th century and only 9,000 hm³/year during the last decade.

The regime is irregular, which corresponds to a Mediterranean river, and flows have to be regulated, mainly by reservoirs, to enable the use of water resources.

The Ebro Hydrographic Confederation, created in 1926, is the basin organization, supervised by the Spanish Ministry of the Environment. Its responsibilities are water resource management, planning, monitoring, control and development,

and improvement of water quality and of the ecology of rivers.

A Network of Environmental Variables has been ongoing since 1990.

This network includes more than 400 stations or measurement points on the 144 main streams of the Ebro basin and on its representative river ecosystems. The location of the stations was gradually adjusted to take into account the characteristics of each stream bed and to coincide with those of other basin networks (measuring the physico-chemical and chemical quality and gauging), to have a comprehensive information on the variables which affect the same point and the river ecosystems it represents.

The families of macroinvertebrates found (taxa) are system-

atically recorded at each point together with the most appropriate physical and chemical parameters. Campaigns for measuring the fish species were also carried out. The gathered data are stored and managed by an Access database. Each point has a description sheet with the data of the successive campaigns and photographs made during the various visits.

A BMWP indicator is currently used to define the ecological quality with these data. It enables the taking into account of some specific organisms found in the country.

The recorded data enable the determination of the river ecosystems and the creation of a forecast model. The parameters of a given point allow the deduction of what will be its

physical, chemical and biological characteristics according to the data available in the base of the Network of Environmental Variables. Objectives of biological water quality (values of the BMWP index) or of biodiversity (number of taxa) could thus be set in the future and enable the assessment of the flows needed to guarantee these ecological characteristics, the ecological status of waters, in compliance with the European Framework Directive, and the quality of the ecosystem found on the river banks, according to the QBR index.

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FRANCE

EPTB: RIVER BASINS' LOCAL PUBLIC COMPANIES



Tripartite organization

Current French water management stems from the Water Law of 1964 which set the principle of water management at the scale of the catchment area and identified three stakeholders:

- **The River Basin Committee** to define water policy (Local water Parliament);
- **The Water Agency** to finance it;
- **An Administrative Public Company** to implement it with the ability of a contracting authority.

From 1982 onward, local authorities of several basins have created the "River Basins' Local Public Companies (EPTB)".

What are the "EPTBs"?

Three criteria can be used to define "EPTBs":

- ◆ **Responsibilities:** the "EPTBs" intervene in river developments with the partners concerned taking into account the different scales in which problems can be solved.
- ◆ **Intervention area:** the "EPTBs" have an action area directly linked to a geographical reality: the catchment area, the sub-basin, the river, etc. They clearly claim that at the scale of a river basin, river management is a strong part of territorial land use.
- ◆ **Legal status:** the "EPTBs" are all mixed groupings of local authorities (Regions, Departments and Municipalities), and interdepartmental institutions.

The "EPTBs" action concern: water quality, floods and low waters, hydraulic and river bank management, and the management of aquatic environments. Human interaction is not ignored as the actions also

take into account risks, landscape, development of activities and uses related to the rivers.

The French Association of EPTBs

An association was created in 1999 by twenty "EPTBs", whose aim is to:

- promote integrated and sustainable development of river basins,
- enhance the sharing of information between the local elected officials in charge of the "EPTBs",
- allow a dialogue with the different stakeholders concerned,
- be an active representative of the "EPTBs" with the Government.

Within the Association, the "EPTBs" have planned their action by creating working groups on the topics: laws, floods, land development, environment, communication, insurance, which contributed to the debates on flood prevention and to the preparation of a new Water Law. They also organized seminars on basin

information systems or on tourist development: Plenary Sessions on the Garonne, Dordogne and Adour or Charente, participation in Courts of Enquiry of the Parliament on flood prevention, a national seminar on the rehabilitation of migrating fish and sturgeon, and a working day on consequences of the implementation of the European Framework Directive.

It should be noted that the "AFEPT"B has just become a member of the International Network of Basin Organizations.

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A BRAZILIAN VIEWPOINT: THE INDICATORS, STRATEGIC TOOLS FOR MANAGING THE FRENCH BASIN ORGANIZATIONS

Indicators are increasingly used all over the world as assisting tools for water management. They provide synthetic information, indicate action priorities and make communication and decision-making easier. In France, the system created in 1964 had to evolve to meet the requirements of sustainable development, of which one of the components is precisely the globalization of information to meet the greater system complexity, social criticism on the transparency of the decision-making processes and unbalanced access to the information among the decision-makers.

Three main groups of indicators

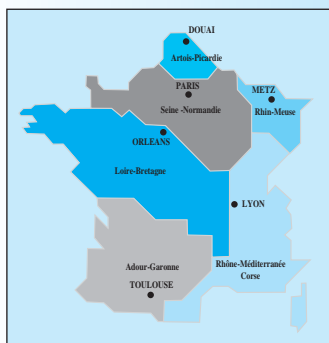
1 **Indicators related to the Resource** measure water availability and quality. From an historical viewpoint, they are associated to the evolution of the Water Agencies' priorities, in particular the control of pollution in rivers. The "classical core" of indicators is water quality. The European Framework Directive imposes the management of the quality of environments and aquatic

ecosystems, but pragmatic references are still lacking to qualify the status of watercourses. The "SEQ" System (Système d'évaluation de la qualité des eaux- System for assessing water quality), adopted in France since 2000, integrates water quality, biological resources and physical environments. The global assessment of the ecological quality of basins remains to be done.

- 2 **Performance indicators for public water supply and sanitation utilities** results from the need to reinforce the regulation system, evaluate the quality of services and prices paid and the evolution towards more transparency and participation.
- 3 **Indicators on sustainable development** are developing with an international process for evaluating the performances of environmental policies.

Management charts for "SDAGE" follow-up

In 2000, the Water Agencies adopted six management charts for following-up the "SDAGEs" (Masterplans for



Water Development and Management). A working group harmonizes the definition, collection and validation of indicators at the national level, using common management topics or objectives. The charts will have to be adapted, from 2009 onwards, to the requirements of the Water Framework Directive. The "river basin districts" will be the basic spatial units for water planning and management in Europe in which the new Management Plans will be implemented.

New financial needs are also arising concerns.

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"HYDROMET" : A NEW DATA MANAGEMENT SOFTWARE

The Institute of Research for Development (IRD) and the National Rhone Company (CNR) shared their knowledge on the management of monitoring networks and the processing of hydro-meteorological data to develop the "HYDROMET" software to fulfil the following tasks:

- acquisition and collection of all hydro-meteorological data,
- storage of information in an ORACLE database to ensure its integrity,
- automated processing of data in real or deferred time,
- availability of information, using various dissemination means.

National Rhone Company
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www.cnr.tm.fr

NATIONAL DIALOGUE ON WATER POLICY

The Conference of the Presidents of Basin Committees met, for the first time, in an overseas basin in the Reunion Island, at the end of November 2002, in the presence of Mrs. Roselyne Bachelot-Narquin, French Minister of Ecology and Sustainable Development.

The Minister reminded that she wished "that the Basin Committees start in 2003 the phase of the inventory of the situation before beginning, after 2004, the adaptation of the European Framework Directive to the Masterplans for Water Development and Management (SDAGEs). A common methodology is being finalized for the entire European Union. It should allow for the flexibility needed by the Member States, as underlined during the recent work meeting of

the European Water Directors in Copenhagen in which the new French Director, Mr. Pascal Bertheaud actively participated".

The Minister also reset the French water policy reform to take account of the new simultaneous works on decentralization, the Environment Charter and on the national strategy for Sustainable Development.

For this purpose, she proposed a debate including three steps:

- a first national step, up to the end of February 2003, will enable bilateral contacts with national representatives of the main stakeholders to define the challenges and the area of local discussion.

- the step of local debate, during the second quarter of 2003, will rely on Basin Committees and on the initiative of Regions or Departments, or groups even.
- lastly, a synthesis step, during the second semester of 2003, could lead, in liaison with the Parliament, to National Conferences.

The objective will be to summarize the recommendations which will be used for building a revised water policy and an action plan shared by all the French stakeholders and the base of a draft law to be discussed by the Parliament in 2004.

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www.environnement.gouv.fr

"REX" EXPERIENCE ON HAZARDS

It is necessary to classify and develop the lessons learned on natural hazards. The French Ministry of Ecology and Sustainable Development (MESD) has tried to provide information on the significant hazards which struck our country in 2000 and 2001 (floods in Brittany and the Somme).

The MESD indicated the means needed to lastingly apply these lessons learned to natural hazards and the information which must be managed to do so. A "REX" Unit (Experience Feedback) was created. The aim is to widely inform the departments and operators, on the one hand, and the general public, on the other, of the nature, consequences and status that can be learned from main harmful natural phenomena (about five hundred every year) and systematically study the existing or planned preventive arrangements.

FRANCE

THE EUROPEAN WATER FRAMEWORK-DIRECTIVE

Published in the Official Journal of the European Community on 22 December 2000, it sets a single political framework for water resource protection and management, from a qualitative and quantitative viewpoint. It especially provides ambitious objectives for the conservation and rehabilitation of the status of aquatic environments (good ecological, physical-chemical and biological status), before 2015. **Water planning and management at the level of river basin districts, very close to the ones used in**

France since the water law of 1964, are now becoming the rule in Europe.

An inventory of the situation must be undertaken before 2004 and an action program and management plan should be prepared before 2009. Then, they will be reviewed every 6 years. The SDAGE (Masterplan for Water Development and Management) will also be revised in 2009, since it shall have to meet the requirements of the management plan of the Framework-Directive.

UPSTREAM / DOWNSTREAM GUIDELINES FOR BETTER WATER MANAGEMENT

These guidelines for improving water management between the river basin heads and downstream regions are now available.

They are the result of an action undertaken by IOWater and the Junta of Extremadura (Spain) within the **European Inter-REG II Program**.

This 64-page booklet features:

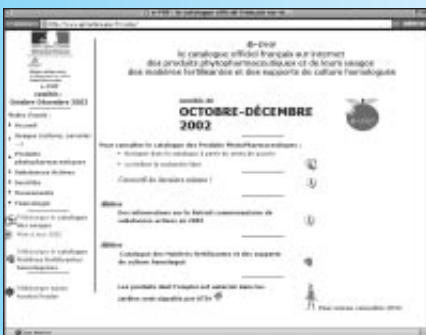
- A summary translated into French, Spanish and English,
- An introduction to the method used,

- Situation sheets,
- Proposals for local projects:
- The creation of a "Water Label" for the river basin head regions.
- A bibliography,
- A list of resource persons.

Access and downloading is possible from:

www.iowater.fr/amont-aval/guide

E-PHY THE OFFICIAL CATALOGUE OF PHYTOSANITARY PRODUCTS



- its content of active substances;
- its classification, associated to the risks and adapted precautionary advice;
- its uses (associated with the homologated dosage) for which it has been authorized.

This e-PHY catalogue allows the essential information on a phytosanitary product to be quickly obtained, using different search keys:

- its name and that of the company which has the marketing authorization;

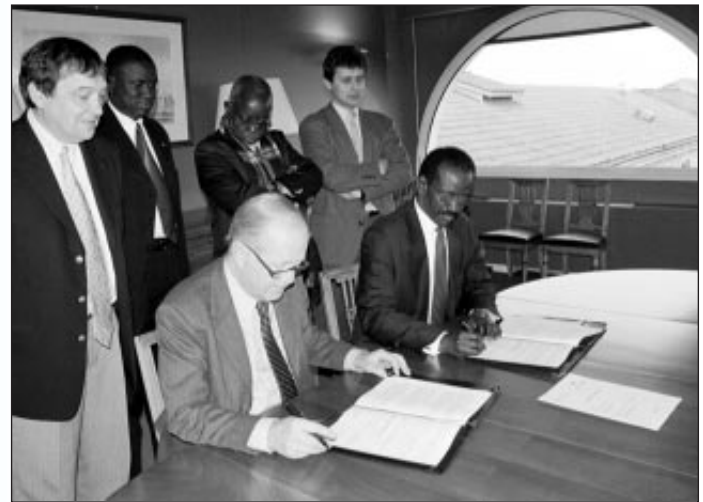
The catalogue will be periodically updated to take account of the authorization changes or withdrawal of products.

**Ministry of Agriculture, Food, Fisheries and Rural Affairs
DERF
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www.agriculture.gouv.fr

ADOUR-GARONNE

A TWINNING ARRANGEMENT: ADOUR-GARONNE / OMVS



The signing ceremony (Adour-Garonne)

In AGEN on 13 December 2002, the High Commissioner of the Organization for the Development of the Senegal River (OMVS), Mr. Mohamed Salem Ould Merzoug, and the Director of the Adour-Garonne Water Agency, Mr. Jean-Pierre Poly, signed a three-year twinning agreement, in the presence of Mr. Jean-François Poncet, President of the Adour Garonne Basin Committee.

It plans for technical and institutional cooperation activities relative to training and evaluation, thanks to the exchange of experiences between both organizations.

From 2003 onwards, the first assignments will deal with:

- Developing a resource management chart;
- Continuing the set up of an information system on the environment;
- Preparing a water development and management scheme for the large Senegal river basin;
- Public awareness actions towards water savings and pollution prevention.

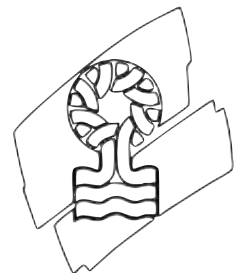
A DELEGATION IN MOROCCO

A delegation of the Board of Directors went to Morocco in February 2002 at the invitation of the Moroccan Ministry of Public Works and the Oum Er Rbia River Basin Agency.

The main objective was to sign a twinning agreement between both Agencies, the latter being included in the technical agreement which has just been renewed by the Moroccan Directorate General of Hydraulics and the French Water Directorate.

The program of the field visits has given the opportunity to observe the variety and seriousness of the water and drought problems again encountered on the Moroccan territory this year, and the related economic and social realities.

The Oum Er Rbia is the longest river of Morocco (560 km) and it drains the largest territory of the 7 Water Agencies being established in this country.



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SEINE-NORMANDY

TWINNING AGREEMENT WITH HUNGARY

Initiated in 1998, the technical cooperation between the Seine-Normandy Agency, the National Water Board (OVF) and the Water Directorate of Middle Danube (Hungary) was renewed for three years. Focusing on water management and water protection against pollution, especially within the implementation of the European Directives, this cooperation includes:

- ◆ **the exchange of professional information or documentation;**
- ◆ **the joint organization of seminars, conferences, meetings or technical visits;**
- ◆ **the exchange of specialized staff members to carry out assignments or practical training;**
- ◆ **collaboration for carrying out studies or evaluations of common interest.**

THE AGENCY IS COMMITTED TO INTERNATIONAL WORK

Prospects

The Seine-Normandy Water Agency attended the World Summit on Sustainable Development of Johannesburg in August 2002 and will also attend the Third World Water Forum in Kyoto in March 2003.

The Seine-Normandy basin is one of the two European basins and one of the seven selected by UNESCO as a case study for the "World Water Assessment Program - WWAP" of the United Nations.

Technical cooperation

The Agency is signing an agreement every year, on the average, with counterparts in charge of river basins. At the beginning, its objective was Europe and concerned large rivers (the Thames, Danube, Guadalquivir, etc.).

Now two criteria are taken into account in its choices: the size of the basin and a large agglomeration located in its midst. This is the case of Central Hungary with Budapest and of the Mexico basin. Other considerations may intervene, especially when a country aims at creating comparable institutions. Thus, the Seine-Normandy Water Agency has signed an agreement with the Oka basin in the Russian Federation or with the Gliwice "RZGW" in Poland.

Its agents are thus intervening on the five continents.

Humanitarian actions

The Seine-Normandy Water Agency has devoted one thousandth of its budget since 1997 for training programs and micro-enterprises in the drinking water supply and sanitation sectors in developing countries.

In total, 84 projects were carried out or are under way. In Mali, an interesting experiment was really successful: the organization of the first international water school class at Gory, and, at the same time, the Agency with other partners helped digging trenches, installing hydrants in the school and water supply facilities for all dwellings.



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RHONE-MEDITERRANEAN-CORSICA

TOULON BAY CONTRACT

It has taken four years of discussion, reflection and preliminary work for the Bay Contract for Toulon Harbor and its drainage area to enter the operational phase.

28 contracting authorities were concerned together with their financial partners (the State, Water Agency, Provence-Côte d'Azur Regional Council, Var Regional Authority). The Bay Contract was signed in Toulon on 6 September 2002 with a budget of €112 million for five years.

Its priority objectives are the protection of bathing zones, maintaining the shellfish beds, combating toxic agents and protecting the exceptional ecological communities.

The Bay Contract marks an important stage in the development of management policies for the Mediterranean littoral zone.

1,200 YOUNG PEOPLE FOR WATER MANAGEMENT

The Rhone-Mediterranean-Corsica Water Agency helped the basin companies to recruit young people when new services were created:

- policing the connections in urban sanitation,
- sanitation in rural areas,
- on-site sanitation,
- security of drinking water supply,
- replacement of lead pipes,

- land application in agriculture,
- aquatic environments,
- education on the environment,
- irrigation and non-point pollution.

SESSIONS ON WETLANDS

600 people participated in these Sessions, organized on 29 January 2002 in Lyons. The main objective was to convince the decision-makers of the Rhone-Mediterranean-Corsica Basin of the need to deal with wetlands threatened by disappearance.

As swamps, peat lands, lagoons, etc. they are natural filters and protect the drinking water resources and regulate floods, etc. Small or big, they have a part to play in water management.

Exemplary actions, initiated by different stakeholders were presented.

The Sessions also aimed to commit the participants with the integrating of this policy in the decision-making processes and in the various urban and

land use planning projects and with adhering to **the Charter on Wetlands of the RMC Basin Committee.**

An "Exhibition" space enabled many illustrations to present what is done in the field.

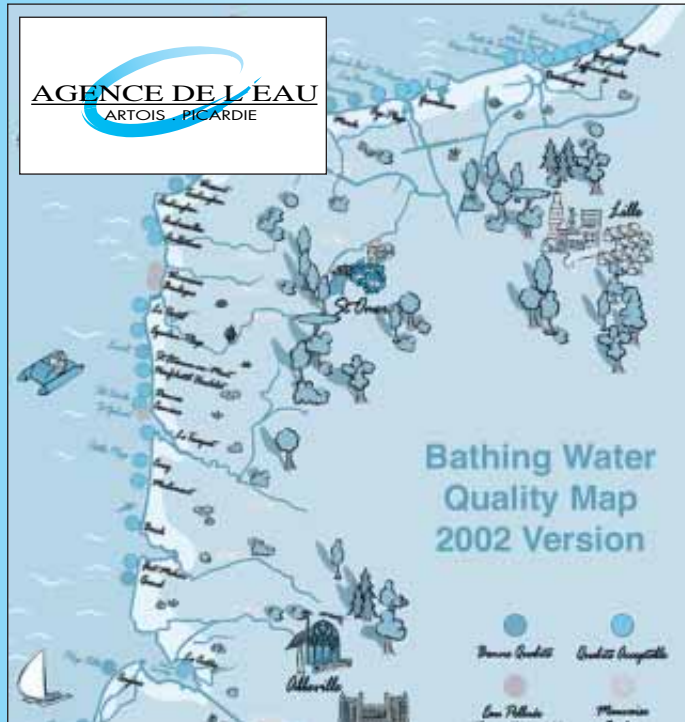


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Water Agency
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ARTOIS-PICARDY

QUALITY OF BEACHES IN 2002



The Artois-Picardy Water Agency has presented the classification established by using the last analyses of 42 beaches on the French North-West coast for the bathing season of 2002.

- 10 beaches were good quality rated
- 29 beaches were acceptable quality rated
- 3 beaches were momentarily polluted

These outcomes resulted from the analyses of 11 to 21 sam-

plings made on the 47 areas used by swimmers between June and September 2001.

Today, beach recovery can be considered effective: bathing is possible everywhere on the Artois-Picardy coastline, according to the sanitary standards in force.

The website of the French Ministry of Health enables everyone to know the water quality of the French beaches:

<http://baignades.sante.gouv.fr>

INFORMATION SYSTEM ON WATER PRICES

Since 1994, the Artois-Picardy Water Agency has managed an Information System on the price of water-related services. This unit gathers the data produced in the basin by private and public partners and

enables a follow-up of the changes in price of water-related services. These results are published. A summary is drawn up every year, disseminated and available on the Agency website.

ENVIRONMENTAL MANAGEMENT

Industries may benefit from the support of the Artois-Picardy Water Agency for setting up an Environmental Management System.

An active partnership has developed with local professional unions since 1995.

These joint ventures are broken down by activity branch or geographic sector. The majority of the industries concerned by these activities are small and medium enterprises or small and medium industries.

Between 1997 and 2001, the Artois-Picardy Water Agency has financially and technically supported 13 activities:

- **Training activities,**
- **ISO 14000 Certification of companies,**
- **The recruiting of a "chargé de mission" for the industrial environment.**

Artois-Picardy Water Agency
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www.eau-artois-picardie.fr

THE AGENCY IS ISO 9001 CERTIFIED



Following a certification audit carried out by the "AFAQ", the Artois-Picardy Water Agency obtained, on 28 February 2002, its ISO 9001 certificate for all its activities.

This action, launched in November 1998, aimed to:

- ❖ meet, in the best way possible, the partners' expectations and needs,
- ❖ improve the quality of processes,
- ❖ improve the environmental and economic efficiency of its actions.

3RD WORLD WATER FORUM

Kyoto (Japan) - 2003

• ON TUESDAY 18 MARCH IN KYOTO

Kyoto International Conference Hall:
10:00 – 12:00 at the Agora of the "Citizen's House of Water":

Debate: "How to organize the participation of water users in Basin Committees?"

in partnership with the International Secretariat for Water (ISW) of Montreal.

• ON WEDNESDAY 19 MARCH IN OSAKA

Osaka International Convention Center:
15:30 - 18:15 during the session on "Water and Information"

Presentation: "The Euro-Mediterranean Water Information and Documentation System (EMWIS), 27 countries exchange their data"

at the initiative of the Technical Unit and all the National Focal Points of EMWIS.

• ON THURSDAY 20 MARCH IN SHIGA

OTSU Prince Hotel – OHMI Room – River Stream 2:
12:30 - 15:15

Topic "Integrated Water Resource and River Basin Management"

Official session: "Progress in water management at the level of river basins over the world" with the participation of all the attending members of INBO.

• ON FRIDAY 21 MARCH IN SHIGA

OTSU Prince Hotel – Suzuka Room:
15:30 - 18:15

Topic "Integrated Water Resource and River Basin Management"

Official session: "And now what ambitions for Basin Organizations?" with the members of INBO Liaison Bureau and GWP.

RHINE-MEUSE

WATER AWARDS 2003

On 15 May 2003, The Rhine-Meuse Water Agency will nominate the winners of the Water Awards and Initiative Prizes for the sixth time. This ceremony is giving honors to local authorities, industries, farmers and associations of the Rhine-Meuse basin, whose actions enable the recovery and conservation of the water heritage and the aquatic environments.

In total, six prizes, illustrated by a water drop in Daum crystal, will be awarded.

After examining applications, a jury will select three nominees for each class and the members of the Basin Committee will choose the winners during a secret vote.

For the first time, three Initiative Prizes of 7,500 Euro each will also be awarded.

PAINTING AND NATURE

The Regional Federation of the Corporations of Painting and Cleaning Enterprises of Alsace announced, on 21 June, the design of a waste removal process.

This sector of activities generates about 107 tons of dangerous waste every year: painting waste, solvents, paint diluents, cleaning residues, glue residues, dirty rags.

The objective of the project "When Painting Rhymes with Nature" aims to improve the management of wastes produ-

ced by the 700 enterprises concerned, by proposing them a regional collection and treatment system suited to their needs.

The Water Agency provides financial support:

- ★ a 40% subsidy to the companies involved in this project,
- ★ aid to the design of communication materials,
- ★ creation of a network of facilitators in Alsace.

WELCOME TO HECTOR !

www.eau-rhin-meuse.fr/hector/index.htm

The Rhine-Meuse Water Agency has started its website for the

young to enable the children (and their parents) to learn by having fun in becoming ecocitizens.



Hector the beaver and its gang of frogs are there to educate by entertaining, using games, illustrations and information on the water cycle and pollution risk.

THE BASIN INFORMATION SYSTEM

The data on about 230 piezometric measurement stations have been available since May 2002. This involves 30 stations of the "RBES" (Basin Network for Groundwater) and 200 stations of the "APRONA" network (Association for the Protection of Alsace Aquifer). About 340,000 measurements, dating from 1960 to now, are available on the Agency website.



Rhine-Meuse Water Agency
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www.eau-rhin-meuse.fr

LOIRE-BRITTANY

THE LOCAL WATER COMMISSIONS (LWC)

On the initiative of the Basin Committee, the Presidents of the Local Water Commissions and the people in charge of the Water Development and Management Schemes (SAGEs) of the Loire-Brittany basin will periodically meet.

This will enable the analysis of the progress made and the preparation to the changes induced by the European Framework Directive.

The Presidents have especially discussed about the difficulties encountered and about the possibility of creating an appropriate contracting authority.

The Presidents and people in charge of the "SAGEs" expressed their wish that an inter-"SAGE" network be created to establish lasting relations between the Local Water Commissions and thus facilitate thinking and the exchange of experiences and know-how on the issues common to all of them.

In the western basin, a network of the 16 people in charge of the "SAGEs" has been working since 1998 with the Water Agency.

President Guellec proposed to associate, from now on, the Presidents of the Local Water Commissions of the Loire-Brittany basin in the work of the Basin Committee. This should reinforce consistency between local initiatives and planning at the basin level.



Loire-Brittany Water Agency
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THE WATER ACADEMY

NEW MONOGRAPHS ON WATER MANAGEMENT AT THE RIVER BASIN LEVEL



In 1996, the Water Academy started an analysis of experiments on water management at the level of river basins carried out the world over with institutions belonging to INBO (International Network of Basin Organizations). This comparative analysis is based on monographs of the various ongoing projects (objectives, bodies and action means, financing).

The monographs on the Danube, the Scheldt, the Great Lakes and the Saint-Lawrence, the Nile, the Mekong, the Tigris and Euphrates are completed. Others will be written in the coming months: the Parana, Lake Chad, the Aral Sea, and SADC (South Africa).

The members of this working group also prepared a note on strategies for managing shared waters. It was presented to the INBO General Assembly in Quebec, from 28 to 30 May, and was used as a basis for the Constitutive Assembly of the new Network of International Commissions and Transboundary Basin Organizations which took place in Thonon-les-Bains on 25 and 26 November 2002.

The Water Academy
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www.oieau.fr/academie

THE FRENCH OVERSEAS DEPARTMENTS (OSDs)



LOCAL WATER OFFICES

The "basic" problems encountered by the Overseas Departments (OSDs) are different from those faced by Continental France. Indeed, water quantity is not a problem but the wide scattering of water resources in time and space leads to storage and supply problems.

The financial issue is also significant as equipment is still lacking in spite of European aid.

Indeed, it was only under the water law of 1992 that Basin Committees were created in the OSDs and under the orientation law for Overseas Departments of 2000 that associated financial organizations were set up: the Local Water Offices (LWOs), which are local public bodies chaired by the President of the General

Council. In order to take into account the specificity of each OSD, they will have a potentially wide range of action: study and follow up of the environments and resources, advice and technical assistance to contracting authorities, training, information and establishment of taxes on proposal of the Basin Committee.

A body such as the Water Office enables real decentralization to take place and is in keeping with the increased accountability of local stakeholders.

In order to help with the Offices' implementation, an overall allocation of 2.5 million Euros will be granted to each Office, for a three or four-year period depending on the starting date.

THE CASE OF THE REUNION ISLAND

In this context, the General Council of the Reunion entrusted IOWater with an assistance assignment to define the future Local Water Office's responsibilities. Indeed, this Office should be integrated into a wealthy institutional environment having many active bodies and take account of the needs expressed by the local stakeholders.

Starting with an inventory of existing actions in the area of responsibility of the LWO, the assignment enabled the drawing up of several pre-scenarios presented to the main partners (Municipalities, Department, Region, State) gathered in a steering group. They were gradually refined to achieve a consensual scenario which proposes a technical, human and financial sizing of

the future office.

Validated in July 2002, this scheme will be gradually implemented and its effective start is planned for the beginning of 2003. Its work program is already well filled up: implementation of a "SDAGE" and of the European Framework Directive, integration into the national data management system, preparation of futures taxes, or even technical assistance to the municipalities which is much expected on many topics (drinking water, wastewater, storm water).

THE "SDAGE" ARE PROGRESSING "Masterplans for Water Development and Management"

Martinique

The preparation of a Masterplan for Water Development and Management (SDAGE) has enabled the determination of many extremely significant issues:

- Accurate assessment of surface and ground water resources as compared to needs;
- Increasing the resource in terms of security forecasting, network obsolescence, non-protection of intakes;
- Status of waters and environments;
- Necessity of treating pollution (either urban, agricultural or industrial) with particular attention paid to phytosanitary products;
- Lack or dispersion of water-related data;
- Delays in sanitation;
- Lack of a stringent water policy;
- and, above all, the necessary changing of the people's consciousness towards water.

Implementing the "SDAGE" is hard work. Indeed, not only a management body had to be defined (this issue is partly solved by the overseas orientation law passed in December 2000) but the "SDAGE" had also to be adapted to local specificity: a mountainous island of 1,180 km² with tropical climate and 70 water courses including 40 dry torrents, on the one hand, and, on the other, a one-Department/Region managed by two Assemblies, municipalities and by the State.

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Guadeloupe

The priority objectives of the Guadeloupe "SDAGE" include six topics. They deal with the meeting of the economic uses of water, security of the drinking water supply, the control of point and non-point pollution, the rehabilitation of the biological functioning of rivers and coastal environments, the protection of people and properties against flood hazards

and the acquisition of means for knowledge, dialogue and information. The "SDAGE" project (the first version of which has just been published) is available from the local authorities.

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Guyana

The "SDAGE" of Guyana was approved on 9 October 2000. It defines four basic orientations. They deal with public health, the development of economic uses of water, respect of the natural heritage and of the functioning of aquatic environments and also with communication, information and training.

These operational measures were specified in 2001 during meetings of the various partners. The drinking water supply to isolated settlements of the Department, only supplied by way of ships or planes, is now being thought of. This action which falls within the competence of public health is a priority in Guyana. At the same time, sanitation will be of prime importance as these issues are difficult to solve due to the climate and heavy rainfall.

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The Reunion Island

The Basin Coordinator Prefect has now adopted the "SDAGE" of the Reunion after a four-year work.

This basic document for overall water management for the 15 coming years must now be adapted and implemented.

There are many possible ways and the current drought is an argument for quickly starting actions intended for balancing needs with resources.

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POLAND

IMPLEMENTATION OF THE FRAMEWORK DIRECTIVE

The Water Act of 18 July 2001, which came into force on 1st January 2002, includes most of the provisions of the Framework Directive. In order to implement it, Poland initiated three projects:

Management plan for the Narew basin

On 15 July 1999, the French and Polish Ministers of the Environment signed a Twinning Agreement.

The Warsaw Water Agency has prepared, in cooperation with the French experts of the International Office for Water (Paris) and of the Adour-Garonne Water Agency (Toulouse), the water management plan for the Narew river basin (between the border and the city of Pultusk). Three new advisory bodies were created, in accordance with Article 14 of the Framework Directive: the Technical Steering Committee, the Narew Basin Committee and the Arbitration Commission.

The Narew Basin Committee has already met three times and designated the Presidency Bureau and the Arbitration Commission.

The specialists started with an inventory of the environmental status of the basin and with the determining of the main problems of the region.

A priority list was approved by the Arbitration Commission:

- 1 Improving water quality in the regions having unprotected groundwater reservoirs,
- 2 Reducing the volume of pollution coming from point sources, especially those located in the lake region,
- 3 Protecting water quality in the Siemianówka reservoir,
- 4 Protecting wetlands against the increasing water deficit,
- 5 Balancing water deficits on agricultural lands,
- 6 Improving the sanitary status of farms and reducing pollution caused by agriculture.

The second step consisted in preparing an "activity program" for the project on the "Water management plan": identification of the types of water resource, assessment of surface water quality, determination of the chemical status of water, impact of abstractions, determination of low flows, impact of hydro-technical infrastructures on the flow of rivers, determination of the morphological characteristics, impact of human activities, classification of the sensitiveness of water to external influences, determination of the types of water resource and their relations with ecosystems, identification of all protected areas of the basin and economic analysis.

Implementation of the WFD in the Brda river basin

Within the framework of the MATRA pre-accession program, the Ministry for Foreign Affairs of the Netherlands and the Polish Ministry of the Environment cooperate for implementing a project: "Implementation of the Framework Directive in the Brda river basin".

The Brda river springs from Lake Smolowe. It is 238 km long. The surface area of the Brda river basin is 4,627.7 km² and it includes 191 natural lakes and 3 man-made lakes (Koronowo, Tryszczyn and Smukala).

An Advisory Committee supervises the works.

A Brda River Basin Committee is made of representatives of users, various administrations and non-governmental organizations.

A seminar took place in Bydgoszcz, in March 2001 to interest and inform the population.

The relevant group collected data on the Brda river basin.

The "scenarios" prepared by the group dealing with water resources, will be sent to the financial specialists for their analysis.

The final output consists in drawing up the river basin management plan, according to the Framework Directive.

Transboundary waters in the Bug

The Bug river basin, the total surface area of which is 39,400 km², belongs to three countries: Ukraine (27.4 %), Byelorussia (23.4 %) and Poland (49.2 %).

In 1997, a tripartite convention was signed by Poland, Ukraine and Byelorussia on Poland initiative. It dealt with cooperation in water monitoring.

The project deals with the implementation of the Framework Directive with an approach by river basin, an analysis of the uses of water resources in the river basin, the identification of the main problems encountered to ensure good ecological status of the Bug and its tributaries and the determination of the monitoring data needed.

Information was gathered on water pollution and water quality measured at 17 monitoring points in Poland.

An inventory of all the wastewater treatment plants, either for towns or industries, and of all possible pollution sources, such as landfills, was carried out in the three countries.

Thanks to the creation of the same monitoring system covering the entire Bug river basin in the three countries, it may be possible to start having a water management system which would meet the requirements of the Framework Directive.

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GEORGIA

WATER MANAGEMENT IN THE SOUTH CAUCASUS

Water represents one of the most vital resources in the South Caucasus. It is, however, poorly managed. There is no system nor any tradition of river basin approach to water resources management.

The Kura-Araks River, that originates in Turkey and flows through Georgia, Armenia and Azerbaijan to the Caspian Sea, is the major watercourse in the South Caucasus. All three countries are dependent on this water basin as a source of water for agriculture, urban, industrial sectors and hydro-power.

The rivers are heavily polluted from municipal and industrial wastes, as well as agricultural runoff and landfill discharges.

The primary goal of the Project "Water Management in the South Caucasus", financed by the United States Agency for International Development (USAID), is to increase dialogue in order to develop sustainable water management practices in the region through increased cooperation in the management of water resources, integrated river basin planning, and bilateral agreements.

This three-year Project envisages strengthening the legal and regulatory frameworks for transboundary water management, improving the institutional capacity for monitoring river flows and water quality, etc.

The first activity is concerned with monitoring water quality

and quantity in the Kura-Araks River Basin and is being carried out in close collaboration with the Hydrometeorological Services (HMS) in all three countries.

The second activity is Introduction of geographic information system (GIS) in the process of water monitoring and provision of necessary equipment and training in six institutions, the National Hydrometeorological and Environmental Monitoring Centers in the three countries.

The third activity is related to Facilitation of data and information exchange between the three countries. It should be noted that despite the outdated technologies and econo-

mic difficulties the services face today they are still sharing data with the neighboring countries.

The objective of the project is also to show the principles of integrated river basin planning to the local Authorities. It focuses mainly on capacity building in two pilot areas Khrami/Debed and Alazani.

The Project related to the Legal framework affecting transboundary waters anticipates to result in improved understanding and awareness of national laws and international agreements in the region.

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ROMANIA - HUNGARY

THE TISZA – CRISURI TRANSBOUNDARY BASIN

On 8 and 9 March 2001, the representatives of the 5 governments of the Tisza Basin (Romania, Slovakia, Ukraine, Yugoslavia and Hungary), the European Union and the International Commission for the Protection of the Danube (ICPRD) met in Budapest to discuss the implementation of an "Environmental Program for the Tisza River Basin" (EPTRB).

The tripartite meetings (Romania / Hungary / France) of Budapest, Oradea and Paris (December 2001) allowed, within the France-supported project for exchange of experiences on the management of a transboundary basin, the updating of the following priorities for the Körös/Crisuri basin (sub-basin of the Tisza):

- **Analysis and strengthening of the water quality monitoring and warning systems in case of accidental pollution;**
- **Organization of data exchanges and standardization of analysis methods;**
- **Analysis of existing tools for integrated water resource management and participation in the preparation of an inventory and of the management plan for the transboundary river basin, according to the recommendations of the Fra-**



Network-Directive and Helsinki Convention.

This preliminary phase, financed by the French Ministry for Foreign Affairs, led to the terms of references of a large-scale project approved by both countries.

This project of "assistance with the creation of tools for the control and management of the transboundary water of the Körös/ Crisuri basin" should enable a better identification and follow up of the pollution sources and the measurement of their point and non-point impacts.

Informing the people in charge of local Authorities on their role in the river basin management and public access to the information will also be dealt with in this project.

This technical assistance, coordinated by IOWater, thus aims to:

- ① **Develop the capacities of the Romanian-Hungarian Commission,** through the strengthening of the Romanian organizations (basin branches and Crisuri basin committee) and Hungarian bodies in charge of water management. This means:
 - **the establishment of a Romanian-Hungarian Steering Committee** for the Körös/ Crisuri basin project,
 - **the building of capacities for collecting and analyzing data on water quality,**
 - **the improvement of data processing and exchange** in and between both parties,

- **the improvement of action processes** and the creation of an action team for accidental pollution purposes,

- ② **Help with the preparation of an inventory** and procedures for drawing up a harmonized transboundary management plan, according to the recommendations of the Framework-Directive, and especially of its Annex n°7, while respecting the Helsinki Convention.

The total budget of this international project for the management of the Crisuri transboundary basin amounts to 3.7 million €, including the financing of about 1.024 million € by the French Fund for Global Environment (FFEM).

HUNGARY

IMPLEMENTATION OF THE WATER FRAMEWORK DIRECTIVE

In the framework of the Dutch-Hungarian MATRA Project, a workshop was held in Budapest on 24 September 2002, for the representatives of the Hungarian Regional Water Management Authorities and Environmental Inspectorates. The workshop was organized by the National Water Authority and DHV Hungary as a training for the local experts to introduce them to the experiences of some European Union member countries.

Lecturers from France, Mr. Olivier Bommelaer (Seine-Normandie Water Agency), Spain, Mr. Manuel Menendez (CED-CEH), Holland, Messrs. Marc de Rooy (RIZA) and Marc

Staljanssen (CIAW), were invited. The Hungarian participants also gave information about the preparation for the implementation of the European Framework Directive in Hungary.

The workshop was opened by Dr. Miklós Varga, General Director of NWA who referred to the importance of bilateral cooperation with partner basin organizations from the European Union member Countries.

Ms. Eszter Havas-Szilágyi gave a summary of activities coordinated by the Ministry of Environment and Water for a better preparedness for the implementation of the WFD. She emphasized the achievements

in legal harmonization, preparation of the National Plan, participation in the EU working groups and in Hungary. She underlined the importance to nominate the competent basin authorities taking into consideration the fact that Hungary belongs to the most international river basin of the world. Therefore it is important to harmonize the planning activities with the International Commission for the Protection of the Danube River (ICPRD).

Mr. László Menyhért Tóth presented the Hungarian-Dutch MATRA project on a pilot area Által-ér.

The Hungarian experts followed with great appreciation the practices used in the Netherlands, Spain and France. They underlined that the identification of the basin needs required a detailed evaluation at the sub-basin level. For this purpose Mr. Marc Staljanssen gave information on the post-graduate courses of the International Agricultural Center in Wageningen (the Netherlands).

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CZECH REPUBLIC

A NEW WATER LAW

The establishment of River Basin organizations (Povodi) dates back to 1967 when the River Basin Administrations of the Vltava, Labe (Elbe), Ohre, Berounka, Morava and Odra (Oder) rivers were entrusted with the care of water management within the natural hydrologic boundaries of their respective river basins. Today, the state enterprises (Povodi) are five: Povodí Vltavy, Povodí Labe, Povodí Ohre, Povodí Moravy and Povodí Odry.

In accordance with the new Water Act, the organizations are entrusted with the functions of river basin manager, in charge of managing water courses and the operation and maintenance of water works owned by the State, including weirs and reservoirs and the care of riverbeds and riparian vegetation.

The Povodis are also responsible for the monitoring and evaluation of the status of surface and ground water and for providing underlying materials for water management.

On the basis of these data, they carry out an hydrological balance of their respective river basins and keep the necessary registers and records. All this information is used in compiling river basin district management plans, respecting the principles of the European Framework Directive.

As part of flood prevention, they make proposals and revision regarding the definition of the limits of flood zones.

The "Povodis" are authorized to collect fees for actually abstracted quantities of water in excess of the limit of 6,000 m³/year or 500 m³/month.

The Czech Republic has adopted a new Water Act which applies the "who-pollutes-pays" principle, sets forth the principle of fees for wastewater discharges and requires that fees be payable for the abstraction of surface and groundwater.

The Water Act has made significantly stricter the penalties for any violation of the obligations imposed.

A considerable part of the Act is devoted to flood protection. It refers to as a modern, flexible and rational legislative act although, in connection with the cataclysmic floods of August 2002 in the Czech Republic, it could not be fully implemented as the crisis management system, being superior to water legisla-

tion, had to be applied, including the announcement of emergency (crisis) status in a prevailing part of the afflicted area.

For a long time, the Czech Republic has been engaged in cooperation with neighboring countries in resolving the problems related to the joint utilization of water courses.

The Czech Republic has its representatives in the International Commissions for the Protection of the Elbe, the Oder and the Danube rivers.

International cooperation encompasses a wide range of issues relating to the quality of water, flood protection, technical modifications of shared water courses, legislation required for integration into the European structures, investments, urgent remedial actions, environmental issues, etc.

Water management planning

Water management planning has had a long tradition in the Czech Republic. The first State Water Management Plan of the Czechoslovak Republic was drafted as early as 1949-1953. The Water Act and the Act on State Administration, dating back to 1973 and 1974, remain in force with a number of modifications.

The European Water Charter (Strasbourg – 1968) and the Framework-Directive (2000) are reflected in the new Water Act, effective as of 1 January 2002. It introduces a new system of planning in the field of water management.

The main positive change is the approval of "river basin plans" which will constitute underlying materials for state administration, administrative authorizations and for the issuance of building permits.

Practical training

The employees of governmental water authorities are obligated to pass a special professional examination to demonstrate their qualification to make decisions under the Water Act and related regulations.

Their education and training consists in thematic meetings organized both by central governmental water authorities and by regional offices.

In addition, a number of conferences and seminars are organized for water specialists, naturally attended by the employees of the "Povodis".



Povodi Moravy

The state enterprise Povodí Moravy operates in the Morava river basin district, encompassing over 21,000 km² with a population of more than 2.7 million.

Its main mission is to take care of major water courses and significant water works.

One of the activities is the care of the quality of surface water. It issues annually a "Yearbook on the Quality of Surface Water in the Morava River Basin".

Yet another important activity of the manager of water courses in the river basin, that is related to the processing of underlying information, is the issue of flood zones. Povodí Moravy, s.p. as manager of water courses is responsible for processing flood zones on the water courses it manages, the total length of which exceeds 4,000 km. Today, flood zones are processed by mathematic modelling preceded by geodetic survey of the riverbed and the adjacent inundation area. However, flood zones processed in the past by the method of "expert estimate" in combination with partial calculations are still used. This method makes use of the knowledge, experience and memory of local inhabitants and experts, and records of past floods.

Povodí Moravy, s.p., has been setting up an information system for several years. It is based on several applications allowing future expansions of the system. This includes technical and operational records regarding facilities in the basins of the rivers Morava and Dyje and a graphical information system. The data are displayed in the form of charts and detail-

led legend concerning the facilities and phenomena on the water courses.

The enterprise also monitors the quality status of surface waters, and thus handles not only up-to-date information, but also data over a longer period of time to work with a time sequence.

The amount of data and information available keeps growing. Information is collected in real time from automated measuring stations.

But Povodí Moravy mainly deals with flood zones on a total length exceeding 4,000 km. Today, flood zones are processed by mathematical modeling preceded by a geodetic survey of the riverbed and the adjacent inundation area.

Flood zones are drawn in maps on a scale 1:10,000 and are accompanied by an explanatory legend.

The publication, entitled "Flood in the Morava River Basin in 1997", describes, in a clearly arranged and comprehensible manner, the worst flood that has hitherto afflicted the river basin in modern history.

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3RD WORLD WATER FORUM Kyoto (Japan) 16 - 23 March 2003

4

MEETINGS ARE NOT TO BE MISSED

In the very tightly packed program of this "Japanese week", the **International Network of Basin Organizations (INBO)** invites you to the four meetings which it organizes with its partners.

1

**Tuesday 18 March
in Kyoto**

Kyoto International Conference Hall
10:00 – 12:00
at the Agora of the "Citizen's House of Water"

Debate:

"How to organize the participation of water users in Basin Committees?"

in partnership with the International Secretariat for Water (ISW) of Montreal.

2

**Wednesday 19 March
in Osaka**

Osaka International Convention Center
15:30 - 18:15

During the session on "Water and Information"

Presentation:

"The Euro-Mediterranean Water Information and Documentation System (EMWIS), 27 countries exchange their data"

at the initiative of the Technical Unit and all the National Focal Points of EMWIS.

3

**Thursday 20 March
in Shiga**

OTSU Prince Hotel
OHMI Room River Stream 2
12:30 - 15:15

Topic
"Integrated Water Resource and River Basin Management"

Official session:

"Progress in water management at the level of river basins over the world"

with the participation of all the attending members of INBO.

4

**Friday 21 March
in Shiga**

OTSU Prince Hotel
Suzuka Room
15:30 - 18:15

Topic
"Integrated Water Resource and River Basin Management"

Official session:

"And now what ambitions for Basin Organizations?"

with the members of INBO Liaison Bureau and GWP.

If you happen to be in Kyoto from 16 to 23 March 2003, do not hesitate, register early to attend these four events as seats are in limited number!!

Download you 4 registration forms on:

www.inbo-news.org ("Kyoto" section)

and send them:

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